

Mobile Network Roaming Situation Analysis – 2022 update



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Introduction

In August 2020, Venture Insights produced a report for Regional Development Australia Committees (Victoria) on the situation with delivery and regulation of domestic roaming services, particularly in regional areas.

Regional Development Victoria (Grampians) has requested an update of that report to address:

- The findings of the 2021 Federal Regional Telecommunications Review
- Any major new federal and State government announcements
- The Telstra/TPG network sharing announcement.

and any other developments that Venture Insights find relevant to the future of roaming in Australia.

Executive Summary

In 2017 the ACCC completed its third review into mobile roaming and (as per its earlier inquiries) determined not to regulate mobile roaming. The key dilemma in making this decision revolved around the balance of (a) increasing the choice of mobile providers for consumers versus (b) the potential for reduced investment in future network upgrades and extensions. The ACCC prioritised competition at the infrastructure level over competition at the service level.

Since that decision, we have seen significant developments across the industry related to this topic. They include ongoing infrastructure co-investment in the Commonwealth's mobile blackspot program, a Regional Telecommunications Independent Review, the rollout of 5G networks, the divestment of tower assets by all three mobile network operators, and a mobile network sharing agreement for regional areas between Telstra and TPG Telecom.

All these developments have material effects on regional coverage, and they mainly increase the viability of alternatives to roaming such as network sharing schemes.

2021 Federal Regional Telecommunications Review

The Review concluded that measures to support increased passive and active mobile network infrastructure sharing should be taken to promote expanded regional mobile coverage. It suggested that policymakers and mobile network operators consider the feasibility of trials of domestic roaming on infrastructure in disaster affected areas as part of a range of measures to ensure there is access to reliable communications in emergency situations.

It also recommended that the government continue to support the provision of new mobile coverage with investments that address coverage, capacity and competition issues and consider funding vehicles which leverage private sector co-investment.

The ACCC is now conducting a public inquiry into regional mobile tower access and the feasibility of providing mobile roaming during natural disasters. This inquiry was a recommendation of the Regional Telecommunications Inquiry.

The Regional Mobile Infrastructure Inquiry 2022-23 will look specifically at whether roaming can be activated in an area where there is a disaster or other emergency. The Minister has specifically noted that this inquiry is not an inquiry into domestic mobile roaming generally.

One of the key outcomes of this inquiry is to provide the government with a better understanding of how costs affect tower access fees and broader decisions to invest in towers and associated telecommunications infrastructure. The inquiry will also consider measures that could improve mobile coverage.

Recent Federal and State government announcements

In response to shifting economics, the Round 5A of the Mobile Black Spot program was used to test a range of program designs to continue to expand and improve mobile coverage and competition in priority areas, including natural disaster-prone areas and major transport corridors.

Funding was provided for three trials that will test ways that providers can roll out shared mobile infrastructure to reduce costs and provide new coverage from multiple carriers. This includes the use of a 'neutral host' model, as well as domestic roaming at two sites. However, the promotion of network sharing by the program has only extended to 28% of projects so far, as the complexities of coordinating multiple network investments and competing carrier interests have proven difficult to overcome.

State governments have also been giving additional funding for regional infrastructure, with the Victorian Government making one of the largest contributions. With public funding underpinning a significant part of this mobile infrastructure, the public interest needs to be considered. Domestic mobile roaming, especially under special circumstances like emergencies and natural disasters could bring important benefits to regional communities.

Telstra and TPG network sharing agreements

Sharing the radio access network (RAN) as would happen under the proposed agreement could improve TPG's regional coverage significantly. The deal covers 17% of the Australian population and will allow TPG Telecom to access approximately 3,700 Telstra's active mobile network assets, increasing its coverage to 98.8% of the population (from ~96% today). The deal in its current form could increase policy pressure for wider regional infrastructure sharing.

Our view is that the ACCC will have several issues with the deal, particularly Telstra's expanded access to spectrum in the area and TPG Telecom's shutting down of regional infrastructure. In addition, the deal would reduce Optus' incentives to invest in regional infrastructure, upsetting the competitive landscape in regional Australia. If the ACCC's approach reflects its past approach and emphasis on infrastructure-based competition, it is difficult to see how it would approve the deal in its current form.

On the other hand, if the ACCC were to approve the deal in its current form it would signal a reduced emphasis on infrastructure-based competition, and a renewed willingness to support infrastructure-sharing approaches (including roaming). Once the ACCC has published its decision in October 2022 it will be clearer which way the ACCC is leaning.

Other developments

The structural separation of the telcos passive assets, particularly mobile towers, is also allowing for more commercial arrangements that can enhance regional coverage by allowing mobile network providers with limited regional coverage to access towers and provide coverage in areas that would not be commercially viable before.

The importance of telecommunications in regional areas is also growing and became even more evident in face of the pandemic and a range of recent natural disasters. Service reliability has become more critical than ever because of the high dependence on digital financial transactions to small business, as the use of cash in the community has declined considerably after the COVID-19. Venture Insights' consumer surveys show a steady increase in the importance consumers attach to regional coverage.

Apart from examining emergency roaming, the ACCC's Regional Mobile Infrastructure Inquiry 2022-23 will investigate the costs and other operational aspects of access to towers and other infrastructure assets in regional, rural, remote and peri-urban areas.

An industry and policy consensus seems to be emerging that emergency roaming will proceed in some form. However, we do not see any consensus emerging to go further, and emergency roaming is unlikely to flow on to wider roaming access for this reason. In particular, there is no evidence that the ACCC's prioritisation of infrastructure-based competition has changed since the last roaming inquiry. Telstra and Optus remain opposed, and if TPG Telecom succeeds in getting access to the Telstra network on a commercial basis, its past support for roaming will be moot.

Definition of Mobile Network Roaming

Mobile network roaming allows a customer of one mobile network (e.g. TPG Telecom) to use (or roam onto) a mobile network managed by another operator (e.g. Telstra's mobile network). Under roaming, customers have access to mobile services outside of their own operator's network coverage.

Telstra, Optus and TPG Telecom are Australia's three mobile network operators. Other mobile phone providers such as Aldi Mobile, Kogan, Boost, Dodo, provide mobile services to consumers and businesses through wholesale or reseller arrangements with one of the three mobile network operators – however the underlying network is managed by either Telstra, Optus or TPG Telecom. They are known as mobile virtual network operators (MVNOs). Some of these MVNO brands are owned by their MNO partners, e.g. Telstra's Belong, Optus' Amaysim or TPG's iiNet.

