



Australian Government

2011–12 Regional Telecommunications Review

REGIONAL COMMUNICATIONS: EMPOWERING DIGITAL COMMUNITIES





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REGIONAL COMMUNICATIONS: EMPOWERING DIGITAL COMMUNITIES

access affordable benefits better broadband businesses
commitment community concern consumers councils coverage
division digital economy digital literacy education emergency export
health high-speed improving indigenous industry information it local
mobile coverage national nbn networks
online government services opportunities organisations people
permanent repairs phone policy probability **regional** remote satellites
schools **service** significant state strategies telecommunications training
universal service obligation

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Australian Government

Regional Telecommunications Review

LETTER OF TRANSMITTAL

Senator the Hon. Stephen Conroy
Minister for Broadband, Communications and the Digital Economy
Minister Assisting the Prime Minister on Digital Productivity
Parliament House
CANBERRA ACT 2600

Dear Minister

Together with my colleagues the Hon. Kim Chance, Alun Davies, Robin Eckermann, Heron Loban and Warren McLachlan, I have pleasure in submitting to you the 2011–12 report of the Regional Telecommunications Independent Review Committee.

It has been a privilege to have engaged with so many Australians in regional areas to discuss their telecommunications needs and the opportunities that communities identified for economic growth and social sustainability.

The committee's review takes a snapshot of existing telecommunications services in different areas and then identifies future measures needed for regional Australia to take advantage of improved broadband services.

Fixed-line services remain a key focus in regional Australia, as for many people they are the only reliable service available. People are aware that the telecommunications sector is undergoing very significant change. There is a need to assure regional consumers that their interests will be protected during this period.

People living, working and travelling in regional Australia constantly told the committee that mobile coverage remains the major concern. There is strong support across the country for a partnership approach to increasing the mobile coverage footprint in parts of regional Australia where a purely commercial business model does not work. Further work remains to be done to ensure effective communications in emergency situations in regional communities.

The priority rollout of the National Broadband Network in regional Australia and the commitment to uniform national wholesale pricing are seen as important steps in bringing reliable and affordable high-speed broadband services to regional Australia. Individuals and organisations in many regional communities are seeking greater clarity around NBN Co's rollout program and network extension policy.

Digital economy developments in regional Australia are patchy with some communities and sectors proceeding strongly and others just becoming aware of the possibilities. There is an opportunity to adopt a more coordinated approach to the delivery of government, education and health services as well as digital productivity initiatives in regional Australia.

I commend this report to you.

Yours sincerely

Rosemary Sinclair
Chair, Regional Telecommunications Independent Review Committee
5 March 2012

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EXECUTIVE SUMMARY

On 7 July 2011 the Minister for Broadband, Communications and the Digital Economy, Senator the Hon. Stephen Conroy, established the committee to conduct the 2011–12 Regional Telecommunications Review to examine telecommunications services in regional, rural and remote parts of Australia.

In conducting this review, the Regional Telecommunications Independent Review Committee examined the key telecommunications services.

The minister also requested that the committee have particular regard to the opportunities created by the National Broadband Network (NBN) and to provide advice on specific initiatives that will enable regional communities to participate in, and realise the opportunities of, the digital economy.

In undertaking its review the committee took a snapshot of existing telecommunications services in different areas, and then identified a range of future measures needed for regional Australia to take advantage of improved broadband services.

Public consultations were held in 20 regional locations, and roundtable stakeholder meetings in every state and territory capital city. We also received 222 submissions from a range of individuals and organisations. We would like to thank everyone who participated in our review by attending consultations or sending in submissions.

Telecommunications services in Australia are currently undergoing significant change. The implementation of the NBN and the related regulatory reforms are the most significant changes since the 2008 regional telecommunications review. Notwithstanding the substantial work that is being done, there continues to be a risk that people in regional Australia are left further behind. Telecommunications users, whether based in cities or in the regions, also have increasing expectations and requirements consistent with advances in services in this dynamic and important sector.

Around one in three people live in regional Australia. Regional Australia makes a vital contribution to Australia's social and cultural life and to its economic prosperity, including through mineral and agricultural exports. Good quality telecommunications services make a huge difference to people who live, work and travel in regional Australia.

FIXED-TELEPHONE AND PAYPHONE SERVICES

There has been a gradual decline in the number of fixed-line phone services over recent years. However, there are both individuals and businesses that still rely on access to a landline as their only form of reliable telecommunications service.

During the transition to an NBN environment, it is important that regional Australians can continue to access fixed-telephone and payphone services. That is, the quality of fixed-telephone services must be retained during the rollout of the NBN. As the new Universal Service Obligation (USO) arrangements are implemented, the consumer safeguards should also be closely monitored.

Many people raised concerns about the lengthy delays experienced by consumers in having permanent repairs carried out on their services. Temporary repairs are a legitimate means of fixing faults quickly to meet immediate needs, but are obviously not a permanent solution. To address this issue, at least in the first instance, we recommend that carriers should commit to improving permanent repair time frames through an industry code of practice.

INDIGENOUS AUSTRALIANS' ACCESS TO COMMUNICATIONS SERVICES

Indigenous Australians still suffer grossly disproportionate rates of disadvantage. The digital literacy of Indigenous Australians in remote communities needs to be improved. Telecommunications has the potential to provide significant and lasting improvements to the economic and social participation of Indigenous Australians. Therefore, there is a clear policy case for sustained intervention to bridge the digital divide between Indigenous Australians and the rest of the population.

CONSUMER CONCERNS

The Telecommunications Industry Ombudsman (TIO) advised the committee that regional Australians have consumer issues that are much the same as those living



Conducting a public consultation. Robin Eckermann, Warren McLachlan and Phil Smurthwaite. Oodnadatta, SA.

in urban areas. Regional consumers have concerns with customer service issues, problems with contacting service providers, problems with complaint-handling and a lack of consumer awareness.

The committee supports the work of organisations such as the Australian Communications and Media Authority (ACMA) and the TIO in pushing to improve customer services practices in the telecommunications industry and dealing effectively with complaints

about service providers. The committee had particular concerns about vulnerable and disadvantaged groups in regional Australia that may be targeted by service providers, and are at a high risk of financial exploitation. The committee believes that there is a need for greater awareness amongst consumers and that clear, relevant information should be made available. The committee recommends work be undertaken by industry and the Australian Communications Consumer Action Network (ACCAN) in this area.

EMERGENCY COMMUNICATIONS

The reliability of communications during emergency situations, especially mobile communications, is a major concern for people in regional areas. Recent natural disasters such as the Victorian bushfires and the Queensland floods have highlighted the importance of reliable communications.

There is a concern that many of the communications deficiencies which became clear in the aftermath of these disasters remain unresolved.

The telecommunications industry has a critical role in working with emergency service providers to understand how their priorities can be met and to ensure adequate communications services and strategies are in place.

Disaster management plans need to include a focus on communications and the full range of communication tools which can be used before and during a disaster to communicate with people in the affected area.

There is also a need for effective deployment of temporary telecommunications infrastructure in the aftermath of natural disasters. This infrastructure is vital to recovery efforts and should be a part of all disaster management plans.

MOBILE COMMUNICATIONS

The predominant concern raised with the committee by regional Australians is the adequacy of mobile voice and broadband services. This issue was raised in every regional consultation and in around two-thirds of the submissions we received. The committee accepts that there are commercial limits to expanding mobile network coverage, but it is equally clear there is strong unmet demand in regional Australia for an expansion of the mobile coverage footprint.

More than ever, people are demanding broadband through mobile devices. Mobile communications are expected to play an increasingly important role in enabling participation in the digital economy. As well, these devices are increasingly used for social engagement and interactions, so mobile coverage is now a key factor in attracting and retaining staff in rural and remote areas, particularly younger workers.

Many emerging technologies require mobile-wireless services to work. Access to mobile-broadband and voice services is important to capture the next generation of productivity improvements, such as water use efficiencies in the agricultural sector. Businesses in rural and remote areas want to take advantage of these technological developments but are limited by poor mobile coverage.

The committee strongly believes that increased priority should be given to expanding the mobile coverage footprint in parts of regional Australia where it is not commercial to do so. There is an opportunity for all levels of government and local communities to work in partnership with carriers to extend the mobile network.

The committee has recommended a co-investment program, jointly funded by the Commonwealth and interested state or territory governments to expand the mobile coverage footprint in regional Australia, focusing on priority locations selected with community input.

NATIONAL BROADBAND NETWORK

The NBN is seen by regional stakeholders as the most significant government commitment to improving telecommunications in regional Australia. From isolated and remote cattle stations to major regional centres, there is a genuine desire across regional Australia for access to faster, more affordable and more reliable broadband services.

The NBN is regarded as an opportunity to bridge the existing digital divide in regional Australia and allow individuals, businesses and communities to more fully participate in the digital economy. The focus in many areas is firmly on the question of when the services will arrive and understanding how communities can help to get the best possible NBN services.

The importance to regional Australians of the commitment to uniform national wholesale prices cannot be overstated, particularly in areas where competition in the broadband market has not previously been present.

The NBN Interim Satellite Service (ISS) offers an immediate improvement in high-speed broadband availability and affordability to eligible customers. The ISS will have capacity constraints but, given the benefits that would come from better broadband services, the committee recommends a review of the program eligibility criteria to enable remote schools, health facilities and Indigenous communities to access the ISS as soon as possible.

X

There are opportunities to improve the efficiency and effectiveness of the NBN rollout if local needs and advice are taken into consideration. Many regional communities see the NBN as a catalyst for positive change in their areas and are eager to have the opportunity to work with NBN Co on local deployment of the network.

DIGITAL ECONOMY

While the digital economy is not a new concept, what is changing is that over the next decade the NBN will bring to regional Australia the higher broadband speeds that many metropolitan users take for granted, at more affordable pricing. In the process, it will facilitate the growth of the digital economy in regional Australia. The digital economy is transforming life in regional Australia, from the way people access health, education and government services, to the way they live and work.

The digital economy presents both opportunities and challenges for regional communities.

For existing bricks-and-mortar businesses in regional areas, the digital economy will bring both greater market opportunities and greater competition. New pressures, for which many businesses are not currently equipped to deal with, will come from suppliers, commercial partners, employees and customers. Small businesses in particular are likely to need assistance with developing their online strategies, skills and confidence.

Many regional Australians are interested in understanding the digital economy and how best to prepare for and participate in it. Improved participation in the digital economy is essential to the productivity, competitive standing and wellbeing of regional Australia.

Individuals, businesses and community leaders who are not already strongly engaged in the digital economy need to take action now to increase their participation and preparation. The committee makes recommendations for regional areas and specific sectors such as agriculture and not-for-profit service delivery organisations.

Without digital literacy and confidence, some people may be left behind and not able to participate in the myriad of online activities and support networks. There are vulnerable and disadvantaged individuals and groups in regional Australia with digital literacy needs, who would benefit from targeted ICT training. The committee recommends initiatives in this area.

We are also recommending, for a period of three years, the formation of a National Digital Productivity Council of Experts in regional service delivery to address systemic barriers to the adoption of national digital productivity initiatives.

OPPORTUNITIES PROVIDED BY THE NBN

The rollout of the NBN will provide a critical part of the infrastructure needed to encourage economic diversification in regional communities. It is the availability of high-speed broadband in homes that enables changes in service delivery.

Regional economies and business opportunities

High-speed broadband is not the only infrastructure needed to encourage people to relocate to regional areas. However, where high-speed broadband is not available, its absence is a major disincentive to relocating to the area. The ubiquitous rollout of the NBN will remove what is currently a major barrier to regional economic development.

Greater acceptance of teleworking will lead to productivity gains for regional businesses, as well as increased flexibility for individuals. This flexibility will increase job opportunities for many regional people, particularly for those with difficulties accessing the labour market, parents, carers and for people with disability and mobility issues.

Government services

The NBN creates many opportunities for improved delivery of government services and will drive an increase in the number of government online transactions. The availability of high-speed broadband in regional homes and businesses removes a major barrier to accessing online government services. However, to be effective, online government services need to be easy to use and understand.

A particular challenge for many smaller rural and remote councils is the resources needed to move services online.

Health

As the major provider of health and education services, the state and territory governments have a critical role to play in the delivery and uptake of online government services. In Australia, there is currently unequal access to healthcare services, particularly in remote and rural communities.



Jackie Plunkett making a presentation to the committee on telehealth issues in Sydney, NSW.

The NBN provides a platform for improved delivery of care to the home, a more convenient system for regional patients to access their health records wherever they are in the country and better system-wide delivery of healthcare.

While telehealth offers great potential in the delivery of healthcare in rural and remote areas, there are barriers to the systemic adoption of initiatives. The work program of the National Digital Productivity Council of Experts in regional service delivery

should include understanding and addressing possible barriers to telehealth adoption—such as access and technology limitations, interoperability, the need for a national telehealth directory and the digital literacy of General Practitioners.



Education

The rollout of high-speed broadband will significantly improve the reach, availability and quality of education services in regional areas.

Students in high-speed broadband connected households in regional areas will have more seamless and less frustrating access to the full range of contemporary approaches to teaching and learning, from access to media-rich interactive reference material and experiences, to engaging online face-to-face interactions with teachers, remote experts and peers.

Teachers in regional areas will have better access to professional development opportunities and subject matter expertise. They can also participate more fully in support networks of metropolitan, other regionally-based teachers and international groups. Teachers will have new ways to deliver innovative lessons and access to more resources. The work program of the National Digital Productivity Council of Experts in regional service delivery should include identifying systemic barriers to e-learning and cross-border vocational training.

SUMMARY OF RECOMMENDATIONS

- 2.1 RECOMMENDATION—The new consumer safeguard arrangements should be closely monitored to ensure that they are achieving their purpose and, if required, any refinements over time can be identified and implemented to minimise any difference in service delivery.*
- 2.2 RECOMMENDATION—The committee recommends that carriers commit to improving permanent repair time frames through an industry code of practice. If industry commitment to improvements in this area is not agreeable or forthcoming, the government should consider additional regulation in this area.
- 2.3 RECOMMENDATION—The government should develop and implement a comprehensive communication strategy to raise awareness of consumer safeguards for people in regional Australia.
- 2.4 RECOMMENDATION—That the government and Telstra, as the current USO provider, commit to maintaining at a minimum the current quality of service for non-copper USO standard telephone services in NBN Co non-fibre served areas.
- 2.5 RECOMMENDATION—The government should continue the provision of Untimed Local Calls in the Extended Zones.
- 2.6 RECOMMENDATION—There should be a continuation and expansion of the Indigenous Communications Program, with sufficient flexibility to allow for tailored localised training and digital literacy solutions. The program should include a trial of wi-fi hotspots using selected community phones.
- 2.7 RECOMMENDATION—The ACMA and DBCDE should report on the status of remote Indigenous communities in respect of telecommunications to monitor the digital divide, including through the collection of data on availability, take-up and usage.
- 2.8 RECOMMENDATION—That the Standing Council on Police and Emergency Management note the committee’s finding on unresolved communications deficiencies in vulnerable areas.
- 2.9 RECOMMENDATION—The ACMA should explore the feasibility of making 000 access a condition for a satellite carrier obtaining and/or maintaining a carrier license.

* Recommendations start from 2.1 to avoid confusion as the first recommendation appears in part 2 of the report.

- 2.10 RECOMMENDATION—Major telecommunications providers, such as Telstra, Optus and NBN Co, should work with local government emergency management planners to identify critical infrastructure priorities and communications challenges that could affect local emergency warning systems and emergency responses.
- 3.1 RECOMMENDATION—DBCDE should be funded to develop a methodology, conduct audits and report on problem mobile phone coverage areas in response to complaints from the public.
- 3.2 RECOMMENDATION—The committee recommends a co-investment program, jointly funded by the Commonwealth and interested states or territory governments, to expand the mobile coverage footprint in regional Australia, focusing on priority regions selected with community input. Open-access arrangements for other carriers to tower infrastructure and/or domestic roaming arrangements should be a feature of the program.
- 3.3 RECOMMENDATION—The government should continue the Satellite Phone Subsidy Scheme.
- 4.1 RECOMMENDATION—The principle of a uniform national wholesale price for like services across technology platforms is essential on an equity basis and should be a fundamental tenet of future policy in this area.
- 4.2 RECOMMENDATION—Industry, through the Communications Alliance and in collaboration with ACCAN, should develop materials to assist customers in making informed choices about NBN broadband products.
- 4.3 RECOMMENDATION—The ISS should be reviewed to determine whether there is scope to allow remote schools, health facilities and Indigenous communities to apply for the ISS.
- 4.4 RECOMMENDATION—The committee recommends that, as a priority, clear information about the ISS and the long-term satellite solution should be provided to people and organisations in areas that will be served by satellite. There will be benefits in developing case studies that demonstrate, in real life situations including shared connections, the range of broadband applications that can be used effectively over satellite technology.
- 4.5 RECOMMENDATION—NBN Co should engage with mobile carriers about using NBN fixed-wireless towers to also improve mobile coverage.

- 4.6 RECOMMENDATION—NBN Co should:
- > Consider community reference groups as a means of gathering local community input and advice on the network rollout.
 - > Actively seek opportunities for collaboration with state and territory governments to achieve better results or efficiencies in the network rollout.
- 4.7 RECOMMENDATION—NBN Co should develop a clear network extension policy. NBN Co’s network extension policy should make provision for community contributions.
- 4.8 RECOMMENDATION—The government should work with industry and NBN Co towards ensuring at least an equivalent quality of broadband service is available under the NBN as was available prior to the NBN.
- 4.9 RECOMMENDATION—The provision of fibre access points offers future opportunities for communities passed by backhaul infrastructure. NBN Co should include additional fibre access points in any future provision of backhaul.
- 5.1 RECOMMENDATION—It is critically important to better understand the economic, social and workforce participation challenges faced by vulnerable and disadvantaged groups. The ACMA should develop metrics and collect data on these challenges, including the contribution improved access to high-speed broadband could make to increasing the workforce participation of these groups.
- 5.2 RECOMMENDATION—To provide practical assistance to improve digital literacy in regional Australia, the government should expand the Digital Hubs program into additional regional areas, not limited to NBN release sites.
- 5.3 RECOMMENDATION—Not-for-profit organisations should be supported to work together to strengthen their digital literacy capabilities and develop local strategies to take advantage of the digital economy.
- 5.4 RECOMMENDATION—DBCDE, in conjunction with the Department of Regional Australia, Local Government, Arts and Sport, should raise awareness about digital economy benefits as well as the emerging opportunities for regional communities.
- 5.5 RECOMMENDATION—A National Digital Productivity Council of Experts in regional service delivery should be established to ensure significant digital productivity issues are addressed and to provide a formal coordination mechanism for the Commonwealth, states and territories.

- 5.6 RECOMMENDATION—Regional Development Australia committees, in conjunction with local councils, should develop digital economy plans for their regions and identify digital economy champions. Cooperation in developing these digital economy plans should be sought from other local and regional institutions such as universities and national organisations such as the CSIRO and National ICT Australia.
- 5.7 RECOMMENDATION—To enhance the digital literacy and preparedness of regional small businesses, the Digital Enterprise program should be expanded into additional regional areas not limited to NBN release sites. DBCDE should also work with state and territory governments to encourage businesses to participate more fully in the digital economy.
- 5.8 RECOMMENDATION: The government should work with the agriculture sector to encourage the sector to develop digital strategies. These strategies should include how best to deliver specific training opportunities and demonstration sites.
- 5.9 RECOMMENDATION—To increase the capacity of local governments in regional and remote areas to take advantage of digital technologies for the provision of a wide range of services online, the Digital Local Government program should be expanded into additional regional areas not limited to NBN release sites.
- 5.10 RECOMMENDATION—The National Digital Productivity Council of Experts in regional service delivery should develop joint strategies and mechanisms for more systemic adoption of telehealth in regional Australia. The council should consider the lessons learnt from previous telehealth trials and also assess possible barriers to telehealth adoption such as access technology limitations, interoperability, the need for a national telehealth directory and the digital literacy of GPs.
- 5.11 RECOMMENDATION—The work program of the National Digital Productivity Council of Experts in regional service delivery should include identifying systemic barriers to e-learning and cross-border vocational training.

Part 1

Introduction



PART 1—INTRODUCTION

The Regional Telecommunications Independent Review Committee has reviewed telecommunications services in regional, rural and remote parts of Australia. The committee is comprised of Ms Rosemary Sinclair (Chair), Mr Warren McLachlan, Mr Robin Eckermann, Ms Heron Loban, Mr Alun Davies and the Hon. Kim Chance.

This is the second legislated Regional Telecommunications Review (RTR) and follows on from the 2008 review led by Dr Bill Glasson AO. The committee acknowledges the Glasson committee's comprehensive report, *Framework for the Future*, and its commitment to improving regional telecommunications.

The committee was required to provide its report to the Minister for Broadband, Communications and the Digital Economy by 5 March 2012.



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2011-12 RTIR committee clockwise from left: the Hon. Kim Chance, Mr Warren McLachlan, Mr Alun Davies, Ms Heron Loban, Ms Rosemary Sinclair [Chair] and Mr Robin Eckermann.

APPROACH TAKEN TO THE REVIEW

The committee's approach to the 2011–12 Regional Telecommunications Review has been to take a snapshot of current service availability in different areas, and to then identify what future measures are needed for regional Australia to take advantage of improved broadband services.

The 2011–12 Regional Telecommunications Review seeks to build upon the progress since the 2008 Glasson Review. In doing so, the minister has asked the committee to have particular regard for the opportunities that the National Broadband Network (NBN) creates for the emerging digital economy to improve the delivery of:

- > health and education outcomes
- > business efficiencies and opportunities
- > growth in local economies
- > government services and programs, including local government services.

The committee was also interested in other telecommunications issues that are important to regional, rural and remote communities. These include:

- > the communications needs of Indigenous Australians, particularly those that live in rural and remote communities
- > developments in the terrestrial and satellite mobile phone sector
- > emergency communications
- > the consumer concerns of people and businesses in regional, rural and remote Australia.



Committee meetings and public consultations in Sydney and Kiama, NSW and Kalgoorlie, WA.

The committee released an issues paper on 16 September 2011 seeking the views of regional Australians on their telecommunications services, their participation in and experience of the digital economy, and any barriers to engagement that they have identified. The committee received 222 submissions to the issues paper which are available at www.rtirc.gov.au

The committee undertook consultations in 20 regional locations from Kununurra, WA to Killcare, NSW, and met with stakeholders in capital cities of every state and territory (for a full list of the committee's consultation program see Appendix 4).

The committee conducted its internal meetings mainly via videoconference and was greatly assisted by the Australian Academic Research Network's (AARNet) videoconference hosting facilities. AARNet is a not-for-profit company, the shareholders of which include 38 Australian universities and the CSIRO. The support provided by AARNet has been invaluable to the success of the committee's videoconference meetings.

The committee decided early that it would not only assess the digital economy, but actively engage in it as well. With committee members located in Cairns and Monto (Qld), Armidale and Sydney (NSW), Canberra (ACT) and Perth (WA), videoconferencing was an efficient and effective means of keeping in contact. The committee also met with stakeholders from the telecommunications sector, state and territory governments, and representative groups in the capital cities.



Committee using teleconferencing to conduct meetings. Taken in Canberra, ACT.

The committee appreciated the time and effort that hundreds of people took to attend meetings and make their views known. People drove for hours, gave freely of their time and presented considered views about their regional telecommunications issues.

2011–12 REGIONAL TELECOMMUNICATIONS REVIEW TERMS OF REFERENCE

Sections 158P and 158Q of the *Telecommunications (Consumer Protection and Service Standards) Act 1999* contain the terms of reference for the Regional Telecommunications Independent Review Committee and the conduct of regional telecommunications reviews:

1. The committee must conduct a review of the adequacy of telecommunications services in regional, rural and remote parts of Australia.
2. In determining the adequacy of those services, the committee must have regard to whether people in regional, rural and remote parts of Australia have equitable access to telecommunications services that are significant to people in those parts of Australia, and currently available in one or more parts of urban Australia.
3. In conducting the review, the committee must make provision for public consultation and consultation with people in regional, rural and remote parts of Australia.
4. In conducting the review, the committee must have regard to any policies of the Australian Government notified to it by the Minister for Broadband, Communications and the Digital Economy*; and such other matters as the committee considers relevant.
5. The committee must prepare a report of the review and give it to the minister. The report may set out recommendations to the Australian Government.
6. In formulating a recommendation that the Australian Government should take a particular action, the committee must assess the costs and benefits of that action

* The minister has asked the committee to have particular regard for the opportunities that the National Broadband Network creates in improving the delivery of health and education outcomes, growth in local economies, business efficiencies, and government services and programs.

SCOPE AND STRUCTURE OF THE REPORT

The report is set out as follows:

Part 1 is the introduction to the review and includes the approach taken to the review, the 2011–12 RTR’s terms of reference, and the significance of regional Australia.

Part 2 consists of the committee’s assessment of the existing telecommunications services in regional, rural and remote Australia. It includes four subsections—fixed-telephone and payphone services, consumer experiences, Indigenous communications, and emergency communications.

Part 3 examines and reports on mobile communications, including opportunities for mobile coverage expansion, the importance of mobile coverage in regional Australia, and the case for expanding the mobile coverage footprint.

Part 4 addresses the most significant government commitment to improving telecommunications in regional Australia, the National Broadband Network. The committee discusses the importance of uniform wholesale prices, the status of the rollout in regional, rural and remote areas, NBN Co’s consultation and network extension policy, satellite technologies, and quality of service.

Part 5 investigates the opportunities that the committee considers the NBN creates for regional communities in the areas of health, education, business and government services. This part also discusses how individuals and communities can more fully participate in the digital economy.

SIGNIFICANCE OF REGIONAL AUSTRALIA

Around one in three people live in regional Australia. Regional Australia provides the economic backbone of the nation’s prosperity, in particular through mineral and agricultural exports. It is a popular tourist destination and makes a vital contribution to Australia’s social and cultural life and to its prosperity in the global economy.

The economic value of regional Australia is clear. It is the main provider of Australia’s food and energy. The resources industry is the country’s largest single export sector directly and indirectly employing approximately 800 000 people. It is also the largest private sector employer of Indigenous Australians.¹ In the farming sector, agriculture produces approximately 93 per cent of all food consumed in Australia.²

Almost half of all tourism expenditure in Australia is spent in regional areas and iconic images of regional Australia feature in many of Australia’s most successful tourist campaigns.³ Metropolitan Australians are increasingly choosing a ‘tree change’ or ‘sea change’ and moving to regional towns and centres for the lifestyle benefits they provide.⁴

Telecommunications services have always been a high priority in regional Australia. There is a small population spread across great distances and it can be difficult for individuals and businesses to access services in these areas. Many regional businesses struggle to reach new markets and attract and retain staff.

There is a long history of people in regional areas actively seeking improvements to their telecommunications services. Good telecommunications make a huge difference to the lives of regional Australians. It means improved access to medical services, training and education professionals or assistance with such everyday tasks as paying bills, shopping and social networking. For regional businesses access to high-speed broadband opens doors to new markets, supports business efficiencies such as teleworking, and provides a platform for new and innovative business practices.

Regional Australia is vital to the quality of life enjoyed by all Australians. Good telecommunications provides a solid foundation for Australia's regions to continue to prosper and contribute to the wellbeing of the country. At this critical juncture in regional telecommunications services, people in Australia's regions must not be left behind.

