

2015 Regional Telecommunications Review Secretariat  
Department of Communications  
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The Broadband for the Bush Alliance (B4BA) is a national not-for-profit membership based organisation committed to improving digital inclusion for remote and rural Australians. The Alliance members comprise a group of stakeholders with expertise in communications, remote service delivery and community engagement. It seeks to advance the digital capacity and capability for those who work and live in remote Australia and is dedicated to creating digitally connected and smarter remote communities, using a number of direct action initiatives. These include:

- influence government and policy makers through sustained and persuasive representation;
- publish remote digital policies supported by research;
- educate stakeholders on the digital challenges faced in the bush; and
- undertake projects to digitally advance remote Australia.

More information on the Alliance, its policies and activities can be found at [www.broadbandforthebush.com.au](http://www.broadbandforthebush.com.au)

Our response presents information that draws directly upon the experiences of our members, most of whom live and work in the 3% of the country designated as satellite broadband delivery areas. We also draw the Committee's attention to the Alliance constituency, that is largely focussed on remote Australia, that part of Australia that experiences significantly different digital connectivity issues than regional and rural Australia. The low population demographic, the premium on remote digital infrastructure cost and the distances between towns present challenges radically different to other areas being considered by the Committee.

Remote Australia<sup>1</sup> statistics give a view of the scope of telecommunication challenges:

- Remote Australia covers 80% of the Australian landmass, using the definition by the Australian Bureau of Statistics;
- About 2.4% of the population live in remote and very remote areas i.e. around 500,000 people (was 324,000 in remote areas and 174,000 in very remote areas<sup>2</sup>);
- About 130,000 Aboriginal and Torres Strait Islander people live in over 1,100 discrete communities across remote Australia;
- Remote areas comprise many diverse settlements, including pastoral, farming, mining, tourism and Aboriginal and Torres Strait Islander communities;
- Half of the population in remote Aboriginal and Torres Strait Islander communities is under 24 years old;
- Aboriginal and Torres Strait Islander employment rates remain low in remote communities with an employment to population ratio of about 45%;

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<sup>1</sup> Remote Australia is defined here as comprising those areas identified as remote and very remote by the ABS Remoteness Structure.

<sup>2</sup> Australian Bureau of Statistics 2010

- Around 45% of Australia's exports come from remote Australia – being \$90 billion (mostly mining);
- Remote Australia makes a significant contribution to national wealth with 60% of the nation's mining platforms operating in Remote Australia;
- There are 40,000 SMEs in remote Australia; and
- 75% of remote Indigenous households have no internet connection -less than in Sudan<sup>3</sup>.

The Alliance brings to the Committee's attention the Alliance's letter to Minister Turnbull dated 27 June 2014, that gave five key issues that the Alliance suggested the RTR should examine. These were:

1. Getting digital infrastructure right (both the rational use of existing infrastructure (fibre, towers etc.) and expanding infrastructure) and incorporate local co-designed approaches to get the best possible outcomes.
2. Remote mobile coverage extension using NBN infrastructure and the introduction of a remote mobile extended zone charging principle.
3. The challenges to the delivery of digital training and support programs for remote areas delivered by community organisations.
4. Ensuring customer service levels and performance are maintained for remote area customers in the NBN environment.
5. Promoting and supporting digital inclusion, including uptake of broadband services by remote Indigenous people. As an example, developing a pre-paid NBN satellite billing model.

We recommend that the effectiveness of the RTR could be significantly increased by expanding its methodology to include the commissioning of independent research, rather than relying predominantly on public consultations and submissions.

I look forward to your continued engagement with remote Australian and the Alliance.

Please contact me directly on 0419 717 485 for further discussion or clarification on issues



Yours sincerely,  
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Chair, Broadband for the Bush Alliance  
Executive Manager Strategy and Innovation, RAPAD

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<sup>3</sup> <http://crc-rep.com/about-remote-australia>

## Preliminary Observation

It is appropriate to briefly discuss the Government's Developing the North agenda, given that a significant proportion of northern Australia consists of remote and very remote areas. In their *Pivot North* report, the Joint Select Committee on Northern Australia recognised that:

*"In a global economy and digitally connected world, the development and provision of affordable, fast and reliable digital technologies is particularly important in regions where distance and access are real challenges. New digital technologies are vital for the growth of businesses and jobs, essential for the expansion of educational opportunities. They will enable research and development, and provide the capacity to improve health care in regional and remote communities. The digital revolution has the capacity to end the tyranny of distance, but only if effective investment in communications infrastructure and digital services is made by governments, industries and communities"*<sup>4</sup>.

The Committee recommended that the Australian Government develop a telecommunications and digital technology strategy specifically for Northern Australia (recommendation no. 21) and that the Australian Government improve access to, speed and reliability of high speed broadband in order to support the development of uses of digital communication technologies in Northern Australia, such as tele-health, e-learning and projects to improve social amenity (recommendation no. 20)<sup>5</sup>. Similarly, the draft National Regional and Remote Transport Strategy also recognises the importance of access to reliable communications for social and economic development and calls for a telecommunications plan for major freight routes<sup>6</sup>.

It is therefore particularly disappointing that the Government's White Paper on Developing the North does not acknowledge this need; instead it simply refers to the NBN and Mobile Black Spots Programme with a clear assumption that the combination of these two programs will be sufficient to provide adequate telecommunications in the north<sup>7</sup>.

**The Alliance does not share this view. More than the NBN and Black Spots Programme is needed to meet telecommunication and digital needs in remote and very remote Australia.**

For remote and rural Australia to participate successfully in the national and global digital economy, it needs a targeted, evidence-based, well-resourced strategy. It must be recognised that policies and strategies aimed at the majority of Australians who live in major cities are not appropriate for remote and rural Australia. In addition to the Government's NBN plans, a strategy aimed at improving communications in remote and rural Australia must:

- Recognise that fixed and mobile services are both equally important parts of the solution;
- Take account of existing communications infrastructure in remote and rural Australia and explore how to best use it, in conjunction infrastructure expansion activities;
- Apply the extended zone approach to mobile calls for greater affordability;

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<sup>4</sup> Commonwealth of Australia. 2014. *Pivot North. Inquiry into the Development of the Northern Australia: Final report*, p178. Retrieved from [www.aph.gov.au/~media/02%20Parliamentary%20Business/.../Final.pdf](http://www.aph.gov.au/~media/02%20Parliamentary%20Business/.../Final.pdf) on 30/6/2015.