In practice, roaming could be applied at various geographic levels within a network, e.g.

- Full national roaming.

- Regional only roaming.
- Specific geographic area roaming.
- Specific tower roaming.

Obviously, a roaming service will not increase new network coverage into new areas in the way that extending network infrastructure would. However, it does allow customers on smaller networks to increase their available coverage. In addition, if applied reciprocally, this can also (a) increase the overall coverage footprint available to a mobile subscriber (e.g. a Telstra customer may have access to Optus coverage in Telstra black spots) and (b) increase the quality of the calls by allowing a subscriber to roam to the strongest signal (where two or more signals are available).

The 2017 ACCC roaming inquiry

In Australia, mobile operators are not currently required to provide roaming to other operators. However, there have been previous commercial roaming agreements in place - for example, Optus and TPG Telecom (still Vodafone when this was initiated) entered into a network sharing agreement in November 2004 (which was subsequently revised and extended in May 2012) to facilitate increased investment in site coverage. This agreement effectively allows TPG Telecom's customers to roam onto some parts of Optus' network where TPG does not have network.

In September 2016 the ACCC commenced an inquiry into whether to declare domestic mobile roaming, concluding in October 2017. This was the third time the ACCC had investigated mobile roaming – having previously considered it also in 1998 and 2004. In both previous inquiries, the ACCC decided not to declare the roaming service on the basis that the benefits of mobile roaming would come at the cost of reduced investment in regional mobile networks.

Key findings

The ACCC's final report concluded that it was not satisfied that declaration would promote the long-term interests of end-users. The ACCC noted that although it had considered the impact of declaration on the national market, it had also examined the effect on competition and regional consumers. Its key findings were:

- Declaration would not promote competition in the retail mobile services market to a significant extent.
- Declaration would have had the effect of reducing geographic rivalry between mobile operators that would likely distort long-term competitive dynamics and reduce incentives for MNOs to differentiate their services, particularly by investing in regional areas.
- The impact of declaration on retail prices was uncertain. Some downward pressure may be placed on Telstra's prices in the short term, but Optus and TPG Telecom (referred as Vodafone at the time) would have incentives to increase their prices to reflect the greater costs they would be likely to face if they acquired a mobile roaming service.
- Telstra and Optus, and to a lesser extent, TPG/Vodafone, were competing on network quality. Declaration had the potential to distort these investment incentives. Optus and Vodafone may not have the same incentives to match or better Telstra's network quality and Telstra may not

have the same incentives to respond if a mobile roaming service was declared. Declaration would therefore not promote economically efficient investment in infrastructure.

- TPG's (then-expected) entry into the market was likely to create more competitive tension, which would mitigate the risk of price rises. However, declaration could encourage MNOs to consider moving away from uniform national pricing. The ACCC also considered that declaration of a roaming service in regional areas is unlikely to facilitate the entry of a new MNO, such as TPG.

In Optus' roaming submission to the ACCC, it claimed "this type of arrangement has enabled both carriers to almost double the size of the areas they can cover for a given level of investment." However, even though this commercial agreement was in place, Optus did not support the ACCC mandating domestic roaming.

Key market changes since the last ACCC roaming inquiry

In the five years since the ACCC roaming decision, the following key changes have occurred in the mobile market and associated policy settings:

- Consumers continue to hold to their phones for longer and prioritize prices when deciding on their next mobile services, but network performance and speed is now equally important, and the importance of regional coverage has significantly increased over the last 3 years.
- TPG did not enter as a fourth mobile competitor and has instead merged with Vodafone in 2021 (after being opposed by the ACCC) resulting in the creation of TPG Telecom. In addition, ACMA conducted 3 spectrum auctions: 3.6GHz band in 2018; 850/900MHz band in 2021; and 26GHz band (mmWave) in 2021 to support the rollout of 5G services. Telstra, Optus and TPG Telecom have all since launched their 5G services (with ongoing network rollout) including fixed wireless access (FWA) products.
- The 2021 Regional Telecommunications Review was conducted with the committee recommending the Government to undertake a feasibility study to consider the capability for mobile roaming to be deployed in emergency circumstances. The ACCC has been charged with this task. The lack of emergency alert roaming (which prevents customers from receiving emergency alerts when out of their network coverage but still in coverage of another operator) was raised in the Royal Commission into Natural Disasters, and a policy consensus is emerging that roaming in emergency situations should be available.
- Telstra, Optus and TPG Telecom have all sold all or part of their tower assets to third parties. This has resulted in a voluntary structural separation of these passive assets across the industry and create new incentives for tower owners to attract new radio access infrastructure.
- Telstra and TPG entered a 10-year agreement for sharing radio access network (RAN) in regional areas. The agreement, which is still subject to regulatory approval, is non-exclusive, and both telcos will continue to operate their own core networks. The deal is not likely to affect considerations around emergency roaming but could possibly generate new interest in further infrastructure sharing options.
- Regional infrastructure including mobile networks received increasing funding from the government. Continued rounds of the Commonwealth's Mobile Blackspot program generated

a total investment of over \$875 million to deliver more than 1,270 new mobile base stations across Australia over 5 rounds. The Government has committed \$80 million for Round 6 of the Program. The design process for Round 6 is expected to commence soon. There has been an attempt to encourage infrastructure sharing through the program but progress has been slower than some had hoped due to the practical difficulty of coordinating network planning amongst the three operators.

The significance of these developments is discussed in the sections below.

ACCC ongoing concerns

Whilst the ACCC did not declare roaming in 2017, it highlighted that consumers and businesses in regional Australia cannot access adequate or contiguous mobile services.

The ACCC opposed TPG's merger with Vodafone in 2020 on the grounds that TPG was a viable fourth MNO entrant, particularly as it had announced plans for a 4G network earlier in the decade. Ultimately, the Federal Court found that this past and now withdrawn announcement was not sufficient reason to prevent the merger, but the episode highlights how the ACCC has continued to favour infrastructure-based competition over service-based competition in regional areas. The shift to 5G does not seem to have changed this emphasis, and we expect this preference to weigh on the ACCC's consideration of roaming, the sharing of facilities and spectrum, and its consideration of the Telstra/TPG Telecom deal, all of which are running concurrently.