PREVIOUS REGIONAL TELECOMMUNICATIONS REVIEWS

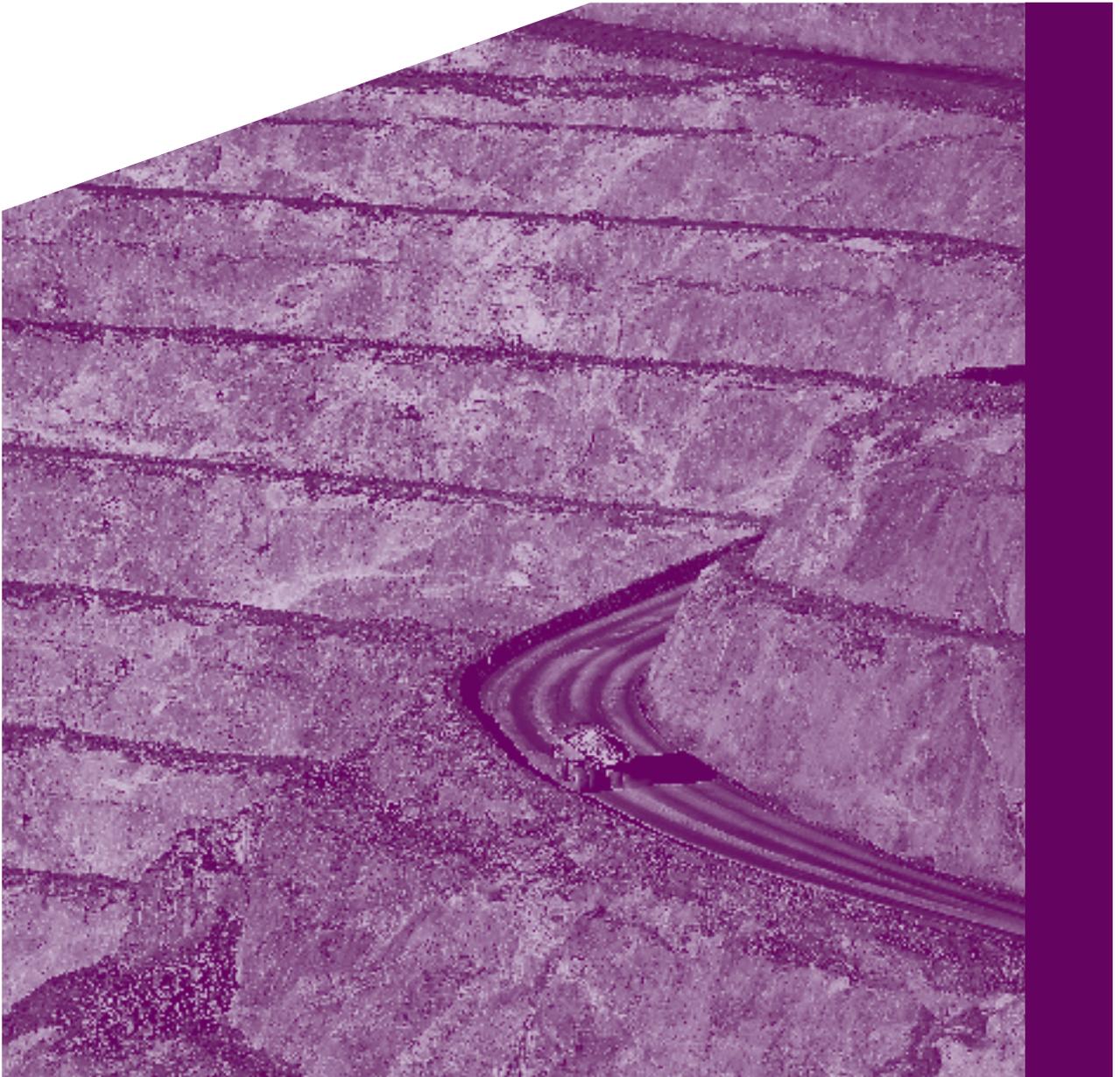
The September 2000 Telecommunications Service Inquiry conducted by Mr M A (Tim) Besley AO, was the first wide-ranging report to focus on telecommunications services in regional Australia. Following on from the Besley Inquiry, the 2002 Regional Telecommunications Inquiry chaired by Mr Dick Estens recommended that the government put in place a process to regularly review telecommunications services in regional areas, and to assess whether important new service advancements are delivered equitably.

The first legislated Regional Telecommunications Independent Review Committee, chaired by Dr Bill Glasson AO, assessed telecommunications services in regional, rural and remote parts of Australia during 2007–08.

These previous reviews have had positive impacts on the level and quality of telecommunications services in regional Australia.

Further information about selected government programs and policies can be found in Appendix 7. These programs or policies are marked with this symbol Δ when referred to in the text.

Part 2
Existing
telecommunications
services



PART 2—EXISTING TELECOMMUNICATIONS SERVICES

2.1 INTRODUCTION

There are strong expectations that people in regional, rural and remote areas have access to basic fixed-telephone services, access to reliable mobile phone coverage and, more recently, quality broadband services. In many ways telecommunications users, whether based in cities or in the regions, have increasing expectations as advances occur in the sector.

Telecommunications services in Australia are currently undergoing significant change. The implementation of the NBN and the related regulatory reforms are the most significant changes since the last regional telecommunications review. These major reforms to the sector will achieve three main outcomes:

- > provide ubiquitous high-speed broadband to all Australians
- > implement structural reform by requiring NBN Co to operate as a wholesale-only, open-access network provider
- > change the telecommunications regulatory framework to enhance competitive outcomes in the Australian telecommunications industry, such as by allowing for the structural separation of Telstra, and strengthening existing consumer safeguards

The NBN and structural reforms are discussed in part four of this report. The regulatory reforms, in particular their impact on fixed-telephones and payphones, are dealt with in this part of the report.

Notwithstanding the substantial work being done in the telecommunications sector, regional stakeholders believe there is a continuing risk of being left further behind.

2.2 FIXED-TELEPHONE AND PAYPHONE SERVICES

A key safeguard of continuing importance for regional Australia is reasonable access to a basic telephone service, including payphones, regardless of where people live or work.

The primary organisations involved in the regulation of fixed-telephone services are:

- > the industry regulator, the Australian Communications and Media Authority (ACMA) and

- > the competition regulator, the Australian Competition and Consumer Commission (ACCC).

While not an industry regulator, the Telecommunications Industry Ombudsman (TIO) also plays an important role as it provides a dispute resolution service for residential and small business customers with telecommunications complaints. The TIO is independent of industry, the government and consumer organisations.

In 2008, the Glasson committee found that, while voice services are generally adequate in regional areas, the consumer protections should be revised and a fresh approach was needed. Since the Glasson review, there has been significant change and achievements in this area with the introduction of the *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010*.^A The Act includes measures to strengthen key consumer safeguards and to enhance the ACMA's enforcement powers.

There were 10.54 million fixed-line telephone services in 2010–11, compared with 11 million in 2007–08.⁵ There has been a gradual decline in the number of fixed-line telephone services over recent years, reflecting changing consumer communication preferences. However, the committee heard from both individuals and businesses who advised that, in many instances, access to a landline is still their only form of reliable telecommunications service.

Consistent with the Glasson review findings, the committee found that consumers in regional and remote areas are still not well informed of their rights and their service provider's obligations.

CONSUMER SAFEGUARDS

Consumer safeguards ensure that all Australians have reasonable access to reliable and affordable telephone services. These safeguards include the Universal Service Obligation (USO), Customer Service Guarantee (CSG), Network Reliability Framework (NRF) and Priority Assistance. These safeguards encourage providers to:

- > supply reliable services quickly
- > restore faulty services promptly
- > address recurrent faults
- > provide quicker responses to assist in meeting the telecommunication needs of people with life-threatening medical conditions.

The objective of the USO^A is to ensure that standard telephone services and payphones are reasonably accessible to all people in Australia. Telstra is the primary universal service provider and is required to fulfil the USO.

The rollout of the NBN will result in a fundamental change to the structure of the Australian telecommunications market as Telstra’s near-ubiquitous copper network is gradually decommissioned to make way for the NBN’s fibre infrastructure. The NBN will provide an open-access, wholesale-only platform that will enable service providers to provide broadband and other telecommunications services (including voice services) to all premises in Australia.

These changes have practical implications for the delivery of basic voice services and other public interest services under the USO. Subject to the passage of legislation, from 1 July 2012 there will be a transition from a regulatory approach to an open and competitive contractual model involving a new government agency, the Telecommunications Universal Service Management Agency (TUSMA).^A

The CSG^A provides minimum performance standards—including the time within which new services must be connected, faults must be rectified, and appointments must be kept.

Over the past four years there has been an incremental increase in service providers consistently meeting the CSG repair time frames in urban and rural areas. There will now be a greater incentive to meet the time frames with the introduction of infringement notice penalties of up to \$990 000 for a failure to meet CSG performance benchmarks.

Table 1 captures service provider performance against the CSG fault repair standards. The benchmark is that the CSG time frames must be met or exceeded in 90 per cent of fault repair cases.

Table 1: CSG—percentage of faults repaired within CSG standard time frames [90 per cent benchmark]

2010–11					
	AAPT	iiNet**	Optus*	Primus	Telstra
Urban areas	96.3%	95.1%	93.5%	94.1%	91.0%
Rural areas	95.6%	95.2%	78.2%	97.3%	92.5%
Remote areas	92.0%	n/a	85.7%	88.9%	93.0%
All areas	96.1%	95.1%	93.5%	94.6%	91.4%
2009–10					
	AAPT	Optus*	Primus	Telstra	
Urban areas	97.4%	93.8%	97.0%	93.6%	
Rural areas	96.8%	84.2%	97.3%	93.0%	
Remote areas	92.0%	84.0%	85.7%	89.4%	
All areas	97.3%	93.8%	97.0%	93.4%	

2008-09				
	AAPT	Optus*	Primus	Telstra
Urban areas	93.7%	90.6%	np	90.5%
Rural areas	94.9%	92.3%	np	90.8%
Remote areas	92.2%	95.8%	np	87.5%
All areas	93.9%	90.6%	np	90.5%

2007-08				
	AAPT‡	Optus*	Primus	Telstra
Urban areas	96.6%	86.5%	94.2%	88.7%
Rural areas	96.4%	86.1%	n/a	89.0%
Remote areas	92.3%	84.9%	n/a	86.2%
All areas	96.6%	86.5%	94.2%	88.8%

Source: ACMA communications report 2010-11, 2009-10, 2008-09, and 2007-08.

*Optus data covers its own urban network only and excludes reseller activity on other networks.

**iiNet acquired AAPT's Consumer Division on 1 October 2010 and therefore iiNet data is for three-quarters only of the 2010-11 financial year.

‡AAPT data is for the September 2010 quarter only.

np—not provided

The NRF^A is a compliance and reporting framework that requires Telstra to report to the ACMA on performance of its network and to fix poorly-performing local areas and individual services.

The ACMA indicates that Telstra's performance has remained relatively stable against the NRF benchmarks since 2006. However, extreme weather events and natural disasters have had an effect on performance outcomes in certain areas of Australia.

Priority assistance is an enhanced telephone connection and repair service for people with a diagnosed life-threatening medical condition. The service provides eligible residential customers with faster connection and fault repair times—24 hours in urban and rural areas, and 48 hours in remote areas.

Table 2 represents Telstra’s performance in relation to fault repairs for priority assistance customers over the past four years.

Table 2: Priority assistance—Telstra fault restoration requests [90 per cent benchmark]

	2007-08	2008-09	2009-10	2010-11
	Completed on time [%]			
Urban	91%	94%	93%	94%
Rural	87%	90%	89%	90%
Remote	83%	86%	84%	87%
National	90%	93%	92%	93%

Source: ACMA Communications report 2010-11.

Note: ‘Urban’ is defined as communities with 10 000 or more people; ‘rural’ is defined as communities with between 200 and 10 000 people; ‘remote’ is defined as communities with up to 200 people.

In the previous four years, Telstra has consistently met the 90 per cent target for priority assistance repairs in urban and rural areas. While Telstra has not met the 90 per cent target for remote areas, it has improved over time.

Overall, the committee notes that performance against the consumer safeguards has improved over the last few years across all geographical areas. However, benchmarks are being met less often in remote areas.

2.1 FINDING—People in rural and remote areas rely heavily on fixed-line services but the remote area benchmarks are not being met as often as they are in other areas.

2.1 RECOMMENDATION—The new consumer safeguard arrangements should be closely monitored to ensure that they are achieving their purpose and, if required, any refinements over time can be identified and implemented to minimise any difference in service delivery.

PERMANENT REPAIRS

The ageing copper wire is subject to faults, breakages, disconnections, water damage etc. Whenever it rained I had a flaky connection—it seems water pooled in the Telstra pit at the end of the street. The technician did a patch job, but in the three years we lived there, this was never fixed properly—he eventually just moved our connection further up the ‘pole’ and so someone else got the flaky connection near the bottom of the pole; that just shifted the problem to someone else.

Rhonda Bracey, WA

A common concern raised in rural and remote areas was the time taken to affect permanent repairs to fixed-line services. The CSG defines fault repair times, but there is no requirement to fix interim repairs, unless those interim repairs experience a fault.

Temporary repairs are a legitimate means of fixing faults, but if not permanently rectified in a reasonable time frame, may be more susceptible to fail again than permanent repairs. This can lead to more outages and is a matter of concern for affected consumers.

I regularly (every day) experience widely varying download speeds from extremely slow to average, and worse, have numerous drop-outs where there is no ADSL connection at all. My internet service provider has been very helpful in sending out technicians, who pulled connectors out of the water (in the Telstra pits) on two separate occasions, and reported a damaged cable needed replacing. Months have gone by and nothing has been done.

Rob Harle, NSW



Left: Image provided by Rob Harle, NSW—the phone cable connector in a plastic bag, duct taped to a fig tree. Right: Image provided by Alan Gelmi, WA—telephone cable crossing driveway.

The TIO's submission to the committee highlighted that, over the past two years, the Ombudsman had received an increasing number of complaints relating to lengthy delays experienced by consumers in having permanent repairs carried out on their services.

In many of the complaints before the TIO these cables, while originally intended as a stop gap measure, have been in place for a year or more. Ongoing (or recurring intermittent) faults and safety hazards (due to the placement of the temporary cable) frequently occur as a result of temporary cabling. Loss of internet access is also common.

For consumers in regional and remote areas, while the installation of a temporary cable may resolve immediate service problems, the lack of expediency in providing a permanent solution resulted in issues such as: health and safety concerns about temporary cabling and associated faults. One consumer described the danger to

farmhands mustering livestock on motorbikes caused by a temporary cable strung 30 cm off the ground. Other consumers noted that cables at this height (which are not uncommon) were tripping hazards, and incidences of a child coming off a bike and livestock tripping were also reported.

Telecommunications Industry Ombudsman

Our telephone cable runs above the ground across the main gateway of our neighbour's property. They have property both sides of this road so cable is constantly being run over with farm machinery, utes, road trains, harvesters, tractors etc.

Alan Gelmi, WA

Delays in permanently fixing landline faults are an unsatisfactory outcome for customers and can leave people feeling vulnerable in emergency situations.

2.2 FINDING—There is a clear concern around temporary repairs to fixed-line services that are not made permanent, which is not being satisfactorily addressed.

2.2 RECOMMENDATION—The committee recommends that carriers commit to improving permanent repair time frames through an industry code of practice. If industry commitment to improvements in this area is not agreeable or forthcoming, the government should consider additional regulation in this area.

PUBLIC PAYPHONES

Public payphones are considered important by many people, particularly those who live or work in areas that do not have reliable mobile phone coverage or limited public internet access.

We are noticing a significant increase in the number of people coming to our offices to use our phone to either call their family, creditors, other services or Centrelink since the removal of the pay phone (in Trangie).

CentaCare Wilcannia-Forbes, NSW⁶

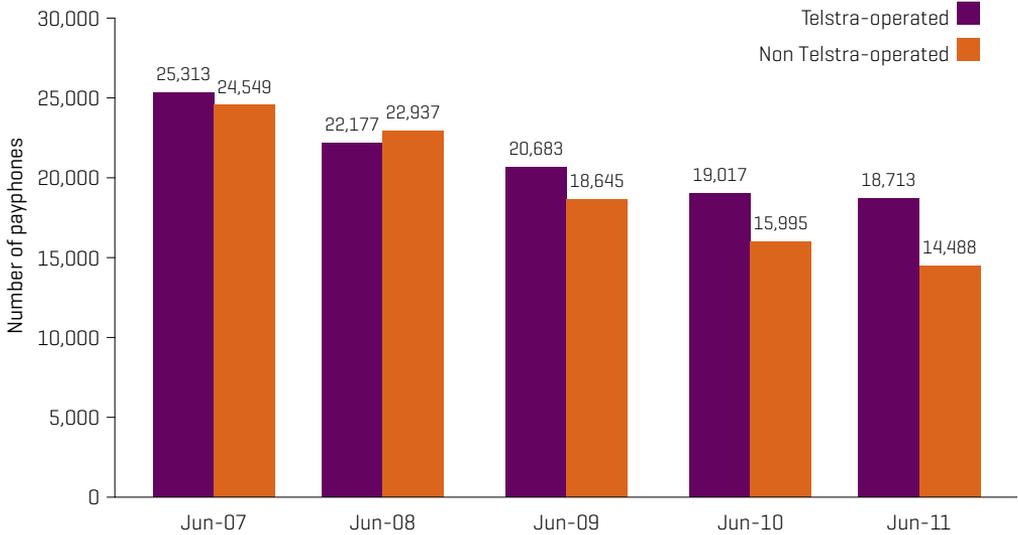
In Australia payphone services are provided either on a commercial basis or by Telstra as part of the USO. As the primary universal service provider, Telstra must provide payphones that are reasonably accessible on an equitable basis to all people in Australia. This obligation covers the supply, installation and maintenance of public payphones.

The ACMA monitors Telstra's performance in providing payphones under the USO and also receives information about the number of payphones supplied or operated on a commercial basis by other providers.⁷

Similar to fixed-line services, the number of and use of payphones is declining as consumer communication preferences change. In the 2010–11 financial year it was reported that there were 33 201 payphones in Australia, which represents a five per cent decline on the previous year.⁸

Figure 1 below shows the gradual decline of payphones since June 2007.

Figure: 1 Number of Telstra and non-Telstra payphones in operation



Source: ACMA Communications report 2010–11

In June 2011, it was reported that 56.4 per cent of payphones were operated by Telstra. The remaining payphones were provided by other telecommunications companies or businesses, such as hotels, clubs and convenience stores.⁹

Table 3: Total distribution of payphones by geographical category as at 30 June 2011

	Urban	Rural	Remote*	RIC
Telstra-operated payphones	12 841	4894	978	615
Other payphones	11 384	2656	448	225

Source: ACMA Communications report 2010–11

*including Remote Indigenous communities (RIC)

As demonstrated in table 3, the majority of remote payphones are located in remote Indigenous communities.

REMOVAL OF PAYPHONES

Submissions from organisations such as the ACCAN, which is the peak body representing consumer interests on communications issues, emphasised there is an ongoing need for payphones, particularly in remote Indigenous communities. The main message conveyed to the committee was the concern around the process for the removal of payphones.

In recognition of community concerns about the removal of public payphones, the Minister for Broadband, Communications and the Digital Economy issued a determination commencing on 1 January 2012 which:

- > introduces enforceable rules to ensure adequate consultation before payphones can be removed
- > provides new provisions to allow people concerned about a payphone removal to apply to the ACMA to direct Telstra not to remove a payphone
- > introduces stronger reporting and performance benchmarks.

Before a decision is taken by Telstra to remove a payphone, it must undertake public consultation with any comments provided in response by the local community, site owner and local government authority to be taken into account. Telstra must acknowledge in writing within five working days all written comments received regarding the proposed removal of a payphone. If requested, Telstra must also advise interested parties of the final removal decision.

Similar to financial penalties applying to breaches of the CSG performance benchmarks under the new infringement notice scheme, financial penalties may also be imposed for breaches relating to the installation and removal of payphones.¹⁰

2.3 FINDING—The removal of USO payphones is a concern, especially in areas that do not have mobile phone coverage or have limited public internet access.

PAYPHONE FAULT REPAIRS

From 1 January 2012, new fault repair time frame benchmarks came into effect. Under these new conditions, penalties may be imposed if Telstra does not meet two key performance indicators. Firstly, Telstra must meet a standard repair time—between one and three days depending on where the phone is located—within a percentage benchmark. Secondly, there is a maximum fault repair time of 10, 15 and 20 working days depending on whether the phone is located in an urban, rural or remote area.¹¹ Table 4 shows the performance benchmarks for urban, rural and remote areas.

Table 4: Benchmarks and standards for payphones fault repair times

Geographic area	Standard repair time	Percentage of repairs completed within standard repair time	Maximum fault repair time without penalty
Urban	1 day	90%	10 working days
Rural	2 days	90%	15 working days
Remote	3 days	80%	20 working days

Source: Telecommunications Universal Service Obligation [Payphone Performance Standards] Determination [No. 1] 2011 and Telecommunications Universal Service Obligation [Payphone Performance Benchmarks] Instrument [No. 1] 2011.

Previously, the standard repair times were informal targets monitored by the ACMA and there were no maximum fault repair times. The introduction of financial penalties for minimum and maximum time frames is designed to encourage improvements to repair time performance.

As noted by ACCAN, Telstra has consistently failed to meet the standard repair time for fault repairs in remote areas. Although the ACMA reports that where payphones are repaired outside the standard repair time in rural and remote areas, the majority are repaired within the next five working days as demonstrated in table 5.

Table 5: Telstra payphone fault repair performance in 2010-11

	Urban	Rural	Remote*	RIC
Repairs on time	92.3%	87.6%	62.0%	56.6%
Repairs within no more than five working days of the target dates	98.8%	96.7%	84.1%	80.6%

Source: ACMA Communications report 2010-11

*including Remote Indigenous communities [RIC]

The standard fault repair time benchmark applies to a percentage of repairs to encourage Telstra to improve its overall fault repair performance for payphones in a given geographical area. In contrast, the introduction of maximum fault repair time frames with penalties applies to payphones individually. This is designed to ensure Telstra does not leave loss-making, remote or difficult-to-reach payphones unrepaired for extended periods of time. Under the previous system, the ACMA found that some payphone faults were taking several months to rectify.

ACCAN's main concern with the new time frames is that people living in remote areas could potentially face very long delays without a working public payphone, despite the financial penalties for breaching the repair times. This would leave people socially disconnected and vulnerable, particularly in emergency situations, and would fall short of community expectations of having reasonable access to a public payphone.

The committee supports ACCAN's view that it would be unreasonable if the maximum fault repair times were to become the norm for payphone repairs. As the new payphone arrangements were only recently introduced, the committee is not able to determine whether ACCAN's concerns will be realised.

2.4 FINDING—The new USO arrangements should lead to better consultation and appeals processes for the removal of payphones.

2.5 FINDING—Monitoring of payphone fault repair times, particularly in rural and remote areas, should be included as part of recommendation 2.1.

FIXED-LINE SERVICES IN NBN NON-FIBRE SERVED AREAS

For people who live in areas where the NBN fibre will not extend and who currently receive their voice services over Telstra's copper network, Telstra will be required to maintain its copper network to deliver voice services for the next 20 years, with a review to occur after 10 years to examine if cost savings can be realised.

The commitment to maintain Telstra's copper network in NBN non-fibre areas for the next 20 years is significant. However, there is little awareness of this commitment and many people in areas that are scheduled to receive a NBN fixed-wireless or satellite service are concerned about losing access to their existing fixed-line services.

2.6 FINDING—There is a lack of awareness in regional Australia about the USO reforms and many people in NBN non-fibre served areas are concerned about losing access to their fixed-line services.

2.3 RECOMMENDATION—The government should develop and implement a comprehensive communication strategy to raise awareness of consumer safeguards for people in regional Australia.

Historically, Telstra has used its copper network to deliver the majority of standard telephone services. The committee is advised that around 30 000 services are currently provided through non-copper technologies. The majority of these services are provided using fixed-wireless technologies and around 1200 services are supplied using satellite technology.

In the event that non-copper technologies covered by the USO do fail, it is not clear what technologies would be considered as acceptable replacements for providing standard telephone services.

The main concern raised was the possibility of a satellite service being used to provide USO standard telephone services if other technologies, such as High Capacity Radio Concentrator (HCRC), fail.

2.7 FINDING—The committee believes that the new USO arrangements will provide the necessary consumer safeguards for the existing copper network in the NBN non-fibre areas. However, it is not clear what arrangements are in place for maintaining or replacing non-copper network assets in the NBN non-fibre footprint, such as HCRC.

2.4 RECOMMENDATION—That the government and Telstra, as the current USO provider, commit to maintaining at a minimum the current quality of service for non-copper USO standard telephone services in NBN Co non-fibre served areas.

UNTIMED LOCAL CALLS IN THE EXTENDED ZONES

Extended Zones^A are large regional call zones that lie outside of Telstra's standard local call zones. They are sparsely populated and geographically diverse.

Figure 2: Map of Telstra Extended Zones



Source: Department of Broadband, Communications and the Digital Economy

In 2001, the government and Telstra entered into a 10-year agreement that customers calling fixed-line services located in their own Extended Zone, adjacent Extended Zones and to a relevant community service town would be charged at Untimed Local Call rates.

When the original agreement expired in May 2011, the government and Telstra negotiated a new contract to continue to provide Untimed Local Calls in the Extended Zones through to 30 June 2012.

The continued provision of Untimed Local Calls in the Extended Zones is a positive outcome for people and businesses located in these areas. As noted earlier, the committee heard from both individuals and businesses who advised that, in many instances, access to a landline is still their only form of reliable telecommunications service.

In the absence of government support for these arrangements, because of the large distances involved, a phone call to a neighbour or local regional centre could attract long-distance charges. The committee supports the government continuing the provision of untimed local calls in the Extended Zones.

2.5 RECOMMENDATION—The government should continue the provision of Untimed Local Calls in the Extended Zones.

2.3 CONSUMER EXPERIENCES

Regional consumers face a range of telecommunications challenges. Digital literacy and access to quality broadband services at affordable prices are necessary pre-requisites to participating in the digital economy (these matters are addressed in the digital economy section in part five of this report). The three consumer telecommunications experiences most commonly raised with the committee were:

- > customer service
- > consumer awareness
- > complaints-handling processes.

CUSTOMER SERVICE

Currently, agencies such as the ACCC, the ACMA and the TIO are working on a range of strategies to improve the customer focus of telecommunications service providers.

In looking at possible solutions to improve consumer experiences, the findings of the ACMA 'Reconnecting the Customer' inquiry are as relevant to regional Australians as they are to metropolitan consumers.

That inquiry found significant deficiencies in customer service and complaint-handling by the telecommunications industry and proposes reforms to the Telecommunications Consumer Protection (TCP) code and the TIO.

The ACMA found that customers experience difficulties contacting their service providers. Common problems include long waiting times, not being able to speak to a real person, having to repeat their stories to each new customer service representative, experiencing multiple transfers and not being able to speak to someone who can resolve their issues.

The regional consultations and submissions process confirmed that these issues are also of relevance for regional consumers.

The ACMA has identified the key areas that need to be adopted by the telecommunications industry to better improve customer relations. The five key points are summarised below:¹²

- > **Clearer pricing information in advertisements**—all providers should clearly disclose pricing information in their advertisements in a way that will make it easier for consumers to compare plans.
- > **Improved information about plans**—all providers should give customers a simple, standard explanation of what is included in a plan, how bills are calculated and what other essential information they need to know about the plan.
- > **Comparisons between providers**—all providers will be asked to provide more information about their customer care, particularly how quickly they resolve their customers' enquiries.
- > **Tools to monitor usage and expenditure**—all providers should enable customers to track their usage and expenditure on data, calls and SMS during a billing period to help reduce the risk of bill shock.
- > **Better complaints management**—all providers should have a standard complaints-handling process that meets benchmark standards and includes time frames for dealing with a complaint.

2.8 FINDING—The committee supports the work the ACMA is undertaking in the area of improved customer service and improving industry consumer practices, including the ongoing implementation of the findings of the 'Reconnecting the Customer' report.

CONSUMER AWARENESS



Heron Loban speaking at the public consultation in Kiama, NSW.

During the consultation process, ACCAN advised the committee that people in regional and remote areas can be the target of inappropriate selling practices by telecommunications retailers, including telemarketers. The committee notes that some people are spending large amounts of money on unsatisfactory services, handsets and attachments that do not result in any measurable improvements in reception or quality of service. In some cases, the equipment purchased was done so on advice from retailers.

Of particular concern is when vulnerable and disadvantaged groups are heavily targeted, such

as Indigenous people living in remote communities. A combination of low literacy levels, lack of services and an uncompetitive marketplace can leave such consumers open to financial exploitation.

We're aware of some service providers cold calling Indigenous clients in Newman and offering them so called 'free' phones that aren't free. They seem to target elder Aboriginal women who don't understand the contract. Our clients want a 'free' phone, but they are not able to keep up payments or they lose the phone. In some cases the phone has never been activated and used but they still incur huge bills.

Pilbara Community Legal Service, WA¹³

Information (to improve mobile phone coverage) is available but it is unusable. It was found to be totally inappropriate in the circumstances.

