2021 Regional Telecommunications Review

September 2021

Introduction

1. Field Solutions Group (FSG) welcomes the opportunity to provide feedback to the Regional Telecommunications Independent Review Committee
2. FSG looks forward to discussing the content of this submission with the Committee in due course, so the Committee is fully informed on the intent of the content within this submission.
3. FSG is Australia's leading, rural, regional, and remote challenger telecommunications carrier listed on the Australian Stock Exchange.
4. FSG operates the largest non NBN Co fixed wireless access network in Australia with over 67,000 sq km of addressability. We are currently in the process of adding an additional 16 place-based networks across regional Australia to further extend that reach within Regional Connectivity Project.
5. Within the next two years, our network reach will extend to over 186,000 sq km of landmass.
6. FSG supports the importance of The Review, and it has been pleasing to see the results of previous reviews bearing fruits with outcomes and programs that have realised improved telecommunications in regional, rural and remote Australia.
7. This review comes at a pivotal time for communications in regional, rural and remote Australia, and FSG is eager to be part of a changing landscape for network connectivity delivery to the bush.

Terms of Reference & Questions Responses

What are the impacts of the Government's policies and programs for improving connectivity, competition and digital literacy in regional, rural and remote areas? (National Broadband Network, the Mobile Black Spot Program, the Regional Connectivity Program and the Regional Tech Hub). The role of innovation and alternative delivery models for regional connectivity.

8. Government Policy is key to driving greater telecommunications services for regional, rural and remote Australia. Further, it is only with the assistance of Commonwealth and State Government funding, that better end user experience *and* much needed competition be delivered in these areas. Costs, especially operational costs, are rising, whilst revenues are declining.
9. Australia is a vast landmass with its populations spread sparsely away from the coast. Yet within these vast plains and valleys with smaller populations, the economic contributions to Australia's GDP is in excess of $300B annually being made up of agriculture, mining and tourism.
10. These are often the areas that are in most need of enhanced connectivity and often being serviced by only one mobile network or satellite connectivity. The lack of quality and reliable connectivity in addition to a lack of competitive mobile networks, has a considerable impact on productivity within these sectors.
11. The NBN, whilst not without some commercial construct challenges, has provided a multi technology wholesale network model for a large proportion of the Australian population.
12. The introduction and changes in pricing for products such as "Enterprise Ethernet" have further enhanced competitiveness in the retail service provider space, especially within the regional markets it is available within.
13. FSG is not supportive of the CVC model being used by the NBN which is a view shared by many within the Australian Telecommunications Industry.
14. The 6 Rounds of Mobile Blackspots have delivered benefits to regional, rural and remote Australia, with over 1,300 sites awarded between the three Mobile Network Operators.

15. Commonwealth funding of over $380M combined with State, Local government and private enterprise capital is making this possible and FSG looks forward to participating in future MBSP rounds.
16. The programs have pioneered innovative solutions such as Optus' Satellite Small Cell solution that changed the way mobile coverage can be delivered to some of the most remote communities and outposts in Outback Australia. Such was the success; it has led to a competitive response in the market showing just what can be achieved with programs such as these.
17. FSG was the *first* successful Mobile Network Infrastructure Provider (MNIP), partnering with Optus, to be awarded funding under the Mobile Blackspot Program (**MBSP**). This has been followed up by a further MNIP award under the recently announced MBSP5A.
18. In addition to the MNIP award under MBSP5A, FSG was awarded funding to undertake two trials, in partnership with Optus.
    a. Active Neutral Host Radio Access Network (NH) trial
    b. Roaming Trial
19. The NH Trial will see 7 new towers built and equipment deployed across a 196km stretch of the Adventure Way between Thargomindah and Cunnamulla in outback Queensland. Using one set of electronics and antenna on the tower, it will facilitate coverage for the FSG Regional Australia Network and the Optus Mobile Network. FSG extended invitations to participate in the trials to both Telstra and TPG Telecom.
20. A regional Australian first, this NH Trial aims to demonstrate that not only is it technically possible to deliver mobile coverage in non-traditional ways, but to do so in a way that is far more economically viable for all MNOs. It will open-up less economically viable areas to not only benefit from mobile connectivity but will drive competitive outcomes for the true benefit of the consumer.
21. The NH network will be Public Safety Mobile Broadband ready.
22. The second trial awarded under MBSP5A involves Optus subscribers roaming onto the FSG's Regional Australia Network (R.A.N), a place based 4G Network designed for Agri-business.
23. As Australia's 4th MNO, FSG will be progressively rolling out the R.A.N in regional, rural and remote Australia, in partnership with communities and Agri-business to deliver 4G and IoT services.
24. Whilst Domestic Roaming isn't "new" to the Australian mobile market, this trial aims to demonstrate the ability for place-based networks, unlikely to be served by traditional MNOs, can realise cost effective connectivity when their customers are in these areas. For example, a farmer has FSG R.A.N deployed across their farm and when contractors or agronomists visit the property, should their carrier have a roaming agreement with FSG, they can maintain connectivity just as they would on their "home" network. Importantly, anyone within the FSG R.A.N coverage area regardless, would have access to make a 000 call with a 4G capable device.
25. As FSG progressively expands its 4G R.A.N, the opportunity for the three large MNOs to have cost effective alternatives to expand and deepen their existing networks will become more relevant.
26. FSG, as a supporter of competition, also firmly believes that the introduction of the R.A.N will drive market competition for price *and* service for the betterment of consumers and business alike. Far to much of regional Australia is desperately suffering from a lack of mobile competition. No one wants to constantly see only one player on the footy field.
27. We are planning to undertake the trials during 2022. In anticipation of the trial's success, we will in parallel be working on commercial models with participating MNOs.
28. The Regional Connectivity Program (**RCP**) was a direct result of the 2018 Regional Telecommunications Review and round one (including RCP1A award) will deliver over 132 placed based connectivity improvements.
29. FSG is very pleased to have been awarded $24.5M to deliver 16 place-based networks that will enhance connectivity across regional, rural, and remote Australia.

