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To: Regional Telecommunications Independent Review Committee
By Email: secretariat@rtirc.gov.au

Thank you for the opportunity to express the Internet Association of Australia (IAA) perspective on the *Regional Telecommunications Review 2021*. The COVID-19 pandemic has highlighted the importance of equitable access to telecommunication services for all Australians. Undeniably, there is a rural element to the digital divide in Australia and we welcome the opportunity to comment on this through the review.

While IAA members come from right across the digital services sector, a significant group are small to medium sized internet service providers (ISPs), some of whom provide connectivity to regional, remote and rural areas. IAA also operates IX-Australia, which is Australia's longest running internet exchange network in Australia.

Changing Demand

What telecommunications services are required in regional Australia to meet current and future needs? Are there any things regional communities and businesses need to do, but can't, on their existing services?

Mechanisms that provide incentives for telecommunication providers to enable and expand reliable internet and/or mobile services in regional Australia should be considered to meet growing needs.

Access to cost-effective backhaul is necessary to meet the growing usage of telecommunications services in regional areas. Increasing the availability of government-funded or partly funded backhaul can assist this by reducing costs for smaller or newer carriers to enter the regional telecommunications market.

Currently, telecommunications carriers operating in some regional areas are required to build their own networks or use existing copper network infrastructure which is old and expensive to operate. The cost of improving network coverage is high, while commercial incentives for carriers to expand their infrastructure is limited.

Funding for this should be considered under existing government initiatives, such as the Mobile Black Spot Program or the Regional Connectivity Program. Other moves including the ACCC's decision to reduce regulated prices for the declared Domestic Transmission Capacity Service (DTCS)¹ can help promote competition by substantially reducing the cost of wholesale transmission services for telecommunications providers, which can in turn be passed on to end users through lower prices.

Enabling and encouraging infrastructure-sharing can also allow for the introduction of more competition within the telecommunications sector, ultimately reducing prices for consumers while improving the quality of telecommunications services. Where infrastructure is funded or subsidised by the government, the capacity for infrastructure sharing should be rated highly in awarding funding.

¹ ACCC 2020, [Price for regulated transmission services set to fall](#)

What changes in demand, barriers or challenges need to be addressed when it comes to telecommunications services in regional, rural and remote Australia?

With businesses and consumers in regional Australia becoming more technologically adept, demand for fast and reliable telecommunications services has expanded. Businesses are increasingly relying on smart devices to automate otherwise intensive or repetitive tasks. For example, farmers use technologies such as sensors and drones to collect data and make informed decisions about aspects including cropping, water management and soil health.² Emerging technologies are also allowing Australians from regional areas to remotely access essential services (including healthcare, financial services and education), while improved internet services are facilitating the wider trend of working from home. This increasing use of new technology poses a challenge to telecommunications services in regional Australia given service reliability issues common to regional areas. Furthermore, lack of choices on mobile and internet services often means that regional users pay the same as metropolitan users, while experiencing poorer quality of service and patchy coverage.

How have the Government's policies and programs affected telecommunications service outcomes in regional, rural and remote Australia? How can these be improved?

The Universal Service Obligation (USO) serves as a consumer protection ensuring all Australians have access to landline telephones and payphones. However, the contractual obligation primarily extends to Telstra and is used to continue the funding of antiquated copper services. Instead, the government should consider replacing the existing copper service with mobile or replacement last mile services. IAA would encourage the government to work collaboratively with the broader telecommunications industry, instead of awarding the contract to a single provider.

Mobile black spot funding could also be awarded to operators offering multiple uses or to facilitate shared infrastructure, such that coverage is improved across the board, rather than to just one mobile network operator.

Service Reliability

How do service reliability issues impact on regional communities and businesses? How do outages, including in natural disasters, impact on communities and businesses?

Service reliability issues can precipitate substantial business losses, especially for those relying on telecommunications technologies central to their work. Network outages also adversely affect citizen safety, especially if they are in dangerous situations and do not have access to connections necessary for communication. In one week in 2020, for example, over 1,400 telecommunications facilities went offline due to bushfires³, posing a significant threat to the safety of Australians and for the ability of businesses to operate. For regional communities more broadly, outages reduce their ability to communicate, learn, work or access essential services. Overall, IAA advocates that resilient telecommunication networks are necessary in an age where there is a growing reliance on digital services.⁴

Service disruption may also have subsequent impact. For example, a child care centre with disrupted telephone communications may be unable to take on the care of children, meaning that parents are unable to work depriving business or reducing community services. Communications outages that prevent EFTPOS transactions may affect cash flow and other community payments.

