

Public Version - Redacted for Confidentiality - Part Document Only

# Mobile Network Investment and Domestic Roaming

2 December 2016

### Contents

1	Introduction and Summary	3
2	Authors	4
3	Background to the Australian mobile market	5
4	The business case for Telstra's investment in regional Australia	10
5	The business case for other provider's future investment in regional Australia	22
Appendix A – Letter of instruction		25
Appendix B		26

[CIC begins] = information not to be released without a confidentiality undertaking [CIC begins] = information not to be released even with a confidentiality undertaking

### **1 Introduction and Summary**

- 1.1 Ovum was appointed by Gilbert + Tobin on behalf of Telstra to prepare a report based on our expert opinion for use by Telstra in relation to the ACCC's Domestic Mobile Roaming Declaration Inquiry. Specifically, Ovum was asked to provide an expert report which addresses the following questions:
  - (a) What is Telstra's current business case for investment in mobile services in regional and rural areas of Australia?
  - (b) What is the current business case of other operators, Singtel Optus Pty Ltd (**Optus**) and Vodafone Hutchison Australia Pty Ltd (**Vodafone**), for investment in mobile services in regional and rural areas of Australia?
- 1.2 Gilbert + Tobin's letter of instruction to Ovum is set out in full at Appendix A of this report.
- 1.3 The material Ovum has relied on is set out in Appendix B of this report.

### Key findings

1.4 In areas where Telstra is currently the only available network (**Telstra-only areas**), we have reviewed a sample of sites and determined that of those sites approximately:



- 1.5 We have concluded that, based on these findings, Telstra's business case for these investments must consider broader revenue factors aside from the direct revenue that is able to be derived from those sites, including:
  - (a) Increased retail revenues from a greater share of the total mobile market (outside of the incremental coverage); and
  - (b) Increased retail revenues from higher pricing reflecting customers' willingness to pay for the extra coverage (outside of the incremental coverage).
- 1.6 Under this broader business case, Telstra essentially absorbs the cost of the coverage it provides in the most remote areas (including many small communities and extensive highway coverage) to retain its network leadership position. There is therefore an effective subsidisation of remote customers and travellers by urban customers.

1.7 The opportunity for the other mobile network operators to invest and close the coverage gap



1.8 This conclusion is supported by Optus' continued investment plans where coverage continues to be expanded, particularly in regional areas of Queensland.

### 2 Authors

- 2.1 Ovum's expertise extends across the Telecoms, ICT and Media and Entertainment markets to provide a comprehensive converging market coverage. Ovum's Regulatory and Policy Consulting Practice provides a range of services to regulators, governments, incumbent operators and new entrants. Ovum has operations in Europe, the Middle East and Africa, the Americas, and the Asia-Pacific. Ovum was incorporated in 1984.
- 2.2 This report was prepared by the following experts from Ovum.

### (a) Stephen Myers, Principal Consultant

Stephen is a Principal Consultant in Ovum's Asia Pacific Telecommunications consultancy team. Stephen specialises in fixed and mobile broadband access, competitive strategy and service innovation. He has over a decade's experience of providing strategic advice to clients globally, with a regional focus in Asia.

Stephen's role with Ovum see him coordinating and contributing to consultancy projects for a broad range of leading telecommunications carrier and vendors regarding a range of technology, competitive, regulatory and strategic challenges.

Stephen joined Ovum from industry, where for over six years he played a senior role in the development of the Australian national broadband network (nbn) project working in strategy, product and regulatory teams. This included the development of business cases, analysis of risks and opportunities and participation on several external and strategic reviews (2013 Strategic Review, 2014 Fixed Wireless and Satellite Review).

Previously, Stephen was the lead telecommunications analyst at Merrill Lynch covering the Australian and New Zealand markets. This and other previous equity research analyst roles, over a period of ten years, involved providing investment advice and analysis of the telecommunication industry for Australian and global investors.

### (b) Craig Skinner, Principal Analyst

Craig Skinner is a principal analyst in Ovum's Consumer Services practice. Craig specializes in fixed and mobile broadband access, market competition, and strategy. He

has over 20 years' experience of providing strategic advice to clients globally, with a regional focus in Asia.

Examples of topics he has covered include scenario modelling and the market impact of government-funded broadband; the study of quality of service (QoS) regulation for broadband access networks; the review of emergency call services and the implications of mobile location, VoIP, and disability access; global reviews of fixed wireless and satellite broadband services; a wireless broadband review covering spectrum requirements, technology roadmaps, and service developments; and analysis of the regulatory barriers to fixed–mobile convergence and recommendations of ways of reducing these barriers.

