

Queensland Capacity Network Pty Ltd (QCN)

Response to the Commonwealth Government's 2024 Regional Telecommunications Review

The Telecommunications Infrastructure Landscape

Digital infrastructure to support mobile networks and high-speed broadband is still lacking in regional Queensland. Backhaul infrastructure and structures to support mobile and fixed wireless equipment remain vitally important in these regional areas where there is less ability for infrastructure providers to recover fixed costs due to the low number of potential users.

No investment plans for Regional Queensland

The telecommunications sector is experiencing heightened competitive pressures, leading to a notable flattening in revenue and reduced profit margins. In this highly competitive, low-margin, and capital-intensive environment, infrastructure providers are grappling with the dual challenge of covering high initial costs while operating on narrow profit margins. The competition is particularly fierce among the major players, exacerbating the squeeze on profitability. Over the past five years, this intense rivalry has whittled down industry profit margins to a below 5% of revenue, reflecting the tough economic landscape that telecommunications companies are navigating.



FIGURE 1 QUEENSLAND IS THE FORGOTTEN STATE. TELSTRA INFRASTRUCTURE INVESTMENT EXCLUDES QUEENSLAND SOURCE: TELSTRA LINKEDIN

Furthermore, costs related to terrestrial infrastructure builds are becoming prohibitive, with not only rising input costs but up to 30% of costs attributable to land access alone. Such costs make commercial returns unachievable and are demonstrated in the shift to subsea cables as a more cost-effective long-haul infrastructure solution.

In the face of margin squeeze and constrained capital, the highly competitive Australian telecommunication infrastructure sector has pivoted from building new infrastructure and is now signalling a new preparedness for the sharing of network infrastructure and evidence

that the declining returns experienced by mobile network operators are driving the need to maximise asset utilisation.

Network expansion strategies by Carriers are now focussed on “Asset Sharing” rather than new asset investment, with Tier 1 telecommunications companies such as TPG, Telstra and Optus all engaging in asset sharing discussions. This trend of network asset sharing and reduced investment in new

infrastructure has also affected the Queensland market, where both Infracore and HyperOne have announced delays or cancellations of their planned regional connectivity projects.

HyperOne – nothing for Regional Australia

In February 2021, Australian infrastructure company SUBCO announced that its HyperOne project will roll out over 20,000 Km of new fibre as a new national backbone network, with 2,000 hand-off points nationally. A year later, in February 2022, HyperOne and Copperstring 2.0 announced a strategic partnership to investigate leveraging the almost 1,000Km of OPGW fibre that would form part of the high voltage transmission network.

As represented in the Figures below, despite significant marketing activity and publicity, no work on HyperOne appears to have been undertaken in Queensland and SUBCO’s own announcements suggest the company’s strategic direction has shifted to investing in subsea fibre infrastructure across southern Australia. In August 2023, SUBCO announced that it is commencing construction of a new transcontinental submarine cable that will connect Sydney, Melbourne (Torquay), Adelaide and Perth (S-M-A-P).