² Telstra 2021, [Regional Australia's Technology Future](#)

³ ACMA 2020, [Impacts of the 2019-20 bushfires on the telecommunications network](#)

⁴ Infrastructure Australia, in their [2021 Australia Infrastructure Plan](#), recognised that in the face of natural disasters and the COVID-19 pandemic disrupting the reliability of telecommunication services, there is an underlining need for more resilient networks.

How might such impacts be addressed to ensure greater reliability? How can the network resilience be addressed in regional areas?

Increasing investment to enable more reliable access to electrical power is an important factor in improving network resilience. Power outages disrupt network connections and remote facilities must have either diverse power feeds, battery backup or solar power to ensure networks can operate continuously. Another mechanism could be to ensure backhaul is also physically diverse and reliable. This means that regional centres need to be served by diverse backhaul networks, such that when one area is affected by natural disasters, other pathways can be used.

COVID-19

How did the use of digital services change for regional consumers and businesses during the response to the COVID-19 pandemic? What insights for future service delivery this provide?

The COVID-19 pandemic has increased the reliance on digital services for regional consumers and businesses, especially in times where lockdowns are extended to regional areas. During these periods, additional traffic throughout the day has been noticed, with schools shifting online and more people working from home. The availability of communications infrastructure has also meant that more people have relocated to regional areas to take advantage of improved lifestyle.

While IAA cannot separate which of its member's networks predominately serve regional areas over urban, some traffic changes were noted: significant increases in overall usage, distinctly higher usage throughout the day, shifts in the balance of traffic with some networks moving from download dominant to upload and vice versa, and a greater impact from traffic spikes due to mass software updates. This suggests that future networks may benefit from greater upload capacity, and better infrastructure for the distribution of content, such as that provided by internet exchanges and local cache capacity. Internet exchanges improve local reticulation of internet traffic, by allowing local networks to interconnect and shed traffic locally and reduce the need for backhaul.

Indigenous Australians

What can be done to improve access and affordability of telco services in regional, rural and remote Indigenous communities?

IAA extends its support to the Indigenous Digital Inclusion Strategy which the 2018 Regional Telecommunications Review report⁵ called for. Developing a program in partnership with Indigenous communities that focuses on enhancing accessibility, affordability and digital ability will be a useful approach to crafting a targeted process addressing this issue. However, a 2020 ACCAN study⁶ noted that although the Australian Government committed to developing this strategy, little visible progress has been made.

IAA would encourage the Committee to look at programs that assist in upskilling local communities so that local support for infrastructure can be available as well as investment in common access facilities, low/no cost community Wi-Fi or community use facilities from local community centres, such as schools and health centres.

Furthermore, government collaboration with industry to expand and enable access to lower latency communication could be useful in improving access in rural Indigenous communities, considering they are often serviced by old and often ineffective copper infrastructure.

⁵ Regional Telecommunications Independent Review Committee, [2018 Regional Telecommunications Review](#)

⁶ ACCAN 2020, [Remote Indigenous Communications Review](#)

Regional Development

How can investment in telecommunications infrastructure work with other programs and policies to encourage economic development in regional Australia?

Investment in shared telecommunications infrastructure can lower overall cost and reduce barriers to market entry. It allows smaller players to achieve scale and meet higher standards of reliability.

Internet exchange points (IXPs) provide an opportunity to optimise backhaul usage and reduce internet-related costs for users up to 20% through decreasing internet service provider operating costs⁷. This is made possible by keeping local network traffic and content local, and by sharing infrastructure to deliver cacheable content from local facilities. As key locations obtain their own internet exchange points, reduced backhaul bottlenecks will mean users (consumers and providers alike) may be able to achieve better content upload and download speeds, improved bandwidth management, and enhanced network performance⁸. This makes IXPs as shared infrastructure uniquely positioned to encourage interconnectivity and economic activity, by leveraging regional communications infrastructure, such as fibre cables and local facilities as data centres.