Craig is often invited to speak to industry on a range of topics, including fixed and mobile broadband networks, market developments, competitive strategy, and service innovation. He has conducted various workshops for regulators and operators across Asia and is often quoted in the telecoms and mainstream press.

Craig rejoined Ovum from industry, where he led the development of several mobile and IP technology solutions for telecoms operators. Previously, Craig was a project manager with Telstra Mobile Networks and a research engineer with Telstra Research Laboratories.

Craig has a BSc in Applied Mathematics and a BEng in Electrical and Electronic Engineering, both with First-Class Honours, from the University of Western Australia, and has completed an MBA at the Melbourne Business School. He is currently studying Mandarin Chinese.

2.3 The authors have each read the Harmonised Expert Witness Code of Conduct (Annexure A to Federal Court of Australia Practice Note GPN-EXPT) and agree to be bound by it.

### 3 Background to the Australian mobile market

3.1 Telstra's decision to invest in remote areas is framed by the competitive environment in which it operates and the strategy it pursues to build and maintain its competitive advantage. The Australian mobile market is dynamic, with operators continuing the investment in innovation and service upgrades to support growing customer requirements.

### Market environment

3.2 Ovum's market profile reports have consistently judged Australia's mobile market to be highly competitive. For example, the most recent Australia market update from September 2016 makes the following market insight into the Australian mobile market<sup>1</sup>:

Price competition remained intense, with the three operators offering extra data and unlimited voice, along with new plan features. Mobile ARPU declined for the three operators, hit by increased data allowances, which resulted in less frequent data recharges.

<sup>&</sup>lt;sup>1</sup> "Australia Update, September 2016", Ovum

- 3.3 The Australian mobile market has little year on year growth in subscriptions. Mobile subscription growth for 2016 versus 2015 is expected to be 1.2%, and Ovum forecasts similar slow growth in subscriptions going forward to 2020,<sup>2</sup> as shown in Figure 1 below.
- 3.4 Similarly, mobile service revenues have flattened, and the forecast revenue for 2016 versus 2015 is expected to fall by 1.5%. Ovum considers that this flattening is a result of increased data offers and unlimited voice which have impacted mobile revenues by reducing revenues from cap overage charges and data top-ups.
- 3.5 Figure 1 below shows the Ovum forecast for mobile service revenues in Australia broken down into voice and data revenues.



Source: Ovum<sup>3</sup>

- 3.6 Under these conditions, price competition has remained strong, with the three Australian mobile network providers offering extra data and unlimited voice, along with new plan features. Australian mobile network providers have launched offers of extra and unmetered data in an effort to attract and retain subscribers with bundled music and video streaming services.
- 3.7 While the mobile revenue outlook is flat and significant increases in subscriptions growth are unlikely, mobile network providers are facing the challenge of needing to continuously invest in and upgrade their networks to increase capacity and enable new features (for example, 5G development and Internet of Things).<sup>4</sup>
- 3.8 Figure 2 below shows Ovum's historical data and forecast of global mobile network traffic. Ovum's view is that for a developed market like Australia, mobile network traffic is expected to increase approximately 4.5 to 5 times between 2016 and 2020, implying that nearly 80% of the mobile network capacity still remains to be built by this date.

<sup>&</sup>lt;sup>2</sup> Australia Update, September 2016", Ovum

<sup>&</sup>lt;sup>3</sup> Ibid.

<sup>&</sup>lt;sup>4</sup> See also M Wright statement at [119] and [120]



Source: Ovum<sup>5</sup>

### Consumer requirements and pricing

3.9 Mobile customers take a number of factors into account when selecting a mobile provider and when changing providers. Figure 3 shows the results from an Ovum Consumer Insights Survey conducted in 2015 in answer to the question "Why do you plan to change your mobile service provider?" Note that this was a global survey, and the mix of responses in the Australian market would likely differ in relative weight.