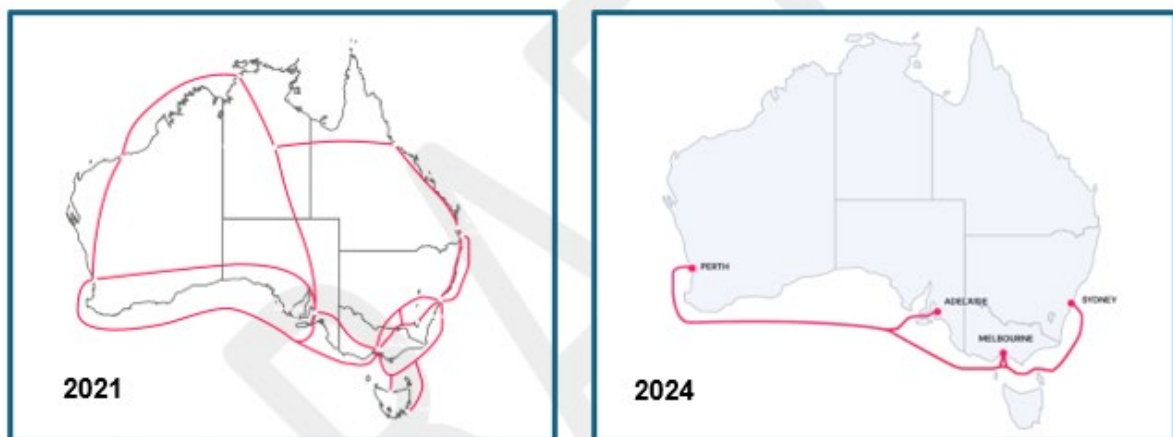


FIGURE 2 HYPERONE PROPOSED NETWORK AS AT LAUNCH FEBRUARY 2021 AND PRESENT. SOURCE: SUBCO.COM.AU

InfraCo – nothing for Regional Queensland

In 2022 (likely in response to HyperOne’s plans), InfraCo planned to expand its regional network coverage in Queensland, but it revised its strategy to focus on inter-capital routes only, subsequently leaving out Queensland.

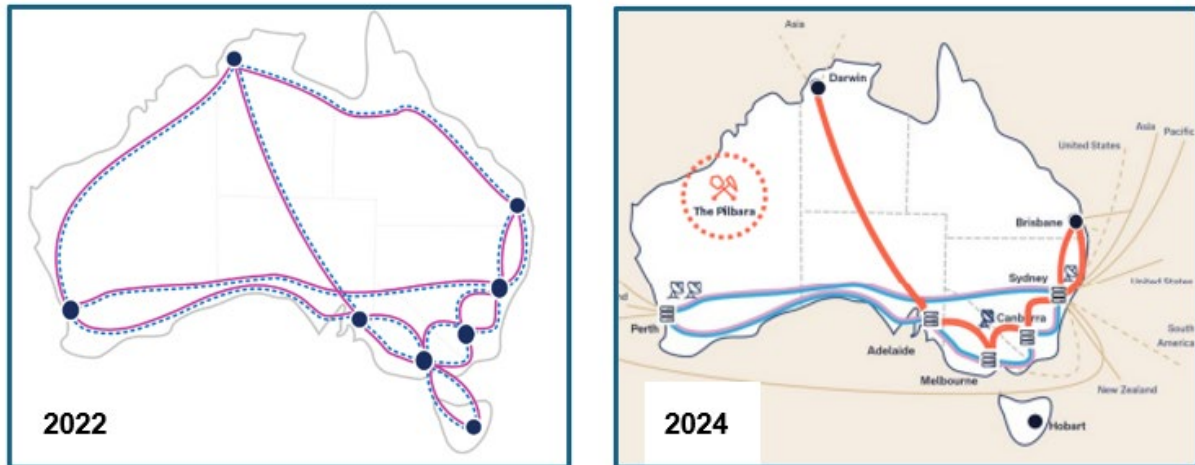


FIGURE 2 INITIAL TELSTRA NATIONAL BACKBONE. REVISED TELSTRA NATIONAL BACKBONE. SOURCE: TELSTRA INVESTOR DAY, 14 NOVEMBER 2023. SOURCE: TELSTRA.COM.AU/SOLUTIONS/INTERCITY-DARK-FIBRE-NETWORK

The “Challenger” Carriers

It must be assumed that Challenger Carriers, Optus and TPG, do not have plans to invest in Regional Telecommunication infrastructure as both are signalling to the market, via proposed core asset sales, that investing in telecommunications infrastructure is now no longer core to their business strategies.