<sup>5</sup> *ibid*

<sup>6</sup> Transport and Infrastructure Council. 2015. *National Remote and Regional Transport Strategy: Consultation Draft*, p20. Retrieved via <http://www.transport.nt.gov.au/publications/National-Remote-and-Regional-Transport-Strategy> on 14/7/2015.

<sup>7</sup> Commonwealth of Australia. 2015a. *Our North, Our Future: White Paper on Developing Northern Australia*. p87-88, p152. Retrieved from [https://northernaustralia.dpmc.gov.au/sites/default/files/papers/northern\\_australia\\_white\\_paper.pdf](https://northernaustralia.dpmc.gov.au/sites/default/files/papers/northern_australia_white_paper.pdf) on 7/7/2015.

- Build the capacity of remote and rural Australians to participate effectively with the digital economy; and,
- Develop 'last mile' solutions to meet local needs. Without a dedicated strategy, remote and rural Australia will be left to play 'catch up' with the rest of the world.

It is critical the Federal Government work closely with organisations such as the Broadband for the Bush Alliance to develop a strategy that provides the best communications outcomes for those in remote and rural Australia. **We urge the Committee to acknowledge the need for such a strategy in their Review report.**

## **Broadband for the Bush Alliance**

### **Regional telecommunications Review 2015 responses.**

*Q1. Do people in regional Australia believe their reliance on telecommunications differs from those in urban areas? How does it differ and can you provide examples?*

Reliance on telecommunications does differ from those in urban areas. In remote and very remote areas access to timely services and information relies on digital connectivity whereas city residents usually have alternatives (e.g. daily newspaper delivery, physical libraries, bank branches, post offices and health/allied health services). In remote areas, social networks are more dispersed and there is less opportunity for direct social interaction, requiring more online communications.

Additionally, the continuous transference of services online (such as health, education, training/webinars and Australian Government plan to move online all services that require more than 50,000 transactions per year by 2017), means there is a greater need for quality and diverse broadband access. Governments are moving to online enquiry and service provision<sup>8</sup> and with remote Australia having less (physical) access to government agencies in their towns, telecommunications is and will become more and more a fundamental basic service.

Quality broadband can assist in overcoming vast distances from cities, reduce travel costs and opens up potential goods and services options that are not otherwise available in remote areas. For example in the health and education environs quality telecommunications enables a range of emergency services and medical services not otherwise available, but only if quality, speed and reliability of broadband and voice services is consistent with the requirement of an ever evolving range of applications.

Remote residents tend to be very mobile in their activities and as a population. That is, they are less likely to be house or office-based. Mobile services therefore represent a significant factor in the work environment, in a social environment and in emergency situations (e.g. distress calls, notification to family/friends etc).

Remote Australians generally experience higher telecommunications costs due to lack of competition, a product of market failure. The lack of competitive digital infrastructure limits choice of telecom services and choice of retail service provider. Innovative suppliers such as TPG, iiNet and internode offer restricted product portfolios or do not service many remote regions. Successive government policies and intervention programs have had limited impact on building competitive

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<sup>8</sup> For example, see the Digital Transformation Office. 2015. *Digital Service Standard*. Retrieved from <https://www.dto.gov.au/standard> on 7/7/2015. Those agencies with over 50,000 transactions per year are required to move on line by 2017.

digital infrastructure in remote regions. Recent state government interventions to improve telecommunication infrastructure in their states (e.g. Royalty for Regions grants to telecommunications projects, state government funds for the Mobile Black Spot Programme<sup>1</sup>) clearly demonstrate concern by various jurisdictions that industry investment and federal government initiatives have not given Australians the digital infrastructure they need.

Higher telecommunications costs are exacerbated for remote Australians as they (usually) have only one supplier hence are tied to their pricing and product options. Telstra provides the best coverage. Mobile coverage in many towns and on remote highways is substantially less than well travelled highways (e.g. Bruce Highway or Newell Highway) even though those highways traverse through sparsely populated areas.

Remote Indigenous communities have different needs, household make-up, socio-economic conditions, environmental challenges, and usage patterns to other households in Australia. More community-wide and regional solutions are needed such as WiFi sharing to enable pre-paid services using mobile devices and shared models of access across a region e.g. community wi-fi/byod (bring-your-own-device) models. There is great demand for mobile services in remote and very remote areas as this enables voice, text and internet communications through Smartphones. Recent research led by one of our Alliance members (Swinburne Institute of Technology for Social Research<sup>9</sup>) suggests that Indigenous people in remote areas are more likely to purchase pre-paid mobile internet rather than post-paid fixed broadband services even though this is not the cheapest solution; however it is an easier option in terms of cash-flow management, involves less administrative processes and is more compatible with relatively high levels of mobility.

Other Alliance members have found that there is low digital literacy in most remote communities where English is not the first language, there is limited access to the Internet and ICTS, and lack of relevant content and services. The current IT training and access program being developed (to replace Indigenous Communications Program) is targeted at only 75 communities (out of over 1100), and is grossly inadequate to address the low level of digital literacy in the most excluded group in Australia. However, where access is provided, there is typically rapid uptake of mobile and ICT use. The Government ISS and NSS policies are evidence of underestimated latent demand.

2015 sees the introduction to the mass market of online entertainment (movies, concerts etc). The Alliance has grave concerns over the disparity on data caps being imposed on remote communities nominated for NBN LTSS coverage compared to non-satellite NBN services. Comments by the government heavily suggest strangulation of LTSS basic service data limits to improve satellite performance. This data capping will place serve limitations on remote Australian being 'connected' to entertainment services and enjoying media comparable to city NBN consumers.

The Isolated Children & Parents Association (ICPA) Queensland branch is concerned that controlling the size and price of download plans to limit data usage **must not** compromise the provision of education via the internet to rural and remote students. The Alliance recommends the Committee's report identifies and supports that the LTSS data packages limits do not disadvantage remote education delivery.

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<sup>9</sup> The Committee is referred to the submission titled "*Home Internet in Remote Communities Summary of Findings*", prepared by Swinburne Institute of Technology for Social Research, Centre for Appropriate Technology and Central Land Council.

*Q2. For those users already connected to an nbn network service, has the service met your expectations?*

Regrettably remote Australia, the area that will most benefit from NBN infrastructure, has been left off the early rollout of NBN (e.g. Central West Queensland, Alice Springs) so we are not in a position to comment on the nature and extent of NBN services provided in these remote regions.