Jim and Joy Harris, NSW¹⁴

Obtaining information can prove difficult especially if the mobile phone carrier's support staff are not familiar with the coverage area or are situated offshore and have no understanding of the topography or distances our members face. We have instances of members having been given incorrect information on the size of an aerial required to boost their mobile service and provide greater service reliability within their residential premises. It becomes a frustrating and sometimes costly exercise for consumers to have to work through various solutions because little accurate information can be accessed.

Isolated Children's Parents Association of Australia, Federal Council

As consumers transition to an NBN environment, consumer awareness of telecommunications services becomes an increasingly complex issue.



Rosemary Sinclair. Public consultation, Berri, SA.

Consumers in regional and remote areas will experience increased competition in available services. Greater choice may bring an increased risk of purchasing products and services that are not suitable for individual circumstances. To assist consumers to make informed choices about the products and services that best suit their needs, the committee believes that there must be clear, relevant and accurate information available.

In the first instance, the obligation to provide this information should be on the retail service providers. There is also a role for industry or consumer representative organisations to assist their members and the general public in understanding the telecommunications choices available in the market.

Some socio-economically disadvantaged groups are over-represented in regional Australia. It is important that information on broadband products and service offerings is presented in ways that are meaningful and helpful to these people.

2.9 FINDING—To assist regional consumers to make an informed choice about the telecommunications products and services that best suit their needs, there must be clear, relevant and accurate information made available.

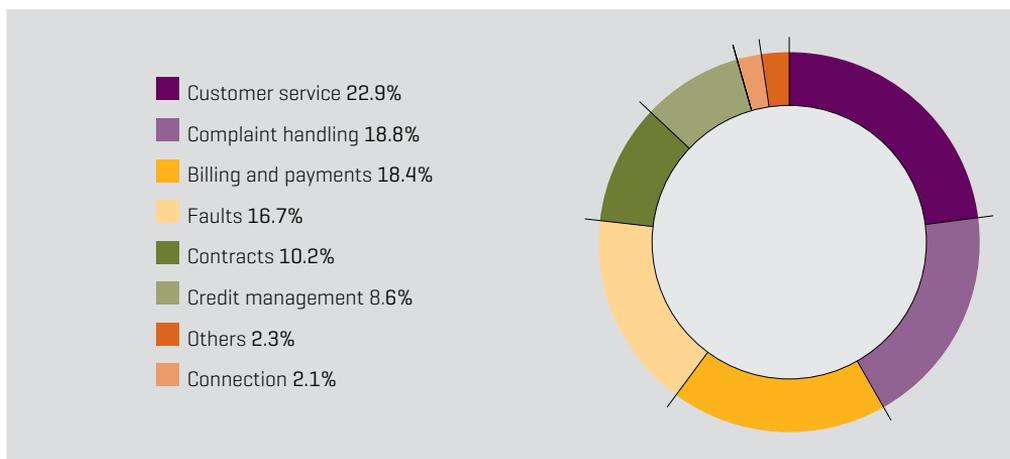
COMPLAINTS-HANDLING PROCESS

The committee found that there seemed to be a lack of awareness in regional and remote areas about the complaint-handling process. During the consultation period, the committee met with the TIO to discuss the types of complaints that were made and the strategies adopted by the TIO to resolve these. The TIO handles a number of consumer issues relating to landline, mobile and internet services, including contracts; bundled services; connecting new services; transferring services; faults, poor coverage and billing mistakes.

An issue of particular relevance for this committee is that the types of complaints raised with the TIO in regional and remote areas are largely the same as those made by all consumers.

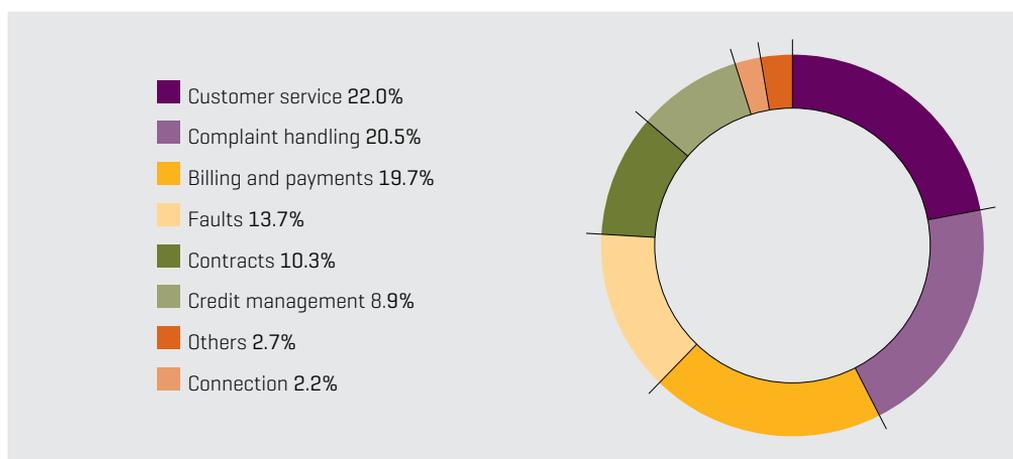
As the graphs provided by the TIO at figure 3 and 4 illustrate, for each issue raised, the number of complaints made by regional and remote consumers is consistently within a few percentage points of the complaints made by all consumers to the TIO.

Figure 3: Consumer issues across all areas



Source: TIO

Figure 4: Consumer issues in regional and remote areas



Source: TIO

Typically, the TIO uses a number of methods to help consumers reach an agreement with their service provider including referral, conciliation, investigation and determination.

2.10 FINDING—The TIO should have an ongoing role in identifying, monitoring and responding to concerns that are specific to regional, rural and remote consumers.

2.4 INDIGENOUS ACCESS TO COMMUNICATIONS

Indigenous people in Australia suffer grossly disproportionate rates of disadvantage against all standard measures of socio-economic status.

Telecommunications can provide significant and lasting improvements to the economic and social participation of Indigenous Australians. A key concern for the committee is that Indigenous Australians may not benefit from the additional opportunities that high-speed broadband will provide, due to a number of barriers which impede access in regional and remote Indigenous communities.

Where access is provided, Indigenous people tend to be rapid adopters of new technologies and active content producers. Affordable broadband access, combined with support for ICT facilities, training and applications, will build the capacity of remote Indigenous Australia and help to bridge the divide with the broader Australian community.

Indigenous Remote Communications Association, NT

The 2006 Census indicates that 21 per cent of the Indigenous Australian population lives in inner regional areas, 22 per cent in outer regional areas, 10 per cent in remote areas and 16 per cent in very remote areas.¹⁵ In 2008, almost 50 per cent of Indigenous people aged 15 years and over living in very remote areas reported problems accessing services, compared with 20 per cent of Indigenous people aged 15 years and over living in major cities.¹⁶

The most recent census figures reveal that only 20 per cent of Indigenous households in remote and very remote Australia had an internet connection, compared with 60 per cent of non-Indigenous households in the same statistical area.¹⁷

Around 26 per cent of Australians 15 years or over did not use the internet in 2008–09.¹⁸ This figure is much higher for retired persons, low-income earners, Indigenous Australians and those living in remote areas. The government's National Digital Economy Strategy states action is required to minimise the extent to which digital exclusion overlaps with, and exacerbates, social exclusion.

These statistics demonstrate a need for a dedicated response to increase the rate of Indigenous engagement with telecommunications. The core issues identified by the committee in this regard are improving access to telecommunications services and increasing digital literacy. These are the two critical steps necessary to encourage more people living in regional and remote communities to engage in the digital economy.

Supporting school bilingual programs and the development and conversion of local language printed material into a digital format is one way in which digital literacy at school could be improved for Indigenous children.

Liam Campbell, NT

As part of the government's response to the Glasson review, the Indigenous Communications Program (ICP) administered by the Department of Broadband, Communications and the Digital Economy (DBCDE) was created to help improve communication services in remote Indigenous communities. It is a four-year program which began in July 2009 and is due to end in June 2013 (other than the ongoing maintenance of facilities installed under the program). The program provides essential telephone services, public internet access facilities and computer training in remote Indigenous communities.

The program is delivered in two parts: community phones and internet access and training:

- > The **community phones** element provides robust, solar-powered satellite phones to Indigenous communities. These are designed to withstand the extreme conditions of remote Australia and allow small Indigenous communities, of 50 residents or fewer, to have access to a telephone service in places where it is often not possible to have access to any other communications. National and emergency calls are provided free of charge. Satellite mobile handsets are provided to communities of seven people or less.

- > The **internet access and training** element of the program is delivered in collaboration with participating state and territory governments. The government provides funding to states and territories to improve public internet access and provide basic computer training. The program targets remote Indigenous communities of 100 or more residents which have limited or no public internet facilities.

Since the inception of the ICP in 2009, there have been 192 fixed community phones installed with over 169 000 calls made.

During the course of the regional consultations the committee visited the remote township of Oodnadatta in South Australia. Committee members were able to see the practical impacts of public internet access, which is hosted at the Oodnadatta Aboriginal School. These facilities are highly valued by the Oodnadatta community, although it was clear that the slow and unreliable internet service prevents people from utilising the facilities to their full potential.

The satellite services that are already available through the NBN Co Interim Satellite Service (ISS) and the long-term satellite service will measurably improve the affordability, reliability and speeds of broadband services in many remote Indigenous communities. Additionally, some major regional service centres such as Cherbourg will have access to a NBN fixed-wireless service. Cherbourg is an Indigenous community in Queensland with an estimated population of 1213 residents. Currently, the community does not have access to ADSL services.

In 2011 the *Home internet for remote Indigenous communities*¹⁹ report looked into the use of communications by Indigenous Australians. This research, together with the submissions to the review, highlights a growing trend by Indigenous Australians in accessing the internet using mobile devices (more specifically mobile phones). Mobile devices are popular for a number of reasons including cost, prepaid options rather than postpaid, mobility across locations and transferability between people.

In remote (indigenous) communities where mobile telephony has been installed, it tends to be more popular and utilised than fixed-phone services.

Indigenous Remote Communications Association

Although the NBN will improve access, there will be people in remote Indigenous communities who will not be able to pay for home internet access. Given the high levels of disadvantage in remote Indigenous communities, the government has an important role to play in continuing to make public access internet facilities available.

2.11 FINDING—A digital divide exists between Indigenous and non-Indigenous Australia. The committee believes bridging this divide is critical if Indigenous people are to be afforded the same economic, social and cultural opportunities to enjoy the digital economy as the rest of Australia. The committee believes that there is a clear policy case for sustained intervention in this area.

2.12 FINDING—Increased training and support is needed to ensure that Indigenous Australians are maximising the benefits of internet access. The committee believes that a greater emphasis on tailored training and support material will enable increased digital literacy.

At the conclusion of the current ICP in June 2013, there is an important opportunity, based on lessons learnt from the first program, to enhance the government's efforts through a renewed focus on improving digital literacy, predominately through support and localised training.

Some of the fixed community phones have the capacity for conversion into wireless-internet hotspots, enabling easier access to internet services for remote Indigenous communities. Making use of a select number of the existing community phones to trial wi-fi access points would be an appropriate next step in assessing mechanisms to enhance the participation by remote communities in the digital economy.

During the June 2011 three-day Laura Dance Festival in Cape York, over 5000 attendees had access to the wi-fi enabled community phone at the festival ground. The outcome of the trial indicates the wi-fi technology worked well and was intensively used by both attendees and officials at the festival. Typical usage included Skype phone calls, web browsing, webmail, Facebook, and prepaid phone account top-up.



Image provided by Australia Private Networks—Modified ICP phone at Laura Dance Festival in Cape York, Qld.

During the regional consultations there were calls for government funding to focus more on providing computers and internet access into Indigenous homes. The committee believes that government assistance should remain focused on public internet access through the provision of a facility or a wi-fi capability, but with sufficient flexibility to allow for tailored localised training and digital literacy solutions.

2.6 RECOMMENDATION—There should be a continuation and expansion of the Indigenous Communications Program, with sufficient flexibility to allow for tailored localised training and digital literacy solutions. The program should include a trial of wi-fi hotspots using selected community phones.

2.7 RECOMMENDATION—The ACMA and DBCDE should report on the status of remote Indigenous communities in respect of telecommunications to monitor the digital divide, including through the collection of data on availability, take-up and usage.

2.5 EMERGENCY COMMUNICATIONS



An ambulance in Oodnadatta, SA

There is a major concern throughout regional Australia about the reliability of communications during natural disasters such as bushfires or floods. People said that they felt vulnerable and unprepared during natural disasters, such as the 2011 Queensland floods, due to cut landlines and unreliable mobile coverage.

The committee's comments in this section reflect the concerns raised during its consultations. The committee has focused on the challenges around contacting people during and immediately following natural disasters, rather than internal emergency services communications networks.

The committee is aware that broader work is being conducted by other authorities, including through the Standing Council on Police and Emergency Management, which promotes a coordinated national response on emergency management issues, including implementation of the National Strategy for Disaster Resilience.

The committee is concerned that, based on the views expressed in regional consultations, many of the communications deficiencies which became clear in the aftermath of the Victorian bushfires and Queensland floods appear to remain unresolved. The committee has formed the view that these issues probably exist in other parts of Australia.

2.13 FINDING—There is strong community concern that many of the communications deficiencies, which became clear in the aftermath of the Victorian bushfires and Queensland floods, appear to remain unresolved.

2.8 RECOMMENDATION—That the Standing Council on Police and Emergency Management note the committee's finding on unresolved communications deficiencies in vulnerable areas.

PRE-EMERGENCY PLANNING AND COMMUNICATIONS

The landline power was cut before the flood so that our only communication was Telstra mobile phone and that signal is very sparse in Murphys Creek. Only a very small part of Murphys Creek could and does receive the Telstra signal. I found out about the flood from my son in Gladstone who emailed me. Nobody else seemed to know it was coming.

Marian Rumens, Qld

It is critically important for people to have more than one means of communication available in case of emergency. This includes fixed-line services, radio, mobile phones and the internet. Satellite phones, in particular, are not as reliant on the local power supply infrastructure and are often more reliable than ground-based systems in an emergency. Local disaster management plans should clearly identify the suite of telecommunications tools needed to contact people in emergency situations.

The telecommunications industry has a critical role in working with emergency service providers to understand how their priorities can be met and to ensure adequate services and strategies are in place.

2.14 FINDING—The suite of telecommunications tools needed to contact people in emergency situations should be a key feature of both individual and regional disaster management plans.

A national emergency warning system, Emergency Alert, became operational on 4 December 2009. Under Emergency Alert, warning alerts are sent by recorded voice and text to landline and mobile phones (including satellite phones) based on an owner's billing address.

An upgrade to the Emergency Alert warning system is currently underway. The upgrade will allow warnings to be sent to mobile phones based on their physical locations. This means that tourists and visitors in an emergency zone will be able to receive emergency warnings. The upgrade is due to be operational in Victoria by November 2012.

During an emergency, the alert system works in conjunction with a number of other forms of communications: television, radio, public address systems, doorknocking, sirens and signage are all used to convey warnings and updates.

2.15 FINDING—The effectiveness of the Emergency Alert to mobile phones initiative is limited by the mobile coverage in an area. Some peri-urban residential areas, popular tourist spots and highways do not currently have mobile phone coverage. This reinforces the critical importance of having a suite of communication tools to convey emergency warnings.

As satellite phones are commonly used by people as emergency devices, it was raised with the committee that not all satellite phones operating in Australia have the ability to access Triple Zero (000). Under the *Telecommunications Act 1997*, the ACMA grants carrier licenses allowing international companies to provide satellite services in Australia. The committee understands that there is currently no requirement on carriers to provide access to 000 emergency calls with their handsets.

2.16 FINDING—There are concerns that people will not be able to contact 000 from their satellite phones during emergencies. As satellite phones are commonly used as emergency devices, it is essential to eliminate barriers to making 000 calls.

2.9 RECOMMENDATION—The ACMA should explore the feasibility of making 000 access a condition for a satellite carrier obtaining and/or maintaining a carrier license.

An additional challenge for Commonwealth, state and territory governments is to implement efficient online systems that can manage varying levels of demand during emergencies and natural disasters. During such events there are peak demands for critical information. Web-based services can be quickly and regularly updated but the sheer demand that these sites can experience in an emergency event can dramatically slow the flow of information or, even worse, crash the system. These same sites will experience substantially less traffic in other non-critical periods. The peak demand periods for web-based emergency information can be expected to increase as access to high-speed broadband improves in regional, rural and remote areas.

POST-EMERGENCY TELECOMMUNICATIONS NEEDS

In addition to its crucial role in emergency management and crisis response, adequate telecommunications infrastructure is critical to community and economic recovery.

Murrindindi Shire Council, Vic

As recent experiences show, there is often a need for temporary telecommunications infrastructure to be deployed immediately after a natural disaster. Carriers are able to deploy temporary communications infrastructure where infrastructure has been damaged, or additional capacity is required.

These temporary communications include a Mobile Exchange on Wheels (MEOW), which is a portable ADSL 2+ enabled exchange that provides temporary landline and broadband services. Also Cells on Wheels (COWs) can be deployed, which are mobile cell sites that are designed to be part of a mobile cellular network where cellular coverage is compromised.



The Hon. Kim Chance listening to a presentation in Kiama, NSW.

The committee acknowledges the commitment that carriers make to restoring telecommunications services and deploying temporary infrastructure after natural disasters, and the clear evidence that the carriers are becoming increasingly proficient at these emergency responses. At times, the extent of damage to permanent telecommunications infrastructure is so significant that temporary infrastructure cannot be deployed to all affected areas. The committee supports any additional actions, whether by carriers and/or the government, to increase the availability of temporary communications infrastructure during and after natural disasters.

- 2.17 FINDING**—The provision of temporary communications infrastructure is vital to community recovery efforts after emergencies and natural disasters. The deployment of this type of infrastructure should feature in the recovery element of disaster management planning.
- 2.10 RECOMMENDATION**—Major telecommunications providers, such as Telstra, Optus and NBN Co, should work with local government emergency management planners to identify critical infrastructure priorities and communications challenges that could affect local emergency warning systems and emergency responses.



Part 3

Mobile communication



PART 3—MOBILE COMMUNICATION

3.1 INTRODUCTION

Mobile phone services continue to be the major growth area in the Australian telecommunications market. The desire to be able to connect to the internet at all times for both business and personal use is a major driver of this growth.

As at June 2011 there were 29.28 million mobile services (voice and data) in Australia, which represents a 13 per cent increase from the same time last year. This is significant, as the population of Australia as at 30 June 2011 was around 22.8 million.²⁰ This high growth in the mobile sector is forecast to continue.

More than ever people are demanding access to broadband through mobile devices. Mobile broadband data demands are growing strongly with a 44 per cent increase in the June 2011 quarter, compared to the same period in the previous year.²¹

As mobile communications plays an ongoing and expanding role in supporting our digital economy, those without reliable mobile coverage are finding it increasingly difficult to fully participate. Many people in rural and remote areas reported experiencing patchy, unreliable mobile coverage or no coverage at all. People are unable to communicate

effectively and can lose business as a result. Furthermore, businesses are unable to capitalise on advances in technology to improve productivity—for example, agricultural applications that use mobile technology to record and process data in the field.

While satellite phones operate in areas beyond the limits of terrestrial mobile phone coverage, they are not considered a viable alternative to terrestrial mobile services for business and everyday use. Advancements in technology have made satellite phones a more attractive option to consumers than in the past, along with cheaper handsets and the introduction into the market of prepaid call charge options. However, consumers still have reservations about using satellite phones, largely due to the expensive call costs if they wish to use the phones on a regular basis.



3.2 MOBILE COVERAGE IN REGIONAL AUSTRALIA

In response to the rise in mobile communications, the major mobile phone carriers continue to improve the national coverage of their networks. Whilst there have been incremental improvements to the coverage footprint, most of this investment has been in new base stations being built, referred to as ‘infill sites’, to cater for the increased network traffic.

The three major network carriers in Australia are Telstra, Optus and Vodafone Hutchinson. These carriers claim their coverage networks as follows:

- > Telstra Next G network—99 per cent of Australians
(www.telstra.com.au/mobile/networks/coverage/maps.cfm)
- > Optus 3G services—97 per cent of Australians
(www2.optus.com.au)
- > Vodafone Hutchinson Australia—94 per cent of Australians.
(www.vodafone.com.au/tools/checker)
(www.three.com.au/coveragechecker)

Based on the carriers’ estimates, mobile phone coverage appears to have improved over time as demand for these services has increased. Reflecting Australia’s highly urbanised population, these high levels of coverage equate to only around 25 per cent of the Australian landmass.

All three carriers have a regional mobile network expansion program. This has led to general coverage improvements in regional areas. However, there are commercial limits to how far carriers are prepared to extend the mobile coverage footprint in regional areas. Much of the expansion programs are focused on boosting network capacity rather than increasing the coverage footprint.

The committee is aware that structural changes in the telecommunications industry, such as Optus’ proposed acquisition of Vivid Wireless, could change the coverage footprint. Additionally, the digital dividend (the radiofrequency spectrum that will become available when analog television signals are switched off) also creates possibilities to increase access to mobile broadband in regional Australia.

CARRIER COVERAGE INFORMATION

The committee has concerns about the presentation of information in carrier coverage maps. Coverage maps often include areas where a mobile device requires an external antenna to receive coverage. In practice the majority of people have handheld mobile phones and do not use an external antenna. The mobile coverage footprint is much

smaller for handheld mobile phones when they are not supported by an external antenna. In some regional areas mobile coverage is halved when an external antenna is not used.

The committee heard from many people who believe the coverage claims are overstated and often not matched by consumer experiences. The result is that carriers' maps are viewed with a high level of scepticism and can be regarded as misleading.

To provide consumers with independent information about mobile phone coverage, particularly in relation to handheld coverage, the committee considers that DBCDE should facilitate independent audits of mobile phone coverage in regional areas where consumers have expressed concern. The results of these audits should be made available to the carriers; to the public through consumer representative organisations such as ACCAN; and to the ACCC.

The maps of coverage listed on the internet are not accurate and phone assistants are not trained satisfactorily in what products work in what areas. Members have been sold devices by telemarketers that supposedly work in specified areas but do not.

Pastoralists' Association of West Darling, NSW

3.1 FINDING—Mobile coverage information provided by carriers can be prone to misinterpretation and frustrating for consumers.

3.1 RECOMMENDATION—DBCDE should be funded to develop a methodology, conduct audits and report on problem mobile phone coverage areas in response to complaints from the public.

3.3 THE IMPORTANCE OF MOBILE COVERAGE IN REGIONAL AUSTRALIA

The biggest barrier to our specific community is not having a strong and reliable mobile phone service. This, followed closely by the inability to have a broadband internet service associated with this mobile coverage.

Minto Pastoral Co, Vic²²

Regional and remote Australians acknowledge and appreciate the benefits of mobile devices and want to be able to use this technology in their everyday lives. Mobile communication is considered essential for people to run businesses, work in remote areas, to encourage tourism and growth, and to have reliable communications in emergency situations. Many people commented on a digital divide between urban, rural and remote areas, suggesting that urban Australians are moving ahead while rural and remote Australians are falling further behind.

Over two-thirds of people through the submissions process raised poor mobile coverage as a priority issue and it was the most common concern raised at every one of the regional consultations.

For crying out loud, surely we have a right to be able to make (a) bloody mobile phone call without having to climb a tree or sit on a silo!

Jim, Joy, Sam and Amanda Barwick, NSW

For businesses, mobile phones are an important tool to conduct commercial transactions and communicate with clients and employees. The committee received many representations from farmers, small business owners and others who work in rural and remote areas regarding the loss of business as a result of no mobile coverage.

It is becoming more and more difficult to undertake my work efficiently and accurately as a freelance journalist and photojournalist without a mobile phone, and its lack means I am losing work and missing deadlines.

Sally Cripps, Qld

I have found that my business opportunities suffer because potential customers try to ring my mobile and if I am not able to be contacted they will ring another transport operator and I miss out on their business. Over the years, with technology moving at such a fast pace, my customers expect an instant response from me and they expect I can be contacted anytime.

Darryl and Tanya Barrett, NSW²³

In 2011, the New South Wales Farmers Association conducted a survey of 587 members regarding telecommunications services in regional areas. The survey found that the lack of mobile phone coverage was the single most pressing telecommunications issue for farmers in New South Wales.

The assumption is that mobile coverage is available 24/7 to all now, and businesses now expect rapid responses which are hard to give if you don't get service.

NSW Farmers Association 2011 survey feedback

Aside from the use of mobile voice and text services, there is also an increasing demand for mobile-broadband services for businesses. Individuals can access email and



Committee member, Robin Eckermann, and Lachlann Paterson from the Department of Broadband, Communications and the Digital Economy.

information online and can also make use of more recent technology developments—such as monitoring, recording and data-processing applications. For example, remote sensors can be used in conjunction with wireless technology and mobile devices to monitor irrigation supplies and manage livestock. The development of mobile applications such as these demonstrates how mobile data connectivity is becoming a key service of the digital economy.

Businesses in rural and remote areas want to take advantage of these technological developments but are limited by poor mobile coverage. The New South Wales Farmers Association found that 67 per cent of members surveyed stated that coverage was not adequate to use the internet or email on their mobile phones. If similar figures are reflected in other regions, then there are considerable productivity gains for rural and remote businesses as a result of improved mobile coverage.

We recently installed telemetry units at stock watering points to try and be more efficient with our labour costs and fuel usage. These units rely on having mobile service and so unfortunately are unreliable as is the coverage. We were very disheartened at this as there is such terrific new technology available but we still do not have the basics to be able to advance any further.

Pip and Bill Ryan, NSW²⁴

Mobile coverage is also a key factor in attracting and retaining staff in rural and remote areas, particularly younger workers. A number of submissions noted that mobile service is important for contractors working in rural areas for conducting business but also keeping in touch with family and friends via phone, email or social media when away from home.

Young workers in these industries (shearing, earthworks and transport) are declining—they do not like coming out this far without their mobile phones and therefore their social media networks. In the next 5 to 10 years there will be extreme shortages of younger workers coming through these industries. Mobile phone service and the ability to communicate effectively will help entice workers back to this area.

Clare and Shane Butler, NSW²⁵

Many people are concerned about not having mobile phone coverage in emergency situations and accidents. The committee heard many accounts of road accidents in rural areas, where an already highly-traumatic and difficult situation was exacerbated by a lack of mobile coverage. There are also concerns about tourists and travellers in remote areas who are not aware of, or prepared for, the lack of mobile coverage. To some extent, satellite mobile handsets are the best option for an emergency situation because of their superior coverage; however, as discussed earlier, many people do not see satellite phones as a viable replacement for a terrestrial handset and choose not to use them.

My wife called me to say that she had hit a kangaroo before the (mobile) phone service dropped out which left me wondering whether to go looking for her or not and where to head. Directing people to a fire we had burning out of control on our property was a nightmare with everyone's mobile phones being unreliable.

Jason Syred, WA

3.4 THE CASE FOR EXPANDING THE MOBILE COVERAGE FOOTPRINT IN REGIONAL AUSTRALIA

Whilst some may find the idea of travelling into the outback and being able to get away from the phone quite romantic, for us trying to run a business and trying to attract young, energetic and technology savvy staff, this problem is a source of much frustration and concern and needs to be addressed as a matter of some priority.

Stuart Croft, Vic

Today the majority of businesses require a fixed-line service, access to high-speed broadband and a mobile service to fully engage in the digital economy. The USO ensures fixed-line services are reasonably accessible to all Australians, while the NBN will provide

high-speed broadband access to all premises. In contrast, the provision of mobile services is left almost entirely to the commercial sector. For those Australians who live in areas where building mobile infrastructure is not profitable, mobile carriers have no incentive to provide this vital service.

The committee acknowledges that the cost of deploying mobile base stations in rural and remote areas remains a significant barrier to increasing the mobile coverage footprint for operators. As well as the costs associated with deploying base station towers, there are additional costs for power and sites. Experience from past programs is that the cost of deploying new infrastructure in regional locations can be approximately \$350 000 to \$500 000 per site. The cost for individual towers may be higher in areas where terrain is difficult or backhaul is not readily accessible. Additionally, there are costs associated with operating and maintaining towers.

Where there are low numbers of potential users in an area, the business case for setting up base stations on a purely commercial basis is not justified.²⁶

In the committee's view, the mobile telecommunications coverage footprint is approaching the limits of commercial viability in rural and remote Australia. In the absence of incentives for carriers to increase the coverage footprint, there is unlikely to be any significant network expansion. Without intervention in the market, the majority of people and businesses that do not currently have mobile coverage will remain without coverage. This effectively means that many communities in regional Australia will be denied the full opportunities afforded by the digital economy.