The ACCC suggested in the roaming inquiry that several measures which could improve outcomes for regional consumers including:

- Increasing the transparency of network quality and coverage information so that consumers can make informed decisions
- Reducing the costs of deploying and improving mobile networks, e.g. by streamlining access to existing infrastructure such as towers
- Ensuring that competition issues are considered in the radiocommunications regulatory framework, e.g. by ensuring that spectrum is distributed in a way that maximises competitive investment.

Coverage Transparency

As reported by the ACCC, Optus, Telstra and TPG/Vodafone each committed individually to improve the provision of information to consumers and businesses. They also committed to discussing with each other measures to improve comparability of coverage and quality of different networks. In addition, the Australian Mobile Telecommunications Association (AMTA) also advised the ACCC that it would work with its members to improve coverage map comparability and develop a co-building process for greenfield sites.

However, limited progress has been made since then, with the 2021 Regional Telecommunications Review recommending that the Government ensure that measures are undertaken to increase the

accuracy and transparency of mobile network quality and coverage information, including network congestion.

This includes measures to collect and standardise mobile network coverage information and develop a tool to empower consumers to compare network performance and service availability.

The Committee further recommended that the Government:

- provides funding to undertake an investigation and audit to collect and report mobile coverage performance across regional Australia, including congestion; and
- undertakes a feasibility study to consider the capability for mobile roaming to be deployed in emergency circumstances (initially being addressed in the ACCC's Regional Mobile Infrastructure Inquiry 2022-23).

The Committee also noted the ongoing work undertaken by the United States Federal Communications Commission (FCC) to develop mapping of both fixed broadband and mobile LTE coverage under the Broadband DATA Act.⁵² and suggested that a similar approach should be considered.

Facilities Access Code

Facilities Access Code (the Code) seeks to ensure that, as far as possible, facilities are shared and/or co-located and that access to facilities is provided in a timely and fair manner by providing the minimum standards of practice for administrative and operational procedures. The Code provides mandatory conditions of access, which carriers must comply with, and other conditions that will apply unless parties negotiate their own terms.

In relation to reducing the costs of deploying and improving mobile networks, the ACCC reviewed the Facilities Access Code in 2020. The review focussed on whether the Code was adequately promoting co-location arrangements on mobile towers.

The submissions to the Facilities Access Review generally noted issues around access seekers (a) not being given sufficient notice of co-location opportunities before new sites were built, and (b) requests for access either being blocked or delayed for unreasonably long periods by the First Carrier reserving space on their towers without having genuine plans to use that reserved space.

The ACCC Review (June 2020) found that the code was largely operating well but recommended two key enhancements around improving pre-build co-location consulting process and the reservation of capacity. The changes became operative on 12 June 2020.

Given the recent market developments, particularly divestment of mobile tower infrastructure, there is a question whether carriers with significantly less equity in a passive tower company continue to have the same means and incentives to prevent access by alternative carriers. For example, Telstra recently restructured and created InfraCo, a company that wants to increase tenancy ratios on its towers to an average tenancy ratio of 1.5-1.6 (from a previously below industry average of 1.34). This suggests that Telstra's incentives have become more positive towards

infrastructure sharing, but it is not clear that such commercial incentives would eliminate the need for the access regime to apply.

Spectrum

The ACCC does not have any spectrum inquiries currently running. However, it has demonstrated in the past that it regards access to spectrum for all MNOs to be important for competition. It has consistently recommended to the Minister for Communications the imposition of upper limits to the amount of spectrum that a single operator can win at auction, and often recommends tighter limits than the Minister ultimately imposes.

When 700MHz spectrum was auctioned for 4G in 2015, the ACCC recommended a limit of 2x 25MHz per bidder, and on this occasion the Minister accepted the ACCC advice.

However, for the 3.6GHz auction in 2020, the ACCC recommended a maximum amount any single bidder could own of 45MHz in metropolitan Sydney and Melbourne, and 60MHz elsewhere, while the Minister set limits of 60MHz of the relevant band in each metropolitan area and 80MHz of the relevant band in each regional area.

For the 850/900MHz spectrum auction in 2021, the ACCC recommended a limit of 80MHz for any bidder's total sub-1GHz holdings, taking this approach as the sub-1GHz bands are substitutable with each other and have similar propagation characteristics. On this occasion, the Minister was less restrictive, setting limits of 82MHz of spectrum below 1GHz under spectrum licences in the major population area, and 92MHz of spectrum below 1GHz under spectrum licences in the regional areas.

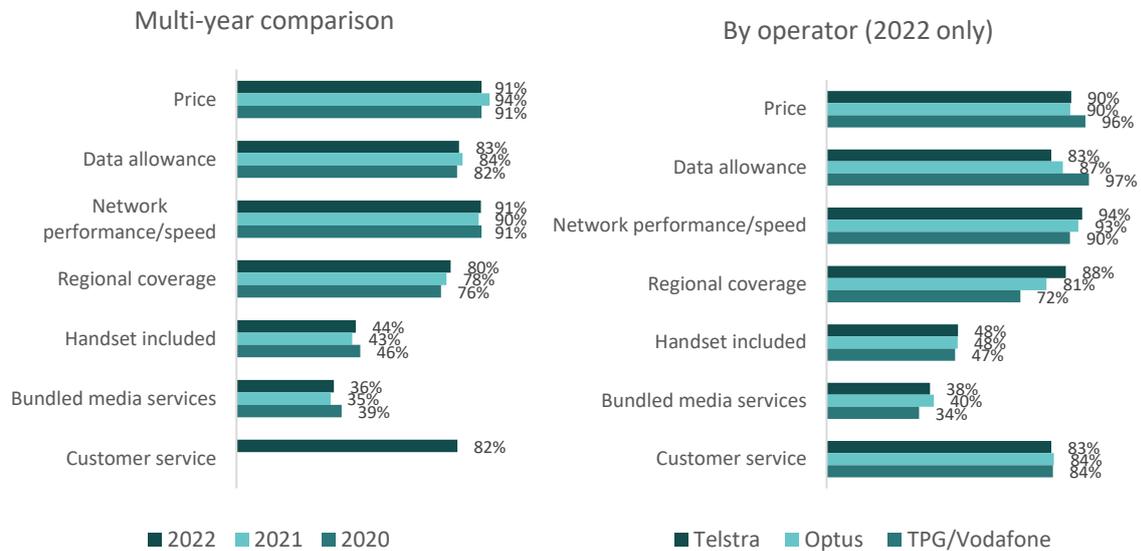
The ACCC's stricter views on spectrum ownership will be a significant factor in its consideration of the Telstra/TPG Telecom deal, particularly Telstra's access to TPG Telecom spectrum.