Optus Reportedly May Look to Sell Fibre Assets

May 20, 2024

Share

Speculation is mounting that Australian telco Singtel Optus Pty Limited (Optus) may look to sell its fibre infrastructure assets to a group like KKR & Co. Inc. (NYSE:KKR) (Kohlberg Kravis Roberts)

Source: www.marketscreener.com

Source: www.theaustralian.com.au/business/dataroom

DATAROOM

TPG Telecom prepares fresh push for fibre asset sales

By BRIDGET CARTER

4:39pm February 01, 2024. Updated 3:16pm February 28, 2024 The Australian Business Network

Comments on existing infrastructure limitations

Backhaul

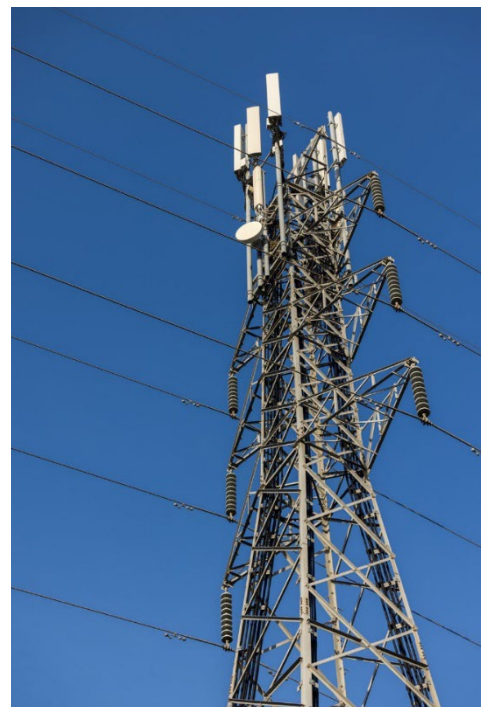
Backhaul is critical for introducing competition into the regions as it enables independent operators (wireless or fixed line) to offer services in areas where they otherwise would not have access to network infrastructure. By using backhaul, independent and local operators can connect their base stations or small cells to a core network that may be located far away, and thus expand their coverage and capacity. This can create more choice and lower prices for consumers and businesses in regional and remote areas, as well as improve the quality and reliability of services overall.

It must be noted that NBN access services cannot be used to backhaul traffic from a location beyond the boundary of the premises. Independent telecommunication operators building their own infrastructure cannot leverage the NBN service to backhaul their network. Where NBN is the only infrastructure provider in a region its business model explicitly blocks independent infrastructure providers from leveraging the NBN infrastructure to compete in that region with an NBN equivalent product using the NBN access infrastructure to provide backhaul services.

Mobile Connectivity

It is well known that not all Australians have access to reliable and affordable mobile services. There are still significant gaps in mobile coverage and capacity in some parts of regional Australia, affecting the quality of life and economic opportunities for millions of people. Connectivity along highways is also lacking and is critical for safety and emergency services, as well as for tourism and transport industries.

Telstra dominates the regional and remote market, with Optus and TPG having a smaller presence. Mobile coverage maps are not accurate or consistent, as they depend on various factors such as handset type, terrain, buildings and vegetation. Regional and remote areas face mobile connectivity challenges due to limited capacity, maintenance issues, vast distances, and natural and artificial obstacles. Building and maintaining cell towers in these areas is costly and unprofitable for operators, who mainly focus on covering the population rather than the land area.



Response to selected questions from the Issues Paper

Telecommunications Customers

How can government and industry address the prevalence of misleading and inaccurate information surrounding telecommunications services in regional, rural and remote areas, to ensure consumers and businesses have access to reliable and unbiased information when making decisions about their connectivity options?

QCN Response:

NBN coverage maps only provide a “technology type” coverage. NBN service quality data is readily available to NBN, but NBN does not provide this information to the public.

NBN should be instructed to provide metrics associated with access quality to the public, ideally in the form of a heat map. At a minimum metrics should include actual latency, upload and download speeds of the NBN access network.

In relation to Mobile Coverage, QCN has conducted its own independent radio frequency studies along the Flinders Highway between Townsville and Mount Isa, as well as the North Burnett and Gympie regions around the proposed Borumba Pumped Hydro Dam site. What QCN found was that the coverage quality and strength, across carriers and bands varies considerably with what is promoted by the most prominent telcos. In almost every instance our independently verified survey results showed coverage was worse and likely to decline as a result of 3G being removed. QCN supports the efforts by the Commonwealth Government in establishing an independent audit of mobile coverage, and making this available to the public and to inform future blackspot investments.