Source: Ovum<sup>6</sup>, sample size = 4,083, respondents could select more than one option

<sup>&</sup>lt;sup>5</sup> "Network Traffic Forecast: 2015–20", Ovum

- 3.10 From this survey, the most important reason given is "to get a better or cheaper deal" at 41.5% of responses. "Network coverage" and a "faster mobile broadband speed" come in at a very close second and third choices at 25.7% and 25.3% of responses respectively. Both of these factors, in our view, are aspects network quality the breadth and depth of coverage and the performance of the delivered service.
- 3.11 In the ACCC's Discussion Paper<sup>7</sup> it is pointed out that price is a key area on which mobile service providers compete, with the average price of mobile services falling by over 25% in real terms during the ten-year period from 2004-5 to 2014-15. The Discussion Paper also points out that in addition to price, mobile service providers have been competing by increasing value to consumers through increased data inclusions and a wide range of plans that include unlimited voice and SMS, content and unmetered use of streaming services.
- 3.12 Ovum notes that the Australian retail mobile market operates on a national level. That is, plans and offers that are made available by the mobile network providers are made available nationally without any geographic restrictions (apart from network availability differences). This includes in areas where only a single mobile network provider has coverage.
- 3.13 According to the ACCC's Discussion Paper, while Telstra's mobile network covers a larger geographic area than the Optus and Vodafone mobile networks, the areas where Telstra is the only mobile network operator equates to up to 0.8% of the population<sup>8</sup>. Customers living in these areas and customers who wish to have coverage when travelling to these areas need a Telstra mobile subscription to use mobile services in these areas (apart from emergency calls that are available to all compatible handsets), these customers have available to them the same Telstra mobile plans at the same pricing as urban customers. That is, these customers still benefit from the competitive pressure across 99.3% of the Australian population.
- 3.14 The Australian mobile network operators have taken different strategies in their choice of network investment to improve coverage, capacity and quality, pricing, and included benefits. Telstra has invested heavily in its mobile network, expanding coverage, increasing capacity and improving quality. Ovum explains below our view on the differences between mobile network coverage and quality.
- 3.15 Telstra emphasises this network difference in their marketing and advertising, as captured by their marketing phrase "Australia's largest mobile network, with greater reliability and faster speeds in more places". Customers who select Telstra as their mobile service provider, do so on the basis of their consideration of the combination of factors including pricing, network coverage, and network quality.
- 3.16 As Ovum discusses in more detail below, deploying mobile infrastructure to regional and rural areas is expensive, and with the low population density in these areas, the cost is not covered on a standalone basis by the direct revenues earned by traffic carried over the network in these areas. Instead, Telstra's business case for building out incremental coverage to these standalone net loss areas is made by consideration of the total increase in revenues generated across its entire customer base.

<sup>&</sup>lt;sup>6</sup> "Digital Consumer Insights 2015/16: Connectivity", Ovum

<sup>&</sup>lt;sup>7</sup> "Domestic mobile roaming declaration inquiry Discussion Paper", ACCC

<sup>&</sup>lt;sup>8</sup> Ibid.

3.17 Telstra's marketing in the urban area benefits from its better network coverage, and Telstra's urban customers are willing to pay a higher price for this perceived benefit. As a consequence of the national pricing, Telstra's urban customers are implicitly cross-subsidizing the costs of regional and rural network coverage even when they are not making direct or full use of this coverage. That is, Telstra's regional and rural customers who make use of the expanded network coverage are direct beneficiaries of the perceived value that Telstra's urban customers place on using a network with the best national coverage.

### Mobile network investment and innovation

- 3.18 Mobile network operators have an ongoing requirement to invest in their network to support rising customer demands and meet competitive pressures. While investment in coverage is progressive, enabling improved technology tends to be cyclical. Telstra has consistently pursued the strategy of reinvesting in its network to ensure its network leadership. While the assessed site costs in Ovum's analysis include both initial coverage investment and implementation of 3G and 4G, further investment will be required as innovation continues.
- 3.19 Mobile network technology has gone through multiple generations of advancement, with the Australian mobile networks now fixed on expanding their 4G networks and plans to start deactivating the 2G networks. Each new generation has required different levels of new network equipment and investment. Where the new generation technology also includes allocation and use of a new spectrum band, antennas also have to be added or upgraded.
- 3.20 New mobile network technology generations improve network capacity, increase customer data speeds, and often add new features. 2G was primarily about moving from analogue voice to digital voice, 3G was about adding data communications and 4G was designed to create an all-IP broadband network.
- 3.21 In conjunction with LTE, mobile network providers have been activating Voice over LTE (VoLTE) for customers as they upgrade to compatible mobile handsets. VoLTE supports voice and SMS natively on LTE, removing the need to maintain 2G/3G networks to provide these services. VoLTE also provides the customer with a better call experience and enhanced communications services. VoLTE has been launched by all the Australian mobile operators.
- 3.22 Similar to VoLTE, and utilizing the same core network IMS platform, Wi-Fi Calling (sometimes referred to as Voice over Wi-Fi) effectively extends VoLTE functionality to Wi-Fi networks (such as in a customer's home). Wi-Fi Calling is enabled in the mobile device and provides native calling and seamless handover of voice between the LTE mobile network and the Wi-Fi network. Wi-Fi Calling has been successfully used by operators such as T-Mobile in the United States to compensate for their smaller mobile network coverage by ensuring that the customer at least has good mobile service quality in their home environment.
- 3.23 Australia has always been a leading edge market for deploying the latest mobile network technology, and Australian customers are quick to buy the latest mobile devices and make use of the newer services. This is expected to continue with 5G.
- 3.24 5G is not just about more bandwidth capacity and faster speeds at both the individual device level and on an aggregate base station level (that is, enhanced mobile broadband). 5G also delivers a lower latency (delay between the device and the network) and the ability to connect a very large number of devices and simultaneously handle their data requirements. This opens up new use cases, with virtual reality, augmented reality, autonomous vehicles, and remote