30. One of the biggest successes of the **RCP** was the engagement and support of Local Government and regionally based organisations. Local knows best.
31. The **RCP** was well supported from a variety if telecommunication providers, including many non-tier 1 organisations, with many of these focussed solely on serving regional Australia.

What were some of the insights from COVID-19 on consumer access to and usage of broadband and mobile technology in regional, rural and remote areas?

32. Internet connectivity was a major requirement during Australian "lockdown" lives. This is not just about reliability of broadband throughputs, but also the ability to use mobile devices within homesteads and sheds across regional, rural, and remote Australia. These requirements have consistently been highlighted within previous reviews and FSG suspects, this will continue to be the case for the 2021 review.
33. Australia was already experiencing a "sea" and "tree" change before the COVID-19 pandemic. Reliable and suitable broadband & mobile connectivity is a major factor when considering such a move. Work from home orders have proven that many jobs can be undertaken from wherever reliable connectivity is present. As a result, more than ever, a shift to live in regional areas has become more viable for more Australians.
34. Just as important in these times, is the ability to support customers with robust customer service. The reliance on connectivity has never been more important for work, education and entertainment reasons alike. Supporting timely fault resolution in already isolated areas remains paramount with long outages a significant impact to the lives of those in impacted areas.
35. Video Conferences became the norm during 2020 which did stretch the limits of many users' broadband connectivity. Having to "turn off video" in order to ensure quality of a conference calls defeats the purpose of having a video subscription option and lessons the engagement that "face-to-face" interactions bring.

What emerging technologies could lead to significant changes in how telecommunications services are delivered in regional, rural and remote parts of Australia in the next 5-10 years; What are some of the barriers to accessing emerging technologies?

36. FSG is looking forward to undertaking the two trials under MBSP5A. These two trials will ultimately significantly change the way mobile networks can be deployed in a more economically sustainable manner in regional, rural, and remote Australia.
37. Without changing the model for delivery of mobile connectivity in regional, rural, and remote Australia, there will be limited change in market and infrastructure competition. It's already plainly clear that the lack of competition is resulting in significant connectivity challenges within the mobile market and without competitive forces driving the incumbents to invest, consumers are greatly impacted.
38. The emergence of "OpenRan" technologies will help to further drive reduced costs of required mobile tower equipment, critical to making regional networks economically viable. Even with government grants, the cost to deliver the service in some areas is still economically challenging.
39. The emergence of Low Earth Orbit Satellites (LEOs) will change the way some of the most remote & traditionally challenging locations can enjoy connectivity at service levels, greater than what is provided today by geostationary satellite services. This will be of particular benefit to the many remote Indigenous Communities that are often underserved.
40. LEOs have the potential to provide backup connectivity during times of natural disasters when terrestrial networks experience service interruptions.
41. Satellite Communications are still very relevant within Australia with mobile networks covering less than 30% of this vast continent.