Deploying and maintaining telecommunications infrastructure in remote areas requires a skilled workforce. What initiatives can be implemented to ensure there is a skilled workforce in regional and remote Australia capable of supporting the construction, maintenance and operation of future-proof telecommunications infrastructure?

QCN Response:

Regional Internet Service Providers (ISPs) need to operate at scale to justify employment of service and O&M staff, and to operate at scale requires cost-effective backhaul.

ISPs that focus on regional areas are at an unfair disadvantage compared to the large national telcos. The larger telcos who have their own backhaul infrastructure focus on populated areas and

operate regionally only as a last resort (typically bypassing small towns). This translates to high regional backhaul charges, making it uneconomical for an ISP to begin operations as most residents and businesses can't afford the costs.

Through leveraging existing government-owned infrastructure, QCN's business model provides ISPs with the opportunity to compete on par with the likes of Telstra and NBN. With a small amount of support provided by the State and Federal Governments to QCN (and other similar businesses with the same business model), cost-effective backhaul can be provided across a significant area, enabling ISPs to generate the scale they need to be competitive in the national market and, in turn, allow them to employ more regional support and O&M staff.

Universal Service Arrangements

What should the minimum internet speed guarantee be (currently a peak speed of 25/5 Mbps) to meet modern needs? Should minimum data download/upload allowances be regulated? What other factors are important, like latency, reliability and affordability?

QCN Response:

A symmetrical 100/100 Mbps should be the aspirational minimum internet speed to cater to how modern families operate in the home, with digital-based learning, remote education, and work and working from home (or the capacity to work from home) reflecting the modern norms in communities around Australia.

Mobile & Fixed Broadband

How can we achieve equity with respect to mobile services (voice, data and SMS) in regional, rural and remote communities and on regional and remote roads?

The cost of building and maintaining telecommunications infrastructure in rural and remote areas can be a barrier to offering better services. What can be done to improve the fixed broadband options available to regional, rural and remote Australians?

QCN Response:

Stand-alone new telecommunications infrastructure is cost-prohibitive in regional areas.

We consider it essential to capitalise on existing or planned infrastructure (roads, pipelines, rail, electricity, etc.) to reduce telco service costs for regional communities.

By leveraging the groundwork laid by substantial infrastructure projects, the telecommunications sector can provide long-lasting benefits at minimal expense, through influencing solution design and sharing of construction and delivery resources. This is especially critical over the coming years with increasing resource constraints facing all industries. Solid planning and funding approaches are required that incentivise asset owners, both private and public, to collaborate with telecommunication carriers.

We need the Federal Government to incentivise change at the State level.

A new regulatory framework is needed that requires all major infrastructure projects that meet certain financial or geographic benchmarks to seek guidance from independent, (new) State-level bodies with expertise in telecommunications planning and technical delivery. These new entities would oversee the coordination of projects within their respective State, ensuring an organised and effective approach for building out digital infrastructure without the cost burden of stand-alone infrastructure.

QCN has recent and significant experience in leveraging existing and planned State Government rail and electricity assets for the building out of regional connectivity. We recommend an industry working group to be established and tasked with providing key criteria that would inform the development of a regulatory framework that would be effective in advancing regional connectivity through leveraging large infrastructure projects.

Additionally, there are notable challenges in accessing government-owned assets, in particular land. This process must be simplified and streamlined to empower carriers to develop new infrastructure without facing undue obstacles.

In the words of AMTA CEO in CommsDay 02/08/2024 - "Both Victoria and New South Wales have introduced some streamlined approaches for planning and approval in rural areas where many blackspot funded sites are present. A similar approach should be introduced across Australia for telecommunications infrastructure in blackspot funded sites that meets pre-agreed guidelines."

QCN considers this approach should be expanded to include proactively cataloguing State and Federal Government-owned assets that could support regional connectivity. These assets should be made visible to all carriers, enabling them to design regional networks with pre-designated, pre-approved sites for telecommunications infrastructure.