monitoring and control through the Internet of Things (for example in an agricultural environment) being just a selection.

- 3.25 Australia is preparing to be among the first countries to have 5G. By 2020, Australian mobile customers are set to be able to access 5G mobile network services, offering speeds up to 100 times faster than 4G. Telstra has partnered with Ericsson and recently demonstrated Australia's first 5G test in a live environment. Optus and Vodafone have both partnered with Huawei and have been conducting their own trials. Telstra is planning a wider scale precommercial trial of 5G for the Commonwealth Games on the Gold Coast in 2018.
- 3.26 With 5G standards still being finalized, this is an opportunity for Australian mobile network providers to trial 5G in Australian environmental conditions and feed this back into the 3GPP standards body. In particular, to take into account the low population density and vast coverage requirements that exist in Australia.
- 3.27 Telstra has already had some early success within 3GPP in this regard, including influencing 3GPP's "channel modelling" standards around 5G's long-range capabilities in rural environments. It has successfully pushed through three changes in 3GPP standards based on extended range.
- 3.28 Telstra will need to continue to invest across its network to maintain its competitive position and meet current and future customer expectations. This will include the eventual replacement of the 3G service that has formed the backbone of Telstra's mobile coverage in regional areas over the last five years. As assumed by the depreciation rate used in the analysis, the replacement and reinvestment cycle for each generation of mobile technology is about ten years.

### 4 The business case for Telstra's investment in regional Australia

### Telstra's regional and rural mobile investment

- 4.1 Telstra's ongoing investment in mobile coverage has resulted in 99.3% of the population residing in areas with 3G coverage, and 98% in areas also with 4G coverage. Telstra's planned investments will increase 4G coverage to 99% by the middle of 2017.<sup>9</sup> The launch of 4G services took place in 2011.<sup>10</sup>
- 4.2 Telstra's 3G ("Next G") network launched in 2006 and surpassed the coverage of the rural focused CDMA network it superseded in 2007, with coverage extended to two million square kilometres. Beyond exceeding its initial coverage obligation, the 3G network has been extended to over 2.4 million square kilometres.<sup>11</sup> We understand from the statement of Michael Wright that Telstra's investment in Next G was significant, requiring extensive new technology and infrastructure.<sup>12</sup>

<sup>&</sup>lt;sup>9</sup> M Wright Statement paragraphs [93]

<sup>&</sup>lt;sup>10</sup> M Wright Statement paragraphs [60]

<sup>&</sup>lt;sup>11</sup> M Wright Statement paragraphs [55]-[58] and [91]

<sup>&</sup>lt;sup>12</sup> M Wright Statement paragraph [46]-[47]

