Submission to the 5-year Productivity Inquiry: Australia's data and digital dividend Interim report

About Vocus

Vocus, Australia's specialist fibre and network solutions provider, operates Australia's second-largest intercapital network and is a key enabler of the Australian satellite industry. In total, the Vocus network comprises 25,000km of secure, high-capacity fibre supported by the 4,600km Australia Singapore Cable and the 2,100km North West Cable System between Darwin and Port Hedland. Vocus also owns and operates more than 300 Controlled Environment Vaults (CEVs) which provide critical ground infrastructure assets for global satellite operators offering services in Australia.

Executive Summary

Vocus welcomes the opportunity to respond to the Productivity Commission's Inquiry, and this response is directed towards *Recommendation direction and information request 3.1: Investing in regional digital infrastructure.*

Australia's approach to funding regional telecommunications infrastructure has resulted in a patchwork of subsidies, levies, and funding grants which often provide overlapping technology solutions to the same group of end-users.

For example, a person living in regional Australia today may have access to:

- a standard telephone service provided by Telstra (funded by both carriers and taxpayers under the Universal Service Guarantee),
- a broadband service provided by NBN's Fixed Wireless or Satellite network (initially funded by taxpayers in the form of NBN equity, then subsidised by carriers under the Regional Broadband Scheme),
- a mobile voice and broadband service provided by one or more operators (funded by taxpayers under the Mobile Black Spot Program),
- a voice and broadband service provided by a non-NBN fixed wireless operator (funded by taxpayers under the Regional Connectivity Program),
- a broadband service provided on ADSL in NBN's fixed wireless and satellite footprint as a result of Telstra's copper continuity obligation (funded by both carriers and taxpayers under the Universal Service Guarantee).

While each of these individual programs has improved telecommunications access for regional Australians, they have also been economically inefficient by having little or no regard for the other funding programs already in place.

Vocus submits that the telecommunications industry is on the cusp of a technological breakthrough which will revolutionise connectivity for Australians in regional areas – requiring a major rethink of Government policies and funding programs.

Low Earth Orbit satellites, or LEOs, are poised to deliver a step-change in both the speed and capacity of broadband services in regional Australia, and in future are expected to provide the capability to deliver voice services that are virtually indistinguishable from traditional landline telephony. At least four LEO operators including Starlink (a division of SpaceX), OneWeb, Telesat, and Amazon's Project Kuiper are launching global LEO satellite constellations, and all have indicated their intention to serve the Australian market (with one already in service).

The arrival of commercial, competitive, and universally-available communications services delivered by LEOs has dramatic implications for regional telecommunications funding programs.

The Universal Service Guarantee (USG), Regional Broadband Scheme (RBS), Mobile Black Spot Program (MBSP), Regional Connectivity Program (RCP), and numerous State Government funding programs have created an inefficient tangle of cross-subsidies which regularly overlap and overbuild one another – at a total cost (to taxpayers, carriers, and consumers) of more than a billion dollars every year.

If current programs continue unchanged, Australians in regional areas will be left with a duplicative patchwork of services – when a recalibration of funding could help provide superior technologies at lower cost.

Vocus' response calls for:

1. The removal of the USG (Standard Telephone Service), to be replaced with a contestable voice service subsidy solely available to premises with poor or no mobile coverage,
2. The removal of the RBS, to provide a level playing field for competitive infrastructure operators in areas covered by NBN Fixed Wireless and Satellite,
3. The removal of the RCP, which subsidises terrestrial telecommunications infrastructure in areas that already have competitive satellite coverage,
4. The establishment of a targeted subsidy program tailored to address the small number of premises that lack access to voice and broadband services on a commercial basis.

Recommendation direction and information request 3.1: Investing in regional digital infrastructure

The Commission is considering a recommendation in its final report to improve access to low-cost, reliable, future-proofed internet services in regional and remote parts of Australia. To inform the development of this recommendation, we are seeking views and evidence on:

- Could a Universal Service Guarantee (USG) tender mechanism be designed to meet regional and remote connectivity requirements and support competitive bidding, and what would be appropriate settings for:
  - the minimum service levels to be delivered and maximum prices to be charged by the successful provider
  - the geographic regions that tenders are issued for, and how granular regional breakdowns should be
  - contract specifications such as optimal length and payments structure?
- What would be the benefits and costs of introducing such a market-based mechanism, compared to the current system of allocating government funds to multiple regional digital infrastructure programs?
- If a USG tender mechanism were to be implemented, what kind of phasing or transitional arrangements would be required to effectively shift from the current system?