Have you had experience with new or alternate service providers such as Starlink or WISPs? If not, why not? What additional measures would persuade you to consider new technologies?

QCN Response:

The satellite option for regional and remote areas offers a great alternative to no service or an expensive, low-speed regional telco option. QCN believes that this will continue to be an acceptable alternative to customers who have little or no choice. The advent of the Amazon Kuiper satellite offering has the potential to bring prices down further and create competition for Starlink. The limitations of a satellite service continue to be the unreliable nature of a company domiciled outside of Australia, with no long-term contractual service obligations. Weather effects on service quality are another downside to the type of service. The question of sovereign risk

should also be closely considered should government agencies rely on satellite solutions as a standard remote connectivity option.

Wireless Internet Service Providers (WISPs) have been pivotal in QCN's strategy to enhance regional connectivity. The cost-effectiveness of backhaul is a critical component that enables regional players to thrive. QCN has consistently highlighted the importance of high-capacity handoff points that allow smaller partners to scale up rapidly. By promoting these points and building strong relationships with WISPs, QCN has successfully facilitated wireless network deployment in regional Queensland, ensuring that businesses previously unable to compete due to prohibitive backhaul costs can now do so effectively.

This approach aligns with the broader industry trend towards high-capacity wireless connectivity, supporting a range of applications from voice and data to IoT across diverse communities. QCN's collaboration with WISPs underlines the company's dedication to providing cost-effective backhaul solutions, which is essential for the growth and sustainability of regional telecommunications infrastructure.

Disaster resilience and emergency

What can be done to maximise access to multiple connectivity options in case of outages?

QCN Response:

Robust connectivity during times of outage demands a diverse range of connectivity options encompassing different carriers and technologies. A solid approach necessitates that local governments and emergency services are well-informed of their options before disasters occur.

Providing local governments and emergency services with alternative connectivity paths through diverse backhaul infrastructure is essential. Where tower access is available, microwave backhaul wireless access solutions can be utilised. In situations lacking fibre connections or alternative pathways, agencies should be equipped with the ability to swiftly deploy satellite connectivity. To make this cost-effective, agencies could serve as aggregators of satellite services for other community services, such as remote schools, hospitals, and police stations. Bulk procurement can reduce costs, and assigning this role to an entity with seasoned telecommunications staff is vital for effective emergency response and resilience.

Each state should be tasked with mapping towns that face resilience challenges, identifying potential fibre and microwave backhaul connections, or satellite backhaul connectivity options. State and federal funding should then be strategically allocated to connect each community with the most suitable option, thereby enhancing connectivity resilience.

What can be done to increase capacity and improve the reliability of telecommunications services in regional, rural and remote Australia?

QCN Response:

See previous responses.