Increasing importance of regional coverage

The importance of telecommunications in regional areas became even more evident in face of the pandemic and a range of recent natural disasters. Service reliability has become more critical than ever because of the high dependence on digital financial transactions to small business, as the use of cash in the community has declined considerably after the COVID-19. During natural disasters such as the recent floods and bush fires, the communication with emergency services and with other individuals have proven to be vital.

According to the Australian Communications and Media Authority's (ACMA) 2020/21 market report, the national market shares of the three mobile network operators (including their own MVNO brands) was 44% for Telstra, 31% Optus and 17% TPG Telecom, with the remaining 9% attributed to the independent MVNOs. However, outside the metropolitan areas we estimate the market shares to be approximately 56% for Telstra, 37% for Optus and 2% for TPG Telecom, demonstrating Telstra's and Optus' overwhelming position non-metropolitan areas.

Figure 1. Percentage of survey respondents rating a factor between 4 and 5 on a scale of 1 (not important) – 5 (very important), when deciding their next mobile service purchase



Source: Venture Insights Consumer Telco Survey June 2022, n=1,022

These market shares figures will further lean towards Telstra in remoter areas where Optus coverage is patchy or non-existent. Our recent consumer survey revealed that customers who value regional coverage highly are more likely to be Telstra customers. The size of these differences (see Figure 1) has been increasing over the last couple of years and reveal the growing importance of this attribute for Telstra.

The rising appreciation of the importance of regional coverage seems to be driving a growing industry focus on regional, which is in turn driving public and private investments into regional infrastructure and major developments such as the Telstra and TPG network sharing deal.

For example, on 9 August 2021 the Minister announced his decision on the allocation limits to apply to the 850/900 MHz allocation. This low-band spectrum can be used to provide wide-area coverage over long distances and is a critical input to the provision of nationwide mobile network services.

The Minister decided to impose a 40% limit across low-band spectrum holdings in metropolitan and more populated areas but decided on a slightly higher limit of 45% in larger geographic and sparsely populated regional and remote areas to encourage investment. This signals a desire to avoid limiting mobile operators who wish to prioritise investment in regional areas.

The 2021 Regional Telecommunications Review

These trends were amongst the drivers of the recent 2021 Telecommunication Review, which examined the adequacy of telecommunications services in regional, rural and remote Australia, and looked specifically at the mobile roaming issue. The Terms of Reference included the impact of

Government policies and programs, insights from the COVID-19 pandemic, emerging technologies, service reliability, regional development, and improving coordination between tiers of government.

The 2021 Regional Telecommunication Independent Review Committee (RTIRC) was announced on 2 June 2021 and was held from June to December. The five members appointed to the Committee were the Hon Luke Hartsuyker (Chair), Ms Kristy Sparrow (Deputy Chair), Ms Sue Middleton, Professor Hugh Bradlow and Mr Michael Cosgrave.

The 2021 Regional Telecommunications Review emphasised the importance of reliable, modern, high-quality telecommunications to regional communities, particularly considering COVID-19 and the increased data demands of working and studying from home. Improving mobile coverage and performance and enhancing the resilience of telecommunications infrastructure to natural disasters, are key focuses of the report.

Recommendation for mobile roaming in emergency circumstances

The final report claims that, in line with reforms under the most recent round of the Mobile Black Spot Program, measures to support increased passive and active mobile network infrastructure sharing should be included in future rounds to promote expanded regional mobile coverage. It suggests that policymakers and mobile network operators consider the feasibility of trials of domestic roaming on infrastructure in disaster affected areas as part of a range of measures to ensure there is access to reliable communications in emergency situations.

The RTIRC also recommended that the Government undertakes a feasibility study to consider the capability for mobile roaming to be deployed in emergency circumstances.

These recommendations are aligned with suggestions the ACCC made in its submission to the review including how co-contribution programs could be better designed to promote increased coverage and promote the efficient use of infrastructure. The ACCC also noted how limited and well-defined circumstances, such as during a natural disaster or an emergency, mobile roaming might provide an important safety measure that would not impact the overall competitive dynamics in the market.

The report also considered ways of improving mobile coverage and competition such as shared network access. It also considered the conditions under which MNOs gain access to the necessary inputs from the owners of tower infrastructure. It recommended that the government continue to support the provision of new mobile coverage with investments that address coverage, capacity and competition issues and consider funding vehicles which leverage private sector co-investment.

The RTIRC noted that mobile roaming during emergencies could assist members of the public to contact emergency or rescue organisations, or each other, during natural disasters or emergency situations if they are in an area where their own mobile provider does not have coverage. While mobile phones in Australia can access emergency numbers (e.g. 000) via other providers' networks as a feature of the GSM standard, this is not true roaming and does not extend to any other numbers.

New ACCC inquiry into regional mobile roaming and tower access

The ACCC is now conducting a public inquiry into regional mobile tower access and the feasibility of providing mobile roaming during natural disasters. This inquiry was a recommendation of the Regional Telecommunications Inquiry. The Regional Mobile Infrastructure Inquiry 2022-23 is looking specifically at whether roaming can be activated in an area where there is a disaster or other emergencies, regardless of which telco people may be using during the time of the crisis.

One of the key outcomes of this inquiry is to provide the government with a better understanding of how costs affect tower access fees and broader decisions to invest in towers and associated telecommunications infrastructure. The inquiry will also consider measures that could improve mobile coverage.

This comes in the wake of the recent Southeast Queensland and Northern NSW floods causing severe outages in telecommunication networks that at some stages obstructed rescue efforts and crisis recovery. Other factors that increase the need for this review are the sale of tower assets by both Telstra, Optus, and TPG Telecom to third parties and the recent regional network sharing deal between Telstra and TPG.