Vocus Response

A USG could be put to tender utilising the new generation of LEO satellite providers. LEO services already in market exceed the minimum speeds required of NBN under existing Statutory Infrastructure Provider (SIP) arrangements as part of the USG. A key consideration in including LEO services in a USG funding program is support and replacement of customer premise equipment (CPE, i.e. dishes, modems) in the case of fault. To enable a standard minimum level of service level requires a critical mass in an area to support field staff. This could be tendered competitively separately to the LEO provider, because CPE is disaggregated from a service restoration perspective, as the service level (outside of the speed and latency) is all in the user terminal. This would allow a USG subsidy to be offered as a direct payment to each user targeted at affordability: the Government could pay the difference between a capped monthly consumer cost (which could be set at a comparable metropolitan broadband service) and the tendered fee from a panel of providers, providing choice for consumers from a range of providers.

USG arrangements have historically been established on the notion that regional and remote telecoms services are not commercially viable, and therefore must be centrally funded to ensure their supply. But this is largely no longer the case – the majority of premises in regional Australia now have a choice of infrastructure providers competing to provide their voice and/or broadband services:

- 100% of premises have access to at least one broadband provider (via the NBN, using Satellite (3%), fixed wireless (4%), or fixed line (93%)),
- 99.4% of premises have access to at least two providers (inc. Telstra mobile voice and broadband coverage[1]),
- 98.5% of premises have access to at least three providers (inc. Optus mobile voice and broadband coverage[2]),
- 96% of premises have access to at least four providers (inc. TPG/Vodafone mobile voice and broadband coverage),
- And the majority of premises now also have access to LEO satellite broadband, with 100% coverage anticipated in coming years as the rollout is completed.

Starlink coverage map (October 2022)

USG Voice Services

Assuming that mobile network operators' coverage claims are accurate, only 0.6% of premises in Australia are without any mobile coverage, and of the 99.4% of premises with coverage, less than 1% of premises only have coverage from one operator – meaning 98.5% of premises are expected to have access to competitive mobile voice and broadband services.

[1] https://www.telstra.com.au/coverage-networks/our-networkhttps://www.telstra.com.au/coverage-networks/our-network
[2] https://www.optus.com.au/portal/site/shop/menuitem.26522dd2345d90435fdcf21060a08a0c/?vgnextoid=6fe99309ee210410VgnVCM1000001f80ff0aRCRD&vgnextfmt=default

The competitive market has solved the issue of voice service provision for these premises, so any future Government funding programs should only target the 0.6% of premises with poor or no mobile coverage. Given that mobile pricing is nationally consistent regardless of geographical location (and voice calls are now unlimited and untimed on virtually all plans, at a lower cost than fixed line plans), there should be no requirement for any Government subsidy for voice services to any premise where mobile coverage is available and reliable.

For the 0.6% of premises without mobile coverage, a USG tender mechanism for voice services could provide alternatives such as subsidised satellite phones, or subsidised installation of rooftop antennas to improve signal strength and enable mobile voice services in areas where signal strength is too weak to guarantee a reliable voice connection.

As LEO technology continues to advance, LEOs are expected to be capable of providing voice over IP services – making them another potential option for USG voice services in future. LEOs offer latencies similar to fixed-line and mobile technologies (~20-40 milliseconds), a significant improvement over existing satellite services which typically have round-trip latencies of ~600ms.

A contestable USG voice tender could be conducted on a per-premise basis for the 0.6% of premises without mobile coverage (as distinct from a geographic-region basis as suggested in the Inquiry's question). Participants in a tender process would have the opportunity to submit their lowest cost to provide a voice service to each eligible premise, and Government could subsidise the 'gap' between the total cost of service provision and the cost to be charged to the end-user (which could be pegged at the cost of an existing standard telephone service).

This system would ensure that Government subsidies would only be paid to provide services to premises where no alternatives were available, unlike today's overlapping arrangements where USG fixed-line voice services are subsidised to premises which also have NBN coverage, mobile coverage, and in the vast majority of cases, LEO satellite coverage.

<u>USG Broadband Services</u>

The Commission states in its report that "investing in a mix of technology types to improve regional and remote connectivity is most efficient, as different connection methods can be used and adapted to more efficiently accommodate the needs of various locations" (p35).