**The Alliance suggests that the Committee recommends that NBN publish its roll out schedule for remote towns nominating the year of connection and the technology to be deployed.**

There appears to be no defensible reason why a long term deployment plan cannot be released and then updated regularly. As an example Central West Queensland towns (e.g. Winton, Longreach and Barcaldine) and other regional centres such as Alice Springs have no knowledge of when they will be NBN connected. Such information may prove useful for planning by governments, service providers and businesses.

The Committee should note that for remote Australia, our first experience with the Government NBN (satellite) program was most disappointing. The ISS was over-subscribed and became slow and unreliable, and according to many of the remote users became little better than a dial up connection. It was essentially useless for even the most basic functions such as booking an airfare. Additional capacity was recently added (6000 extra services), but this action has not adequately addressed the need of remote consumers prior to the LTSS availability. The 9000 NSS services provided under NBN Satellite Support Scheme uses a different satellite service provider, service quality, download limit and pricing structure. This was a poor policy decision as it provided an even lower-grade interim service compared to the ISS. Although an interim arrangement, this is inconsistent with the model of NBN providing equitable quality and price of services across Australia.

*Q3. Having regard to the technical solution likely to be used in your area, do you have views on the adequacy of that solution in terms of meeting needs now and into the future?*

The use of word “adequate” and “adequacy” of services is of concern to the Alliance. Should non-city consumers be satisfied with merely “adequate” services not equivalent services (in terms of speed, reliability etc) than city consumers? It can be argued that broadband access and broadband applications are of higher importance to remote residents than city residents, for the reasons outlined earlier in this submission.

The Broadband for the Bush Alliance has serious concerns regarding the Government’s policies and the underlying technological platforms and more specifically:

- the current direction to downgrade consumer protections under the USO (CSG and NRF);
- a failure to recognise that remote Australia needs a long term infrastructure construction program to build a spider web of optic fibre connecting towns. Such a network would meet the long term needs and is essential for deployment of a range of services – mobile, broadband and fixed line. The rapid development of new applications and bandwidth growth is difficult to predict therefore a preference to optic fibre backhaul must dominate policy development. **People in remote and very remote areas should not be “locked into” a single solution (i.e. satellite);**
- incorporation of competitive access into all facets of infrastructure funding assistance to address market failure in remote areas and prevent wasteful infrastructure duplication;
- reduction in provider choice and service choice for remote consumers because the infrastructure is dominated by one owner;

- segregation of programs. For example, the NBN LTSS should facilitate backhaul to increase mobile coverage in remote regions. The LTSS is not currently designed to enable expansion of mobile coverage, which is a key area of demand in remote areas. Mobile providers are likely only to use such an option if the terms and conditions offer a business return;
- the past propensity to adopt a “one-solution-fits-all” approach to infrastructure solutions whereas in remote Australia lower cost technology platforms and applications are often considered to be more appropriate. Government policy in Australia continues to be dominated by the urban majority, high demand areas.

No comment can be made on the “adequacy” of the LTSS without the ability to test the NBN satellite solution’s capacity to support high-bandwidth two-way applications for tele-health, education, videoconferencing, mobile, VoIP and other applications. It is therefore difficult to predict the adequacy of the service. The B4BA reiterates previous calls for more testing of both the infrastructure and applications likely to be adopted by remote users<sup>10</sup>.

NBN LTSS is a high latency (Delay) broadband service and recent comments suggesting its use as the USO for voice calls are disturbing. The previous government design for the LTSS was for data only (IP traffic) and would not be suitable for voice calls.

**The Alliance asks that the Committee recommend that the existing legacy voice networks servicing remote areas will remain and be properly maintained to existing quality of service standards.** Substitution to mobile connection for USO voice services is acceptable if the existing USO conditions are retained.

The Alliance supports the nine questions the ICPA<sup>11</sup> raises with respect to possible use of the LTSS for standard voice call. The Committee should seek specific responses to these questions and publish the replies.

Notwithstanding the above, a key issue will be sustaining quality of service over the 15-year lifespan of the NBN LTSS satellite, given the relatively fixed capacity of the spot beams. For example, will heavy user applications (e.g. on-demand movies and other large content) require management systems that prevent this impacting on service quality for other users? This is already an issue with the ISS and we note that the Government’s response to date favours severe data restrictions for basic LTSS access which in itself suggests that the LTSS is unlikely to be adequate in the future. This problem will be exacerbated as Government moves to providing more and more services on-line; high speed reliable connectivity is required for many telehealth services, Remote Court Sessions, training and education. Such issues all point to the realization that over the 15 year life of the LTSS a requirement exists for an incremental process of terrestrial network expansion to address increase in usage over time.

The Committee should also note that it is not simply a case of providing a technical solution; issues around affordability, billing mechanisms (i.e. lack of pre-paid mechanism for satellite internet similar

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<sup>10</sup> Broadband for the Bush Alliance 2013a. *Better telecommunications for rural and remote Australians: a Broadband for the Bush Alliance Policy Paper*. p6. Available at <http://broadbandforthebush.com.au/wp-content/uploads/2013/05/Broadband-for-the-Bush-Alliance-Policy-June-20131.pdf> [accessed 8/7/2015].

<sup>11</sup> Isolated Children’s Parents’ Association - Queensland (ICPA Qld Inc.) Telecommunications Position Paper June 2015

to pre-paid for mobile phones), digital literacy and other customer service issues also need to be addressed<sup>12</sup>.

*Q4. Irrespective of the adequacy of your local access, are there issues with backhaul or long distance carriage that impacts on your use of telecommunications services?*

Restrictive backhaul in terms of bandwidth and competitive access are definitively having negative impact on the type of services offered, the range of service providers in the market, the competitive options and price/package options. Our view is that it also restricts innovation because those wishing to enter remote markets usually find the cost of backhaul and the types of backhaul options priced well above other markets. Telstra's near monopolistic ownership of the remote backhaul infrastructure and the issues that creates locks out most competitive players on price/bandwidth.

More populated towns also experience lower performance. For example the ADSL and mobile services in Alice Springs are very slow and patchy, with high congestion and regular outages. In Longreach users report that in a 12 month period using mobile broadband (e.g. for a journalist to file reports using mobile data) has become unusable. This suggests that mobile carriage providers are not improving infrastructure consistent with local demand.

When considering satellite service, ISS and NSS services are slow and unreliable to the point of being unusable at peak use times. This suggests the backhaul is not dimensioned to provide a quality service and with nearly a year to go before the LTSS is available remote consumers are likely to experience greater frustration as speeds diminish further. Other ABG services and Telstra 2-way satellite services (installed in early 2000s) are also very slow and unreliable. It is currently difficult to find an affordable quality satellite service.