IXPs provide common points of interconnection (peering) between both commercial internet access providers (ISPs) and content and digital service providers such as cloud providers and online marketplaces. They are not expensive to start as the cost of equipment is minimal, but experience in their operation and access to neutral locations with significant bandwidth is essential. IXPs offering full services (caches, content systems, time and name servers) will not enter a region if they cannot get access to reliable, affordable facilities and backhaul.

Government support for the construction of IXPs can be facilitated by providing access to public property assets within larger regional centres, particularly those located on the major optical fibre routes and key connectivity junctions, such as Townsville, Rockhampton, Toowoomba, Dubbo, or Albury. Such public property asset facilities could be repurposed into low-cost data centres that can function as IXPs and local data centre facilities, which over a five-to-ten-year timeframe can underpin vibrant regional digital hubs. This could be supported through government funded programs that encourage either regional connectivity or infrastructure development for the public good (e.g., Regional Connectivity Program) and regulatory reform.

Provisions such as these can also reduce barriers to entry for smaller digital businesses. Facilitating the entry of low cost not-for-profit IXPs, like IX Australia, can build out cache capacity and help connect business, educational institutions, content hosting platforms and internet service providers more efficiently.

Emerging Technologies

To what extent will new technologies enable significant change to the delivery of telecommunications services in regional Australia over the next 5-10 years? Are there any barriers to accessing these technologies?

Emerging satellite technologies have the capability to provide high-speed broadband to regional areas. In particular, low-earth orbit (LEO) satellites offer significant benefits through their expansive coverage, and low signal delay times⁹. They can support IoT services in remote areas where fixed wireless networks are not available. However, currently, LEO satellites are primarily owned by American corporations, making it difficult for Australian companies to have certainty of access at guaranteed prices. Enabling equitable wholesale access for LEO satellites to Australians either through support for Australia's own space industry, or through bulk

⁷ Internet Society 2015, [Internet Exchange Points: An Internet Society Public Policy Briefing](#)

⁸ Analysys Mason 2020, [IP interconnection on the internet: a white paper](#)

⁹ Clark, M. 2019, [Emerging space-based infrastructure for the Internet of Things](#)

purchase of capacity may improve overall access to areas poorly serviced by existing access technologies. It can also prevent the creation of large monopolies which would not be in the long-term interest of users.

The increased usage of smart devices by both businesses and consumers increases the importance of reliable wireless and mobile networks. Cloud computing and data centre capabilities in regional areas will also be necessary to improve the data processing efforts for local businesses.

How can Government better support the rapid rollout of and investment in new telecommunications solutions in regional areas?

The government can support telecommunications providers operating in regional areas by investing in and mandating that all carriers have access to shared infrastructure (e.g. backhaul, towers, electricity towers), particularly that subsidised or wholly funded by government.

What changes to Government investment programs are required to ensure they continue to be effective in delivering improved telecommunications?

The government should consider realigning the USO to ensure funding for shared assets (e.g. backhaul, towers, electricity supplies) is available to a wider array of telecommunications providers. The current process is biased towards Telstra and NBN Co, preserving their inefficiencies, and creates a significant barrier for smaller telecommunications providers. Where alternative technologies can provide reliable last mile access, these should be considered and a broader number of players be permitted to service that market.

Once again, I would like to thank you for providing us with the opportunity to contribute to the *Regional Telecommunications Review 2021*.

About the Internet Association of Australia

The Internet Association of Australia Inc (IAA) is a member-based association representing the Internet community. Founded in 1995, as the Western Australian Internet Association (WAIA), the Association changed its name in early 2016 to better reflect our national membership and growth.

Our members comprise industry professionals, corporations and affiliate organisations. IAA provides a range of services and resources for members and supports the development of the Internet industry both within Australia and internationally. Providing technical services as well as social and professional development events, IAA aims to provide services and resources that our members need.

IX-Australia is a service provided by the Internet Association of Australia to Corporate and Affiliate members. It is the longest running and lowest cost Internet Exchange in Australia. Spanning six states and territories, IAA operates over 30 points of presence and operates the New Zealand Internet Exchange on behalf of NZIX Inc in New Zealand.

IAA is also a licenced telecommunications carrier, and operates on a not-for-profit basis.

Yours faithfully,

Narelle Clark
Chief Executive Officer
Internet Association of Australia