42. Of most benefit from the LEOs is the lower latency and higher throughputs capable than what is available by traditional geostationary satellites. Whilst GEOs can also provide higher throughput speed, they do so with higher latency and the cost to provide the service makes it all but uneconomic to those that require it most.

How does service reliability issues impact customers and communities in regional and remote areas?

43. All types of connectivity in many respects are now considered "essential" by those that use them. This is becoming more relevant to mobile networks, with the continued decline in fixed home phones and introductions of the many "over the top" applications handling voice calls.
44. Unlike metropolitan areas, when outages and a reliability issues become apparent in regional, rural, and remote Australia, it's not just a case of driving a short distance to the next tower or WiFi hotspot to make your call or send an email.
45. Reliability issues can include network congestion, which can occur on any network not designed and built to the demands of the users that the network is serving. This can often be the case where there is only one mobile network operator providing service. With no competitive market tension, resolution of "poor performance and coverage" can be a long time coming.
46. During the Black Summer Bushfires, lack of connectivity resulted in essential businesses being unable to process electronic payments due to outages caused by the fires. These outages included mobile networks, often used to provide connectivity to EFTPOS terminals as well as the NBN which requires power to maintain service.
47. Addressing these issues is can be complex as no network, fixed or mobile, is "bullet" proof. The MNOs and NBN Co worked closely with power and government authorities to restore (and protect) services when safe to do so, however, often the loss of these services during the height of the emergency is of greatest concern.
48. During times of natural disasters, mobile network congestion, when sites remain on air, is often experienced. More than ever, there is a reliance on "apps" to obtain up to date information which drives further pressure on mobile networks.
49. FSG supports education campaigns that remind communities to ensure they have access to other forms of communications such as battery powered radios to keep across updates via Australia's Emergency Broadcaster, the ABC.
50. FSG recommends for members of the community that may have hearing impairments, that consideration be given to provide subsidised satellite based "text" devices that can issue emergency updates.
51. FSG has been pleased to see that there have been some government initiatives to assist with network hardening, however it was noted that the initial government programs did not extend to the wider telecommunications industry.
52. The location of evacuation areas is one area that could have greater focus for "backup" connectivity requirements. Dedicated backup power and telecommunication facilities could be established and used, not only during disaster situations, but also have the potential to be used all year around. Diverse transmission paths, backup generators for power supply, and innovative solutions such as Neutral Host Active Radio Access Networks (NH), can ensure that all MNOs, future PSMB and even NBN Co are catered for and avoid duplication of infrastructure.
53. Where evacuation locations are nominated on an ad-hoc basis, NH Cells on Wheels utilising backhaul by satellite can also be used to maintain connectivity for those evacuated communities. The ability to rapidly deploy a mobile network capable of broadcasting all carriers, whilst being independent of terrestrial connectivity and power, will provide many benefits to regions that have been impacted by the loss of infrastructure and equipment.

What changes are warranted to existing Government policies and programs to ensure they continue to be effective, fit for purpose and are maximising the social and economic potential from existing and emerging technological advances?