Business in general has become more cost efficient through use of technology, there is a definite productivity contrast between those farmers who enjoy mobile coverage and those that don't. This impacts not only on profitability and competition but will also have a negative impact on land values.

Boorowa Council, NSW

In most instances, it is beyond an individual community's capacity to fund the extension of mobile coverage on its own. Furthermore the benefits of increasing mobile coverage in a regional area extend beyond the local community. Broader benefits include increased public safety, improved access to government services, ease of communications for police and emergency services, mobile access for surrounding highways and major roads, and coverage for visitors to the area. Because there is a wide range of benefits, it appears reasonable that a partnership approach would be an effective way of improving mobile phone coverage.

Most people and organisations that the committee met are aware that commercial realities have dictated the mobile market and the coverage footprint. Many local communities are prepared to commit resources to improve coverage in their areas. Similarly, as the Western Australian government has recently demonstrated, there is a willingness to partner with carriers to improve mobile coverage.

Since 2001, the Australian government has spent around \$145 million on improving terrestrial mobile phone infrastructure. This has resulted in new or improved coverage to 560 towns and districts, 62 lengths along 34 regional highways, and coverage along 10 000 kilometres of 16 national highways.²⁷

In 2005, \$8 million was made available by the Australian Government for the Mobile Connect program to extend terrestrial mobile phone coverage in selected remote areas. No applications were received from carriers. The committee understands this was due to the program's lack of scale, the remoteness of most of the priority locations that had been specified, and the associated servicing costs these sites would attract.

In 2011, the WA government launched a Regional Mobile Communications Project (RMCP), which is an initiative fully funded by the WA Royalties for Regions program. Under the project, Telstra and the WA government will deliver about \$106 million in value to deploy mobile communications infrastructure along major roads and highways and in several regional communities. The project aims to increase existing mobile coverage in the state by up to 22 per cent.



The Super Pit in Kalgoorlie, WA.

The WA RCMP demonstrates that, where government partners with a mobile carrier, there is the ability to leverage substantial co-investment. For a \$39.2 million government investment in the project, Telstra will deliver mobile voice and data services through new or expanded mobile infrastructure at 113 sites. Telstra will also provide a complementary right-of-use to nominated emergency service organisations to co-locate their digital radio communications equipment at each site.

In considering the costs of a mobile phone coverage extension program, one of the successful features of the WA RCMP appears to be the less-prescriptive approach taken by the WA government. Within the priority areas identified, carriers were able determine how the service would be provided. The ability to use existing infrastructure, such as decommissioned microwave backhaul towers, significantly reduces build costs.

To minimise costs of a mobile coverage extension program it would also appear sensible to maximise existing backhaul links where possible, including the Regional Backbone Blackspots Program (RBBP) network.

Given the significance of this issue, the committee commissioned some independent analysis of international efforts to expand mobile coverage beyond the commercial footprint. The research investigated current programs and approaches for mobile coverage expansion in a range of countries with similar geographic or regulatory environments to Australia. Countries examined include Canada, the United States of America, Spain, Saudi Arabia and Chile.

The research found that there are a number of ways to extend coverage—including through infrastructure funding, community-based initiatives and concessional spectrum access. Some programs were funded by government or came about as a result of partnerships between carriers, government and/or communities.

There are also a number of emerging technologies that might help the expansion of mobile coverage in rural and remote Australia. Emerging technologies include methods to extend the technical range of radio interfaces, techniques to boost the range of mobile base stations, more efficient use of power in mobile base stations, the use of open femtocells, and alternative means of backhaul. The CSIRO Ngara technologies are examples of recent developments which aim to provide wireless broadband and improve mobile coverage in rural areas.

3.2 FINDING—DBCDE should develop the capacity to monitor technologies that have the potential to expand mobile phone coverage.

The committee strongly believes that increased priority should be given to expanding the mobile coverage footprint in parts of regional Australia where it is not commercial to do so. The focus of the carriers appears to be on increased ‘infill’ and capacity to commercially viable areas.

There is an opportunity for all levels of government and local communities to work in partnership with carriers to extend the mobile network. The Australian Government

could take a lead role in coordinating and generating the level of support needed for carriers to make a commitment to extend coverage beyond that possible on a purely commercial basis.

Developing effective partnerships to expand mobile coverage in rural and remote Australia does come with challenges. There may need to be different approaches taken to take account of local circumstances. However, the committee is confident that there is sufficient support at the local, state and territory government level to make such a partnership succeed.

The state and territory governments could assist in coordinating mobile network extensions to take account of other strategic priorities, such as improving emergency services networks. An additional role for state and territory governments could be to help identify priority regions, in consultation with communities. Local governments also have access to a range of sites and equipment that could be utilised.

While local governments would largely be able to provide in-kind contributions, the committee thinks it is reasonable that the state and territory governments have a co-funding arrangement with the Australian government.

To support better outcomes for consumers in regional areas open-access arrangements for other carriers to tower infrastructure and/or domestic roaming arrangements should be a feature of the program. The committee's preference is for commercially-negotiated agreements, but if they do not eventuate or are not effective, mandated arrangements should be put in place under the guidance of the ACCC.

Given the infrastructure build required to extend the mobile coverage footprint, it would need to be a multi-year program of works and funding that would require a forward funding commitment.

3.3 FINDING—In many of the committee's consultations, regional and remote Australians acknowledged and appreciated the benefits of mobile devices and wanted to be able to use this technology in their everyday lives. Mobile communication is considered essential for people to run businesses, work in remote areas, to encourage tourism and growth, and to have reliable communications in emergency situations.

3.4 FINDING—Poor mobile phone coverage affects business productivity and limits the ability of regional businesses to fully participate in the digital economy.

3.2 RECOMMENDATION—The committee recommends a co-investment program, jointly funded by the Commonwealth and interested states or territory governments, to expand the mobile coverage footprint in regional Australia, focusing on priority regions selected with community input. Open-access arrangements for other carriers to tower infrastructure and/or domestic roaming arrangements should be a feature of the program.

3.5 SATELLITE PHONES



Andrew Roberts with his pet dingo using a satellite phone, NT.

Satellite mobile phone services cover the entire Australian landmass and have a similar functionality to terrestrial mobile phones, including voice, SMS and data services.

Satellite mobile phones are viewed by many as expensive to purchase, with high-cost call rates. Since the Glasson Review, the satellite market has witnessed the introduction of two new satellite carriers—Thuraya from the Middle East in 2010 and Inmarsat from Britain in 2011. Thuraya offers a dual-mode handset (SG-2520) which roams between the terrestrial and satellite networks as needed. The Inmarsat IsatPhone Pro handset entered the market at the cheapest price point (\$600) with the option of the cheapest monthly plan at \$15 per month or the option of prepaid airtime.



The prepaid option has proved popular, allowing consumers to purchase credit which is available for use over a two-year period. Additionally, all carriers offer free messaging from the web to the satellite handset via SMS. Increased competition has revitalised the satellite market and started to shift the previously-held perception of satellite as prohibitively expensive. The introduction of prepaid arrangements also allows consumers to control their costs.

The government's Satellite Phone Subsidy Scheme (SPSS)^A is due to end in June 2013. The SPSS has experienced a threefold increase in applications over the past year; this is generally due to the availability of a cheaper handset with a pre paid option, as well as greater awareness of the SPSS.

Image provided by Satcomms—IsatPhone Pro

The introduction of a subsidy scheme to assist people living and working in remote areas to purchase a satellite mobile phone has provided an important safety net when people are out of range of normal communication services. However it is still a very costly means of communication and must be used sparingly.

Isolated Children's Parents' Association of Australia, WA

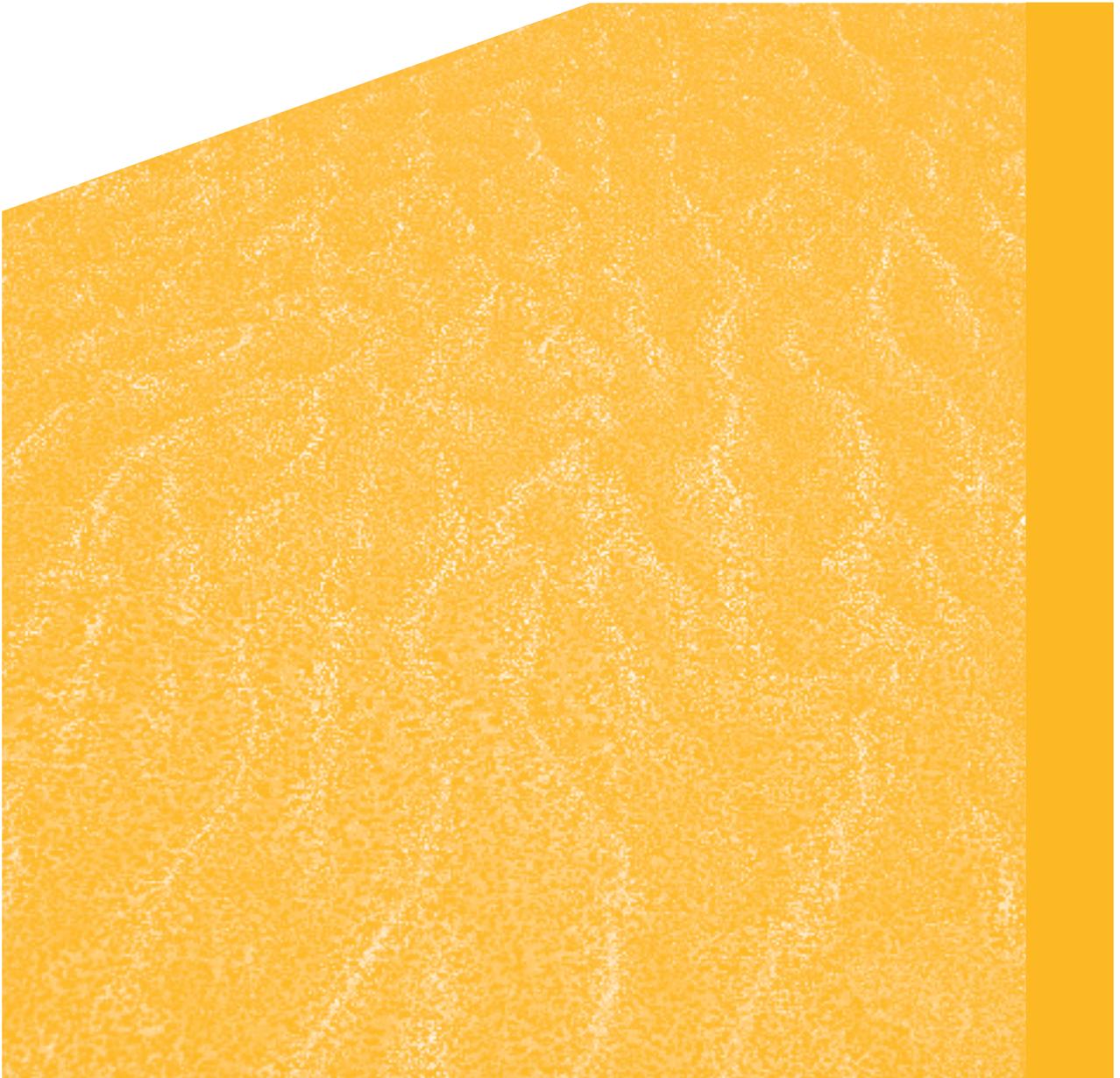
While people appreciate the value of the handset subsidy given with the SPSS, they do not view satellite phones as a desirable alternative to a terrestrial mobile phone. Although handset costs have reduced, satellite call costs are still considered too high. There has been a reduction in the per-minute rate, (around \$1.50 per minute) for outgoing satellite calls over the past decade, but the cost of calling a satellite phone from a landline remains exorbitant. A landline call to a satellite phone can vary between \$4.85 per minute to \$20 per minute in interconnect charges between carriers.

Even in the event that the committee's recommended mobile coverage extension program is taken up, there will still be large parts of Australia that will not have terrestrial mobile coverage. Satellite phones will continue to play a valuable role in providing mobile services in remote Australia. The continuation of the SPSS would be a complementary program to a mobile coverage extension program.

3.5 FINDING—Satellite phones will continue to play a valuable role in providing mobile services in remote Australia.

3.3 RECOMMENDATION—The government should continue the Satellite Phone Subsidy Scheme.

Part 4
National
Broadband
Network



PART 4—NATIONAL BROADBAND NETWORK

The roll out of the NBN network to the Mildura region will create numerous opportunities for business, industry and the community. The importance of having access to a broadband network with capacity, coverage, reliability and that is reasonably priced has been emphasised by businesses and organisations across the region.

Mildura Development Corporation, Vic

4.1 INTRODUCTION

There has been a range of encouraging commercial and regulatory advances since the last regional telecommunications review. The NBN is by far the most significant government commitment to improving telecommunications in regional Australia. From isolated and remote cattle stations to major regional centres, there is a genuine desire across regional Australia for access to faster, more affordable and more reliable broadband services. The NBN promises an opportunity to bridge the existing digital divide in regional Australia and allows individuals, businesses and communities to more fully participate in the digital economy.

The future for Queensland and Gladstone is truly outstanding however the industrial and infrastructure projects that have commenced or are about to commence in the Gladstone region have posed a number of problems for small and medium sized enterprises (SMEs) who wish to become part of the supply chain to the projects...

One of the main barriers for these innovative businesses maximising the benefits of their initiatives is the quality of existing telecommunication services.

Gladstone Region Economic Partnership, Qld

The objective of the government's NBN policy is to provide access to high-speed broadband to 100 per cent of Australian premises. Ninety-three per cent of Australian homes, schools and businesses will be connected with fibre-to-the-premises technology (FTTP), providing speeds of up to one gigabit per second. All remaining premises will be served by a combination of fixed-wireless and satellite technologies, providing peak speeds of 12 megabits per second.²⁸

For regional Australia, it is estimated that more than 70 per cent of premises will receive a fibre connection.²⁹

The arrival of the NBN will bring features in broadband communications that to date have not been available in many of the day-to-day transactions undertaken in a community.

Dick Rowe, Qld

As the NBN is a wholesale-only, open-access broadband network, it represents a significant structural change to Australia's telecommunications industry.

NBN Co Limited was established to build and operate this new network. The NBN is expected to be completed by 2021, at which time around 13 million premises should have access to FTTP, fixed-wireless or satellite broadband services.³⁰

For regional Australians, the NBN policy was significantly strengthened by the government's commitment announced on 7 September 2010 to prioritise the regional rollout of the NBN.³¹ This commitment is being realised through three strategies: building fibre in regional areas as a priority; bringing forward the introduction of fixed wireless and satellite services so that regional Australia can gain access to better broadband as soon as possible; and putting in place uniform national wholesale prices, so that regional communities have the opportunity to get fairer access to affordable high-speed broadband.

Since the release of the 2011–12 Regional Telecommunications Review Issues paper in September 2011, there has been progress in a number of key areas of the NBN deployment:³²

- > The definitive agreement between NBN Co and Telstra has been endorsed by Telstra's shareholders.
- > NBN Co's schedule for the construction of the fibre network over the next 12 months was released in October 2011.
- > Commercial NBN services are now being offered to residents and business owners in the mainland First Release Sites and over the Interim Satellite Service (ISS).
- > The first communities to receive an NBN fixed wireless service have been identified.
- > A program of construction works for the NBN rollout has been established in every state and territory in Australia.
- > The contracts have been awarded for the design and build of the two Ka-band satellites.
- > The Australian Competition and Consumer Commission has accepted Telstra's structural separation undertaking (SSU) and approved its draft migration plan.

People in regional Australia made it clear to the committee that they want equitable access to quality broadband services at affordable prices. They realise that prioritising the NBN rollout in regional Australia will benefit the people and businesses that currently have the poorest levels of broadband services.

4.1 FINDING—The NBN is by far the most significant government commitment to improving telecommunications in regional Australia. There is a genuine desire across regional Australia for access to faster, more affordable and more reliable broadband services.

4.2 UNIFORM WHOLESALE PRICE FOR BASIC SERVICES ACROSS ALL THREE NBN TECHNOLOGIES

Regional people strongly support the commitment to uniform national wholesale prices for basic services across the three NBN access technologies. Throughout the committee's consultations people made it known the commitment to uniform national wholesale prices is of great significance to them, particularly those in areas where competition in the broadband market has not previously been present.

During the course of the review a number of individuals and organisations raised concerns about the higher charges that consumers must pay for telecommunications services in areas where there is no effective retail competition.

The importance of encouraging true retail competition in the high-speed broadband market should not be underestimated. The NBN will offer equivalent terms and conditions to all access seekers, and a uniform national wholesale price will give more retail service providers an opportunity to reach consumers and businesses in regional Australia.

Initiatives such as uniform national wholesale pricing remove a major barrier to increased competition in the broadband market in regional Australia.

One area where Aboriginal community-controlled health services in remote and regional areas are still constrained is in access to affordable telecommunications infrastructure. Particularly in remote locations the majority of [Aboriginal Community Controlled Health Services] have very limited access to city priced and quality services. This is one of the biggest barriers to engaging with improving ehealth systems.

Aboriginal Medical Services Alliance, NT

The uniform national wholesale price currently applies to the basic 12 megabits per second download/one megabit per second upload service offering. However, there is an expectation that services across all three technologies will be upgraded over time. Given the significant and positive impact of a uniform national wholesale price to regional Australia, the committee would like to see this initiative extended to other service offerings in the event that the wireless and satellite technologies are upgraded.

4.2 FINDING—The commitment to a uniform national wholesale price is of great significance to regional Australians, particularly those in areas where competition in the broadband market has not previously been present.

4.1 RECOMMENDATION—The principle of a uniform national wholesale price for like services across technology platforms is essential on an equity basis and should be a fundamental tenet of future policy in this area.

4.3 INCREASED COMPETITION AND CONSUMER CHOICE

As a result of the NBN, regional telecommunications users will have a greater choice of service providers and have access to a significantly-improved range of services. For some regional Australians, this will be the first time they have a real choice of service providers.

The NBN is levelling the playing field in terms of wholesale access rates and availability. The result of this is that some organisations that have not traditionally been in telecommunications are emerging as potentially adding some or all telecommunications services to their offering.

Adrian Atherton, Telcoinabox

The committee agrees that the retail pricing of NBN services is best addressed by the market. The retail offerings for NBN services are at an early stage but it is already clear that there is a range of services and price points being offered to consumers. In February 2012 there were 22 service providers offering NBN services in first-release sites and new developments, and seven service providers offering services over the ISS.

With the greater choice of products and services available in regional areas, there is an increased risk of individuals purchasing products or services unsuitable for their needs. This is particularly concerning for socio-economically disadvantaged groups that are over-represented in regional Australia.

Retail service providers are the interface between households and the NBN. One risk the committee has identified is the possibility of retail service providers signing up more

customers than the capacity of the service that they purchase from backhaul providers or wholesalers of NBN services. Oversubscription of customers would reduce the quality of service experience for these customers. Any reductions in quality of service may reflect poorly on the NBN Co network, despite the issue lying with a retail service provider rather than the network itself. The committee encourages NBN Co to monitor retail service providers to ensure this does not occur.

Customers require access to clear, relevant and accurate information to assist them in making informed choices about the NBN products or services that best suit their needs. In the first instance, the obligation to provide this information should be on retail service providers, however, there is also a role for industry or consumer representative organisations to assist their members and the general public in understanding the choices available in the telecommunications market. For example, comparison charts of products and services could be made more widely available.

4.3 FINDING—To assist consumers to make an informed choice about NBN broadband products and services that best suit their needs, there must be clear, relevant and accurate information available.

4.2 RECOMMENDATION—Industry, through the Communications Alliance and in collaboration with ACCAN, should develop materials to assist customers in making informed choices about NBN broadband products.

4.4 NBN CO PLANNING

In response to the survey question ‘do you have any plans for new business propositions or expansion that might involve high-speed broadband?’ as many as 18% of those using their home internet for business reported they were ‘waiting to see what happens with the NBN.’

Get Connected, Tas

The NBN Co Limited 2011–13 Corporate Plan indicates that the construction of the NBN will take until 2021 to complete. The scale of the infrastructure build is such that many parts of the country face uncertainty as to when the NBN rollout will occur in their areas, and where the respective boundaries are for the deployment of the three technologies.

The committee understands that, in the short-term, it is not feasible for NBN Co to release the full national rollout schedule or to identify the precise boundaries where fibre, wireless or satellite broadband services will be made available. However, the committee is concerned that the uncertainty around the timing and location of the NBN rollout could delay carrier and community level decision-making about telecommunication services.

For people that will not be able to access NBN services for several years, this may affect their level of engagement in the digital economy.

...[T]he switch on date for most of regional NSW is currently unknown. This lack of information hinders the abilities of people in regional and rural areas to plan for future information technology ('IT') needs.

NSW Young Lawyers

There was also a number of examples given to the committee where the existing telecommunications services in an area are not considered adequate for the communities short-to-medium term needs. The uncertainty around the timing and location of the NBN rollout creates difficulties in making decisions about upgrading local telecommunications equipment.

Telecommunications infrastructure such as wireless towers or exchange upgrades can require a medium to long-term time frame to generate a return on investment. It is difficult to make sound commercial judgements on telecommunications infrastructure upgrades when the NBN rollout schedule is not known.

The committee was pleased to note NBN Co's commitment in October 2011 to releasing a 12-month construction schedule and updating this quarterly.³³ This commitment will be further enhanced by NBN Co releasing an annually-updated three-year indicative construction plan, which the company has undertaken to release early in 2012. This additional information on the rollout schedule will provide a level of certainty which is not currently available in those communities that are not identified as part of the early phases of the rollout. It will also allow areas that will not benefit from the NBN in the short term to better determine the business case for developing alternate or interim telecommunications infrastructure solutions.

For areas that will access the NBN through a fixed-wireless or satellite service, there is a commitment by the government and NBN Co to fully deploy both of these technologies by 2015.³⁴ The committee expects that the indicative three-year rollout schedule that NBN Co expects to release in early 2012 should include substantial information on the fixed-wireless rollout schedule.

4.4 FINDING—A five-year indicative plan from NBN Co would assist in telecommunications infrastructure planning.

4.5 SATELLITE TECHNOLOGIES

There is strong demand for decent and affordable high-speed broadband in regional Australia. For those without a current metro-comparable terrestrial service, the NBN ISS^A offering of six megabits per second download/one megabit per second upload peak speeds will provide an immediate improvement in high-speed broadband availability to eligible customers. From 2015, the long-term satellite service will be available, providing a further upgrade.

Since November 2011, NBN Co has offered up to 1000 ISS connections per month through seven retail service providers.³⁵ The strong initial uptake of the ISS clearly demonstrates the pent-up demand for better broadband. As at 23 February 2012, 3278 premises had been connected to an active ISS. The committee would like to see NBN Co expand the number of monthly connections offered to ensure those eligible can receive it without delay.

Until the release of the ISS in late 2011, many people in rural and remote areas only had access to lower-capacity and more expensive commercial satellite broadband services or dial-up internet services. Without programs such as the Australian Broadband Guarantee^A and its predecessors, access to high-speed broadband in regional Australia would have been considerably worse. Both the interim and long-term satellite services are a major improvement on previous satellite services, and offer opportunities for many regional Australians to participate in the digital economy more than would otherwise have been possible.



Public consultation in Oodnadatta, SA.

The delivery of the interim satellite service is a positive step towards improved broadband services for Australian farmers...

National Farmers Federation

There are a number of remote schools, public health facilities and Indigenous communities that would benefit greatly from improved broadband services that are not able to connect to the ISS or an equivalent. The broadband services available in some remote communities that we visited were of such poor quality that the committee considers the internet service itself to be the single biggest barrier to increasing online participation.

However, these remote public institutions are not currently eligible to apply for the ISS. The ISS has capacity constraints, but given the benefits that would come from better broadband services, the committee supports a review of the ISS eligibility criteria to allow remote schools, health facilities and Indigenous communities to access the ISS. The committee notes that remote schools may need more than one ISS connection as there are likely to be multiple students using the service.

Our small school has wonderful technology there like smart boards and fabulous computers which the children are unable to use to their full potential because of this inadequate service. Internet and telecommunication services are extremely important for people living in rural, regional and remote locations. Better services would benefit the whole community as well as business but the educational outcomes of the school are paramount.

North Star Public School P and C Association

4.5 FINDING—The NBN Interim Satellite Service (ISS) offers an immediate improvement in high-speed broadband availability to people and businesses in regional Australia.

4.3 RECOMMENDATION—The ISS should be reviewed to determine whether there is scope to allow remote schools, health facilities and Indigenous communities to apply for the ISS.

A recurring theme in the public consultations and submissions process was that many people and businesses are constrained from participating in online activities by their existing broadband services. Whether students, small business owners, educators, healthcare providers or people wishing to engage in social networking, the message was the same.

The main barrier for our community is the lack of reliable high-speed broadband, which is preventing expansion and progression for many.

Get Connected

It also became apparent to us that there is confusion regarding ISS eligibility. There are two priority groups for receiving the service: those without access to a metro-comparable terrestrial broadband service, and those who received an Australian Broadband Guarantee service more than three years ago. Additionally, many people were unaware of the ISS itself, other than those specifically involved in telecommunications services. It appears that additional efforts are needed to inform people of this service and the eligibility criteria.

As many people in rural and remote parts of Australia have had poor experiences with their current satellite broadband services, the committee found that significant numbers of people are tending to view the NBN satellite solutions through the lens of these less-than-optimal experiences.

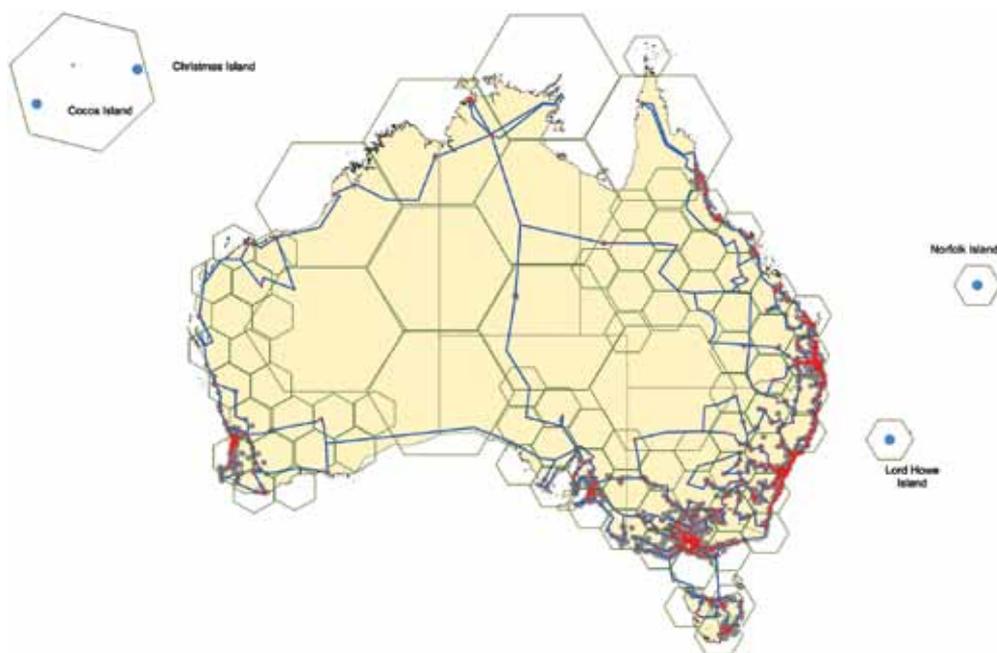
In my area here at Eugowra we cannot get broadband via phone line only Satellite or Wireless, neither is very satisfactory.

Janet Noble

Using the internet is the most painful, boring, time wasting exercise imaginable. I can make and drink a coffee between start-up and connection—but the internet has become essential.

NSW Farmers Association Telecommunications Survey Feedback

Figure 5: NBN Co's illustrative satellite footprint³⁶



Source: NBN Co [This map shows the estimated likely coverage areas based on NBN Co's rollout schedule, which may change following more detailed planning and design work].

The NBN Co's long-term satellite solution, provided by Ka-band multi-beam satellites, will have significantly greater capacity and capability than earlier generation satellites.

There is widespread acceptance that satellite is the only means of providing high-speed broadband services to a significant part of Australia's landmass, particularly in areas where there are low population densities.