Furthermore, satellite backhaul is not being seen as a viable delivery of 4G quality mobile services, despite this being common in other countries. NBN have yet to clarify if or when this will be possible via the LTSS.

**The Alliance recommends the Committee consider the use of high-speed microwave terrestrial backhaul and existing legacy fibre (through arrangements with Telstra) to extend NBN and mobile services into remote areas from existing nodes.**

*Q5. For users living in areas without mobile coverage, what priorities, other than specific locations, do you consider should be recognised in future efforts to improve coverage?*

Establishing local internet and computing access centres and/or WiFi distribution is highly advantageous for some residents of small remote settlements, particularly in locations where there is no mobile phone coverage and only a single payphone available. Computers or mobile devices (i.e. iPads/tablets, smart phone) with WiFi capability can provide an alternative option, especially on occasions when that payphone is faulty. However, there are significant barriers around cost, billing mechanisms, administrative processes and digital literacy that must be overcome in order for this to occur.

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<sup>12</sup> Broadband for the Bush Alliance. 2014. *Broadband for the Bush Forum III: Building a Better Digital Future Communique*. p3. Available at <http://broadbandforthebush.com.au/wp-content/uploads/2013/05/Broadband-for-the-Bush-Forum-III-COMMUNIQUE-July2014.pdf> [accessed on 7/7/2015]



The Alliance suggests a program that includes (and funds) backhaul options other than fibre, such as via microwave and satellite be investigated and the business case options be published. The investigation must include options to make regulatory changes where market failure exists and price/access barriers where only a single underlining legacy infrastructure is in place. For example, existing Telstra DRCS/ HCRC towers could potentially be used for backhaul or for providing local mobile repeaters or 'hot spots'. In considering the business case options, Government services should be included in the demand estimate component because this sector is often the heaviest user of ICT broadband and telecommunications in remote areas<sup>13</sup>, but their existing and future needs are often excluded from establishing the case for ICT infrastructure investment in a local area or region.

Micro-cell or pico-cell technology should be encouraged for small communities, using existing infrastructure such as broadcast towers and facilities. This would reduce the capex and opex, and enable scalable infrastructure and affordable services at a community level. Quality of Service (QoS) requirements may need to be negotiated accordingly. In developing priorities the following should be considered:

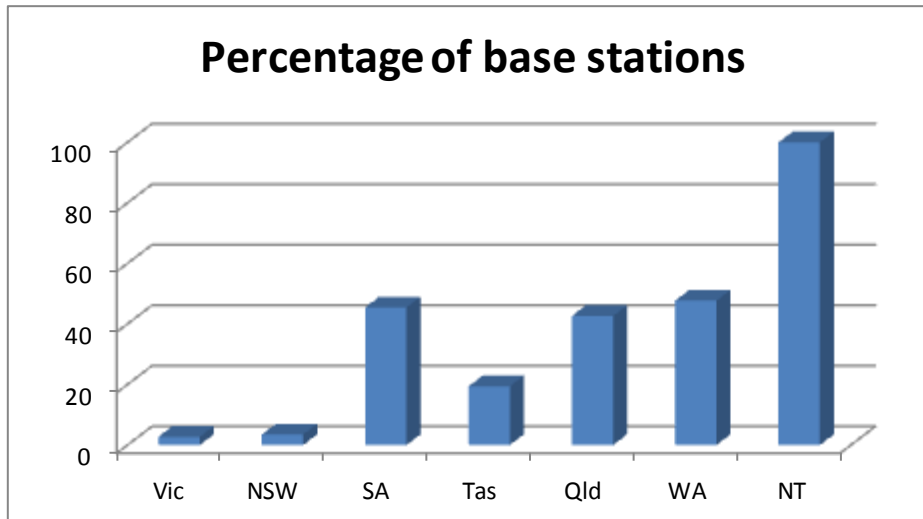
- Towns that are hubs for their region (e.g. have a school, or health clinic, or police station or local government office);
- Level of availability of home telephony services;
- Level of access to Internet services at home or via a community internet access facility; and

The Alliance applauds the 25 June announcement on the outcomes of the Mobile Black-Spot Programme (MBSP) that will deliver almost 500 new or upgraded mobile base stations around Australia – 429 Telstra base stations and 70 Vodafone base stations. The Alliance awaits further information on Telstra's commitment to build 200 new 4G mini base stations and to assess how many will be located in remote Australia.

The Alliance notes the broad national spread of new and upgraded base stations to be funded under the Mobile Black-Spot Programme; NSW (144), Victoria (110), Queensland (68), Western Australia (130), South Australia (11), Tasmania (31) and Northern Territory (5). However an analysis of funded remote areas (as per ABS) shows the following new remote mobile coverage localities: 5 in NT; 5 in SA in the APY Lands; 29 in QLD; in 62 WA; 5 in NSW; 3 in VIC and 6 in TAS.

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<sup>13</sup> For example, Government users comprised a third of participants in remote areas and 48% of participants in very remote areas in RDANT's 2014 NT digital workplace survey. Data courtesy of Regional Development Australia NT.



The further \$60M earmarked for the newly proposed 2016 Round 2 during current difficult national economic restraints is also welcomed. For as well as promising additional substantial near-future alleviation, it also concretely demonstrates an in-depth Federal government appreciation of the severity of regional and remote area cellular mobile service shortfalls. However, as welcome as the present programme and its Round 2 extension are, the scale of existing regional and remote mobile coverage scarcity clearly demonstrates that such Federal support will long continue to be required as attested to by the data-base information<sup>14</sup> assembled under Round 1. Locations that had poor mobile reception (i.e. one bar of reception) were excluded from consideration whereas it is well known that such signal strength makes mobile phone usage virtually impossible.

Furthermore, we note that data available to the Indigenous Remote Communications Association shows that the MBSP requirement of a 10-year business model for sustainable delivery by the telco prevented the \$100 million Black Spots Programme reaching any remote Indigenous communities or sites that did not have existing fibre backhaul.

In view of the above, B4BA recommends that

- (a) funding be earmarked for further such Black Spot Programmes; and
- (b) where appropriate, emphasis be afforded to potential significant cost saving measures, including approaches for leveraging existing under-used backhaul infrastructure and for the provisioning of small-cell base stations<sup>15</sup>.