54. Spectrum, its cost, and availability is by far the biggest barrier for any new entrant into the mobile market. In particular, low band spectrum is scarce, but also the most desirable in regional, rural and remote Australia where coverage is king.
55. Historically, low band spectrum, with exception of the 850 band, has been allocated in national lots.
56. FSG acknowledges that the ACMA has been in consultation with Industry on the 2021 low band 850/900 auction, and as a result, a new regional metro split has been introduced.
57. Significant amounts of this spectrum, awarded under previous auctions, is not currently being used in large areas of regional, rural, and remote Australia. There is a strong argument that policy should be introduced covering off a "use it or lose it" clause for spectrum licence holders. This may encourage spectrum licences holders to enter into *reasonable* commercial arrangements with potential users of the spectrum ahead of a relinquish of held spectrum in areas of non-use.
58. 98% of the Australian population is served by at least two MNOs, however, investment to truly drive competition outside these areas is limited. Whilst agreement can be sought commercially to access the spectrum of MNOs with national licences not using spectrum in that "2%", the ability to independently acquire low band spectrum in areas desperate for choice and enhanced services, will remain limited without a significant change in policy.
59. Spectrum acquisition allows for certainty around capital investments for the long-term and build confidence in the market that new entrants are here for the long-haul. One of the biggest challenges is the payment terms on the spectrum licences. Greater flexibility should be given to new entrants into regional markets on payment terms over a 20-year licence, to allow them to establish networks and drive competition. This isn't that different to when the three incumbents MNOs were granted spectrum licences to establish national networks back in the early 1990s.
60. Whilst there is no doubting that the 6 rounds of **MBSP** have been successful, the guidelines still use poor eligibility and assessment criteria that have for certain resulted in solid submissions to address in building and in vehicular coverage being left unawarded. This is despite several recent rounds being left "undersubscribed".
61. Current guidelines require applicants to submit proposals that simulate a level of coverage that is considered "inbuilding/in vehicle" (in other words, levels which enable the use of a handheld device inside a building or within a vehicle). However, assessments compare this "new coverage" with public coverage maps which is not a "like for like" comparison.
62. Public coverage maps show the general extent of using a mobile device whilst "outdoors". Comparisons must be made between a guidelines design requirement (that is inbuilding/in vehicle levels) and the same level of existing carriers' networks – that is like for like.
63. Previous reviews have constantly highlighted the desire to enhance in home, work shed and vehicle coverage for voice, and importantly, data. To this extent, data service levels need to be the focus when considering coverage design levels for any programs. As a result, basic voice and text services will also be enhanced.
64. FSG has been encouraged by recent proposed changes within the Peri-Urban Mobile Program proposed guidelines and will look forward to discussing suggested changes to further enhance assessment criteria.
65. FSG has more than 30 years' experience in mobile network coverage planning and will welcome the opportunity to deep dive into how MBSP guidelines can be modified to represent the nature of consumer requirements and how best the Commonwealth could update its assessment criteria to

ensure there is less likelihood of undersubscription whilst maximising benefits for Australian mobile consumers.

66. FSG understands that not all MNOs offer access to the full extent of their mobile networks to MNVO customers. Under future guidelines to any **MBSP/RCP**, it should be considered a requirement that sites awarded funding be made available to MNVO customers to maximise consumer choice and to promote competition (Across 5G and 4G services).
67. Some MNOs and their subsidiaries, have access to a significant pool of existing infrastructure, historically funded by government, to deliver regional backhaul transmission services. Whilst guidelines do not *specifically* exclude these from being offered to other MNOs for co-location like greenfield solutions are required to be, the looseness around this being a requirement has resulted in a further loss of potential competition outcomes for regional Australia.
68. Significant Commonwealth investment has been directed towards structurally upgrading some of these towers to facilitate one MNO outcomes. A simple change in the guidelines would allow other MNOs the opportunity to negotiate incremental contribution costs to ensure the structure can accommodate their mobile equipment on these structures. Whilst not every awarded site may be attractive to other MNOs, it will further promote competition in areas that will be otherwise monopolised without these changes being considered.
69. Round 1 of the Regional Connectivity Program (**RCP**) was well subscribed and FSG is looking forward to delivering the 16 place-based networks awarded.
70. There is no doubt, that the **RCP** success was a result of less stringent guidelines when compared, for example, the **MBSP**. A balanced approach however is recommended to ensure appropriate and scalable solutions are awarded.
71. Significant **RCP** grants were awarded for delivery of mobile voice & data solutions which is more aligned to a mobile blackspot type program. Could these funds have been better utilised to facilitate broadband connectivity networks? This further supports that **MBSP** guidelines require changes to assessment criteria and perhaps a result would have been less undersubscription and greater outcomes for the **RCP**.
72. Within the **RCP** awards, there is significant "tower" infrastructure being built. Unlike the **MBSP**, there is no requirement for awardees to offer this infrastructure to the market for the purpose of co-design/co-locate. FSG intends to proactively offer the opportunity of co-design/co-locate to the industry and would recommend that **RCP2** guidelines include a similar process to the MBSP to drive greater competition outcomes.
73. Greater consideration needs to be given for operational expenses for future **MBSPs** and **RCP**. Cost of power, land access and tower access are considerable and have major impact on the total cost of ownership of a network. This also becomes more apparent as MNOs divest ownership of tower assets to companies that require a return on their investments which may actually drive-up tower leasing costs.
74. Further scrutiny needs to be placed on applicants not submitting solutions which are not, or have not been recently, within their 3-year operating plans.
75. The **RCP** could've have benefited from stronger guidelines on minimum service levels required for solutions to be awarded funding. Whilst there is no doubt flexibility within the **RCP** was advantageous, FSG believes that implementing clear deliverables on service level requirements will ensure that the network solutions awarded will deliver the best possible outcome for the communities benefiting from the rollout.
76. FSG is looking forward to working with the Department in providing feedback on guidelines ahead of **RCP2** to best maximise the outcomes for communities.
77. Scalable, competitive and cost-effective access to fibre backhaul is still a challenge in many parts of regional Australia.