The committee has carefully considered the capabilities of the ISS and long-term satellite service. The committee believes that the ISS offers a highly cost-effective and improved broadband service for remote Australians compared to previous satellite offerings.

When the new Ka-band satellites become available in 2015, as per NBN Co's commitment, this will be a very positive move for rural and remote Australians. The committee understands that steps have been taken to reduce the impacts of rain fade, including through the size of the satellite dishes in northern Australia. The guaranteed throughput speeds are also significantly better than the existing satellite services offered in Australia.

NBN Co's long-term satellite service will be the technology expected to serve around 200 000 premises in rural and remote Australia. As people in locations that will be served by the long-term satellite do not have clear and accurate information about the technology, this creates a particular challenge for NBN Co.

Physics dictates that both the Ku (ISS) and Ka-band satellites will have inherent latency and this will have an impact on real-time high-speed broadband applications. For e-health and e-education, the Commonwealth, state and territory governments should work collaboratively to develop approaches that take account of the various access technologies in use.

4.6 FINDING—When the new Ka-band satellites become available in 2015, as per NBN Co's commitment, this will be a very positive development for rural and remote Australians.

4.4 RECOMMENDATION—The committee recommends that, as a priority, clear information about the ISS and the long-term satellite solution should be provided to people and organisations in areas that will be served by satellite. There will be benefits in developing case studies that demonstrate, in real life situations including shared connections, the range of broadband applications that can be used effectively over satellite technology.

4.6 FIXED-WIRELESS TECHNOLOGIES

While 93 per cent of Australian premises will be connected by fibre, four per cent are scheduled to receive a 4G fixed-wireless connection. Fixed-wireless services provide a broadband connection from a radio network base station to a transmitter typically attached to the outside of the premises.

Unlike mobile wireless services, NBN Co's fixed-wireless network will specifically cater for a predictable number of customers in a given area to deliver consistency in service quality. Peak download speeds on this service are 12 megabits per second, although the committee notes that NBN Co anticipates higher speeds becoming available as technology advances and the network is upgraded.

The fixed-wireless component of the NBN rollout is expected to be completed by 2015, significantly earlier than the rollout of fibre-optic cable.³⁷ Customers in rural and regional communities that surround Geraldton (WA), Toowoomba (Qld), Tamworth (NSW), Ballarat (Vic) and Darwin (NT) are expected to be able to sign up with retail service providers to use the network from the middle of 2012.

In addition to the fixed-broadband services that will be available, the committee sees value in NBN Co working with carriers to explore the possibilities of harnessing this infrastructure to improve mobile coverage.

4.7 FINDING—The construction of towers for the NBN's wireless network may also provide an opportunity to improve mobile coverage in regional areas.

4.5 RECOMMENDATION—NBN Co should engage with mobile carriers about using NBN fixed-wireless towers to also improve mobile coverage.

4.7 CONSULTATION ON THE NBN ROLLOUT AND NETWORK EXTENSION POLICY

There is a real lack of good quality information available about the NBN in rural and remote areas. The [Pastoralists and Graziers Association] believes that the Minister for Broadband, Communications and the Digital Economy needs to better engage with people living in rural and remote areas so that they understand that change is coming and what its significance will be to them.

Pastoralists and Graziers Association, WA

Many people and organisations are seeking information about the regional NBN rollout. During the consultations, two key issues were regularly raised with the committee:

- > a strong desire to be able to provide NBN Co with local community input and advice on the network rollout
- > the need for greater clarity around NBN Co's network extension policy.

The government, through its Statement of Expectations issued to NBN Co in December 2010, addresses both of these issues. The government encouraged NBN Co to explore mechanisms by which community inputs and advice on regional priorities can be considered. The government also encouraged NBN Co to explore mechanisms for a community to fully or partially fund the extension of the fibre network to cover its location.

While many people in this region can see the benefits of the network (NBN) there is no detail on how it will be rolled out and to whom.

Council of the Shire of Bourke, NSW

The committee regards both of these issues as being very important as there are opportunities to improve the efficiency and effectiveness of the NBN rollout if local needs and advice are taken into consideration. In the committee's experience, many regional communities see the NBN as a catalyst for positive change in their areas and are eager to have the opportunity to work with NBN Co on local deployment of the network. Additionally, many local government organisations have access to infrastructure, works depots and equipment that could be harnessed during the local network rollout.

Bringing forward and prioritizing roll out of the NBN in our region would provide a much needed economic stimulus.

Moe and District Residents Association, Vic

State and territory governments have developed their own fibre networks and have some valuable experiences in broadband network deployment. However, there do not seem to be sufficient mechanisms for NBN Co to engage with state and territory officials. This creates a risk of missed opportunities for collaboration to achieve better results or efficiencies in the network rollout. As such, state and territory jurisdictions and NBN Co would benefit from forming closer relationships to maximise the benefits of the NBN rollout.

4.6 RECOMMENDATION—NBN Co should:

- > **Consider community reference groups as a means of gathering local community input and advice on the network rollout.**
- > **Actively seek opportunities for collaboration with state and territory governments to achieve better results or efficiencies in the network rollout.**

In some areas, it may be possible to increase the FTTP or fixed-wireless coverage footprint at no additional cost to NBN Co if community contributions are incorporated into the NBN Co network extension policy.

While the NBN Co fixed-wireless and satellite services will be leading edge technologies, a number of communities that the committee spoke to during its regional consultations were very keen to extend the FTTP footprint in their areas as far as practicable. It would be a positive outcome if an extended FTTP footprint could be achieved through community contributions.

Additionally, in the committee's view, there are no in-principle reasons why the NBN Co network extension policy should not also include extensions to the fixed-wireless network where it is practicable to do so and funded by communities or state governments.

NBN Co has outlined that co-investment opportunities exist for communities and individuals, with a great deal of work already done with specific councils and communities. It would be beneficial if all these details could be published so that all interested parties could be aware of deadlines for agreements to be reached in specific communities.

NSW Farmers Association

There is currently little information available to communities about NBN Co's network extension policy. This makes it difficult for regional communities to understand the process for achieving network extensions or how the incremental costs of extending the FTTP or fixed-wireless network will be calculated.

For example, the committee is aware of towns and properties in regional Australia where there is optic-fibre cable laid nearby but they cannot connect their communities to it. In many of these communities there is very little or, in some cases, no understanding as to why people cannot access this fibre and they feel that they are instead being offered an inferior service. In the absence of genuine consultation on these issues, many people in these communities will continue to feel alienated by the process.

In many situations the committee expects that it will be less expensive to extend the network while the initial construction is underway rather than attempting to retrofit a network extension after the initial rollout has occurred. Many regional communities would like NBN Co to develop a clear network extension policy and funding framework as a priority.

The committee strongly supports the Joint Committee on the National Broadband Network's call for NBN Co to formalise and publicise its policy for the provision of costing extensions as a matter of urgency.

4.8 FINDING—There are no in-principle reasons why the NBN Co network extension policy should not also include extensions to the fixed-wireless network.

4.7 RECOMMENDATION—NBN Co should develop a clear network extension policy. NBN Co's network extension policy should make provision for community contributions.

4.8 AREAS CURRENTLY SERVED BY ADSL

It is estimated that around 70 per cent of premises in regional Australia will receive FTTP. However, there are towns (including some regional centres that are the access point for government services) which currently have access to DSL services or high-performance fixed-wireless services but are scheduled to receive NBN Co satellite technology.

Many people and organisations the committee met with advised that they consider the non-FTTP NBN solutions, particularly the satellite technology, as an inferior service to ADSL. Accordingly, these people indicated that they would be seeking to maintain their existing ADSL services in preference to the NBN solution.



The committee consulting with TAFE representatives via the TAFE SA online student learning system in Berri, SA.

In support of this view, the committee notes that in the Implementation Study of the National Broadband Network, McKinsey's noted that it would be very difficult to deliver a superior service by shifting an end user from a DSL-based broadband service to a wireless or satellite service.³⁸

Unfortunately, there is a level of uncertainty about the extent to which the current Telstra copper network, or other networks maintained by third parties, will continue to be used to provide data services such as ADSL to regional and rural and remote communities that are in non-fibre NBN areas.

There is a commitment from Telstra to continue to provide ADSL services over the copper network in non-fibre NBN areas where practicable, but there is no regulatory requirement for this to occur.

In the committee's view, the NBN fixed-wireless technology will provide a customer experience that is at least comparable to an ADSL2+ service, and in many cases there will be a measurable improvement, particularly at premises that are more than two kilometres from their existing local exchanges. However, the committee accepts that ADSL2 broadband services and some existing fixed-wireless services provide a better customer experience than the NBN Co satellite on any applications that require real-time interaction.

The committee believes, as a fundamental principle, that regional and remote broadband services should not be worse under the NBN.

4.9 FINDING—A significant number of regional consumers who have an existing ADSL service are likely to prefer to keep that service rather than taking up an NBN satellite service.

4.10 FINDING—There is a commitment from Telstra to continue to provide ADSL services over the copper network in non-fibre NBN areas where practicable, but there is no regulatory requirement for this to occur.

4.8 RECOMMENDATION—The government should work with industry and NBN Co towards ensuring at least an equivalent quality of broadband service is available under the NBN as was available prior to the NBN.

4.9 BACKHAUL

Backhaul was a key element of the Glasson Report. The most substantial investment in backhaul since the Glasson review is the Australian Government's \$250 million Regional Backbone Blackspots Program (RBBP).^A This program is improving the supply of backhaul transmission links and is projected to benefit approximately 400 000 people

across six states and territories. The 6000 kilometres of optical-fibre cable has now been laid across regional Australia and all lines are operational.³⁹

When complete, by the end of 2011 this key telecommunications link will provide the Northern Territory with a competitive wholesale telecommunications environment. This will provide significant benefits to Darwin and the regional centres through reduced prices and a more extensive telecommunications product range from a broader group of service providers. Indeed in Alice Springs where Nextgen is already providing a competitive interstate connection, new service providers are offering product and installing their own broadband infrastructure.

Northern Territory Government

The committee is pleased to note the positive impact on retail broadband pricing due to the availability of competitive backhaul in regional towns where the RBBP has been built. For example, ISP Westnet (a subsidiary of iiNet), now offers broadband services in Geraldton (Western Australia) with both faster data transfer rates and higher monthly download quotas than previously available.⁴⁰ This is a direct result of the government's investment in competitive backbone infrastructure.

Similarly, South Australian ISP Internode began offering an improved range of broadband services in Victor Harbor (South Australia) and other neighbouring regional locations shortly after the completion of the Victor Harbor RBBP link.⁴¹ Internode's entry level broadband package in these regional areas, which once cost \$39.95 per month for an ADSL package with five gigabytes of data per month, was replaced with a \$29.95 ADSL2+ package offering 30 gigabytes of data per month.

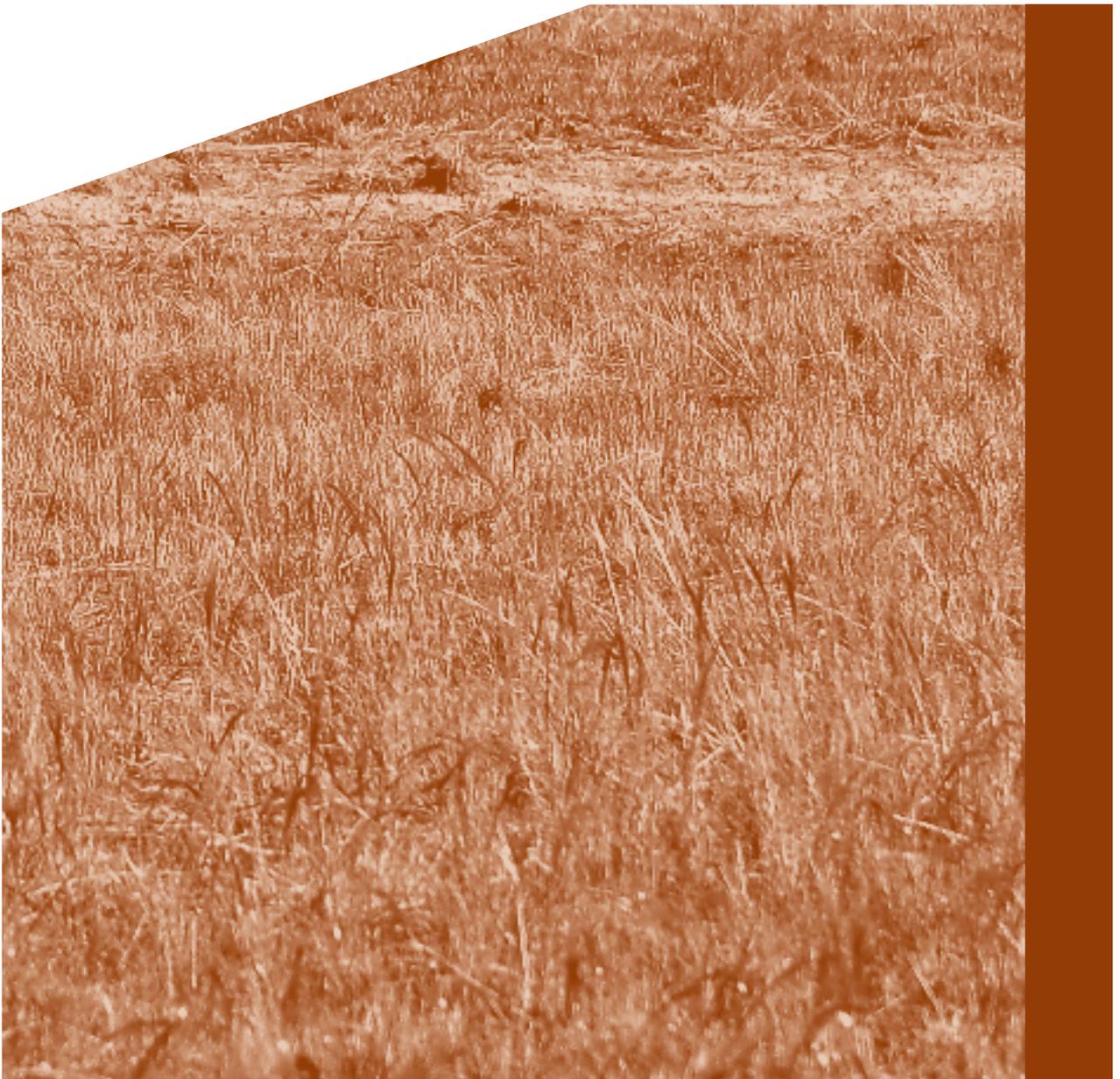
This investment in backbone infrastructure has enabled ISPs to deploy their own last-mile infrastructure and offer improved services to their own retail customers. The committee also understands that NEC Australia has deployed ADSL2+ infrastructure in more than 60 locations along the RBBP links for the provision of competitive wholesale ADSL2+ services, potentially lowering the barrier to new service providers entering the market in these regional locations.⁴²

The competitive pricing and services that have become available as a result of the RBBP project provide a glimpse of the possibilities that a more competitive high-speed broadband retail market will offer regional Australians.

Particularly worthy but, to date, largely unnoticed aspects of the RBBP are the opportunities created for the future that have been designed into the network by Nextgen.⁴³ This has been achieved through the strategic provision of fibre access points in the splice pits, which are established approximately every 10 kilometres along the network. These access points have been positioned at major road intersections and other strategic points of interest and will be available to carriers. Additionally, they could provide access to the network for existing or new mobile coverage towers.

- 4.11 FINDING**—There has been a significant Australian Government investment in backhaul in regional Australia since 2008. Nextgen’s network is providing significant economic benefits for communities covered by its backhaul.
- 4.9 RECOMMENDATION**—The provision of fibre access points offers future opportunities for communities passed by backhaul infrastructure. NBN Co should include additional fibre access points in any future provision of backhaul.

Part 5
Digital economy



PART 5—DIGITAL ECONOMY

We would delight in being able to take full advantage of the opportunities offered by the digital economy. Local residents keep up to date as much as possible: in our area a recent program called “Getting Connected: Information technology support for the Hatfield region” was very well received and benefitted 32 families.

Jim and Joy Harris, NSW⁴⁴

5.1 INTRODUCTION

The minister has asked the committee to have particular regard for the opportunities that the NBN creates in improving the delivery of:

- > government services and programs, including local government services
- > economic growth
- > business efficiencies and opportunities
- > improved health and education outcomes

The committee has also been requested to provide advice on specific initiatives that will improve opportunities for regional communities to participate in, and realise the benefits of, the digital economy.

The digital economy refers to economic activity that is enabled by the use of information and communications technology. The digital economy impacts on the entire Australian economy – including every business, government agency, not-for-profit group and individual Australian. The digital economy presents both opportunities and challenges for regional communities.

The main message that the committee wishes to convey is that individuals, businesses and community leaders who are not already strongly engaged in the digital economy should take action now to increase their participation and preparation. The digital economy is not a new concept. What is changing is that over the next decade the NBN will bring to regional Australia the higher broadband speeds that many metropolitan users take for granted, at more affordable pricing.

The committee was concerned that some people, carriers and communities appear to be waiting for the rollout of the NBN in their areas before participating in the digital economy. For communities that are located in areas that will not receive the NBN for a number of years, there is a risk that significant sections of these communities may not be prepared to participate in the digital economy.

While the NBN will provide a platform for individuals and organisations to participate more fully in the digital economy, there are opportunities to participate in the digital economy now using existing broadband services. It would be a poor outcome should regional communities decide to wait for the NBN rollout in their areas before they consider participating in the digital economy, particularly if they are not part of the early rollout schedule.

A large and growing body of evidence supports the link between internet use by individuals and businesses and greater productivity. According to the Organisation for Economic Co-operation and Development (OECD), increased GDP growth in the information, communications and technology (ICT) sector has contributed to GDP growth in Australia of between 1.1 and 1.3 per cent.⁴⁵

A study by Allen Consulting found that broadband of 10 megabits per second would increase Queensland's Gross State Product (GSP) by \$4.2 billion over 15 years and create an average 1630 jobs in a typical year.⁴⁶ Similarly, a study on increased broadband adoption on the Yorke Peninsula anticipated benefits in the region in the order of \$9.4 million annually in 2010, with additional flow-through benefits to the South Australian economy of approximately \$1.8 million per annum.⁴⁷

High speed broadband is considered essential for knowledge-based workers to interact with the global market place and to be able to run their businesses effectively.

Bass Coast Shire Council, Vic

Commonwealth, state and territory governments have established a range of initiatives in the health and education areas to better harness the digital economy. Through the committee's consultations it became clear that adopting a more coordinated approach to issues such as telehealth could increase their efficiency and effectiveness.

The committee recommends the establishment of a high-level body with ministerial and key stakeholder representation to improve the coordination of high-priority digital productivity projects, and to identify barriers to the systemic take-up of these important initiatives.

In addition to the digital economy opportunities for people already living in regional communities, evidence suggests that there are significant numbers of metropolitan-based people with a genuine desire to relocate to, or run their businesses from, regional locations. However, a common requirement for such relocation is access to high-speed broadband.

There are digital literacy and digital access challenges to overcome. As the level of participation in the digital economy increases, there is a risk that sections of the community could be left behind. There is, equally, the danger that particular disadvantaged groups in regional areas—such as those with physical or intellectual

disabilities—will continue to be denied the chance to use high-speed broadband combined with new assistive technologies to transform the quality of their healthcare, education and employment opportunities. There is a need for a coordinated effort from all levels of government as well as non-government organisations to increase the level of digital literacy in vulnerable sections of the community.

The committee also recognises that both the upfront costs of ICT equipment and recurrent internet access charges are barriers to increasing digital participation for some community members. Although both of these cost elements continue to decrease over time in real terms, for some people the value proposition is not sufficient for them to participate more fully in the digital economy. Whilst affordability is a genuine issue for some, the committee also believes that the benefits of participating in the digital economy are not sufficiently understood by all sections of the community and could be better explained and communicated.

5.2 DIGITAL ENGAGEMENT: ACCESS AND DIGITAL LITERACY

Regional Australians are excited about the possibilities that the digital economy provides, but to more fully participate two key barriers must be overcome. Individuals and groups



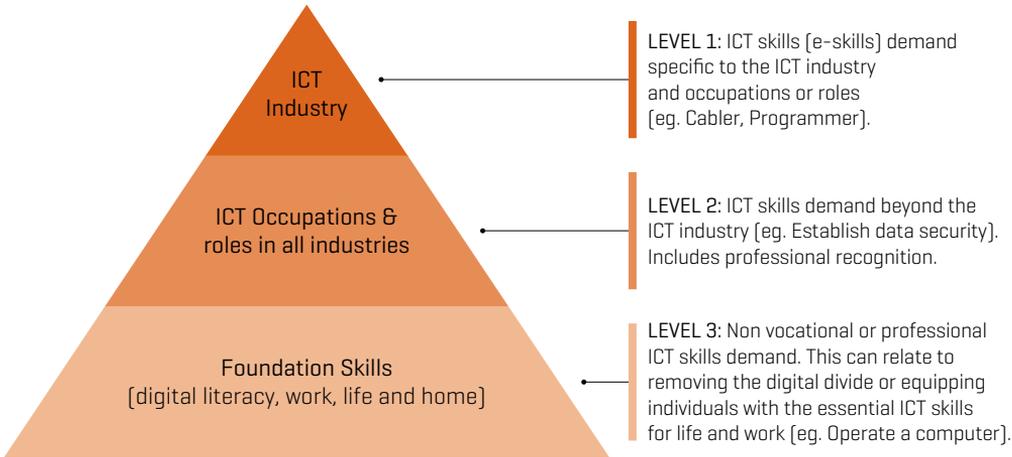
Public internet access facility in the Oodnadatta Aboriginal School, SA.

need to be digitally literate to participate fully in the digital economy; and they should be able to access a quality internet service at an affordable price.

Digital confidence helps with everyday tasks such as paying bills, buying groceries and shopping for loved ones. Daily online interactions are becoming increasingly commonplace and it is vital that already-disadvantaged individuals and groups are not further disadvantaged by a low level of digital literacy.

Digital literacy was raised in a large number of submissions, ranging from Aged and Community Services Australia and the Physical Disability Council of NSW to the Wheatbelt Development Commission WA. Digital literacy challenges are exacerbated for people with low levels of English literacy, for example where English is not a person's first language. This is the case for Indigenous Australians living in many remote communities and migrants from non-English speaking countries.

Figure 6: Dimensions to digital literacy



Source: Marcus Bowles submission

A lack of participation in the digital economy is often the result of existing inequalities. Research has found that internet use at home by people with disability is only 27 per cent, compared to 67 per cent for the general population. In contrast, use of the internet is higher in other disadvantaged and vulnerable groups such as older people and people who are unemployed.⁴⁸ Without digital literacy and confidence, vulnerable groups such as people with disability may be left behind and not able to participate in the myriad of online activities and support networks.

90% of seniors are reasonably keen to learn the new technology, but are hesitant to try anything by themselves ... and for those who are prepared to use the internet ... it's a big step, like learning a new language.

Council on the Ageing, WA

There are people with disability who face daily challenges in work and social environments that will greatly benefit from the increasing availability of high-speed broadband infrastructure. For example, 'bandwidth-hungry' applications such as real-time captioning, talking books, and video-calling will enable people with disability to more fully engage with friends, family and their community.

Australia's rate of workforce participation by people with disability is lower than most OECD countries. Australia's rate is actually decreasing while the employment rate of people with disability in similar countries is increasing.

The OECD ranked Australia:

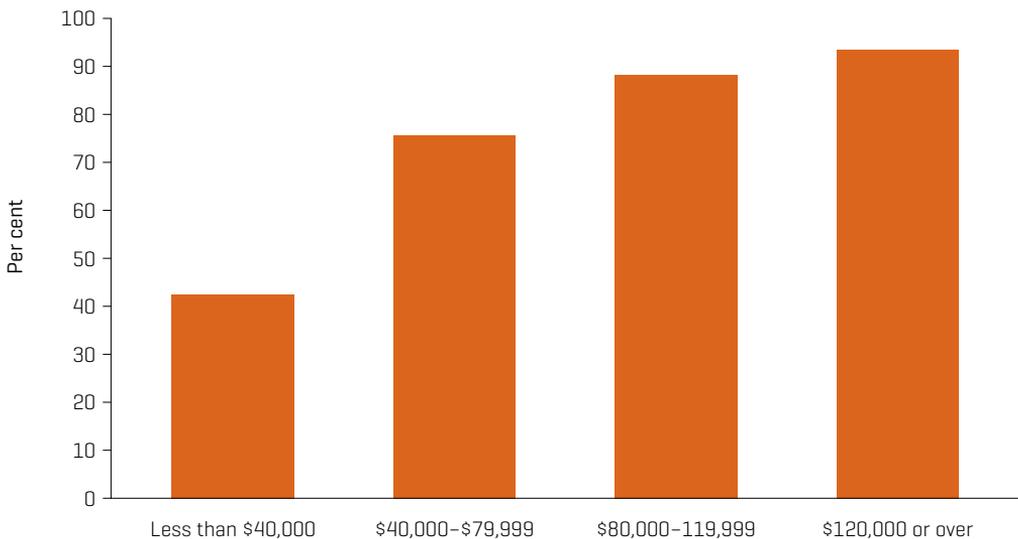
- > 13th out of 19 countries on the employment rate for all people with disability
- > lowest of 16 countries on the percentage of people receiving disability-related benefits while they were also employed (only 11 per cent of people employed in Australia were receiving these benefits).⁴⁹

Increasing the levels of digital participation for vulnerable groups should be a priority. There would be benefit in tracking, over time, the extent to which vulnerable groups are able to take advantage of high-speed broadband to increase workforce participation, reduce social isolation, and access services.

5.1 RECOMMENDATION—It is critically important to better understand the economic, social and workforce participation challenges faced by vulnerable and disadvantaged groups. The ACMA should develop metrics and collect data on these challenges, including the contribution improved access to high-speed broadband could make to increasing the workforce participation of these groups.

Affordability of internet access is a major hurdle for people on low incomes. According to the ACMA, there are around 2.6 million people (or 14 per cent of the total population aged 14 years and over) who do not have access to the internet at home or through a mobile phone. Of these 2.6 million people 62 per cent had personal annual incomes of less than \$25 000.⁵⁰

Figure 7: Internet connections by household income, 2008–09



Source: ACMA Report, The internet service market and Australians in the online environment, July 2011.

The government commitment to a uniform national wholesale price across all three technologies will enable more retail providers to offer broadband in regional Australia at competitive prices. The entrance of new broadband competition in regional Australia promises a significant cost saving for people in these areas.

5. 1 FINDING—Affordability of internet services for people on low incomes is a major hurdle to participation in the digital economy. It is important that the ACMA continues to measure this.

The rollout of high-speed broadband will increase the level of digital engagement and the number of online service delivery methods. As noted above, there are some groups and individuals that do not have a home internet service. Public internet facilities are an important way of providing vulnerable and disadvantaged groups in the community with access to the digital economy. Public libraries in particular are considered safe and friendly environments for public internet access facilities. As public libraries are traditional repositories of knowledge, staff members are highly-experienced in offering support and guidance.

It is important the public is aware of the availability of these facilities. There is a need to identify additional opportunities to provide public internet access in communities where currently it is limited.

The government's Digital Hubs initiative provides access to high-speed broadband, as well as training and assistance to explain the benefits of participating online and to drive greater digital literacy skills. This initiative aims to narrow the divide between those Australians who engage online and those who do not, as well as showcasing the experience of online applications enabled by the NBN. The Digital Hubs program will shortly be available in 40 of NBN Co's early-release sites.

As digital literacy and access are key challenges for many regional Australians, the committee supports a further expansion of this program into regional areas beyond the NBN early-release sites. Any further expansion should be guided by an evaluation of the program's rollout in those sites.

The committee understands that rolling out the Digital Hubs program on a national scale would require significant resources. The Digital Hubs program guidelines specify a funding range to deliver a Digital Hub over a two-year period of \$150 000 to \$350 000. However, there may be not-for-profit organisations such as those in the aged care sector that may be able to provide digital literacy programs.

For example, the Australian Government's Broadband for Seniors initiative was established to improve the digital literacy of older people. The initiative supports older Australians in gaining the skills and confidence they need to use new technology, so they can participate in and share the benefits of the growing digital economy. Free training is

provided in a friendly face-to-face environment by volunteer tutors. Older Australians can also access training materials including an online development course, enabling them to study at their own pace and on their computers at home.⁵¹

5.2 FINDING—There are vulnerable and disadvantaged individuals and groups in regional Australia with digital literacy needs, which would benefit from targeted ICT training.