The Government should also retain (and/or require) the 700M Hz spectrum for remote Australia and use this to provide backhaul and last-mile delivery options (as it has better penetration within communities than WiFi frequencies).

**Q6. What opportunities do the mobile network industry see for extending coverage in regional Australia and increasing investment in mobile networks?**

<sup>14</sup> See map locations recorded as in need cf. those benefitting under Round 1..

<sup>15</sup> e.g. Broadband for the Bush Alliance. 2013. *Extending remote and rural cellular mobile: a Broadband for the Bush Alliance discussion paper* May 2013. Available at <http://broadbandforthebush.com.au/wp-content/uploads/2013/05/B4BA-discuss-paper-Feb14-Submission-to-the-Dept-of-Comms-Mobile-Coverage-Programme.pdf> and <http://telsoc.org/ajtde/2013-11-v1-n1/a2> [accessed on 7/7/2015]

The Alliance experience is that the mobile network industry has only self serving interests in remote and very remote areas as the limited markets will not produce the necessary corporate returns. It would appear that only Government grants to their corporate capital investment programs will entice investment which can be significant in more remote localities.

For example, one Queensland town's bid to be included in a carrier's Mobile Black Spot Programme failed because the estimated investment to construct a mobile facility was approximately \$7M, well outside any realistic chance of attracting Government funds. Backhaul costs were a significant proportion of the total cost. We have previously noted in our submission the impact of the near monopolistic ownership of remote backhaul infrastructure and this only exacerbates the problem of further expansion of mobile infrastructure.

*Q7. Do you have any views on co-investment approaches that might help to improve the broadband technology outcome in your area?*

The Alliance is aware of a number of co-investment models which have been demonstrated to work. Examples include:

- The Barcoo/Diamantina project expected to be signed in the near future where federal funds (\$7M), State Government funds (\$6.5M) and local government funds (\$3M) plus industry funds have combined to provide backhaul and 4G at 5 remote towns.
- the Ngaanyatjarra Lands Telecommunications Project<sup>16</sup> co-funded by Australian Govt under CCIF program;
- the \$110million mobile expansion program in WA (2012-3)
- the NT government's joint project with Telstra for \$34million fibre extension to Gove in Arnhem Land (2010)
- NT Government/ Telstra mobile and ADSL rollouts to remote communities (2013,2015)
- TSIRC/TSRA/ Telstra upgrade of mobile telephony in Torres Strait islands (underway).

However it is important to be aware of potentially perverse outcomes. While co-investment results in the provision of infrastructure, reliance on co-investment in remote and very remote areas (where market failure is demonstrated) has been found to (typically) result in monopoly environments with little choice, affordability issues and less product options. Lack of choice continues to characterise telecommunications in remote and very remote areas. For example, outside of the main centres of Darwin-Palmerston, Katherine, Tennant Creek and Alice Springs there is very little choice of provider. The same situation is experienced throughout remote Australia.

Telstra remains the dominant supplier of a broad range of telecommunications services and is the monopoly supplier of last resort for the domestic transmission carriage service. While co-investment may potentially lead to greater choices available, the reality is that market-based policy and procurement mechanisms have failed in regional and remote areas where there are small, dispersed populations spread over vast distances.

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<sup>16</sup> For further information see Featherstone, D. 2011. The Ngaanyatjarra Lands Telecommunications Project: a quest for broadband in the Western Desert. *Telecommunications Journal of Australia* 61(1):4.1 – 4.25. Copy available at [www.irca.net.au/images/stories/documents/186-1072-7-PB.pdf](http://www.irca.net.au/images/stories/documents/186-1072-7-PB.pdf)

Australia has a history of government intervention to improve digital infrastructure in remote regions. Greater market intervention by state and local governments is clear acknowledgement of the importance of getting digital infrastructure to all citizens. To date we have not seen a sustained and proportionate philanthropic contribution to the construction of digital infrastructure. **It is suggested that specific Government policies be developed with a view to encouraging greater leveraging philanthropic infrastructure funding.** This could be achieved through, for example, tax concessions and a government program to encourage and facilitate philanthropic interest

NBN's Technology Choice program is essentially a "user-pays" scheme that punishes remote communities who seek metro-equivalent telecommunications services. The Alliance believes the failure to review the NBN to include other forms of telecommunication services (e.g. mobile backhaul) for remote Australia is a policy shortfall. It could be said the NBN program is creating a two-tiered telecommunications system in this country that will simply entrench the digital divide between metropolitan and inner/outer regional areas and the rest who the government decide are to be connected by less appropriate means. The Alliance points to direct action by local governments and state governments in contributing significant funds to improve telecommunication infrastructure in specific areas. Clearly the economic and social shortfall caused by the federal government failure to recognise and develop alternative policy/solutions is recognised by all other sectors of the community.

The Alliance is also concerned by proposals considering how to fund NBN services that will remain non-commercial over time<sup>17</sup>. Without Uniform National Wholesale Pricing, those in remote areas will pay comparatively more for less choice and service options. The principle of cross-subsidy i.e. where urban consumers subsidise those in non-urban localities in the areas of health, education and so on) is well established yet the federal government is now favouring a purely economic approach to telecommunications. Why should telecommunications differ from other essential services? The Alliance believes strongly that legislated consumer protections will continue to be required in order to ensure equity of access and service.

**The Committee is encouraged to make strong statements in support of cross subsidy principles and consumer protection as part of its Regional Telecommunication Review report, independent of other review mechanisms.**

Communications services should be tailored to meet local needs. Regional communications strategies provide useful information such as needs analysis and identify stakeholders, including those with high-use communications needs (clinics, police stations, schools, training facilities, access centres/ libraries, industry, research centres). For further information, we refer the Committee to our policy paper on partnership models<sup>18</sup>.