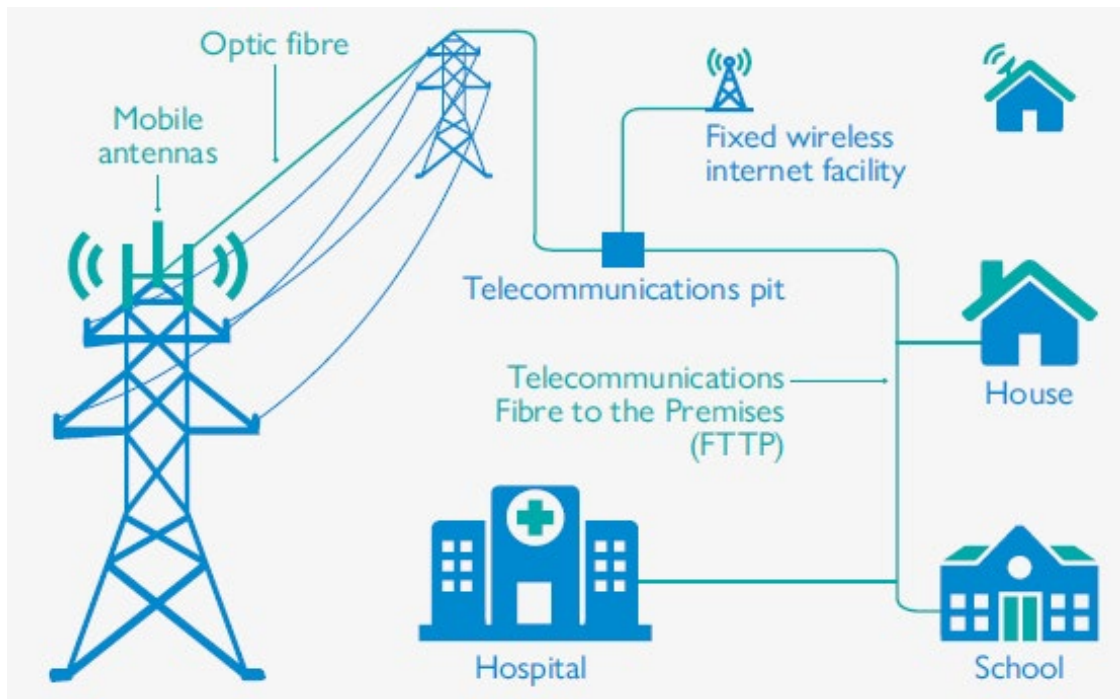
How can the energy and telecommunications sectors work more effectively, especially with respect to redundancy?

QCN Response:

The energy sector plays a crucial role in providing not only power redundancy but also telecommunications connectivity, as demonstrated by QCN's business model. Electrical distribution and transmission towers are dual-purpose, carrying high-voltage electricity and fibre optic cables for remote monitoring, control, and protection of the electricity network. These fibre optic cables offer substantial data transfer capacity, and by harnessing their spare capacity, high-speed redundant paths can be established for communities near this infrastructure. Additionally, transmission and distribution towers can accommodate wireless equipment to enhance mobile phone coverage.

A prime example of this application by QCN is depicted in Figure 1, where fibre optic cables within the electrical transmission line connect to a telecommunications pit. From there, QCN extends the connectivity into the township, enabling the installation of fibre or wireless equipment to connect residential homes, hospitals, schools, and businesses. This approach not only leverages existing infrastructure but also provides a cost-effective solution for enhancing connectivity in various communities.

Hosting of antennas and equipment for mobile phone coverage also occurs at transmission structures that have been identified as suitable for mobile black spot infill.



Impact of Government and Private Investment

What lessons can be learned from private sector investment in regional telecommunications in closing the digital divide in regional and remote areas?

QCN Response:

Put bluntly, private sector investment will not close the digital divide.

As stated in the opening of this response document, no private investment strategy currently exists that will close the digital divide in regional and remote areas of Australia. Both Telstra's and HyperOne's current plans focus on connectivity to major population centres, with regional Australia left begging.

Additionally, it must be assumed that 'Challenger Carriers' - Optus and TPG, do not have plans to invest in Regional Telecommunication infrastructure as both are signalling to the market, via proposed core asset sales, that investing in telecommunications infrastructure is now no longer core to their business strategies.

What has been your experience as a consumer of Australian Government programs aimed at improving regional communications? What improvements would you suggest?

QCN Response:

QCN has been a recipient of almost \$10M under Rounds 1 and 2 of the Regional Connectivity Program (RCP). For both rounds of the program, QCN has co-contributed 10% of the total project funding. As these programs are generally rolled out in areas where there is no commercial return, requiring even a 10% financial contribution will be prohibitive for many smaller local private telecommunications companies.

In conversations with the RCP teams in Canberra regarding feedback as to why a number of our proposed projects were unsuccessful, we were very surprised to hear that the Commonwealth generally expected up to a 50% co-contribution from RCP applicants. QCN considers this unreasonable and has the effect of the majority of the funding going to the usual large (uncompetitive) players – Telstra and NBN. Naturally this results in the continuation of uncompetitive regional telecommunications markets (particularly in terms of backhaul costs).