5.2 RECOMMENDATION—To provide practical assistance to improve digital literacy in regional Australia, the government should expand the Digital Hubs program into additional regional areas, not limited to NBN release sites.

5.3 NOT-FOR-PROFIT SECTOR

[A]s Australia moves into the era of the digital economy and the NBN, not-for profits are increasingly finding themselves as brokers of phone and internet access for their clients who continue to struggle with the basics of availability, affordability, and accessibility.

ACCAN

Vulnerable and disadvantaged groups look to trusted organisations in the not-for-profit (NFP) sector to help them participate more fully in the digital economy.

There are an estimated 600 000 organisations in the NFP sector with 440 000 of these being small unincorporated organisations such as neighbourhood groups and 59 000 being ‘economically significant’ (that is, they employ staff or access tax concessions). These larger NFPs employ over 850 000 staff, which is around eight per cent of employment in Australia, and contribute almost \$43 billion to Australia’s GDP.⁵²

NFP organisations often provide the link between the provision of services, and access by vulnerable and disadvantaged groups. For a range of factors many vulnerable people in regional areas are unaware of the services available to them. Providing both knowledge and access is increasingly becoming a core function for many NFPs, particularly in rural and remote areas. However, many of these organisations are themselves struggling to keep up with technology.⁵³

[M]ore and more government and non-government departments are reluctant to send out any forms and tell customers to download them, so many seniors (and non seniors) come in to our Centre for assistance.

COTA WA

To better assist disadvantaged and vulnerable Australians, organisations within the NFP sector would benefit from strengthening their digital literacy capabilities. There would be advantages and efficiencies if the NFP sector adopted a collaborative approach to strengthening the digital skills of people working in the sector. NFPs based in regional areas should actively consider how they can best work with other local groups to improve outcomes for clients, reduce the costs of digitisation and initiate shared digital inclusion programs.⁵⁴ Regional Development Australia committees and local government organisations may be able to assist local NFPs in this process.

5.3 FINDING—Not-for-profit organisations would benefit from support to strengthen their digital literacy capabilities and help them work together to develop local strategies to take advantage of the digital economy.

5.3 RECOMMENDATION—Not-for-profit organisations should be supported to work together to strengthen their digital literacy capabilities and develop local strategies to take advantage of the digital economy.

5.4 COMMUNICATING THE BENEFITS OF THE DIGITAL ECONOMY

There needs to be a lot more awareness and education about what people can do with the roll out of the National Broadband Network. People don't want to know the overall benefits. Instead they want to know the relevance to them—how can it benefit individuals and communities and how can they use it.

CentaCare Wilcannia Forbes, NSW⁵⁵



Alun Davies and Warren McLachlan travelling by charter plane to Bourke, NSW.

A major theme that emerged during consultations was that both individuals and local organisations believe that the growing digital economy will create new opportunities for their communities. Many regional Australians are already fully exploiting online opportunities, within the constraints of their currently available broadband services. There are others who are keen to engage in the digital economy but are limited by their existing level of internet services.

Many people in these groups are already considering how best to take advantage of the arrival of higher-speed broadband.

However, there is also a large group of people in regional Australia who would like to know more about the digital economy and how to position themselves to take advantage of it.

This level of interest is very encouraging. To assist in translating this interest into action, the committee believes the benefits of the digital economy and the NBN could be better communicated in regional areas. Regional Australians are often unaware of programs and digital applications relevant to them. It is apparent there has been too much emphasis and promotion on the way the technology works rather than how people can use it.

The march towards online services and activities will not slow. The earlier people and businesses become involved in the digital economy, the more included and empowered they will be. There is a need to raise awareness about the digital possibilities that are already out there and those that will be coming to communities in the near future.

DBCDE is well placed to develop initiatives that provide information about the digital economy and high-speed broadband. The Department of Regional Australia, Local Government, Arts and Sport, with its focus on assisting regions to realise their potential, should work with DBCDE to address the digital economy knowledge gap in the community and communicate the message to local government authorities.

5.4 FINDING—In some regional areas and sectors there is not a high level of awareness about the benefits of the digital economy.

5.4 RECOMMENDATION—DBCDE, in conjunction with the Department of Regional Australia, Local Government, Arts and Sport, should raise awareness about digital economy benefits as well as the emerging opportunities for regional communities.

5.5 COORDINATION OF DIGITAL PRODUCTIVITY ISSUES

During its consultations the committee found that Commonwealth, state and territory government coordination on digital economy programs and digital productivity issues in regional areas could be far more effective. State and territory governments are the primary agencies for the delivery of a range of services, particularly in the areas of health and education. Conversely, telecommunications services are mainly the responsibility of the Commonwealth government. More effective cooperation between governments could

lead to a broader take up of online services, more effective use of resources, and greater efficiencies in the rollout of programs.

The development of the digital economy requires both a strategic and coordinated approach. In particular alignment and coordination with the States, Territories and local government will be important to deliver productivity and social benefits from the use of broadband in education, health and local government service delivery.

Victorian Government

In the committee's view, digital productivity constitutes a critical and complex issue that warrants the formation of a Council of Experts in regional service delivery for a period of three years, chaired by the Minister Assisting the Prime Minister on Digital Productivity. Council membership could include Commonwealth, state and territory representatives as well as industry leaders. The council's purpose would be to address systemic barriers to the adoption of national digital productivity initiatives, including:

- > identifying and assessing systemic barriers to the adoption of telehealth, including issues such as access technology limitations, the merits of a national directory of telehealth specialists, interoperability of videoconferencing systems, and the digital literacy levels of General Practitioners and their support staff
- > identifying and assessing e-learning opportunities, particularly in vocational education and the training and professional development needs of the rural and remote workforce
- > developing a regional digital productivity agenda, including small business participation in the digital economy and economic development opportunities for Indigenous Australians.

The committee believes that a cooperative approach between all tiers of government and supported at ministerial level is needed to ensure that digital productivity issues are given the priority attention they deserve.

5.5 FINDING—As digital productivity is critically important to the Australian economy, there is a need for a formal coordination mechanism for the Commonwealth, states and territories.

5.5 RECOMMENDATION—A National Digital Productivity Council of Experts in regional service delivery should be established to ensure significant digital productivity issues are addressed and to provide a formal coordination mechanism for the Commonwealth, states and territories.

5.6 DIGITAL ECONOMY PLANNING

The Far West NSW region is committed to ensuring that from the outset we build an inclusive strategy that will address the issue of a digital divide. What is more, the processes and strategies built in this region to counter the digital divide can become a blueprint for narrowing the gap throughout regional Australia.

...[T]he digital economy is really about people being enabled to work together more effectively.

Regional Development Australia Far West NSW Digital Economy Strategy⁵⁶

Some local councils and regional development organisations have developed, or are developing digital economy plans so their regions can take advantage of the economic development opportunities that the online world brings.

A significant number of regional areas have not yet positioned themselves to take advantage of the economic, social and cultural benefits of the digital economy. One of the reasons cited for this was that local councils felt they were not appropriately resourced to cope with the challenges of digital engagement and that the task seemed too large.

There is a need for regional communities to adopt a strategic approach to participating in the digital economy. This could best be achieved through the development of regional digital economy plans. The committee considers that Regional Development Australia committees, with their focus on the growth and economic and cultural development of regions, are well-placed to encourage the development of regional digital economy plans. These plans should be developed in conjunction with local councils, and with the community institutions and organisations.



Committee and department members with Moe residents, Cheryl Wragg and Peter Gibbons at the lookout in Moe, Vic.

Regional Digital Economy plans should include strategies to address practical challenges such as a lack of IT professionals in rural and remote areas. As Dr Genevieve Bell found in her report *Getting Connected, Staying Connected*, it will be crucial for regional Australia to engage universities, vocational education training providers and the non-profit sector when developing and fostering this new IT workforce.

The possible future requirement for ongoing maintenance and difficulty in obtaining qualified technicians and fair cost for service...is a barrier to technology use in the regions.

[W]e need to ensure that regional cost equities and regional technical support mechanisms are being put in place.

Wheatbelt Development Commissions, WA

There are existing organisations and individuals that are able to assist with digital economy planning. The Broadband Today Alliance consists of around 120 councils and was formed to collaborate and share knowledge on the NBN, broadband and the digital economy. Those councils represent a population base of approximately 6.5 million.

Using digital champions to promote digital economy benefits is another good way to help raise awareness of the benefits of the digital economy. Working with digital champions and existing organisations, such as the Broadband Today Alliance, provides an opportunity to reduce duplication by sharing experiences and lessons learnt.

To the extent possible, organisations that are developing regional digital economy plans should work with state and territory economic development departments to make use of their resources and strategies. Adopting a collaborative approach to digital economy planning will be far more efficient and effective than developing plans in isolation.

5.6 FINDING—Some regions are better prepared and resourced than others to exploit the digital economy. To address this at the local level, priority actions should include developing regional digital economy plans and identifying local digital champions.

5.7 FINDING—Regional digital economy plans should include strategies to address practical challenges, such as a lack of IT professionals in some rural and remote areas.

5.6 RECOMMENDATION—Regional Development Australia committees, in conjunction with local councils, should develop digital economy plans for their regions and identify digital economy champions. Cooperation in developing these digital economy plans should be sought from other local and regional institutions such as universities and national organisations such as the CSIRO and National ICT Australia.

5.7 ECONOMIC GROWTH IN REGIONAL COMMUNITIES

ECONOMIC DIVERSIFICATION

In towns and regions which have undiversified economic bases, the digital economy will provide businesses in these areas with new opportunities to tap into alternative markets, helping to reduce economic risk and volatility associated with a narrow economic base.

Isaac Regional Council

Diverse economies are considered more resilient than those that rely on a few key industries. While most regional areas have lower levels of diversity than metropolitan areas, there is a growing level of economic diversity emerging. Based on ABS industry data, the Bureau of Transport and Regional Economics has shown that many regional areas have created a wider range of employment opportunities over the past decade.⁵⁷

The rollout of the NBN will provide an important part of the infrastructure needed to encourage economic diversification in regional communities, particularly in the services sector. The service sector accounts for around 70 per cent of the country's economic activity. The services sector includes banking, insurance and finance; the media and entertainment industries; consulting, tourism and retail; services provided by government, such as education, health and welfare; and other personal and business services.⁵⁸

ABS census data from 2006 shows that there is internal net outmigration in Australia's capital cities, except in the young adult ages where there is a significant net gain from non-metropolitan Australia. This means that there are more established Australian residents who move out of Australia's major cities than move in to them. The 'tree-change' and 'sea-change' phenomena are the most well-known examples of this occurring. Regional locations that can attract these people to move to their community have an opportunity to generate a range of new and diverse businesses opportunities.

Communities right across the country are saying that good communication services are critical for regional areas to attract and retain workers in all sectors.

AgForce recognises now, more than ever, there is a need to retain youth in rural areas. By delivering broadband to rural communities, access to education beyond compulsory schooling years, as well as a range of social networking benefits may positively counteract the exodus of youth from the bush.

AgForce, Qld

Professionals are attracted to areas where they can continue to enhance their skills. Not only does poor access to professional development act as an impediment to professionals

such as lawyers, doctors and teachers looking to move to regional areas, it is an issue for those wanting to stay in their regional area. The cost and inconvenience of travelling to a metropolitan centre for training can be a major disincentive for professionals considering a career in a regional area. Online education tools for regional professionals such as video podcasts, online education programs and streaming of lectures require access to high-speed broadband. While access to good telecommunications services is not the only challenge for professionals looking to move to regional areas, it is significant.⁵⁹

The incentives to live in small communities don't exist when essential services (especially telecommunications) have not seen maintenance or replacement investment for years. Poor Internet access and mobile phone communications are amongst the commonly expressed reasons why people elect to leave the region, if opportunity elsewhere emerges.

Regional Development Australia Far West NSW

5.8 FINDING—High-speed broadband is not the only infrastructure needed to encourage people to relocate to regional areas. However, where high-speed broadband is not available, it is a major disincentive to relocating to the area. The ubiquitous rollout of the NBN will remove what is currently a major barrier to regional economic development and diversification.

TELEWORKING

More than sixty percent of survey participants identified they would like to work from home very often or often in the future.

Yarra Ranges Council, Vic

Teleworking means working from a place other than the office, in most cases from a home office. While teleworking is not relevant to all sectors of work, it does present greater opportunities to people living in regional areas. It allows people the freedom to work from any location and be employed by businesses or agencies that are not based in their areas. It also saves time and costs associated with travel.

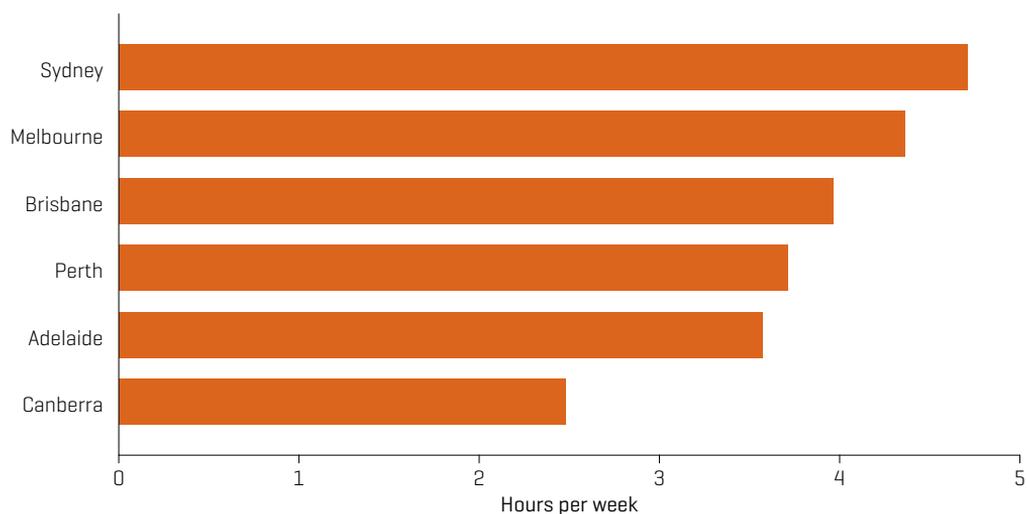
Although teleworking remains relatively uncommon in Australia, the increasing availability of high-speed broadband in regional Australia will open the door to a new generation of teleworking. Greater acceptance of teleworking will lead to productivity gains for regional businesses, as well as increased flexibility for individuals. This flexibility will increase job opportunities for many regional people, particularly for those with difficulties accessing the labour market, parents, carers and people with disabilities and mobility issues.

For businesses, teleworking provides access to appropriately skilled people no matter where that person lives. As Access Economics reports, 'This means that the employer is able to recruit the "best employee" rather than the "best employee in the area"'.⁶⁰

As noted above, there are more established Australian residents who move out of Australia's major cities than move in to them. Where employees do decide to relocate to a regional area, the business can suffer a loss of expertise and corporate knowledge. If teleworking were available as an option to such an employee, they may be able to stay with their organisation and continue to contribute from their new location.

For individuals, teleworking can offer significant savings in time and money. Many Australians travel great distances to work. Longer travel times result in increased transport-related energy consumption and leaves individuals with less time to spend pursuing other activities. For example, data from the Household, Income and Labour Dynamics survey shows that over 10 per cent of working parents spend more time each week commuting (between 10 and 15 hours), than they do with their children.⁶¹ Teleworking has the potential to improve working arrangements for individuals as well as businesses.

Figure 8: Average weekly commuting times in selected capital cities



Source: Australian Institute of Management, National Salary Survey: Large Company, 2009, Sydney.

Unity4 is a great example of a business benefiting from the use of teleworking now. It is one of Australia's largest teleworking organisations with over 300 people working from home.

Teleworking at Unity4 is fantastic for our business. It enables us to hire brilliant people irrespective of where they are from a geographical perspective in any state or territory. From an environmental perspective, it pays huge dividends—we save 220 tons of greenhouse gas emissions per annum by not having people having to commute to work by train or by car.

Dan Turner, Unity4 CEO⁶²

Telework has the potential to increase the workforce participation for people with disability. Currently, there is a high degree of under-employment of people with disability. A whole range of skills is not being used, in part because of an inability to access them. The greater availability of high-speed broadband will provide that access. People with disability will be empowered to more easily contribute in their existing jobs, but also find new jobs that offer teleworking options. The possible increases in productivity are immense.⁶³

The committee is excited about the opportunities that telework enabled by high-speed broadband infrastructure presents for regional communities. Teleworking is a positive strategy for regional areas that both employers and employees should explore.

5.9 FINDING—Teleworking arrangements offer significant opportunities for workers and small businesses in regional Australia.

BUSINESS OPPORTUNITIES

The take up of ICT is not uniform across or within industry sectors. It is not uncommon to find some enterprises making fantastic use of ICT and capitalizing upon the administrative and marketing advantages that it provides, whilst other within the same sector are wedded to outdated administrative practices and see the advent of the 'online environment' as a threat to their business.

Bass Coast Shire Council, Vic

Regional small businesses are set to benefit from the increased availability of high-speed broadband. There are significant competitive advantages for regional businesses that participate in the digital economy. This could be achieved through generating efficiencies in business operations, increased productivity and the ability to access new markets.

There is also an opportunity for regional areas with high-speed broadband services to attract new businesses that previously needed to be located in a major metropolitan city. The benefits to these businesses relocating to regional areas can include reduced rents, less commuting times for workers and a more stable workforce. Access Economics cites a scenario of a business relocating from Melbourne to Bendigo, with a total office size of 200 square metres, resulting in an annual saving in rent of \$13 000.⁶⁴ Businesses that need to be able to quickly and regularly transfer large files electronically, such as architects, designers and property lawyers, will be able to operate these businesses in regional areas, whereas previously they had no choice but to locate in metropolitan centres.

Smaller-scale producers of niche or specialised products right across Australia are making high-quality and innovative products. However, they can struggle to get their products known in the marketplace. With access to affordable high-speed broadband and an online strategy, many micro-businesses in regional Australia can access a much greater market.

My mobile app business allows me to work anywhere there is a 3G connection. Because Yuendumu has 3G available, I have been able to continue working in Yuendumu on local projects while managing my core business online.

Liam Campbell, NT

5.10 FINDING—Access to high-speed broadband will assist regional areas to attract businesses that could only previously have been located in major metropolitan cities.

BUSINESS CHALLENGES

For existing bricks-and-mortar businesses in regional areas, the digital economy also means greater competition. Regional consumers will have significantly greater choice as the number of physical retail outlets tends to be more limited in regional areas.⁶⁵ New pressures, for which many small businesses are not currently equipped to deal with, will come from suppliers, commercial partners, employees and customers.

Many enterprises will need to make structural changes to their business models to meet the challenges of increased online competition. Small businesses in particular are likely to need assistance with developing their online skills and confidence. An essential first step in understanding the magnitude of this problem is for the relevant sectoral and industry representative bodies to consult with their members. A better understanding of the structural issues faced by small businesses is needed to help them prepare for those changes.⁶⁶

There is little being done to identify and understand the potential structural impact of the likely major changes on a range of existing small and medium business enterprises. Many such impacts will be positive, however there is also an urgent need to prepare for those changes that inevitably will create dislocation and disruption.

Dick Rowe, Qld

Of itself, access to high-speed broadband is not enough to realise the benefits of the digital economy. Regional business operators will need to adjust their operations and adapt their business plans to maximise opportunities and profits.

The Australian Government's Digital Enterprise initiative provides for group training seminars as well as one-on-one advice to small-to-medium businesses and not-for-profit organisations. Businesses obtain advice and training on how they can use the NBN to make greater use of online opportunities to grow and enhance their businesses efficiently, and to better achieve their organisational goals.

To assist small businesses to transition to the digital economy, the committee considers that the Digital Enterprise program should be extended to regional areas. In particular the

committee supports expansion of the Digital Enterprise program in regional areas beyond NBN first and second-release sites.

Program guidelines specify a funding range of \$140 000 to \$270 000 to deliver a Digital Enterprise service over a two-year period.

There are existing agencies or organisations with business development experience, including state, territory and local government business development agencies and locally-based organisations such as business enterprise centres and non-government organisations. These agencies and organisations may be able to assist with any expansion of the Digital Enterprise program.

5.11 FINDING—Many regional businesses are not prepared to take advantage of the opportunities, applications and services that will arise with high-speed broadband infrastructure.

5.7 RECOMMENDATION—To enhance the digital literacy and preparedness of regional small businesses, the Digital Enterprise program should be expanded into additional regional areas not limited to NBN release sites. DBCDE should also work with state and territory governments to encourage businesses to participate more fully in the digital economy.

The committee has examined two business sectors that are of great importance to regional Australia—tourism and agriculture. These two sectors, although different in many respects, highlight the importance of adopting online strategies and the productivity improvements that can be achieved.

TOURISM

The recent report, *A Sustainable Population for Australia*, found that building on the existing tourism sector in regional Australia would be a good approach to improving the economic growth, 'liveability' and environmental sustainability of regional Australia. Greater involvement from Indigenous Australians in tourism activities was seen as an additional inclusion benefit.⁶⁷

This theme came through in submissions to the committee. For example, the Regional Development Australia committee of Far West NSW is looking to broaden the region's economic inputs from the traditional mining and agriculture sectors to include such sectors as the creative industries and tourism.⁶⁸ The Murrindindi Shire Council highlighted that high-speed broadband would be able to 'support the development and use of virtual visitor information centres with tourism maps, information, access to individual operators and automatic booking systems'.⁶⁹



Tourist taking a photo of the Glass House Mountains in Qld.

However, studies by Tourism Research Australia (TRA) reinforce the importance of businesses having a strong web presence and online booking capabilities to make the most of opportunities in the tourism industry. According to TRA, visitors are becoming increasingly reliant on the internet when planning and booking travel.⁷⁰ In 2010, 62 per cent of international visitors and 37 per cent of domestic visitors used the internet as a source of information prior to commencing their trips, up 11 per cent and 6 per cent respectively since 2007. This preference for conducting research and transactions online is likely to increase with the growth of new communication technologies such as smart phones, and related social networking tools that allow consumers rapid access to information.⁷¹

As operators of boutique accommodation—and we are only one of many tourist businesses in this great valley—our business relies on fast internet service for the vast majority of our bookings.

... [I]f we do not keep up with our competitors, in relation to speed and accessibility of our web marketing and bookings, then we will certainly be significantly disadvantaged. This is in spite of our business being totally e-enabled. We stand to lose substantial business, through no fault of our own, when potential guests will spend time on faster websites and consequently bypass our slower service.

Carl Gledhill and Helen Hale (The River House), Tas⁷²

Many tourism businesses have some work ahead of them. A recent survey conducted on behalf of the Tourism Ministers' Digital Distribution Working Group found that 84 per cent of tourism businesses surveyed have an online presence, but only around half of these businesses have comprehensive booking capabilities or instant booking confirmation.⁷³ Even fewer businesses are able to accept online payment for instant bookings.

This finding was reflected by the South East Local Government Association, which found that only 40 per cent of tourism operators in the Limestone Coast communities of South Australia had the ability to accept tourism bookings online.⁷⁴

The committee considers improving affordability and availability of high-speed broadband will increase opportunities for local tourism in regional communities, but businesses need to adopt online strategies as a priority.

AGRICULTURE

...[The] Bureau of Meteorology site has been a terrific tool for our rural contracting business, with the Captains Flat Radar not far away the predictions are usually accurate for this area. Prior to internet connection there was no way of knowing long term weather predictions.

Chauntelle Hindmarsh, NSW



A hand-held device being used to monitor irrigation.

People who work in Australia's agricultural sector make a vital contribution to the economy and more broadly to society. Australian agriculture currently produces approximately 93 per cent all food consumed domestically in Australia.⁷⁵ Over the 30 years from 1974–75 to 2003–04, Australian farms consistently achieved average productivity growth of 2.8 per cent a year.⁷⁶ Importantly, the Productivity Commission found that while Australia is well above the OECD average for agricultural productivity, it still has room for improvement.⁷⁷

The farming sector will face continued challenges as a result of pressures such as the sustainable management of resources, including the allocation of water. The sector will need to find new ways to continue to achieve the high level of productivity growth and water use efficiency that it has achieved over the past several decades. Greater use

of existing information and communications technologies is seen as a key driver for future productivity. For example, the committee saw evidence that the increased use of broadband-supported sensor networks offered major opportunities for further productivity growth in the Australian agriculture sector.

WA Farmers believes that the next great area of productivity gain will be driven by communications technology. Access to central or industry data bases, in-time production and marketing information will be needed by growers, both in their paddocks and their office.

Mike Norton, President, WA Farmers Federation

The NSW Farmers Association undertook a survey of its members in August and September 2011 to identify some of the key concerns and problems faced by farmers in NSW. Respondents to the survey showed clear interest in farm-related demonstrations of technology and also IT training, with 85 per cent interested in a local area IT demonstration and 78.8 per cent interested in local area IT training.⁷⁸ The NSW Farmers submission indicates that farmers are keen to embrace the opportunities of the digital economy, but need greater availability of sector-specific training.

Broadband will help farmers to achieve greater productivity gains. However, many emerging technologies require access to mobile wireless to work—for example, sensing of soil and plant properties before and during the growing season for nutrients and moisture. Access to mobile-broadband and voice services is important to capture the next generation of productivity improvements.

CASE STUDY: TANDOU FARMS LIMITED, MILDURA VIC

Tandou uses advanced computer programs and software to obtain vital information on crop progress in order to maximise water use efficiency and, hence, yields. Weather and soil moisture data are gathered and logged to computer systems, which are integrated with irrigation systems to ensure absolute precision in irrigation volumes. In the future Tandou Farms believes high-speed broadband will assist with:

- > improving productivity and cost efficiency through Tandou Farm being able to access software based in the corporate office in Mildura
- > engaging in real time problem solving with merchandise agents which will aid in keeping stock alive during summer
- > conducting online inductions, training, etc., for staff based at Tandou Farm.

5.12 FINDING—Areas of the farming sector are already fully exploiting the opportunities of the digital economy. However, there are many agricultural enterprises that could better engage in the digital economy.

5.8 RECOMMENDATION—The government should work with the agriculture sector to encourage the sector to develop digital strategies. These strategies should include how best to deliver specific training opportunities and demonstration sites.

5.8 DELIVERING GOVERNMENT SERVICES ONLINE

We use online government services. We voted and completed the Census online, we applied for a community liquor licence online for recent fundraising events, we access government policies and procedures online. We have found all of these processes easy to use and it avoids unnecessary travel.

Claire and Shane Butler, NSW⁷⁹

Offering government services online can make a range of activities—such as paying rates, renewing licenses, claiming Centrelink payments, or simply changing details—easier and more convenient for people living in regional Australia.

There is a range of online government services that are available—from the provision of basic information, through to sophisticated interactive transactional capabilities. According to an ACMA survey published in November 2010, only 33 per cent of respondents in non-metropolitan Australia were accessing government services online.⁸⁰ The corollary of that survey is that around two-thirds of the survey respondents did not access government services online.

Encouraging greater use of online options, particularly for transactional services, will lead to more cost-efficient service provision for governments and a more streamlined experience for customers. The committee is not aware of any equivalent Australian studies, but the findings of a 2009 PriceWaterhouseCoopers study on behalf of the United Kingdom government indicated that the average cost saving to government of an online transaction is between £3.30 (telephone) and £12.00 (post) compared to an online transaction.⁸¹

ICPA recognises that the expansion of online government services will lead to positive outcomes for rural and remote users. For example, many of our families make use of the capability of the Centrelink site. Accessing online information and filling out forms, with the ability to submit forms and accompanying application data online, can relieve the frustration of lengthy phone calls.

Isolated Children and Parents' Association of Australia, Federal Council

The availability of high-speed broadband in regional homes and businesses removes a major barrier to accessing online government services. However, to be effective, online government services need to be easy to use and understand. The more difficult it is for a customer to locate the service or information they need, the less likely they are to use online services. A number of people the committee met with expressed frustration when government websites are difficult to navigate and do not appear to have content relevant to the local community.⁸²

To encourage better usage of their online services, governments need to recognise that there are varying levels of digital literacy and confidence amongst their user target groups. Catering for these different levels and making sites as user-friendly as possible are important design characteristics.