Vocus submits that for the purposes of providing high-speed broadband, LEO satellites provide the most efficient one-size-fits-all connectivity as they offer the fastest available broadband speeds regardless of geographical location (noting that 100% national coverage is anticipated in coming years as LEO deployments are completed).

Unlike terrestrial broadband technologies (fixed line, fixed wireless, and mobile), LEO satellites do not require any new terrestrial network investment except for a self-install antenna (currently sold direct to consumers at a retail price of US$924). Compared to the cost of installing a new mobile tower with terrestrial backhaul and any required customer premise equipment – at a total cost likely to be in the vicinity of $1 million – a contestable USG is likely to find that the cost of subsidising LEO antennas is far more economically efficient, particularly in locations with low population densities.

LEO services currently retail at US$139 per month for unlimited data, so even with a Government subsidy towards this monthly cost, LEO broadband services are still likely to be more cost effective than comparable terrestrial technologies.

LEO broadband speeds are also likely to be superior to terrestrial technologies in remote areas, offering median speeds of over 140Mbps in Australia compared to just over 50Mbps for fixed line, according to Speedtest.net operator Ookla[3].

LEOs also offer unlimited data at much higher speeds than available on NBN Sky Muster satellite services. For example, a $64.99 NBN Sky Muster broadband plan offers speeds between 5-25Mbps with 60Gb of monthly data during peak times, compared to LEO speeds of 140Mbps with unlimited data at all times. While a commercial LEO service comes at a higher monthly cost, it should be noted that these services,

[3] https://www.ookla.com/articles/starlink-hughesnet-viasat-performance-q4-2021

unlike NBN's, have no Government subsidies nor the benefit of the Regional Broadband Scheme levy on competitors.

Vocus agrees with the Commission's view that "Government investment in regional digital infrastructure should therefore be targeted towards addressing infrastructure gaps, where required, without unduly interfering with private sector activity" (p37). Vocus also agrees that "The government could instead consider using a technology neutral market-based mechanism such as competitive tendering, which may lead to more efficient outcomes and address gaps in regional and remote connectivity at lower cost" (p40).

By removing the various taxpayer and industry subsidies involved in the USG, RBS, MBSP, and RCP, LEOs could provide near-universal high-speed broadband coverage on a level playing field with other technologies. This could enable LEO operators to participate in a technology neutral competitive tender to provide the most advanced broadband services in regional Australia at the least cost to taxpayers.

Today, the USG sees Telstra paid ~$250 million a year to maintain the voice-only Standard Telephone Service (predominantly via the copper continuity obligation). This is partially a direct Government subsidy of $100 million, and partially via the Telecoms Industry Levy (TIL) which collects ~$250 million for a range of public interest telecoms services including the Standard Telephone Service.

Telstra contributes the largest annual share of the TIL – around $140 million[4]. But in 2020 NBN contributed more than $16 million to the TIL – and as NBN's revenues inevitably grow, so will its share of the TIL. This means NBN will be paying Telstra tens of millions of dollars a year to keep its USG copper network operational in the same areas that NBN is required to operate its own loss-making fixed wireless and satellite networks.

At the same time, NBN's fixed wireless and satellite networks are subsidised via the Regional Broadband Scheme (RBS). The RBS is expected to raise over $741 million in its first year of operation to offset NBN's regional network losses of $12.9 billion for the period of 2009-2040, with 95% of the total annual cost initially expected to be paid by NBN itself and competitive operators (including USG provider Telstra) paying the remaining 5%.

The result is an absurd situation where Telstra pays the majority of USG funding to itself, and NBN pays the majority of RBS funding to itself – but where Telstra and NBN also increasingly pay each other to operate duplicative networks. Combined, the USG and the RBS result in ~$1 billion of annual cross-subsidies for overlapping networks serving the same users.

These programs create an uneven playing field for a commercial LEO operator which is forced to compete for customers against two Government-subsidised networks.

The RBS should be abolished to ensure that NBN does not maintain its unfair advantage over competitive providers, and any future USG broadband arrangements should require NBN to compete on a level playing field for any Government funding against private operators.

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Please direct any questions regarding this submission to:

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[4] https://www.acma.gov.au/publications/2020-11/rules/telecommunications-industry-levy-assessment-til-2019-20