*Q8. How might new applications and services that utilise mobile networks for voice and data transform the way you live and work?*

In its June 2015 'Predictions for the Future of the Internet of Things' Cisco stated that terms like "eCommerce", "the Net" and "WWW" are all quaint reminders of how the Internet has ceased to be

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<sup>17</sup> Commonwealth of Australia 2015b. *NBN Non-commercial services funding options: consultation paper*. Prepared by the Bureau of Communications Research. p10. Retrieved via <https://www.communications.gov.au/have-your-say/nbn-non-commercial-services-funding-options> on 30th June 2015

<sup>18</sup> Broadband for the Bush Alliance 2013b. *Revisiting a Partnership Model for Remote Broadband Delivery*. Available at [http://broadbandforthebush.com.au/wp-content/uploads/2013/05/B4BA\\_Remote-Partnership-Model.pdf](http://broadbandforthebush.com.au/wp-content/uploads/2013/05/B4BA_Remote-Partnership-Model.pdf) [accessed on 7/7/2015]

an exciting and mysterious new thing, and, like electricity, is now just part of our daily lives. The Internet of Things (IoT) will go the same way. IoT is a greenfield market. New players, with new business models, approaches, and solutions can appear out of nowhere and overtake incumbents. One day soon, it will be hard to imagine that all things weren't connected and that the extraordinary benefits of IoT hadn't always been with us. Furthermore Cisco says the IoT currency will be data converted into concrete actions that will transform businesses, change people's lives and effect social change.<sup>19</sup>

With billions of devices projected to be spewing out petabytes of data, application developers will have a field day launching thousands, or even millions, of new and cool apps. Specific examples include:

- Apps on smartphones and tablets are being increasingly use by Ranger land management programs for flora and fauna surveys and GIS mapping, School truancy officers, interpreters, community journalists and many other remote;
- Remote monitoring of essential service facilities (generators, bores, watertanks, broadcast facilities, security devices;
- Online storage and data backup is increasingly important in remote communities;
- Access to workplace servers from any location;
- Community organisations can have dispersed workforce using cloud-based project management and collaboration tools;
- Where there isn't mobile coverage, mobile devices can be used via WiFi or LANs to access internet and local servers; and
- VoIP, Videocon (e.g. skype) and messaging are effective and increasingly normalised means of communication where connectivity and quality allows.

In the smaller settlements being able to access the internet to undertake what mainstream Australia considers to be ordinary every-day tasks such as Internet banking, on-line shopping, connecting to Government agencies, represents a significant advance; without internet access in these areas there is a real risk that people in these areas simple drop off-line and become further disadvantaged.

The potential of the IoT to improve conditions for remote Australia is consistent with the benefits metropolitan cities will experience although not on the same scale. Applications in the many areas (e.g. agriculture, pastoral production, telehealth, education government and security), will improve efficiency and productivity as well as liveability of remote areas.

A case that typifies expected efficiencies but that uses existing technology is that of monitoring water troughs for cattle. A Boulia station uses satellite monitoring that saves a fortnightly 200km trip to check water levels, an activity that previously incurred vehicle costs and staff expenses and potentially placed staff at risk. If the station property was serviced by cellular mobile data a new spectrum of water management data would be available.

However, unless issues around equitable access, affordability and digital access are addressed, the potential benefits will go unrealised. For example, Regional Development Australia NT (RDANT) found in their survey that for the majority of participants on satellite (66.7%), the use of technology in their workplace had not reduced their operational costs<sup>20</sup>.

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<sup>19</sup> <http://blogs.cisco.com/cle/10-predictions-for-the-future-of-the-internet-of-things>

<sup>20</sup> Data courtesy Regional Development Australia NT

*Q9. What communications barriers have you experienced in expanding or operating your business or providing services, such as health or education? Have you been able to overcome these barriers and if so, how?*

Fast, reliable, affordable, digital access is an urgent priority for remote and rural communities, for business and recreational purposes as well as for health services such as telehealth and telecare. However a range of barriers have been experienced by Alliance members, including those relating to service, products and competition; affordability, digital literacy, and barriers to Indigenous take-up.

Example 1. In late June 2015 an Alliance member at Alice Springs had no internet or home phone for more than a week, therefore was unable to access business emails. This service fails every time it rains yet Telstra has not implemented a permanent fix. Lack of service causes consumer frustration and business difficulties.

Example 2. A western NSW health professional uses a Telstra wireless internet dongle. \$50.00 buys 8GB per month at very slow speed compared with Sydney. Sometimes "network is unavailable". It is OK for email and social media but links to high volume content such as video tutorials are avoided. The health professional says *"It is really important that any funding strategy should find affordable solutions for those living in farms and small regional centres. Many farms have a shared "pair gain" phone line which is incompatible with ADSL. If an NBN optical cable runs close to a small town, it should be compulsory that feeds are provided to the small town even if deemed commercially unprofitable. Access to data is like access to water. Without it, small communities are unable grow into the digital age."*

Example 3. A Windorah business reports reaching the end of their satellite monthly data quota early in the month and their internet access has been 'shaped'. The service provider advised they cannot rectify the 'shaping' as the restriction comes under NBN Fair Usage Policy. The Windorah business is conducted via Internet – including incoming invoices; business stock ordering; banking etc. This is not an isolated case. Rural residents are increasingly reporting internet access problems. Access is slowing down as end of quota approaches, and then stops and they need to wait for start of new month.

Example 3. A home with a distance education student recently (July 2015) reported that it took five days, of rising about 2-3am to turn computer on, in an effort to receive distant education material (downloads) for schooling.

Example 4. Metropolitan resident daughters who travel home to a remote cattle property and use the house satellite internet. The parents often suffer data 'shaping' as the daughters' online usage reflects their city pattern. Again this demonstrates disparity between online behaviours a NBN satellite connected consumer can expect as opposed to a NBN non-satellite connected consumer.

**The majority of remote landholders, businesses and town residents do their business over the internet these days. The 'shaping' of internet data is a HUGE issue and LTSS data limitations suggest a considerable burden for remote satellite users in the foreseeable future.**

The ICPA (Qld) reports many members who use satellite internet have commented on the significant decrease in their internet data speeds. This frustrating situation has coincided with the release of internet-streamed movie programs such as Netflix, and is demonstrating the inadequacy of the current satellite systems. The progression and widespread adoption of on-line technologies is utilising more bandwidth than ever before.

Sadly this progression is not only by-passing those students who study via Distance Education, it is further minimising their already very limited access to the internet. The significant decrease in internet data speeds is exacerbating issues with what is already an overloaded system which cannot cope with the demands of modern on-line technologies. Geographically isolated families who struggle to educate their children in 21st Century are being further marginalised and their children's education further compromised.<sup>21</sup>

A number of western Queensland towns are connected via radio systems that are aging and fault prone. For example Bedourie had no phones, fax or EFTPOS for up to 5 days frustrating business and the community. (Note: These towns have no mobile services and only limited satellite services).<sup>22</sup>

Slow speeds and lack of reliable connectivity is an issue especially in terms of telehealth. A proposal for a Queensland Health telehealth trial at Bedourie was abandoned because satellite services (the only option) would not support telehealth applications.