There is already a substantial segment of the community with access to broadband services. However, particularly in rural and more remote areas, many customers have much slower internet speeds, with a declining but still-significant proportion using dial-up services. Where governments need to cater to and support dial-up internet customers this will constrain the deployment of more sophisticated services, particularly content rich services that require high download capacities.

As the NBN rolls out, the greater consistency of internet service levels will alleviate this problem. As a result, the committee expects that the NBN will drive an increase in the number of government online transactions.

5.13 FINDING—The committee strongly supports the provision of online government services. Agencies need to be aware that many regional Australians do not currently have the ability to conduct online transactions due to the poor quality of their internet services, low levels of digital literacy and a lack of affordable high-speed broadband.

Regional, rural and remote local government organisations and their customers stand to be major beneficiaries of the NBN rollout. Local governments play an important role in sustaining the economic and social growth of communities by providing a range of services to residents and local businesses. The Australian Local Government Association reports that there are around 560 local government bodies in Australia, of which 539 are regional, rural or remote.

There are a variety of ways in which local governments can provide services to their constituents. These include the traditional in-person delivery of services, telephone delivery and online delivery. Local governments in Australia are already adopting IT-based methods of doing business, including electronic record-keeping, online payments and online applications for permits and licences.

With the rollout of the NBN it will be possible for local governments to significantly expand online services and provide improved service levels to customers. The challenge for many local governments, particularly smaller rural and remote councils, is in the resources needed to move services online. The initial funds required to move services online are in addition to existing administrative costs but the savings to the organisation may not be immediately harvestable.

The Australian Government's Digital Local Government program is providing funding to local councils for the development of online services. The Digital Local Government initiative will assist local governments to deliver online services with a particular focus on delivery to homes and businesses. The program aims to develop solutions which are replicable and scalable. This will facilitate their further use by local governments across Australia.

The eligible local governments for this program are in the NBN early-release sites. The initial projects being developed by these local governments include implementing online processes for development applications which encompasses high-definition videoconferencing sessions with council staff and applicants, and video-based interactive online customer services, community consultation and workshops.⁸³

The committee supports an expansion of the Digital Local Government program if it achieves savings in service delivery for participating local councils. The initiative makes available approximately \$375 000 in funding per council. Solutions being developed are required to be scalable across a local council's area, and must be able to be replicated by other councils. All projects must also be able to be sustained financially by the council after the program funding ceases.

5.9 RECOMMENDATION—To increase the capacity of local governments in regional and remote areas to take advantage of digital technologies for the provision of a wide range of services online, the Digital Local Government program should be expanded into additional regional areas not limited to NBN release sites.

The Commonwealth, state and territory governments have more resources than local governments to implement online services. The larger pool of potential users of online services can also provide measurable savings in service delivery. For example, there may be opportunities for rural and remote local councils to act as agents to deliver Commonwealth, state and territory services where those agencies do not have a physical presence in these communities.

High-speed broadband will improve the connectivity for local councils to offer these services. The committee believes the NBN will allow more regional, rural and remote users to access Commonwealth, state and territory government programs and provides an opportunity for more innovative delivery of services.

5.14 FINDING—High-speed broadband could enhance the opportunity for local government organisations in more remote areas to act as agents to deliver, or facilitate access to, Commonwealth, state and territory government services.

5.9 HEALTH SERVICES

ICPA acknowledges that the NBN will provide a critical piece of enabling infrastructure; the Association is pleased that the government has recognised the importance of establishing early trials of the technology to demonstrate its impact and to set the stage for broader systemic adoption in education, healthcare, and government service delivery. ICPA cannot stress too strongly how critical this is for rural and remote users.

Isolated Children's Parents' Association of Australia, Federal Council

As the major provider of health and education services, the state and territory governments have critical roles to play in the delivery and uptake of online government services. In Australia, there is currently unequal access to healthcare services, particularly in remote and rural communities. The better use of information and communications technology will play a critical role in improving the efficiency, safety and sustainability of the Australian health system.

High-speed broadband to the home and local health facilities will deliver improved health and aged care outcomes in regional areas. Australia has the opportunity to use the NBN to jump-start into a leading position in the delivery of telehealthcare as a central feature in the future of healthcare.

With an ageing population and the corresponding increased demands on Australia's healthcare system the NBN provides an opportunity to deliver a number of specific benefits to people living in regional areas. It will improve delivery of care to the home, a more convenient system for regional patients to access their records wherever they are in the country and better system-wide delivery of healthcare.

As part of the Digital Economy Strategy, the government has set three main goals to improve health and aged care. All three are relevant to regional Australians, with the two telehealth goals having particular relevance for rural and remote Australians.



Committee members Warren McLachlan, Robin Eckerman and Alun Davies with Rosemary Gaston [left] and Jackie Plunkett [right] visiting Katherine hospital, NT.

- > By 2020, 90 per cent of high priority consumers such as older Australians, mothers and babies and those with a chronic disease can access individual electronic health records.
- > By July 2015, the goal is to have delivered 495 000 specialist telehealth consultations to people in rural, remote and outer metropolitan areas.
- > By 2020, 25 per cent of all specialists will be participating in telehealth consultations to remote patients.

While most Australian hospitals already have fibre connections, achieving each of these goals requires high-speed broadband to be available to other medical facilities, such as regional health centres and GP offices, as well as to the homes of patients. The opportunities for improved home access to health services are particularly exciting.

E-HEALTH RECORDS

Most rural and remote health centres and GP offices currently have the same levels of internet connectivity as the homes in their local area, which can range from reasonable quality ADSL2 services to very constrained and congested satellite services. The committee witnessed firsthand the very poor levels of internet connectivity at the Oodnadatta health centre and the difficulties this created for staff and patients alike.

The NBN will deliver a significant improvement to the current services available in these areas and will support a range of e-health initiatives, such as the implementation of Personally Controlled Electronic Health Records (PCEHR).

The sharing of information between healthcare participants, through the PCEHR initiative, will be much more effective where there is ubiquitous and reliable high-speed broadband. The intent of the PCEHR is to allow for better information sharing between health providers, provide access to accurate and timely information no matter where the patient is, and allow patients to be more involved in their own healthcare. As the PCEHR initiative is being designed to accommodate a range of users with different levels of connectivity, all three NBN Co technology solutions—fibre, fixed-wireless and satellite—will support its delivery in regional, rural and remote communities.

The committee is encouraged by the work of the National E-Health Transition Authority in developing an overarching e-health interoperability framework.

5.15 FINDING—Electronic health records for healthcare providers will provide improved continuity-of-care for regional patients. The committee finds that the NBN will support the implementation of the PCEHR initiative in regional Australia.

TELEHEALTH

High-definition videoconferencing creates exciting opportunities for improving access to health services for regional Australians. Telehealth will not replace the need for face-to-face consultations but does offer improved access to specialist health services in rural and remote areas.

In July 2011 the government implemented Medicare Benefits Schedule rebates for video consultations with medical specialists in distant locations. Since then uptake has steadily increased with more than 7000 services provided by more than 1200 clinicians located mostly in rural and remote Australia.⁸⁴ This initiative has removed a major systemic barrier to the adoption of telehealth.

As part of the introduction of the Medicare telehealth rebate initiative the Royal Australian College of General Practitioners (RACGP) is developing standards for GPs offering video consultations. The committee notes the standards that the RACGP is developing could be expanded to include other types of consultations such as telehealth applications which link up with patients in their homes.⁸⁵

Telehealth, as a subset of e-health, relies much more on higher upload speeds if it is to be used for diagnostic and treatment services. Across the three NBN technologies, as well as within the range of FTTP retail service offerings, there will be different broadband upload capabilities offered. It will be important to understand the limitations of the

respective services, particularly the entry-level services, and what impact this will have on a person's ability to access telehealth in the home.

[E]ffective and labour efficient technologies are hindered by unreliable connectivity at current internet service levels. A systematic approach to digital capacity building will further encourage the development and roll-out of such technologies across an industry keen to move forward.

Aged and Community Services Australia

While telehealth offers great potential in the delivery of healthcare in rural and remote areas, there are barriers to the systemic adoption of initiatives. The committee heard one barrier may be a lack of a structured national telehealth operations network. Such a network could provide interoperability of various proprietary videoconferencing systems. If different videoconferencing systems cannot 'talk to each other' and be used by non-specialists, participation in telehealth delivery could be impeded.

A telehealth operations network could also publish a national directory of specialists that offer telehealth consultations. A telehealth national directory, rather than one developed by individual states and territories, would avoid duplication of resources and provide more comprehensive options for rural and remote patients.⁸⁶

Successful delivery of telehealth in rural and remote areas requires both the willingness of patients and GPs to engage in the process. The MBS rebates for medical specialists in remote locations are a good initial step to encouraging telehealth consultations in rural and remote locations. However, the more GPs there are with digital confidence and digital literacy, the greater the likelihood that telehealth consultations will be offered. GPs need to be comfortable using the technology and explaining it to their patients.

The Wheatbelt has had good experience with medical and administrative staff utilising the technology particularly video conferencing. However it appears that in other areas Staff either lack confidence in technology or haven't been educated in its use and therefore limiting application.

Wheatbelt Development Commission, WA

5.16 FINDING—The committee supports the federal government, in collaboration with the states and territories, taking the lessons learnt from telehealth trials and developing joint strategies and mechanisms for more systemic adoption in regional Australia.

E-HEALTH TRIALS

There are a large and growing number of e-health initiatives being delivered within local geographic regions, across different health settings, and across health sector disciplines.

Several trials are currently underway or in development to test and demonstrate the beneficial impacts of high-speed broadband on healthcare. The government's Digital Regions Initiative (DRI) co-funds innovative digital enablement projects through a National Partnership Agreement with the state and territory governments.

These telehealth initiatives have the potential to transform the way in which healthcare is delivered to regional Australia.

TELEHEALTH AND AGED CARE IN REGIONAL AREAS

Of particular importance to seniors, is the development of e-health technology, but access to all services will become increasingly difficult without Internet use, potentially disadvantaging many people who are on the wrong side of the 'digital divide.'

COTA, WA

A greater proportion of the population is elderly in rural and remote areas than in the cities, and their health is generally poorer than that of older people living in metropolitan areas.⁸⁷ The vast distances, low population density and high cost of providing healthcare in regional Australia pose significant challenges to our healthcare system.

The committee heard from several communities that expect to have an increase in the number of older Australians living in their regions. The region of Hume in Victoria, which encompasses Victoria's alpine areas, remote farming communities and the major regional centres of Wodonga, Wangaratta and Shepparton, expects that by 2031 there will be an additional projected 100 000 residents within the region with a significant increase in the number aged 55+ by 2026.⁸⁸



Telehealth technology being used in the Health e-Towns program in Katherine, NT.

Access Economics has completed two reports *Telehealth for aged care* and *Telehealth for veterans*, which conclude that there are net financial benefits for the health system, veterans and individuals from the introduction of telehealth enabled by high-speed broadband in regional areas.⁸⁹

Among their findings, the reports calculate a 61 per cent return on investment over two years. If quality of life benefits from reduced suffering and pain are factored in there is a 149 per cent return on investment over two years. These benefits would result from delayed entry to residential aged care, a lessened burden on carers, and reduced transport costs. The reports' findings support the use of new and innovative ways of delivering healthcare for older Australians and veterans that take full advantage of high-speed broadband.

5.17 FINDING—The committee supports COTA WA's view that access to e-health technology is of vital importance to Australia's ageing population, particularly in regional areas.

5.10 RECOMMENDATION—The National Digital Productivity Council of Experts in regional service delivery should develop joint strategies and mechanisms for more systemic adoption of telehealth in regional Australia. The council should consider the lessons learnt from previous telehealth trials and also assess possible barriers to telehealth adoption such as access technology limitations, interoperability, the need for a national telehealth directory and the digital literacy of GPs.

5.10 EDUCATION SERVICES

It is essential that government understands the importance of accessing ... [reliable and affordable telecommunications] services for consumers with homes located in rural and remote areas. These homes serve as not only the family home but also the office for their business and most importantly function as the isolated schoolroom for many young students who live too far for daily attendance at their nearest school.

Isolated Children's Parents' Association of Australia, Federal Council

The rollout of high-speed broadband will significantly improve the reach, availability and quality of education services in regional areas. Telecommunications services play a key role in improving access to all levels of education. Access to and use of digital technologies, particularly at home, can have a positive impact on children's educational results. As ICT has advanced, the traditional 'same-time, same-place' educational model has become just one of several possibilities.

The ability to learn via reliable high-speed internet has specific benefits for regional, rural and remote communities. It helps to:

- > overcome the disadvantage that isolated students face in trying to further their education
- > attract and retain quality teachers in rural areas and provide those teachers with access to continual learning and professional development
- > retain more young people in rural communities as they can be trained locally and provide further skills to the community.

5.18 FINDING—The rollout of high-speed broadband will significantly improve the reach, availability and quality of education services in regional areas.

PRIMARY AND SECONDARY EDUCATION

Our students are going to leave primary school and head off to a myriad of high schools across NSW and Queensland, we must ensure that they are adequately prepared for the ‘digital revolution’ that is taking place in high schools. We can’t have them playing catch up in their early years of high school, some will manage and move their skills beyond what is required but some will feel out of their depth and run the risk of being left behind.

North Star Public School, NSW



Access to high-speed broadband benefits both students and teachers in regional Australia.

Students in high-speed broadband connected households will have more seamless access to reference material, be able to download image-rich documents more easily and they will experience fewer frustrations in online face-to-face interactions with teachers and peers.

For teachers in regional areas it will mean better access to professional development options, continuation of their learning and an improved ability to develop support networks with both metropolitan and regionally-based teachers. Teachers will have new ways to deliver innovative lessons and access to more resources.

In an environment where it is difficult to source teachers and retain them, the NBN offers the potential to reduce turnover in teaching staff in remote communities. Remote won't seem so remote when friends, family and pastoral support are just a videoconference click away.

Furthermore the nature and pricing of the NBN guarantees an increase in collaboration between jurisdictions, schools, teachers and students in the same way email and aeroplanes shrunk the globe in the last century making us more aware of events in a shorter period of time than ever before.

NT Government

Remote schools such as Oodnadatta Aboriginal School will benefit considerably from the introduction of higher bandwidth and more reliable broadband services, such as through more seamless access to online reference material. The limited download capacity of the current service restricts face-to-face communications and image-rich internet browsing. The school is fitted out with videoconferencing equipment but staff and students are not able to use it as the bandwidth is insufficient.⁹⁰ The committee understands that this is very frustrating.

We have on occasion tried to participate in these events [that require a higher bandwidth such as videoconferencing] as a whole school. However, the sound and image quality is so poor, interrupted by constant buffering, that students get little or no benefit from these sessions.

Karen Stokes, SA

Oodnadatta Aboriginal School is also a joint partner and lead school in a trade training centre providing education to students around South Australia in cattle station management. The benefits of high-speed broadband will extend to the students and teachers in the trade training centre as well as the school and help provide employment opportunities in the community.

TERTIARY EDUCATION

A lack of access to high-quality educational opportunities can be a barrier to regional students receiving a standard of education comparable to students in metropolitan areas. Where you live should not impact the level of services you are able to access.

The committee considers that the increased availability of high-speed broadband for regional students has the potential to improve their access to high-quality teachers, peers and educational material. It is anticipated that this may result in a greater number of students undertaking tertiary education courses.

Vocational education and training contributes to the prosperity and wellbeing of regional Australians. Around 1.8 million students were enrolled in the public Vocational Education and Training system in 2010.⁹¹ One issue brought to the attention of the committee is the difficulties that interstate students have accessing vocational learning in other states and territories. Cross-jurisdictional e-learning is not encouraged by the present model as funding is not provided for out-of-state students engaged in interactive distant learning with their vocational institution.



TAFE SA students, Naomi Kelm and Kaylah Sawtell, undertaking business studies via the Flexible Learning Options [FLO] face-to-face online learning system.

Given the potential that the NBN presents to increase regional student participation in online vocational studies, the committee finds that the current arrangements for cross-jurisdictional vocational studies should be reviewed, with a view to removing barriers such as the need for out-of-state students to pay full fees.

5.19 FINDING—Issues such as TAFE funding formulas limit the capacity for students within the same state or cross-border, to access vocational courses online.

5.11 RECOMMENDATION—The work program of the National Digital Productivity Council of Experts in regional service delivery should include identifying systemic barriers to e-learning and cross-border vocational training.

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Appendices



APPENDIX 1

RECOMMENDATIONS AND FINDINGS

- 2.1 **RECOMMENDATION**—The new consumer safeguard arrangements should be closely monitored to ensure that they are achieving their purpose and, if required, any refinements over time can be identified and implemented to minimise any difference in service delivery.
- 2.2 **RECOMMENDATION**—The committee recommends that carriers commit to improving permanent repair time frames through an industry code of practice. If industry commitment to improvements in this area is not agreeable or forthcoming, the government should consider additional regulation in this area.
- 2.3 **RECOMMENDATION**—The government should develop and implement a comprehensive communication strategy to raise awareness of consumer safeguards for people in regional Australia.
- 2.4 **RECOMMENDATION**—That the government and Telstra, as the current USO provider, commit to maintaining at a minimum the current quality of service for non-copper USO standard telephone services in NBN Co non-fibre served areas.
- 2.5 **RECOMMENDATION**—The government should continue the provision of Untimed Local Calls in the Extended Zones.
- 2.6 **RECOMMENDATION**—There should be a continuation and expansion of the Indigenous Communications Program, with sufficient flexibility to allow for tailored localised training and digital literacy solutions. The program should include a trial of wi-fi hotspots using selected community phones.
- 2.7 **RECOMMENDATION**—The ACMA and DBCDE should report on the status of remote Indigenous communities in respect of telecommunications to monitor the digital divide, including through the collection of data on availability, take-up and usage.
- 2.8 **RECOMMENDATION**—That the Standing Council on Police and Emergency Management note the committee’s finding on unresolved communications deficiencies in vulnerable areas.
- 2.9 **RECOMMENDATION**—The ACMA should explore the feasibility of making 000 access a condition for a satellite carrier obtaining and/or maintaining a carrier license.

- 2.10 RECOMMENDATION**—Major telecommunications providers, such as Telstra, Optus and NBN Co, should work with local government emergency management planners to identify critical infrastructure priorities and communications challenges that could affect local emergency warning systems and emergency responses.
- 3.1 RECOMMENDATION**—DBCDE should be funded to develop a methodology, conduct audits and report on problem mobile phone coverage areas in response to complaints from the public.
- 3.2 RECOMMENDATION**—The committee recommends a co-investment program, jointly funded by the Commonwealth and interested states or territory governments, to expand the mobile coverage footprint in regional Australia, focusing on priority regions selected with community input. Open-access arrangements for other carriers to tower infrastructure and/or domestic roaming arrangements should be a feature of the program.
- 3.3 RECOMMENDATION**—The government should continue the Satellite Phone Subsidy Scheme.
- 4.1 RECOMMENDATION**—The principle of a uniform national wholesale price for like services across technology platforms is essential on an equity basis and should be a fundamental tenet of future policy in this area.
- 4.2 RECOMMENDATION**—Industry, through the Communications Alliance and in collaboration with ACCAN, should develop materials to assist customers in making informed choices about NBN broadband products.
- 4.3 RECOMMENDATION**—The ISS should be reviewed to determine whether there is scope to allow remote schools, health facilities and Indigenous communities to apply for the ISS.
- 4.4 RECOMMENDATION**—The committee recommends that, as a priority, clear information about the ISS and the long-term satellite solution should be provided to people and organisations in areas that will be served by satellite. There will be benefits in developing case studies that demonstrate, in real life situations including shared connections, the range of broadband applications that can be used effectively over satellite technology.

- 4.5 **RECOMMENDATION**—NBN Co should engage with mobile carriers about using NBN fixed-wireless towers to also improve mobile coverage.
- 4.6 **RECOMMENDATION**—NBN Co should:
- Consider community reference groups as a means of gathering local community input and advice on the network rollout.
- Actively seek opportunities for collaboration with state and territory governments to achieve better results or efficiencies in the network rollout.
- 4.7 **RECOMMENDATION**—NBN Co should develop a clear network extension policy. NBN Co's network extension policy should make provision for community contributions.
- 4.8 **RECOMMENDATION**—The government should work with industry and NBN Co towards ensuring at least an equivalent quality of broadband service is available under the NBN as was available prior to the NBN.
- 4.9 **RECOMMENDATION**—The provision of fibre access points offers future opportunities for communities passed by backhaul infrastructure. NBN Co should include additional fibre access points in any future provision of backhaul.
- 5.1 **RECOMMENDATION**—It is critically important to better understand the economic, social and workforce participation challenges faced by vulnerable and disadvantaged groups. The ACMA should develop metrics and collect data on these challenges, including the contribution improved access to high-speed broadband could make to increasing the workforce participation of these groups.
- 5.2 **RECOMMENDATION**—To provide practical assistance to improve digital literacy in regional Australia, the government should expand the Digital Hubs program into additional regional areas, not limited to NBN release sites.
- 5.3 **RECOMMENDATION**—Not-for-profit organisations should be supported to work together to strengthen their digital literacy capabilities and develop local strategies to take advantage of the digital economy.
- 5.4 **RECOMMENDATION**—DBCDE, in conjunction with the Department of Regional Australia, Local Government, Arts and Sport, should raise awareness about digital economy benefits as well as the emerging opportunities for regional communities.

- 5.5 RECOMMENDATION**—A National Digital Productivity Council of Experts in regional service delivery should be established to ensure significant digital productivity issues are addressed and to provide a formal coordination mechanism for the Commonwealth, states and territories.
- 5.6 RECOMMENDATION**—Regional Development Australia committees, in conjunction with local councils, should develop digital economy plans for their regions and identify digital economy champions. Cooperation in developing these digital economy plans should be sought from other local and regional institutions such as universities and national organisations such as the CSIRO and National ICT Australia.
- 5.7 RECOMMENDATION**—To enhance the digital literacy and preparedness of regional small businesses, the Digital Enterprise program should be expanded into additional regional areas not limited to NBN release sites. DBCDE should also work with state and territory governments to encourage businesses to participate more fully in the digital economy.
- 5.8 RECOMMENDATION**—The government should work with the agriculture sector to encourage the sector to develop digital strategies. These strategies should include how best to deliver specific training opportunities and demonstration sites.
- 5.9 RECOMMENDATION**— To increase the capacity of local governments in regional and remote areas to take advantage of digital technologies for the provision of a wide range of services online, the Digital Local Government program should be expanded into additional regional areas not limited to NBN release sites.
- 5.10 RECOMMENDATION**—The National Digital Productivity Council of Experts in regional service delivery should develop joint strategies and mechanisms for more systemic adoption of telehealth in regional Australia. The council should consider the lessons learnt from previous telehealth trials and also assess possible barriers to telehealth adoption such as access technology limitations, interoperability, the need for a national telehealth directory and the digital literacy of GPs.
- 5.11 RECOMMENDATION**—The work program of the National Digital Productivity Council of Experts in regional service delivery should include identifying systemic barriers to e-learning and cross-border vocational training.

- 2.1 **FINDING**—People in rural and remote areas rely heavily on fixed-line services but the remote area benchmarks are not being met as often as they are in other areas.
- 2.2 **FINDING**—There is a clear concern around temporary repairs to fixed-line services that are not made permanent, which is not being satisfactorily addressed.
- 2.3 **FINDING**—The removal of USO payphones is a concern especially in areas that do not have mobile phone coverage or have limited public internet access.
- 2.4 **FINDING**—The new USO arrangements should lead to better consultation and appeals processes for the removal of payphones.
- 2.5 **FINDING**—Monitoring of payphone fault repair times, particularly in rural and remote areas, should be included as part of recommendation 2.1.
- 2.6 **FINDING**—There is a lack of awareness in regional Australia about the USO reforms and many people in NBN non-fibre served areas are concerned about losing access to their fixed-line services.
- 2.7 **FINDING**—The committee believes that the new USO arrangements will provide the necessary consumer safeguards for the existing copper network in the NBN non-fibre areas. However, it is not clear what arrangements are in place for maintaining or replacing non-copper network assets in the NBN non-fibre footprint, such as HCRC.
- 2.8 **FINDING**—The committee supports the work the ACMA is undertaking in the area of improved customer service and improving industry consumer practices, including the ongoing implementation of the findings of the ‘Reconnecting the Customer’ report.
- 2.9 **FINDING**—To assist regional consumers to make an informed choice about the telecommunications products and services that best suit their needs, there must be clear, relevant and accurate information made available.
- 2.10 **FINDING**—The TIO should have an ongoing role in identifying, monitoring and responding to concerns that are specific to regional, rural and remote consumers.
- 2.11 **FINDING**—A digital divide exists between Indigenous and non-Indigenous Australia. The committee believes bridging this divide is critical if Indigenous people are to be afforded the same economic, social and cultural opportunities

to enjoy the digital economy as the rest of Australia. The committee believes that there is a clear policy case for sustained intervention in this area.

- 2.12 FINDING**—Increased training and support is needed to ensure that Indigenous Australians are maximising the benefits of internet access. The committee believes that a greater emphasis on tailored training and support material will enable increased digital literacy.
- 2.13 FINDING**—There is strong community concern that many of the communications deficiencies, which became clear in the aftermath of the Victorian bushfires and Queensland floods, appear to remain unresolved.
- 2.14 FINDING**—The suite of telecommunications tools needed to contact people in emergency situations should be a key feature of both individual and regional disaster management plans.
- 2.15 FINDING**—The effectiveness of the Emergency Alert to mobile phones initiative is limited by the mobile coverage in an area. Some peri-urban residential areas, popular tourist spots and highways do not currently have mobile phone coverage. This reinforces the critical importance of having a suite of communication tools to convey emergency warnings.
- 2.16 FINDING**— There are concerns that people will not be able to contact 000 from their satellite phones during emergencies. As satellite phones are commonly used as emergency devices, it is essential to eliminate barriers to making 000 calls.
- 2.17 FINDING**—The provision of temporary communications infrastructure is vital to community recovery efforts after emergencies and natural disasters. The deployment of this type of infrastructure should feature in the recovery element of disaster management planning.
- 3.1 FINDING**—Mobile coverage information provided by carriers can be prone to misinterpretation and frustrating for consumers.
- 3.2 FINDING**—DBCDE should develop the capacity to monitor technologies that have the potential to expand mobile phone coverage.
- 3.3 FINDING**—In many of the committee’s consultations, regional and remote Australians acknowledged and appreciated the benefits of mobile devices and wanted to be able to use this technology in their everyday lives. Mobile communication is considered essential for people to run businesses, work

in remote areas, to encourage tourism and growth, and to have reliable communications in emergency situations.

- 3.4 **FINDING**—Poor mobile phone coverage affects business productivity and limits the ability of regional businesses to fully participate in the digital economy.
- 3.5 **FINDING**—Satellite phones will continue to play a valuable role in providing mobile services in remote Australia.

- 4.1 **FINDING**—The NBN is by far the most significant government commitment to improving telecommunications in regional Australia. There is a genuine desire across regional Australia for access to faster, more affordable and more reliable broadband services.
- 4.2 **FINDING**—The commitment to a uniform national wholesale price is of great significance to regional Australians, particularly those in areas where competition in the broadband market has not previously been present.
- 4.3 **FINDING**—To assist consumers to make an informed choice about NBN broadband products and services that best suit their needs, there must be clear, relevant and accurate information available.
- 4.4 **FINDING**—A five-year indicative plan from NBN Co would assist in telecommunications infrastructure planning.
- 4.5 **FINDING**—The NBN Interim Satellite Service (ISS) offers an immediate improvement in high-speed broadband availability to people and businesses in regional Australia.
- 4.6 **FINDING**—When the new Ka-band satellites become available in 2015, as per NBN Co's commitment, this will be a very positive development for rural and remote Australians.
- 4.7 **FINDING**—The construction of towers for the NBN's wireless network may also provide an opportunity to improve mobile coverage in regional areas.
- 4.8 **FINDING**—There are no in-principle reasons why the NBN Co network extension policy should not also include extensions to the fixed-wireless network.
- 4.9 **FINDING**—A significant number of regional consumers who have an existing ADSL service are likely to prefer to keep that service rather than taking up an NBN satellite service.