For RCP2, QCN (and many providers delivering difficult and complex regional projects) have experienced unexpected delivery delays due to factors outside of their control (unforeseen land access issues, inexperienced local councils, equipment delays, etc). Consequently, extensions to project finalisation dates have been requested.

For RCP2 projects, QCN was therefore surprised and disappointed when we were advised that an unexpected and unexplained arbitrary finalisation date of December 2024 would be imposed on all projects with no exceptions. This has resulted in a reduced scope having to be deployed to meet this deadline which is only two months short of what QCN required to complete the project. It is the residents and businesses in the small regional towns who will be disadvantaged by this, perhaps politically motivated, imposed deadline.

QCN was particularly disappointed to see a preferential treatment for Carriers on similar projects, delayed for similar reasons. Noting Communications Minister Michelle Rowland was compelled to extend the funding period for 176 mobile blackspot projects last year that were delayed, largely by local and state government planning processes, and writing to TPG Telecom CEO [REDACTED] on 22 June last year:

“I understand that building mobile infrastructure in regional, rural and remote parts of Australia can be complex and challenging, whereby factors such as obtaining landowner agreement, state and territory planning approvals, and receiving support from parks and power authorities is typically outside TPG’s direct control.”

One must ask, why is one regional project forcibly cut short, when another receives a letter from the Federal Minister expressing empathy for another carrier.

For QCN's project, with a minimum life of 7 years, but cut short due to a 2-month delivery delay, one might consider why this project is treated differently to others, to the detriment of the recipient community, who will miss out on much needed connectivity improvements.

What changes to Australian Government investment programs are required to ensure they are successful, efficient and effective in delivering improved, reliable and equitable telecommunications for regional, rural and remote consumers?

QCN Response:

Stop favouring the existing Telstra : NBN duopoly!

Repeatedly funding NBN and Telstra, in preference to supporting the private sector, destroys market competition and perpetuates the duopoly enjoyed by the two organisations. Supporting NBN and Telstra in regional areas simply extends their (Government funded) coverage to the detriment of local small businesses and stifles the growth of local ISPs. Smaller local ISPs, who employ and re-invest in their communities, should be supported.

As noted in this response the capital investment required to extend coverage, in sparsely and low-population areas, is prohibitive even for government funded organisations. Setting requirements of up to 50% contribution to RCP projects immediately culls the private sector participation.

How could Australian Government programs better align with state, territory and local government planning and funding processes in delivering telecommunications services and infrastructure?

QCN Response:

The Telecommunications Act positions Telecommunications as a Federal responsibility. This effectively makes state governments push back to the Federal government to "own and fix the problem", this then leads to disjointed approaches to improving telecommunication infrastructure.

Viable telecommunications infrastructure is in existence across various state and local government departments and utility providers, but as "**Telco is a Federal problem**", these assets sit underutilised. The Australian Government needs to ensure it is speaking with all participants in the telecommunications infrastructure sector within State Governments, including Government-owned corporations, and Local Governments.

The corollary to this position is that state (and local) governments must view telecommunications infrastructure in the same the way as other critical and essential infrastructure, such as road, rail and power. Despite the view that "**Telco is a Federal problem**", the state cannot turn their backs on

telecommunications, the state and local governments must see that it is their responsibility to improve liveability in their community.

As stated earlier, the Australian Government could consider supporting the establishment of a dedicated entity with expertise in telecommunications planning and technical delivery on a State-by-State basis, with the responsibility for coordinating the leverage of large infrastructure projects, to obtain systematic, efficient and cost-effective outcomes for improving regional connectivity.

In Queensland, QCN is lobbying for the creation of an **Office of Digital Infrastructure** within the Queensland Government, which would be focused on developing strategies and actions to improve the telecommunications infrastructure layer across Queensland. Such an Office, if appropriately empowered, could be the conduit and co-ordinator between the carriers, both national and local, the utility infrastructure providers, the Federal, State and Local governments and telecommunications industry participants. Such an organisation should also be empowered to clear the way for easier, more timely and appropriately priced access to existing government assets that could be leveraged for improved telecommunications access, such as land, easements and towers.