The public inquiry will investigate:

- Access to towers and associated passive and active infrastructure provided by telecommunications and other infrastructure providers in regional, rural, remote and peri-urban areas within Australia, that can be used in the supply of mobile telecommunications and other radiocommunications services, and
- The feasibility of temporary mobile roaming services to be provided during natural disasters and other such emergencies.

The ACCC is consulting with a range of persons, bodies and agencies including:

- Providers of mobile towers and associated infrastructure namely specialist telecommunications tower operators, neutral host operators, telecommunications carriers, owners of other suitable infrastructure, utilities and emergency service organisations.
- Providers of other infrastructure that could similarly be used in supplying mobile telecommunications and other radio communications services such as electricity and other utility service providers, the NBN and dedicated emergency services networks
- Likely users of the towers and associated infrastructure including mobile network operators (MNOs), communication service providers, businesses, emergency service organisations, and
- Members of the community that may be interested in improvements in mobile coverage and/or temporary mobile roaming services to be provided during natural disasters and other such emergencies including mobile phone users, consumer organisations, business organisations and other interested parties.

The Minister specifically noted that this inquiry is not an inquiry into domestic mobile roaming generally, nor is it a regulatory review or inquiry that the ACCC might conduct under the facilities

access regime in Part 5 of Schedule 1 of the Telecommunications Act 1997 or an access inquiry under Part XIC of the Competition and Consumer Act 2010 (CCA).

The ACCC is required to report to the Minister on its findings within 12 months from the commencement of the inquiry (by 1 July 2022). We note that there are currently (as of 18th July) no submissions received yet (due 5th August 2022).

An industry and policy consensus seems to be emerging that emergency roaming will proceed in some form. However, we do not see any consensus emerging to go further, and emergency roaming is unlikely to flow on to wider roaming access for this reason. In particular, there is no evidence that the ACCC's prioritisation of infrastructure-based competition has changed since the last roaming inquiry. Telstra and Optus remain opposed, and if TPG Telecom succeeds in getting access to the Telstra network on a commercial basis, its past support for roaming will be moot.

The increasing divestment of tower assets

In the last two years, all three mobile network operators have announced full or partial divestment of their tower assets.

Telstra

In June 2021, Telstra sold 49% of its mobile towers business to a consortium of superannuation funds for AU\$2.8 billion. The consortium included the federal government's sovereign wealth Future Fund, the Commonwealth Superannuation Corporation and Sunsuper, managed by Morrison & Co. The asset is the largest mobile tower network in Australia with around 8,200 towers. Following the completion of the sale a new entity was created and named Amplitel.

Telstra's towers deal was largely anticipated, but it happened well ahead of the original plan and at a premium price, demonstrating the high appetite for infrastructure assets. While the move makes a lot of sense for Telstra from a financial point of view and will bring new cash into other strategic areas, it will potentially help competitors to expand their regional coverage. Telstra Retail will still own the active parts of its network, including the radio access equipment and spectrum assets, which still give the company a significant competitive advantage.

To provide returns to its shareholders Amplitel will have to monetise its infrastructure assets by increasing its utilisation and attracting more tenants onto its mobile towers. Amplitel claims to have over 2,000 towers in rural and remote areas that don't currently support any mobile network infrastructure. But with lower commercial returns expected in those areas, few providers would be interested in a significant expansion of coverage unless investments are heavily subsidised. In addition, with the 51% ownership on Amplitel, Telstra retains a commanding voice on prices, which is a key factor in the business case of a network. Unless these obstacles are avoided, Amplitel's network may not support a general improvement in competitor coverage.

Optus

In September 2021, Optus' parent Singtel entered an agreement to sell a 70% stake in its wholly owned subsidiary Australia Tower Network (ATN), which operates Optus' passive telecommunications tower infrastructure, to AustralianSuper.

The transaction included 2,312 mobile network towers and rooftop sites and valued ATN at approximately AU\$2.3 billion, representing FY21 pro-forma EV/EBITDA transaction multiple of 38x, or 28x following completion of the build-to-suit (BTS) program, reflecting the high quality of the assets and tenancy arrangements.

Under the terms of the deal, Optus will have continued access to the sites through a long-term lease agreement with ATN. Optus will be the anchor tenant for 565 new BTS sites to be built over the next three years forming an integral part of Optus' 5G network. ATN will also be working actively to increase tenancy, and this will likely drive access prices down. ATN's current tenancy ratio is around 1.6 but the company aims to raise this.

TPG

TPG recently joined Telstra and Optus in the tower monetization trend and announced the sale of 100% of its passive mobile towers and rooftop infrastructure assets to OMERS Infrastructure Management for \$950 million.

The transaction includes 1,237 existing sites (428 towers and 809 rooftops) and a committed build-to-suit program of 252 new sites. This represents approximately 21% of TPG's total mobile network footprint, the remainder of which is already owned and operated by other tower companies. The portfolio includes 120 sites in non-metropolitan locations at which TPG intends to decommission its active equipment conditional on regulatory approval of the MOCN network sharing agreement with Telstra. TPG will retain ownership of all radio access network infrastructure.

A new market dynamic

TPG's announcement consolidates a major trend in the market and will bring a new dynamic into the way the industry operates. Now all major MNOs have voluntarily structurally separated themselves, but unlike the Telstra structural separation back in 2012, that was imposed by regulation, this one is a response to the market forces. This means that all parts of the value chain (i.e., passive assets owners, active network providers, retailers) must be profitable to continue investing or attracting investments. This might require some adjustments across the current structure of costs and prices.

In addition, with all these new owners of tower assets trying to increase utilization and attract more tenants onto these assets to maximize the returns, RSPs will have access to a larger infrastructure that is available in more equal terms to all players. This will make differentiating on coverage harder, potentially reducing the opposition to domestic mobile roaming amongst leading MNOs and creating an opportunity to increase the focus on customer service. This assumes however that

tower access improves (both technically and price-wise) and that the opportunity is taken up by the two smaller mobile networks.

Until recently, only licensed carriers were subject to the Facilities Access Regime. However, with all the 3 MNOs transferring a significant part of their tower assets to entities that do not hold a telecommunications carrier licence, reviewing the Regime may be necessary.