A common theme at the 2015 ACCAN Rethinking the USO Forum was the frustration people experienced when not able to speak with a Telstra representative who could action service difficulties. Most sought alternative Telstra contact numbers than the advertised fault number as it was commonplace for end users to experience frustration at the lack of progress and relevant information.

Similarly, the RDANT 2014 survey found that lack of reliable and affordable high speed broadband remains a significant barrier for many NT workplaces and that this was even more pronounced among those who relied on satellite connectivity<sup>23</sup>.

Affordability, particularly of mobile services is a real issue for remote Australia. The B4BA reiterates its previous calls for the initiation of a subsidy to part fund mobile phone call costs from remote areas designated as Extended Zones, similar to the existing Untimed Calls for standard phones in these areas<sup>24</sup>. The Committee is strongly urged to include such a scheme in its Review report.

The Broadband for the Bush Alliance is particularly cognisant of some the barriers faced by the health sector. At the recent 13<sup>th</sup> National Rural Health Conference, attended by 1,100 delegates from across the health industry, there was a palpable sense of frustration in relation to some of the barriers around the delivery of e-health services. This culminated in delegates identifying broadband among the top ten priority areas. More specifically, delegates called on:

- the Commonwealth Government to develop a remote digital inclusion framework and telecommunications strategy to ensure that remote and rural Australians can effectively participate in the global digital economy; and
- the Department of Health to undertake a comprehensive review of telehealth/telecare initiatives that identifies ways of extending and improving services delivered through such

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<sup>21</sup> Isolated Children's Parents' Association - Queensland (ICPA Qld Inc.) Telecommunications Position Paper June 2015

<sup>22</sup> <http://www.abc.net.au/news/2012-03-29/phone-outage-over-in-bedourie/3920180> and <http://www.diamantina.qld.gov.au/documents/800087/4073594/079-Media%20Release-180%20Residents%20left%20with%20No%20Phones...again>

<sup>23</sup> Data courtesy RDANT. For further information the Committee is referred to the RDANT submission to the 2015 Regional Telecommunications Review.

<sup>24</sup> See for example, Broadband for the Bush Alliance. 2013b op cit

mediums, providing sustainable resourcing for them, and establishing business models that effectively underpin implementation and sustainability.<sup>25</sup>

In terms of barriers for Indigenous people, we have previously identified billing mechanisms (lack of pre-paid for satellite internet), administrative barriers (complexity of the process involved to get satellite internet), affordability, digital literacy and the nature of training programs as issues that need to be addressed<sup>26</sup>.

Others<sup>27</sup> also report key obstacles around affordability, accessibility/availability, awareness (digital literacy, knowledge of services available) and appropriateness of technologies, interface and content. For regional service providers, the communication barrier is primarily at the user/client end in remote communities where there is limited access to phone, mobile or internet/email. This extends to accessing repair and maintenance and technical support are key issues in remote areas. Over-the-phone support is limited by language barriers and technical understanding.

In remote Indigenous communities, the time taken to get phone or data services connected or repaired has increased significantly compared with 10 years ago due to the withdrawal of Telstra employed technicians from regional centres. With more sub-contracting of these services, a minimum number of requests are required to make a trip financially viable, increasing response times, sometimes up to many months.

Additionally, the inconsistency of internet connections can make it difficult for workers/users to complete online tasks and access services.

Overall, we believe that there is a growing digital divide as people in urban areas and large towns get high-speed services, leaving remote and rural users even further behind in digital literacy and access to the digital economy, creating a two-speed economy.

Some suggested ways to overcome some of these obstacles may include the following:

- Community WiFi hubs – potentially enables affordable access including pre-paid use;
- Online access centres - provide affordable access, local support and training facility;
- IT training and support programs – with an emphasis on skills development and awareness of online tools, applications and services; and
- Development of relevant content and apps.

Additionally, funding programs should expand from the community internet access model and associated training that have been core elements of Government funded programs over the past 10 years, to support other models for residents access to broadband services including home access and community wifi/byod (bring-your-own-device) models.

*Q10. What communication functions (e.g. speed, mobility, reliability, data, etc) would best suit your needs, noting the limitations of each technology (e.g. mobile, wireless, satellite, fibre)?*

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<sup>25</sup> Priority recommendations from the 13<sup>th</sup> National Rural Health Conference. Available at [http://www.ruralhealth.org.au/13nrhc/images/PriorityRecommendationsFinal\\_0.pdf](http://www.ruralhealth.org.au/13nrhc/images/PriorityRecommendationsFinal_0.pdf) [accessed 7/7/2015]

<sup>26</sup> E.g. Broadband for the Bush Alliance 2013a, op cit; Broadband for the Bush Alliance 2014 op cit.

<sup>27</sup> Indigenous Remote Communications Association and ACCAN identified these key obstacles within the Indigenous Focus Day of the B4B Forum 2014.



As previously stated the Alliance believes current thinking is centred on mass market solutions and does not seek to expand to low cost solutions that are (or maybe) acceptable in low population regions. Those making policy and investment decision have limited knowledge of remote Australia and its challenges and the flexibility this part of the country demands.

Given the diversity of users across remote Australia and their varying circumstances, it is not possible to identify a single communication function that is most important to users in this region. For example, participants in the RDANT survey clearly want affordable, high speed reliable connectivity whereas other Alliance members point to mobility and reliability as the critical factors, followed by speed and download limits. Therefore, effective means of last-mile distribution of satellite need to be considered (via mobile, WiFi, micro-cell mobile or WiMax) that are scalable to the local population and coverage area needs.

*Q11. Do we need to continue to guarantee the standard telephone service for all (or only some) consumers, and if so, to what extent?*

The standard telephone service (USO) is funded through a mix of Government money (\$100m) and industry levy (circa \$150 million a year).

In remote Australia there is still need to retain a basic telephone service and the Committee should note that public phones need to be maintained in remote communities. Communications services are vital in an environment where people are isolated and may be more than 100km from their nearest neighbours. For example there are still many places in the NT where there is only a single community phone, where they lie outside of mobile coverage and where residents are unable/unlikely to take up satellite internet owing to issues around affordability, communication barriers and other factors previously discussed in this paper. If these locations no longer had a community phone they would have no way of contacting the outside world short of getting in a car and driving to the nearest settlement with a phone or area of mobile coverage. Clearly this is unacceptable, particularly in the case of emergencies. Living in these areas is not a "lifestyle choice". For many remote households and for the elderly and/or some disabled a standard telephone service may be their only realistic telecommunications option.