78. When government awards funding for fibre builds, more consideration should be given to require awardees to seek design inputs (Drop off points, possible spur options) from the market ahead of the build. As with any infrastructure project, including requirements in the design phase, is usually more cost effective, than revisiting the solution. The result greater market outcomes for consumers and indeed, the fibre provider.
79. Unlike MBSP where greenfield towers are "required" to be offered to other MNOs for co design/build, fibre builds rarely, if it all, have a requirement to go to market to seek these requirements. This is a lost opportunity.

What policy settings might be needed to support more rapid rollout of and investment in new telecommunications technologies in regional areas?

80. Telecommunications operators are often treated very differently to other "Critical Infrastructure" providers when it comes to access and tenure. This is in contrast during and post natural disasters and national emergency when connectivity is described as "Critical Infrastructure".
81. It's acknowledged that there have been some positive changes around some impediments in the construction of new telecommunications services in some areas. It is however noted, the these are very much set at State & Territory level making it difficult to achieve a truly national approach.
82. FSG fully supports the content and 21 key recommendations in the Australian Mobile Telecommunications Associations report "State & Territory 5G Infrastructure Readiness Assessment" First edition, published in 2021.

What improvements in digital connectivity could support the Government's broader regional development policies and priorities, such as decentralisation and the development of Northern Australia;

83. Access to reliable and fast connectivity is key to support decentralisation from the major metropolitan and regional towns, areas where competition generally thrives. With competition comes the benefits of solid connectivity.
84. Whilst "Special Activation Precincts" help to drive growth in some regional towns, others struggle to limit their own declines, which in turn, starts to limit investment from the private sector in connectivity.
85. Connectivity brings everything closer, as has been clearly seen during the COVID-19 pandemic. More than ever, people have been able to continue to undertake their roles, whilst not attending an office – and this has included people moving into regional areas whilst maintaining their "city" job.
86. The development of Northern Australia will be critical to our economy for years to come. And it's for this reason, that government policy should be cautious about how connectivity is funded in this vast part of Australia.
87. The costs to deliver infrastructure and operate it in Northern Australia, outside the populous areas, is challenging. There needs to be significant thought on how any connectivity projects awarded government funding will not result in a (further) monopoly outcome for the region.
88. A possible way to avoid this is to take a holistic approach to gap analysis and future requirements, that can shape a long-term view for Northern Australia. Approaching Northern Australia in piecemeal way, via a multitude of grant programmes run at Federal and State level that may not be aligned in their objectives, is not recommended.
89. Encouraging wider industry collaboration will create for a better outcome where scarce private and government equity can be used to deliver a competitive framework of infrastructure and services at a retail, enterprise and wholesale market level.
90. FSG strongly recommends the Federal Government, in partnership with relevant State and Territory Governments, undertake a public consultation into telecommunications requirements for Northern Australia.

In what ways can State, Territory, and Federal programs to support regional connectivity could be further coordinated?

91. There is no doubt that locals know best. State Governments, together with their regional based agencies and local governments, are a critical part in the prioritising and informing on where connectivity is a challenge and requires investment.
92. FSG believes the State Government ability to procure significant information on regions connectivity issues is key to shaping Commonwealth programs and is a far more efficient way for the Commonwealth and co-investors to be best informed on an equal basis.
93. Equally as important, when Commonwealth funding is provided to states for programs that involve the deployment of telecommunications facilities (QRida for example), is that there are well formed guidelines that ensure grants are facilitated to *appropriate* telecommunication projects that also do not, albeit unintentionally, further monopolise regions. The Federal Governments Blackspots program guidelines, whilst requiring some changes, still offer some very pertinent requirements, such as co-location for example.
94. FSG is pleased to see that there is cross border consideration in some recent telecommunications projects. Recent border closures due to COVID have highlighted there is still some work to go to ensure border communities, large and small, are not negatively impacted by diverse thinking on telecommunications requirements between state and federal governments.

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