- 4.3 The Telstra mobile network not only covers the majority of towns across the country, it also covers major highways across the country. This includes extensive coverage of:
  - (a) the Eyre Highway across the Nullarbor;
  - (b) the North West Coastal Highway from Geraldton to Port Hedland, with coverage extending to Broome; and
  - (c) Flinders Highway from Townsville to Cloncurry (and Mount Isa).
- 4.4 This highway coverage is a large contributor to the advantage in geographic coverage Telstra can claim. (Optus' geographic coverage was about one million square kilometres at the end of 2013 when population coverage had reached 98.5%.)
- 4.5 Telstra has been active in extending its 4G coverage to match its 3G footprint to broaden the opportunity to provide high-speed mobile broadband services.<sup>13</sup> With many remote areas not having access to fixed broadband infrastructure, mobile broadband is an important solution for these communities. While availability of the NBN is opening up new alternatives, the majority of broadband users in rural and remote areas used a wireless service.<sup>14</sup>
- 4.6 The investment in mobile broadband capacity has been substantial, with many sites progressively being upgraded through sectorisation, addition of 4G capability and backhaul capacity upgrades.<sup>15</sup>
- 4.7 Areas where Telstra is the only network are generally centered on small towns and communities, but also includes regional highways, islands (including Groote, King, Fraser and Barrow), remote mining sites, and Indigenous communities (particularly in the Northern Territory).
- 4.8 Telstra has also deployed a considerable number of sites into regional coverage to provide contiguous coverage for its users, beyond these categories.
- 4.9 Australia has one of the lowest rural population densities globally. Population density in rural areas is a major cost driver for mobile network infrastructure. Figure 4 shows the rural population density for a selection of countries. Rural population density has been calculated from World Bank data considering the density of rural population over agricultural land<sup>16</sup>. This provides a fair comparison of rural population density by excluding the vast desert areas of Australia.

<sup>&</sup>lt;sup>13</sup> M Wright Statement paragraphs [70-73], [92]-[94]

<sup>&</sup>lt;sup>14</sup> ABS 8146.0, 2012-13

<sup>&</sup>lt;sup>15</sup> M Wright Statement paragraphs [48], [68]-[73], [94]

<sup>&</sup>lt;sup>16</sup> http://data.worldbank.org/indicator/all



Source: Ovum from World Bank data

- 4.10 Despite the significant investment to date by Telstra, the business case for coverage in remote, lowly populated areas is challenging, with revenues often limited due to low population and high initial costs due to location.
- 4.11 Utilizing input from Telstra, Ovum has modelled the financial performance of a sample of nearly 450 Telstra sites identified as not currently serviced by another mobile network. We note that given additional investments continue to be made, the sites identified as "Telstra-only sites" can change at any given time. For example, of the nearly 450 sites that form part of the modelling as "Telstra-only sites", six of these sites were identified as already set to see coverage from Optus in the next six months.
- 4.12 Set out below are details of the methodology used by Ovum to model the financial performance of these sites, some relevant observations on various inputs to that modelling, and the findings of that analysis.

### Methodology for modelling financial performance of Telstra-only sites

- 4.13 Generally, a mobile network operator will look for all of its investments to generate sufficient revenue to recover not only the operating costs of the investment, but also the cost of investment over time and a minimum return on funds invested.
- 4.14 Whilst this would ideally be the case for each site built, where this is not possible, the mobile network operator will also consider the role of each site in the larger network and the impact of the additional investment on the competitive positioning of its mobile offering in comparison to other networks.
- 4.15 That is, whilst the mobile network operator will look to maximise the number of sites that provide a return in excess of the cost of funds deployed, and try to ensure that the number of sites that do not are minimised, it may still be willing to support investment in some such sites where there are broader gains. To account for this complex analysis, Ovum's methodology in

considering Telstra's business case for investment in regional and remote areas has been to evaluate the different tiers of profitability attainable from these investments. Table 1 below summarises the measures used, what these measures represent, and the components used in each item and how we determined their value.

Table 1: Summary of methodology					
Site returns measure	Purpose	Calculation			
Direct site cost recovery	Determine whether revenue exceeds the ongoing direct operating costs of running the site. This represents the short- term cash yield from the site. An existing site with a negative <i>Direct site cost recovery</i> is unviable without an ongoing cross subsidy from other revenue sources.	Revenue allocated to the site less direct operating costs (including power, site rental [and co-location and DTCS transmission for alternative carrier analysis]).			
Direct site cost & site depreciation recovery	Determine whether revenue less direct site costs is sufficient to also contribute to the recovery of the capital investment in the site. This reflects whether the site is failing to even recover the investment in the site spread over its useful life. A potential new site with a negative <i>Direct</i> <i>site cost and depreciation</i> <i>recovery</i> would not be built without the business case showing sufficient increased revenues from other locations.	Direct site cost recovery Less Capital investment in the individual site assets depreciated over their respective useful lives			
Recovery of fully allocated operating costs & site depreciation	Determine whether revenue less direct site costs and a share of all other operating costs associated with the mobile business, are sufficient to contribute to the recovery of the capital costs of the site. This is a proxy for overall profitability or earnings before interest and tax (EBIT) for each site, recognising the large pool of shared ongoing mobile costs that are not directly connected to a specific site.	Direct site cost and depreciation recovery Less Allocation of other mobile operating costs such as customer service, billing, network maintenance, and head office costs			
Recovery of fully allocated operating costs, site depreciation and the cost of	As per the recovery of fully allocated operating costs and site depreciation with the additional of an allocation of	Recovery of fully allocated costs & site depreciation			