The Alliance supports ACCAN's concerns regarding Telstra's proposal to modify Level 1 so that reporting by the 44 field service areas (FSAs) is discontinued, while retaining monthly nationwide reports. The sheer size of many of the 44 FSAs reported on make analysis by remote, rural and regional areas impossible. For instance, in Central Queensland the distance from the coast to the NT border is approximately 1,000 kilometres, and Far North Queensland covers approximately 1200 kilometres. Cable and individual service performance issues in remote regions are effectively masked by higher volumes of cable connections in more populated areas of the field service area.

There would be continuing value in Telstra reporting the data disaggregated by remote and rural regions where NBN will have minimal FttP and FttN infrastructure making the legacy Telstra copper and radio infrastructure the USO delivery platform.

In respect to the Network Reliability Framework (NRF) regulatory requirement, in 2 years remediation under Level 2 has resulted in improved reliability of 57,131 services.<sup>28</sup>. Therefore it is delivering significant benefits to users of Telstra fixed line services.

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<sup>28</sup>[Communications Report 2012-13, p.71](#)

*Q12. Are there new or other services, the availability of which should be underpinned by consumer safeguards?*

The United Nations declared the internet a basic human right in 2011 and in 2014 United Nations Resolution A/HRC/RES/26/13 called on all states to “promote and facilitate access to the Internet”, as well as to “promote digital literacy and to facilitate access to information on the Internet”<sup>29</sup>. It has been repeatedly demonstrated that market-based policy and procurement mechanisms do not work in regional and remote areas where there small, dispersed populations spread over vast distances.

Existing telecommunication service safeguards such as the USO, CSG and NRF were created because communications is recognised as an essential service, like other utilities (e.g. water and electricity) and guaranteed access and repairs over these services is a crucial element.

The Glasson Review in 2008, recommended a new framework and to provide for a ‘Communications Services Standard (CSS)’ that should include<sup>30</sup>:

- The voice standard must include internationally recognised voice quality measures;
- The broadband standard must be equitable with services delivered by the NBN; and
- The mobile standard must be for hand-held mobile phones.

The Sinclair review in 2012<sup>31</sup> found that there was a lack of consumer awareness of the current protections and that consumers are particularly concerned about losing phone services. They also found that there were gaps in the consumer protections that “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”. They recommended 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.”

The Alliance supports previous RTR reviews that have called on a reasonable level of broadband service and mobile service to be included in the Universal Service Obligation (USO). Such a universal service is especially relevant to remote Australia where an environment of market failure (limited industry infrastructure investment) and near monopoly service provision exists.

The payphone standard must include objective criteria for access to payphones, and in developing this standard consideration.

An option to underpin the development of new service options as providers make the services available to the city markets is to make NBN a provider of last resort.<sup>32</sup>

Special consideration should be given to making broadband services appropriate and accessible to users such as ESL speakers, people with disabilities, the elderly, and users in areas that rank amongst the lowest in terms of the SEIFA Index of Relative Socio-Economic Disadvantage (i.e. the most disadvantaged), including Indigenous people and remote users).

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<sup>29</sup> United Nations General Assembly. Human Rights Council. 2014. A/HRC/RES/26/13. The promotion, protection and enjoyment of human rights on the Internet. retrieved from <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/G14/082/83/PDF/G1408283.pdf?OpenElement> on 15/6/2015.

<sup>30</sup> [https://www.communications.gov.au/sites/g/files/net301/f/2008\\_Glasson\\_Report\\_RTIRC.pdf](https://www.communications.gov.au/sites/g/files/net301/f/2008_Glasson_Report_RTIRC.pdf)

<sup>31</sup> [https://www.communications.gov.au/sites/g/files/net301/f/Government\\_Response\\_to\\_2011-12\\_RTIRC\\_report.pdf](https://www.communications.gov.au/sites/g/files/net301/f/Government_Response_to_2011-12_RTIRC_report.pdf)

<sup>32</sup> See Commonwealth of Australia 2015b, op cit Section 7.3 NBN Co as broadband provider of last resort.

*Q13. What standards should apply to your services? How might they best be enforced?*

As a general rule, standards should be competitive and technology neutral to allow for competition and technological development. However in a market such as remote Australia with limited (or no) competition is this sufficient to guarantee a quality of service comparable to metro-Australia?

The Alliance supports the network provider being responsible for connection performance and for recognition of the consequences for business and consumers when connectivity is disrupted (cut or unusable). There is a basic requirement for standards that incorporate a customer connected principle and providers to offer an equivalent acceptable alternative and interim service(s) until the service(s) are restored.

The benchmark performance standard needs to be transparent, with reported data capable of analysis at regional levels and published annually. The inclusion of incentives to reward improvement should be considered.

The Telecommunications Industry Ombudsman (TIO) and independent authorities are needed to oversee telcos' behaviour, especially with respect to:

- USO and Customer Service Guarantee which are needed in remote areas where there is a high reliance on STS and public phone services; and
- The Extended Zones costing which needs to be retained to ensure affordable services from remote communities to regional service towns and between towns/communities in neighbouring zones.

Previously the Alliance has also recommended that the Telecommunications Universal Service Management Authority (TUSMA) is given access to capital (government or industry) to address substantive service failures through infrastructure upgrades/builds and soft upgrades<sup>33</sup>. This is in keeping with the recommendations of previous Regional Telecommunications Reviews (RTR)<sup>34</sup>. We have also recommended that the Government:

- commits to infrastructure upgrades and to world's best practice with respect to equipment maintenance programs in remote regions;
- continues to commit to invest in remote region black spot programmes to address the provision of telecommunication infrastructure where commercial telecommunication companies require incentives to invest in priority new infrastructure; and
- commits to allocating assistance funding to connect remote towns and communities to the NBN where existing optic fibre routes are in close proximity.

The Alliance notes that the functions of TUSMA have recently been re-integrated within the Department of Communications. We are concerned that this leaves the USO vulnerable to being watered down or abolished without the oversight of an independent watchdog.

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<sup>33</sup> Broadband for the Bush Alliance 2013a op cit, p6

<sup>34</sup> Regional Telecommunications Independent Review Committee 2012. *2011-12 Regional Telecommunications Review*. Recommendation 2.4.2 Available at [https://www.communications.gov.au/sites/g/files/net301/f/Regional\\_Communications-Empowering\\_digital\\_communities.pdf](https://www.communications.gov.au/sites/g/files/net301/f/Regional_Communications-Empowering_digital_communities.pdf) [accessed 8/7/2015]