Following the enactment of the Telstra Corporation and Other Legislation Amendment Act 2021, access obligations were extended to eligible companies who do not have a carrier licence but are part of a 'carrier company group'. A carrier company group consists of two or more related companies where one holds a carrier licence. Currently if a carrier holds more than 15% of the equity or shares in a non-carrier telecommunications tower operator then the non-carrier tower operator is part of the carrier company group, and therefore subject to the Regime.

The Regime means that a carrier must, on request, give another carrier access to facilities, where a facility can be any part of the infrastructure of a telecommunications network, or any line, equipment, apparatus, tower, mast, antenna, tunnel, duct etc. used for, in, or in connection with a telecommunications network. The regime specifically requires access to telecommunications transmission towers, the sites of towers and eligible underground facilities that are designed to hold lines.

Under this Regime, the ACCC has made the Facilities Access Code which seeks to ensure that, as far as possible, facilities are shared and/or co-located and that access to facilities is provided in a timely and fair manner by providing the minimum standards of practice for administrative and operational procedures. The Code provides mandatory conditions of access, which carriers must comply with, and other conditions that will apply unless parties negotiate their own terms.

Given recent market developments, there is a question regarding whether carriers with significantly less equity in a passive tower company continue to have the means and incentives to prevent access to alternative carriers. A carrier may still retain the motivation to prevent alternative carriers from accessing its facilities, despite reducing its share in a passive tower company. Control of a passive tower company could still be achieved through company interests of less than 15%. Furthermore, whilst a carrier might not have most shares, it is still possible for a carrier to have influence over decisions relating to access through its total voting stock or seats on the board.

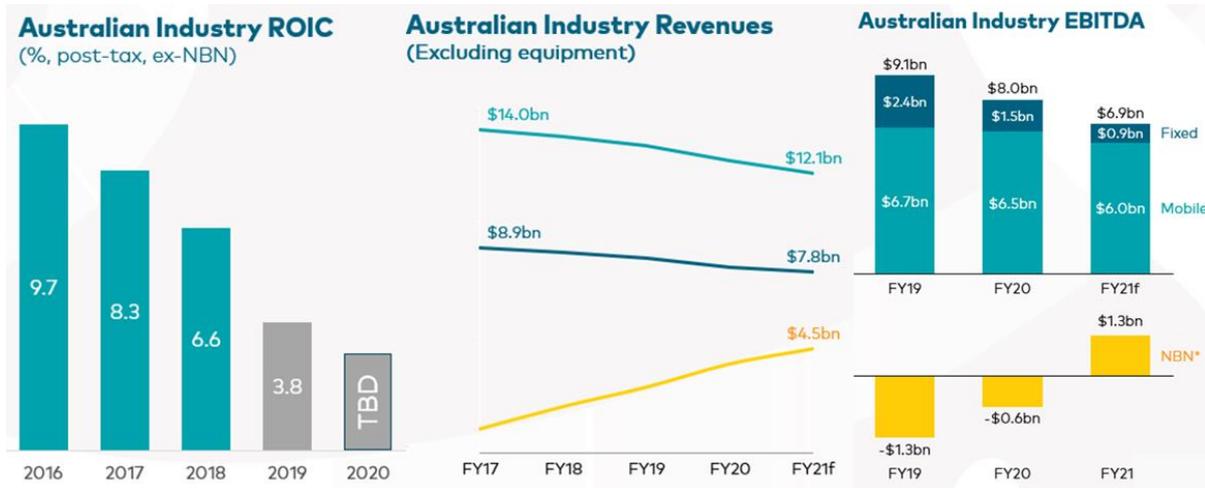
Drivers of divestment

Declining capital returns is the mega-trend that is driving a lot of telco operator behaviour. The headline trends in the global telco industry are service commoditisation, higher capex with 5G and fibre rollout, and wholesale price regulation. Efforts to integrate up into ICT services face strong competition from system integrators and cloud providers. The result is declining telco ROIC and profitability, which is driving telcos to look for ways to reduce both capex and opex.

An obvious way to do this is divestment of assets of different classes, Infrastructure assets are valued at higher multiples of EBITDA than service businesses, so it makes sense to increasingly separate infrastructure assets and services.

This is creating opportunities for more infrastructure sharing, which also reduces capex and opex by spreading costs across multiple operators.

Figure 2. Australian telco industry profitability trends



Source: Optus 2021

This is driving telco interest in a range of infrastructure sharing options. Roaming is perhaps the least attractive for them, as it reduces the scope for competitive differentiation the most. However there are alternatives to roaming that achieve some infrastructure sharing benefits.

Alternatives to regional roaming

Whilst the three alternatives listed below support broader coverage of networks by enabling the sharing of infrastructure, they are not full alternatives to network roaming – which provides broad geographic coverage improvements as opposed to site-by-site coverage improvements.

Network co-location

Base stations represent a significant portion of a telco’s capital and ongoing costs. As such, sharing of network infrastructure such as base station towers can make sense for some deployments and in some cases, operators have been able to save up to 30% of infrastructure costs through network sharing.

In colocation the passive asset costs (such as the tower, land, access etc.) are shared but the operators supply their own base station transmission equipment.

Whilst cost savings from infrastructure sharing should be attractive for remote areas where the cost of infrastructure build per consumer can be high, revenue returns can be low for additional users of the tower in areas where the incumbent already has a high market share and there are few customers. We note that although site sharing (co-location) was available, the Government’s Mobile Blackspot program only resulted in limited sharing.

As highlighted by the ACCC's facilities access code review (see above), the key issues highlighted by industry was lack of sufficient notice of co-location opportunities and requests for access being blocked or delayed.

We note that site sharing can also include sharing of non-mobile infrastructure such as broadcast towers, NBN fixed wireless broadband towers and emergency services towers. With all MNOs diverting a significant part of their passive assets to a third party we expect co-location agreements to become more common, but pricing of access will determine how much more common.

Radio Access Network

Unlike colocation where only the passive assets are shared, radio access network (RAN) sharing involves full sharing of the active radio electronics and transmission. In this case the full tower assets (passive and active electronics) are shared and in these cases the facility can be managed by a third-party infrastructure provider with the mobile operators leasing capacity.

This is the model that applies to the recent deal between Telstra and TPG Telecom.