- 4.10 FINDING**—There is a commitment from Telstra to continue to provide ADSL services over the copper network in non-fibre NBN areas where practicable, but there is no regulatory requirement for this to occur.
- 4.11 FINDING**— There has been a significant Australian Government investment in backhaul in regional Australia since 2008. Nextgen’s network is providing significant economic benefits for communities covered by its backhaul.
- 5.1 FINDING**—Affordability of internet services for people on low incomes is a major hurdle to participation in the digital economy. It is important that the ACMA continues to measure this.
- 5.2 FINDING**—There are vulnerable and disadvantaged individuals and groups in regional Australia with digital literacy needs, which would benefit from targeted ICT training.
- 5.3 FINDING**—Not-for-profit organisations would benefit from support to strengthen their digital literacy capabilities and help them work together to develop local strategies to take advantage of the digital economy.
- 5.4 FINDING**—In some regional areas and sectors there is not a high level of awareness about the benefits of the digital economy.
- 5.5 FINDING**—As digital productivity is critically important to the Australian economy, there is a need for a formal coordination mechanism for the Commonwealth, states and territories.
- 5.6 FINDING**—Some regions are better prepared and resourced than others to exploit the digital economy. To address this at the local level, priority actions should include developing regional digital economy plans and identifying local digital champions.
- 5.7 FINDING**—Regional digital economy plans should include strategies to address practical challenges, such as a lack of IT professionals in some rural and remote areas.
- 5.8 FINDING**—High-speed broadband is not the only infrastructure needed to encourage people to relocate to regional areas. However, where high-speed broadband is not available, it is a major disincentive to relocating to the area. The ubiquitous rollout of the NBN will remove what is currently a major barrier to regional economic development and diversification.

- 5.9 **FINDING**—Teleworking arrangements offer significant opportunities for workers and small businesses in regional Australia.
- 5.10 **FINDING**: Access to high-speed broadband will assist regional areas to attract businesses that could only previously have been located in major metropolitan cities.
- 5.11 **FINDING**—Many regional businesses are not prepared to take advantage of the opportunities, applications and services that will arise with high-speed broadband infrastructure.
- 5.12 **FINDING**—Areas of the farming sector are already fully exploiting the opportunities of the digital economy. However, there are many agricultural enterprises that could better engage in the digital economy.
- 5.13 **FINDING**—The committee strongly supports the provision of online government services. Agencies need to be aware that many regional Australians do not currently have the ability to conduct online transactions due to the poor quality of their internet services, low levels of digital literacy and a lack of affordable high-speed broadband.
- 5.14 **FINDING**—High-speed broadband could enhance the opportunity for local government organisations in more remote areas to act as agents to deliver, or facilitate access to, Commonwealth, state and territory government services.
- 5.15 **FINDING**—Electronic health records for healthcare providers will provide improved continuity-of-care for regional patients. The committee finds that the NBN will support the implementation of the PCEHR initiative in regional Australia.
- 5.16 **FINDING**—The committee supports the federal government, in collaboration with the states and territories, taking the lessons learnt from telehealth trials and developing joint strategies and mechanisms for more systemic adoption in regional Australia.
- 5.17 **FINDING**—The committee supports COTA WA's view that access to e-health technology is of vital importance to Australia's ageing population, particularly in regional areas.
- 5.18 **FINDING**—The rollout of high-speed broadband will significantly improve the reach, availability and quality of education services in regional areas.
- 5.19 **FINDING**— Issues such as TAFE funding formulas limit the capacity for students within the same state or cross-border, to access vocational courses online.

APPENDIX 2

LIST OF SUBMISSIONS

Aboriginal Medical Services Alliance NT	NT
Aged and community services Australia	National
Agforce Queensland	Qld
Alexander, Lester	NSW
Allen, W	Qld
Anonymous 1	NSW
Anonymous 2	NSW
Anonymous 3	NSW
ARC Centre of Excellence for Creative Industries and Innovation, Swinburne University of Technology	Vic
Atherton, Adrian	NSW
Australian Broadcasting Corporation	National
Australian Communications Consumer Action Network (ACCAN)	National
Australian Computer Society Nth Qld Chapter	Qld
Australian Private Networks	National
Balranald Shire Council	NSW
Barwick, Jim, Joy, Sam, Amanda	NSW
Bass Coast Shire Council	Vic
Beilby, Vivien	NSW
Bishop, Elizabeth	Qld
Bland Shire Council	NSW
Booroowa Council	NSW
Bottomley, Bill	Qld
Bowles, Marcus	Tas
Bracey, Rhonda	WA
Bridge, Phil	Qld
Brown, Julie	Qld
Burbidge, Ted	WA
Burges, Joanne WA Local Gov Association	WA
Burke, Sharon	NSW
Business Kerang	Vic
Campbell, Liam	NT

Cape York Digital Network	Qld
Cardwell District Community Association Qld	Qld
Carlyle, Jackie	Qld
Central Goldfields Shire Council	Vic
Central Local Government Region of South Australia	SA
Centre for Appropriate Technology (CAT)	NT
Childs-van Wijk, Carl and Linda	Tas
Clarke Creek Community Reference Group	Qld
Communities of Hatfield and Clare	NSW
Connecting Up Australia	National
Corrigan, Tracey	Tas
Coulton, Mark MP	NSW
Council of Australian University Librarians	ACT
Council of the Ageing WA	WA
Country Women's Association (North Star Branch)	NSW
Cowley, Dr James	NSW
Cripps, Sally	Qld
Croft, Stuart	Vic
Dallimore, Christine	NSW
Davies, Craig	Vic
Dawson, Elise	NSW
Debbage, Dawn	NSW
Delbridge, Pamela	NSW
Denton, Noel	Vic
Diebert, Bertha	Qld
District Council of Loxton	SA
Dixon, John	NSW
Dornauf, Jenny	Tas
Dray, Graeme	NSW
Duncombe, Neil & Lee	NSW
Edwards, Gay	Vic
Edye, John	NSW
Evans, Carol	Qld
Fairleigh, Alison	Qld
Farris, Michael	NSW
Fenley, Kim	NSW
Finley Pastoral Co	NSW
Francis, Margaret	NSW

Gelmi, Alan	WA
Get Connected	Tas
Gibson, Robert	NSW
Gladstone Regional Economic Partnership	Qld
Glasson, Susan (Yaraka Sports and Progress Association)	Qld
Government of Norfolk Island—Hon Andre Nobbs MLA	Norfolk Island
Graham, David	NSW
Greater Shepparton City Council	Vic
Greenvale Progress Association	Qld
Gutzinger, Maria	NSW
Hackney, Ray	NSW
Hainsworth, Kylie	NSW
Harle, Rob	NSW
Harris, Alan	NSW
Harris, David	NSW
Harrison, Steven	NSW
Harwood, Ann	NSW
Healy, Dot	NSW
Herman, Narelle	NSW
Hick, Wendy	Qld
Hicks, Sam	Vic
Hindmarsh, Chauntelle	NSW
Hoore, Russell	NSW
Houston, Anthony	Qld
Huawei	National
IBES—Institute for a Broadband-Enabled Society	Vic
Ingles, Bob	NSW
Isolated Children’s Parents’ Association of Australia (ICPA)—Federal Council	National
Isolated Children’s Parents’ Association of Australia (ICPA)—WA Branch	WA
Indigenous Community Television	NT
Indigenous Remote Communications Association—IRCA	NT
Isaac Regional Council	Qld
Isolated Children’s Parents’ Association of Australia (ICPA)—Qld	Qld
Jakab, Ferec and Cheryle	Vic
Kane, Anne-Marie	NSW
Keele, N. J.	NSW
Killarney Memorial Aged Care	Qld
King Ash Bay Fishing Club Inc.	NT

Kinnear, Graham	NSW
Kitzelmann, Clarry	Qld
Knight, Helen	NSW
Laidlaw, Thea	Vic
Lambell, Allan	NSW
Landholders	NSW
Lane, Martin [Martin Lane Design]	NSW
Leskie, Brian	Vic
Levy, Christopher	NSW
Lincoln, Jane	Qld
Longmore, Graham	Vic
Marchant, John and Irja	NSW
Martin, Robert	National
McCormack, Michael	NSW
McCoy, Delcie	NSW
McDonell, Peter	NSW
McDouall, Linda and Garry	NSW
McGrath, Valerie	NSW
McLennan, Anne	SA
Mildura Development Corporation	Vic
Mingoola Progress Association	Vic
Mitchell, Alan and Kerry	NSW
Moe and District Residents Association	Vic
Moore, Howard	NSW
Murray Shire Council	NSW
Murrindindi Shire Council	Vic
Murrindindi Woodbourne Community	Vic
Naracoorte Lucindale Council	SA
National Farmers Federation	National
Nicholas, A and J	NSW
Noble, Janet	NSW
North Star Public School	NSW
North Star Public School P and C Association	NSW
NSW Dept Trade and Investment	NSW
NSW Farmers Association	NSW
NSW Young Lawyers Bushweb Regional Issues Committee	NSW
NT Government	NT

Odfeldt, Lesley	Tas
Optus	National
Osbourne, Julie and Keith	NSW
Parbery, Carole	NSW
Pastoralist Graziers Assn WA	WA
Pastoralists Association of West Darling	NSW
Pedersen, Arne	Qld
Perglut, Don	NSW
Peters, Robert	Qld
Phillippe, Bob	NSW
Phillips, Anthony	Vic
Phillips, Wayne	SA
Physical Disability Council of NSW	NSW
Plate, Adam	SA
Puris, G.A.	NSW
Rannesberger, Caroline	Tas
RAPAD—Remote Area Planning and Development Board—Qld	Qld
RDA Far West	NSW
RDA Hume	Vic
Richard, Carole	NSW
Robinson, Dale	WA
Roe Suzy	NSW
Rowe Dick	Qld
Rumens Marian	Qld
Russell, Lynette	NSW
SBS	National
Schinkel, Maurice	Vic
Schwarz, John and Jenny	SA
Seiler, Tom	Qld
Sellwood, Suelen	Qld
Shire of Mt Marshall	WA
Sky, Krystle	NSW
Smith, Christine	NSW
Smith, Richard	NSW
Somerset, Robert and Georgie	Qld
South Australian Farmers Federation	SA
South Burnett Regional Council	Qld

South East Local Government Association	SA
Spedding, Patrick	NSW
Spencer, Raymond	Qld
Standfield, Rosanne	NSW
Stokes, Karen	SA
Stuart, Janet	NSW
Suter, Allan [Mayor]	SA
Syred, Jason	WA
Tan, Ian	
Tandou Limited	NSW
Tanswell, Jeffrey	Qld
Tasmanian Government	Tas
Telecommunications Industry Ombudsman	National
Telfer, Joshua	SA
Telstra	National
Thales	National
The Council of the Shire of Bourke	NSW
Thomas, Sandy	NSW
Thompson, John	Tas
Ungarra and district progress association	SA
Vieira, Daniel	NSW
Voss, Anja and Burkhard	Tas
WA Country Health Service	WA
Waite, Yvonne	Vic
Walsh, Peter	NSW
Weatherall, Ruth	NSW
Western Australian Farmers Federation	WA
Wheatbelt Development Commissions WA	WA
Wheeler, Ian	WA
White, Don and Rosie	NSW
White, Judy	NSW
Whitting, Bob	NSW
Wood, Rosemary	NSW
Woodfield, Judith	NSW
Yarra Ranges Council	Vic
Victoria Daly Shire Council	NT
Victorian Government	Vic

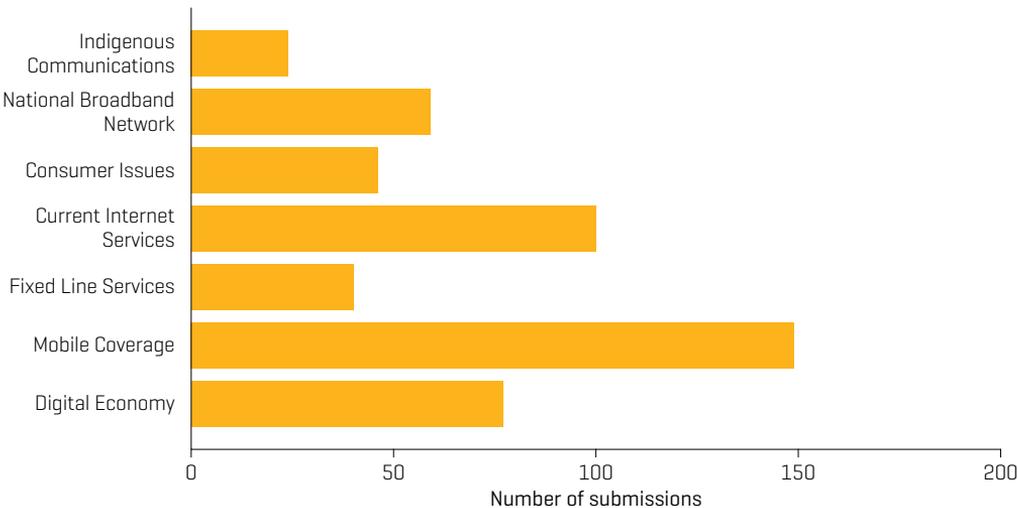
APPENDIX 3

SUBMISSIONS RECEIVED BY THE COMMITTEE

The committee received 222 submissions in total. Eight of these submissions were classified as confidential and are not included in the list below.

The website for the 2011–12 Regional Telecommunications Review went live on 7 July 2011. Since then it has had 7618 unique visitors and 220 882 page views (as at 14 February 2012).

SUBMISSIONS BY MAIN ISSUES



APPENDIX 4

CONSULTATION PROGRAM

The committee conducted public meetings in 20 locations in regional and remote Australia, as well stakeholder meetings in all capital cities.

Location		Date
Queensland	Toowoomba	19 September
	Gladstone	15 November
	Brisbane	16 November
	Townsville	17 November
	Mount Isa	18 November
New South Wales	Moree	19 September
	Bourke	20 September
	Sydney	25 October
	Kiama	27 October
	Killcare	9 December
	Lismore	13 December
Northern Territory	Darwin	26 September
	Katherine	27 September
Western Australia	Kununurra	28 September
	Perth	21 & 23 November
	Kalgoorlie	22 November
Victoria	Melbourne	4 October
	Moe	5 October
	Kinglake	6 October
	Mildura	10 November
South Australia	Oodnadatta	2 November
	Ceduna	3 November
	Adelaide	4 November
	Berri	11 November
Tasmania	Hobart	14 November
	Launceston	16 November
	Burnie	16 November

APPENDIX 5

COMMITTEE MEMBERSHIP



Ms Rosemary Sinclair

Ms Sinclair held a range of senior management positions with Telecom Australia, including Manager of Commercial Operations NSW and National General Manager of Communications Accounts. She was the Director of Strategic Development for the Australian Broadcasting Corporation and Director of Technology and Corporate Services for ABC Radio. From 2001, Ms Sinclair was the Managing Director of the Australian Telecommunications Users Group and has recently taken up the role of Director of External Relations at the Australian School of Business, University of New South Wales. She is based in Sydney.



Mr Warren McLachlan

Mr McLachlan is a beef cattle producer based in Monto, Queensland. He has served on two local government authorities and has held executive positions at both state and national levels in the Cattlemen's Union of Australia. Mr McLachlan previously served as an independent non-executive Director of Queensland Rail and as a board member of the Gladstone Port Authority.



Mr Robin Eckermann

Mr Eckermann is the principal of Robin Eckermann & Associates Telecommunications Consultants and an Adjunct Professor at the University of Canberra. In his previous role as TransACT's Chief Architect Mr Eckermann pioneered open network principles that have since become widely adopted. He has also been Vice President at Smart Grid Australia and Federal Region Manager at Techway Limited. Mr Eckermann

provides advisory services in the field of advanced broadband infrastructure and services to clients throughout Australia and overseas.



Ms Heron Loban

Ms Loban is a Law Lecturer at James Cook University. Formerly, she chaired the Indigenous Consumer Assistance Network, an organisation that provides consumer education, advocacy and financial counselling assistance to Indigenous consumers across Australia. Ms Loban is a former member of the Australian Communications Consumer Action Network Board. Ms Loban is based in Cairns.



The Hon. Kim Chance

Mr Chance is the chair of the Australian Landcare Council. He was the Western Australian Minister for Agriculture and Food and Minister for Forestry from 2001 to 2008, Minister for Fisheries from 2001 to 2005 and the lead Minister for Natural Resource Management. He was the Shadow Minister for Primary Industry from 1994 to 2000. Mr Chance is based in Millendon, Western Australia.



Mr Alun Davies

Mr Davies was formerly the Infrastructure Manager of Telstra Country Wide in the New England area, a position he held for eight years. He is a regional communications advocate and is the head of the National Broadband Network Workgroup New England. Mr Davies is based in Armidale, New South Wales.

APPENDIX 6

ACRONYMS

AARNet	Australian Academic Research network
ABG	Australian Broadband Guarantee
ACCAN	Australian Communications Consumer Action Network
ACCC	Australia Competition and Consumer Commission
ACMA	Australian Communications and Media Authority
AMTA	Australian Mobile Telecommunications Association
BTRE	Bureau of Transport and Regional Economics
COTA WA	Council of the Ageing Western Australia
COW	Cell on Wheels
CSG	Customer Service Guarantee
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DBCDE	Department of Broadband, Communications and the Digital Economy
DRI	Digital Regions Initiative
FTTP	Fibre to the premise
GDP	Gross Domestic Product
ICP	Indigenous Communications Program
ICT	Information and Communication Technology
ISS	Interim Satellite Service
MBS	Medicare Benefits Schedule
MEOW	Mobile Exchange on Wheels
NBN	National Broadband Network
NRF	Network Reliability Framework
OECD	Organisation for Economic Cooperation and Development
PCEHR	Personally Controlled electronic Health Records
RACGP	Royal Australian College of General Practitioners
RBBP	Regional Backbone Blackspots Program
RDA	Regional Development Australia
RMCP	Regional Mobile Communications Project
RTR	Regional Telecommunications Review
SPSS	Satellite Phone Subsidy Scheme
TCP	Telecommunications Consumer Protection
TIO	Telecommunications Industry Ombudsman
TRA	Tourism Research Australia
TUSMA	Telecommunications Universal Service Management Agency
USO	Universal Service Obligation

GLOSSARY

3G

Third generation mobile telecommunications systems that can provide global mobile communications and support multimedia applications.

ADSL (Asymmetrical Digital Subscriber Line)

A transmission method allowing high data rate communication over existing copper wires. The downstream data (data downloaded by a user) transmission rate is much higher than the upstream data rate.

Backhaul

The mid-to-long-distance transport of data from a series of disparate locations back to a more centralised location.

Bandwidth

The capacity of a connection to carry information. It is usually measured in kilobits, megabits or gigabits per second.

Broadband

The term used to refer to ‘always on’ high speed internet. Today broadband is commonly associated with the speeds equal to or greater than those provided by ADSL.

Copper

Copper is a common telecommunications infrastructure for the “last mile” in Australia. Copper wiring enables information to be sent in the form of electrical currents.

Digital economy

Economic activity that is enabled by the use of information and communications technology.

Digital Enterprise program

The Australian Government will provide \$10 million in grant funding to progressively establish a Digital Enterprise training service in each of the 40 communities that will first benefit from the NBN.

The Digital Enterprise program provides free information and training sessions to small-to-medium enterprises (SMEs) and not-for-profit organisations (NFPs), including local cultural organisations.

Digital Enterprise training will help businesses and organisations to better understand how they can take advantage of online opportunities, particularly those enabled or enhanced by the NBN.

Digital Hubs program

The Australian Government will provide \$13.6 million in grant funding over three years from 2011–12 to establish a Digital Hubs program that will help communities to gain the skills needed to maximise the benefits provided by the NBN.

The program will establish a Digital Hub in the 40 communities to first benefit from the NBN to provide local residents with online training and the opportunity to experience NBN-enabled services and technology.

Digital Local Government program

The Australian Government's \$17.1 million Digital Local Government program provides funding to local governments in communities that first benefit from the National Broadband Network (NBN).

The program encourages the development of online services that are replicable and scalable, and that other local governments across Australia can adapt for their purposes. It assists local governments to deliver innovative online services—in particular, to homes and businesses. It has the potential to encourage a step change in the quality, availability and speed of local government services.

Femtocell

A femtocell is a small cellular base station for homes or small businesses that extends a carrier's mobile service coverage by using a broadband internet connection.

Fibre-optic communication

Fibre optic communication is a method of transmitting information from one place to another by sending pulses of light through an optical fibre cable. Optical fibre is ideal for systems requiring higher bandwidth or spanning longer distances than electrical cabling.

FTTP (Fibre-to-the-premise)

FTTP uses an extensive network of optical fibre cables reaching all the way to the premises. It has the capacity to handle several devices simultaneously.

Fixed wireless

A type of broadband internet connection that uses radio signals to provide internet access instead of connecting a cable to the home.

Geostationary satellite

A satellite that maintains a fixed location in the sky by orbiting at an altitude of 35,786 kms at the same speed as the earth's rotation.

Latency

Or delay refers to how much time it takes for data to get from one designated point to another.

Satellite

Broadband satellite uses a home radio link and radio dish to bounce a signal off a satellite and down to an earth station. The long-term satellite solution (provided by Ka-band multi-beam satellites) will have significantly greater capacity and capability than earlier generation satellites.

APPENDIX 7

SUMMARY OF PROGRAMS AND POLICIES

Australian Broadband Guarantee (ABG)

The ABG was an Australian Government initiative designed to help residential and small-business premises access high-quality broadband services regardless of where they were located. The program targeted premises unable to access commercial metro-comparable services, particularly those living in remote parts of Australia. The ABG program ended on 30 June 2011. NBN Co Ltd began providing an Interim Satellite Service through its retail service providers from 1 July 2011.

Customer Service Guarantee (CSG)

The CSG provides that telephone companies must pay financial compensation to customers where certain minimum performance standards relating to service connection, fault rectification and appointment-keeping are not met.

A retail CSG performance benchmark was introduced from 1 October 2011 to provide incentives for larger carriage service providers to meet the individual CSG time frames for connecting new services, repairing existing ones and turning up to appointments. The benchmark is that the CSG time frames must be met or exceeded in 90 per cent of eligible cases.

Failure to meet the benchmarks will expose service providers to substantial civil penalties. The current CSG standard time frames for fault repairs, once the provider has been notified, are;

- > urban areas—within one working day
- > rural areas—within two working days
- > for remote areas—within three working days.

Extended Zones

Extended Zones are large regional call zones that lie outside of Telstra's standard local call zones. They are sparsely-populated and geographically-diverse.

Under sections 107(6) and (6A) of the *Telecommunications (Consumer Protection and Service Standards) Act 1999* (the Act) the Minister for Broadband, Communications and the Digital Economy is obliged to ensure that, at all times, there are regulations or other arrangements in place that provide customers in the Extended Zones with access to untime local calls.

In 2011 the Australian Government and Telstra signed the 'Agreement for the provision of untimed local calls, untimed internet access and other carrier services to Extended Zones'. This ensures that customers calling fixed-line services located in their own and adjacent Extended Zones will be charged at untimed local call rates. Under this agreement, the maximum price that can be charged for an Extended Zone untimed local call cannot exceed the maximum price for a local call as set out in the Price Control Determination. Under the current Price Control Determination, this maximum rate is 22 cents and 50 cents from a public payphone.

The original Extended Zones agreement expired in May 2011. However the Department of Broadband, Communications and the Digital Economy negotiated a new agreement with Telstra to continue to provide untimed local calls in the Extended Zones through to 30 June 2012.

The existing arrangements for the provision of untimed local calls in the Extended Zones are being considered as part of the ACCC/DBCDE Review of Retail Price Controls.

Interim Satellite Service (ISS)

NBN Co's ISS was launched 1 July 2011 and has been available to eligible individuals, small businesses and Indigenous communities on the mainland and across Tasmania, with the first priority given to those eligible customers who currently have no alternate access to commercial broadband services.

This service is designed to provide a transition from the ABG program previously managed by the Department of Broadband Communications and Digital Economy.

Further information on the ISS is at:

www.nbnco.com.au/our-network/fibre-wireless-satellite/satellite.html

NBN and associated reforms

In September 2010 the Australian Government announced its Commitment to Regional Australia. This commitment ensures that regional areas are prioritised during the NBN rollout and that NBN Co brings forward to regional Australia the introduction of wireless and satellite services. The commitment also ensures that wholesale broadband prices are the same for households and businesses regardless of where they are located.

In November 2010, the *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010* was passed by parliament. The Act provides for enhanced competitive outcomes in the Australian telecommunications industry and strengthens consumer safeguards.

The Act provides a framework for Telstra to voluntarily separate its wholesale business from its retail business with the objective of providing increased certainty to Telstra, other

telecommunications providers and consumers. The separation will create a level playing field and enable competition and investment to flourish for the benefit of consumers. Encouraging stronger and more widely available retail competition in regional Australia is of great importance and should not be underestimated.

The Act also enables the minister to make a number of instruments to strengthen consumer safeguard measures relating to the Universal Service Obligation (USO), the CSG, and payphones.

As part of the transition to the NBN, on 23 June 2011 the government announced it had reached an agreement with Telstra to ensure that all Australians will continue to have access to basic telephone services. Subject to the passage of legislation, from 1 July 2012 a new government entity, the Telecommunications Universal Service Management Agency (TUSMA), will manage the new universal service agreement. Under the terms of the new agreement, Telstra will continue to be subject to strong standards and benchmarks for the provision of the USO for voice and payphone services.

On 2 November 2011, the Minister for Broadband, Communications and the Digital Economy introduced a package of reforms to the USO into parliament. This package of bills passed the House of Representatives on 8 February 2012. This three-bill package will deliver both continued telecommunications safeguards for all Australians and certainty for the telecommunications industry as the NBN is rolled out.

Network Reliability Framework (NRF)

The NRF is monitored by the ACMA and provides information on the general reliability of the Telstra network. The NRF addresses the areas of worst performance, with a primary focus on customers who experience ongoing problems with recurring faults.

Through the NRF, Telstra is required to identify and fix the 40 lowest-performing cable runs each month, ranging from regions to individual phone services. Telstra is also required to take action to prevent any service from experiencing more than three faults in any rolling 60-day period or more than four faults in any rolling 365-day period.

Reforms affecting the Universal Service Obligation (USO) and other consumer safeguards

The objective of the USO is to ensure that standard telephone services and payphones are reasonably accessible to all people in Australia. Currently, Telstra is the primary universal service provider and is required to fulfil the USO.

The rollout of the NBN will result in a fundamental change to the structure of the Australian telecommunications market as Telstra's near-ubiquitous copper customer access network is gradually decommissioned to make way for the NBN's next-generation fibre infrastructure. The NBN will provide an open-access, wholesale-only platform

that will enable service providers to provide broadband and other telecommunications services (including voice services) to all premises in Australia.

These changes have practical implications for the delivery of basic voice services and other public interest services under the USO. Subject to the passage of legislation, from 1 July 2012 there will be a transition from a regulatory approach to an open and competitive contractual model involving a new government agency, the Telecommunications Universal Service Management Agency (TUSMA).

These regulatory reforms included measures to strengthen key consumer safeguards such as the USO for voice and payphones, the Customer Service Guarantee (CSG), and to provide enhanced reporting and enforcement powers to the ACMA. As part of these changes the ACMA can now issue infringement notices to carriers for breaching these safeguards, rather than needing to commence court action. This is a simpler and cheaper enforcement option and aims to increase compliance as the ACMA will now be able to act more quickly to address non-compliance.

Regional Backbone Blackspots Program (RBBP)

To ensure regional areas benefit from the introduction of high-speed broadband the Australian Government introduced the \$250 million Regional Backbone Blackspots Program (RBBP). RBBP is improving the supply of backhaul transmission links and is projected to benefit approximately 400 000 people across six states and territories. Backbone infrastructure (otherwise known as ‘backhaul’ or ‘transmission’ infrastructure) provides the links that connect our towns, cities and rural areas to each other and the wider world.

As a result of the RBBP, 6000 kilometres of optical-fibre cables have now been laid across regional Australia and all lines are operational. The project has increased competition and encourages service providers to offer improved range, quality and prices of broadband services to homes and businesses in more than 100 regional areas.

Satellite Phone Subsidy Scheme (SPSS)

The Australian Government’s SPSS aims to improve the affordability of satellite phones for people living, working or travelling in areas without terrestrial mobile phone coverage by providing subsidies for the purchase of satellite phone handsets. To date, over 18 000 handsets have been subsidised under the scheme. The SPSS is due to end in June 2013. It has experienced a threefold increase in applications; this is generally due to greater awareness of the SPSS and competitive market forces has bolstered consumer demand for more choice around handsets and more flexible plans.