Open access to payphones

Telstra recently (Aug 2021) made local and national calls on its public payphones free to standard fixed line numbers and standard Australian mobiles. This aimed to reduce the negative impact of loss of mobile services in emergencies and to help people in vulnerable conditions, homeless or fleeing domestic violence.

The initiative has a positive impact to support communities during natural disasters and emergencies but has a much more limited reach than a mobile roaming approach. It also confirms that Telstra recognizes the need to do more support regional and remote communities during those circumstances.

The Telstra and TPG network sharing agreement

Telstra and TPG recently entered a 10-year agreement for sharing radio access network (RAN) in regional areas covering approximately 17% of the population. The agreement, which is still subject to regulatory approval, is non-exclusive and both telcos will continue to operate their own core networks. The ACCC has 90 days from the date that the application was lodged to make its decision, although it can extend the timeframe if the applicants agree. In this case, Telstra and TPG have agreed to an extension and the ACCC has until 17 October 2022 to make its decision.

The deal will allow TPG Telecom to access approximately 3,700 Telstra's mobile network assets, increasing its coverage to 98.8% of the population (from ~96% today). By using Telstra's infrastructure, TPG Telecom will be able to decommission 725 mobile sites in the coverage area, resulting in a \$75 million write-down to its infrastructure assets. TPG Telecom will pay Telstra for using its infrastructure. This cost to TPG Telecom will be offset by capex that will no longer be required (i.e. building mobile infrastructure) and the immediate reduced operational opex. TPG Telecom claims the agreement will have an expected neutral net effect to its total costs.

Telstra, on the other hand, will be able to access up to 169 existing TPG Telecom mobile sites and use TPG's spectrum holdings in the 700MHz, 2100MHz, 850MHz and 3.6GHz bands. This will significantly increase Telstra's available spectrum for immediate use, which has been constrained by regulatory controls and current utilization across its 3G and 4G networks. Telstra will pay for the TPG spectrum it uses.

While the deal might erode some of Telstra's competitive advantage and potentially market share in the long-term, the significant costs savings will more than offset this loss, resulting in both EBITDA margin and total EBITDA growth, especially in the short-term. Bringing TPG to its regional RAN will bring a welcome wholesale revenue boost to Telstra in the short-term, but TPG Telecom's spectrum is the core strategic asset that Telstra is after. TPG Telecom's spectrum will considerably assist Telstra's 5G rollout by increasing the network capacity Telstra can achieve within a certain capex envelope.

We note that ACCC is currently revising a submission by Telstra and TPG that it divided into three interrelated agreements in respect of a Multi-Operator Core Network (MOCN) commercial arrangement:

- a MOCN Service Agreement,
- a Spectrum Authorisation Agreement,
- and a Mobile Site Transition Agreement

The topic is currently for industry consultation. We note there has been over 100 submissions to the ACCC and we summarized the position and arguments of some key players:

Figure 3. Position of key industry players

Organization	Key position/arguments
Telstra	<ul style="list-style-type: none"> - Key beneficiary of the deal. Will increase the utilization of its infrastructure and bring greater efficiencies. - Argues the deal will improve customer's choice in regional areas by allowing another provider (TPG) to provide services in regions it could not previously.
TPG	<ul style="list-style-type: none"> - Key beneficiary of the deal. Will increase its addressable market (in regional) and customer consideration (by having a greater coverage). - Claims the deal will improve customer's choice in regional areas and the services for its overall customer base, drive more investment and innovation.
Optus	<ul style="list-style-type: none"> - Strongly opposed the deal as it's the company threatened the most by it.

	<ul style="list-style-type: none"> - It is the most actively campaigning against the deal, with most of the applicants to the ACCC submissions opposing the deal being from organizations linked somehow to Optus. - Argues it will reinforce Telstra's already strong position in regional areas by attracting additional traffic to its network and will therefore reduce Optus' incentives to competitively invest in regional markets. - The deal will result in too much power to Telstra in regional Australia, reducing network redundancy and resilience, representing a long-term risk for other regional stakeholders and customers.
Australian Communications Consumer Action Network (ACCAN)	<ul style="list-style-type: none"> - Supports the deal. - TPG services would become an attractive lower priced alternative. This increased choice would be a very welcome development for those living in regional areas, and for those travelling from metropolitan areas to the regions. - To benefit fully from the MOCN, consumers will need improved coverage maps so that they can be properly informed about the services they are buying. ACCAN supports initiatives flagged by the ACCC to standardise the way mobile coverage is reported across mobile network operators. - Calls ACCC to investigate the exclusion imposed to TPG that may limit its ability to compete with Telstra. - Is concerned that the decommissioning of 725 TPG mobile sites could result in diminution of coverage overall.
Regional Development Australia (Pilbara, Riverina, Goldfields Esperance, Southern Inland, Peel)	<ul style="list-style-type: none"> - They broadly support the deal. - They see it mostly improving mobile coverage and data services in regions.
Councils (Murray River, Coonamble, Broken Hill City, Bourke Shire, Eurobodalla Shire, Narrabri Shire, Alliance of Western Councils, Moree Plains Shire, Central Darling Shire, Bellingen Shire)	<ul style="list-style-type: none"> - They broadly support the deal. - See it increasing competition in the regional market, improving services, innovation, and resulting in benefits to the communities.
Nationals Farmers Federation and Regional, Rural and Remote	<ul style="list-style-type: none"> - Supports the deal as it would appear to increase consumers choice and provide for a more fulsome coverage profile for those currently on TPG services.

Communications Coalition	- But asks ACCC to consider: Impact on price and non-price aspect of competition; spectrum allocation; and service delivery arrangements.
Other farmers associations (WA, NSW)	- Broadly support the deal as they see it increasing competition and bringing more innovation.
NBN Co	- Is relatively neutral. It doesn't oppose but raise concerns about the potential to limit competition particularly in FWA, an area that the company sees a threat to its products.

Source: Venture Insights, ACCC submissions. Note this is not an exhaustive list as there were over 100 submissions to the ACCC

The deal could be seen as an opening on regional infrastructure sharing and may increase policy pressure for wider regional infrastructure sharing. However, our view is that the ACCC will have several issues with the deal, particularly Telstra's expanded access to spectrum in the deal area and TPG Telecom's shutting down of existing regional infrastructure. In addition, any transfer of Optus customers to TPG Telecom following the deal would reduce Optus' incentives to invest in regional infrastructure, upsetting the competitive landscape in regional Australia. The opportunity for competitive coverage expansion created by the divestment of tower assets might then be stillborn.

On the other hand, if the ACCC were to approve the deal in its current form it would signal a reduced emphasis on infrastructure-based competition, and a renewed willingness to support other infrastructure-sharing approaches (including roaming). The ACCC's past approach suggests that these issues will weigh heavily on its consideration of the deal. When the ACCC has published its final decision in October 2022 it will be clearer which way the ACCC is leaning.

Mobile Black Spot program

The Commonwealth Government has committed \$380 million to the Mobile Black Spot Program to invest in telecommunications infrastructure to improve mobile coverage and competition across Australia.

The Program is supported by co-contributions from state and local governments, mobile network operators (Optus, Telstra, TPG Telecom Ltd and Field Solutions Group), businesses and local communities.

Under the Program to date (Round 1, Round 2, the Priority Locations Round, Round 4, Round 5 and Round 5A), the Government's commitment has generated a total investment of more than \$875 million, to deliver more than 1,270 new mobile base stations across Australia.

More recently, in response to the program's shifting economics, Round 5A was used to test a range of program designs to continue to expand and improve mobile coverage and competition in priority areas, including natural disaster-prone areas and major transport corridors.

Funding was provided for three trials that will test ways that providers can roll out shared mobile infrastructure to reduce costs and provide new coverage from multiple carriers. This includes the use of a ‘neutral host’ model, as well as domestic roaming at two sites.

Figure 4. MBSP Round 5A trial initiatives

Participants	Summary
Optus and Field Solutions Group	Involves the use of an active neutral host RAN to deliver coverage from FSG’s Regional Australia Network and the Optus mobile network on seven new mobile towers along Queensland’s Adventure Way between Thargomindah and Cunnamulla. The neutral host model will use a single set of electronics and radio equipment on each tower to deliver coverage from both providers, with the potential to accommodate additional carriers.
Optus and Field Solutions Group	A domestic roaming arrangement to allow Optus customers to roam onto FSG’s Regional Australia Network in regional, rural, and remote areas. Under this arrangement, Optus subscribers will be able to continue to use Optus voice and data services on their mobile device when visiting an area with coverage on the FSG Regional Australia Network.

Source: Field Solutions Group submission

Although the results of these trials remain to be seen, this is a step in the right direction for expanding mobile coverage in regional areas. While market conditions in Australia are different to those in other jurisdictions, there have been successful outcomes of passive and active RAN sharing arrangements between multiple carriers in the United Kingdom and New Zealand. These initiatives are using industry cooperation to deliver expanded geographic mobile coverage outcomes at reduced cost to each participating provider.

However, the promotion of network sharing by the Blackspots program has borne limited fruit so far with most sites being single-network, as the complexities of coordinating multiple carriers and their competing interests have proven difficult to overcome.

States are also funding regional infrastructure

State governments also giving additional funding for regional infrastructure. Some examples:

- The Victorian Government is investing \$300 million to improve mobile connectivity at about 1,000 sites across the state. Initial places include Melton and Warrnambool (in partnership with Optus and TPG Telecom) to build new and upgrade existing mobile infrastructure.
- The NSW Government has committed \$50 million for Stage 1 of the Mobile Coverage Project to invest in infrastructure, emerging technologies and services to deliver improved mobile phone service in rural and regional locations.

- The WA Government is investing \$85 million to its current Regional Telecommunications Project (RTP) that includes improving coverage through macrocell towers and highly targeted, local area coverage through small cell installations.
- The Queensland Government announced back in 2021 extra \$12 million over three years for the Mobile Black Spot Program and \$1 million to develop options to improve digital connectivity for regional communities and businesses. It also set aside \$11 million to enhance its cybersecurity.

Appendix

Emergency alerts and roaming

Emergency Alert is the national telephone warning system. It is one of many ways emergency services such as police, fire and emergency services, can warn a community of a likely or actual emergency. The warning system sends voice messages to landline telephones and text messages to mobile telephones within a specific area defined by the emergency service organisation issuing the warning message.

- For the landline telephone alert, if the call goes unanswered, the Emergency Alert system will make a second attempt to deliver the warning message to the landline telephone.
- For the mobile phone SMS alert, a text message is sent based on the registered service address of the mobile phone and on the last known location of the handset at the time of the emergency. This includes visitors and people travelling in the area.

In relation to emergency alert roaming on mobile networks, the Emergency Management team does not manage this functionality within the platform and leaves this for the three mobile operators to settle. However, whilst technically possible there are currently no roaming agreements (or infrastructure) in place between the mobile operators for emergency alerts. For example, if an Optus mobile customer is in an area which does not have Optus mobile coverage but does have Telstra mobile coverage, the emergency alert message will not be given to the Optus customer.

It should be noted that SMS (or voice) roaming is different to mobile calls to triple zero emergency services, which will work if there is network coverage from any one of the mobile network operators. This is due to the GSM standards and technology enabled within the handset/network rather than a roaming agreement for full voice and SMS roaming.

Emergency alert roaming was not considered in the ACCC's 2017 roaming inquiry. A broader approach to mobile roaming under emergency situations is now back on the agenda and is central topic in the Regional Mobile Infrastructure Inquiry 2022-23.

Roaming technology

The technology to enable roaming has been available for several years with roaming implementations already in Australia (Optus and TPG).

In the 2017 roaming inquiry, the ACCC also found that it is technically possible to restrict the provision of roaming to specific geographic areas and that:

- It is possible to provide roaming using the technology that is currently available.
- The cost of supplying and charging for a roaming service is unlikely to be unreasonable, particularly when such cost would most likely be accounted for in a regulated price for the provision of a declared roaming service.

- It is unlikely that roaming would impact on the operation and performance of the access provider's network in such a way as to render the provision of the service infeasible.

We note that although the roaming functionality should be readily achievable, there may still be sites within a network that could face quality issues in an emergency, for example when all mobiles are connected to one operator's base station congestion may occur. However, we maintain that roaming technology is not considered the driver or blocker for declaring roaming, the decision is still focussed on the balance of competition and continued network investment.

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