Site returns measure	Purpose	Calculation
capital	capital depreciation associated to non-site assets. This total return (%) is then reduced by the cost of capital to illustrate whether the site meets the average return requirements of the investor given the cost of sourcing funds.	<ul> <li>Share of depreciation of non-site assets</li> <li>Divided by</li> <li>Total capital invested (site and allocated core network asset acquisition cost)</li> <li>Less</li> <li>Weighted average cost of capital</li> </ul>

- 4.16 To perform the calculations required for each tier of profitability, it was necessary for Ovum to:
  - (a) consider which sites were "Telstra-only";
  - (b) for those sites, calculate the following components:
    - (i) the revenue generated by each site;
    - (ii) the direct operating costs associated with each site;
    - (iii) the indirect operating costs associated with each site; and
    - (iv) depreciation of site assets.
- 4.17 We explain how we calculated each of these components below.-
- 4.18 Ovum undertook this review of the business case for Telstra-only mobile coverage areas using a combination of public and internal Telstra data. Telstra provided site level details of revenue as well as benchmarks for the initial capital investment and main direct cost components for sites in rural and remote areas. Site data included location details, both descriptive and geographic coordinates as well as the active equipment used (base station configuration).
  - <u>Site list</u>: To determine which sample of sites should be included in our analysis, Ovum was provided with a list of sites likely to be in Telstra-only areas. Ovum then cross-checked this list and made additional exclusions. Sites were excluded where the site only featured a repeater. Repeaters are a low power/low cost solution to augment coverage. While they contribute to the revenue a cell site generates, they generally do not have any revenue directly associated with them and have different capital and operating costs. For these reasons, we considered our analysis would be more accurate if repeater sites were excluded. We note, however, that by excluding repeater sites our analysis may understate operating costs (and therefore overstate profitability).

Sites were also excluded where there appeared to be duplicate site codes or where traffic data (used to determine revenue) was not available. Finally, sites were excluded, where, following Ovum's review, the site was identified as being in a location with current Optus or Vodafone coverage. From this process, we created a sample of 448 sites where Telstra is the only MNO.

Given the number of sites included, we consider this sample is representative of Telstraonly sites.

- <u>Revenue:</u> To verify the revenue associated with each site, Ovum considered the traffic generated by each site (being the total Gigabytes of customer traffic carried by the site during the month) as measured by Telstra. Total Telstra mobile revenue was allocated to each site based on the amount of Gigabytes of data carried by the site (as a measure of the value provided to customers). Ovum reviewed and verified this allocation. This methodology assumes that from a revenue generation perspective all traffic is valued equally, or at least that the mix of traffic that may be valued (priced) differently is consistent across all sites. Termination revenue, the payments from other operators to deliver calls and SMS to Telstra customers, was not included in the data supplied by Telstra. Termination revenue contributed 2.6% of Telstra's mobile revenues in its latest half-year reporting period, and is expected to continue to fall as a share of revenue as traditional calling and SMS products transition into data products. Sensitivity analysis suggests this did not have a material effect on our findings.
- <u>Direct operating costs:</u> In considering the direct operating costs associated with each site, we considered the primary recurrent costs of operating a mobile site: site rental and power. Telstra benchmarks<sup>17</sup> were used across all sites under consideration.
- <u>Indirect operating costs:</u> In considering the indirect operating costs associated with each site, we included all remaining Telstra mobile operating costs. This pool of costs includes customer care, billing, marketing, network maintenance and administration, and was derived from Telstra overall mobile EBITDA margin reported for FY 2016 and allocated as a proportion of revenue.
- <u>Depreciation</u>: To calculate depreciation, we considered the depreciation of individual assets associated with each site according to service life. The average resulting depreciation rate applied across the site assets was 11% per annum. We considered the assets held by each site and the benchmark acquisition cost, based on data provided by Telstra. We then considered the extent to which they would depreciate each year, based on service life.
- <u>Cost of capital</u>: Telstra supplied an estimate of their cost of capital representing the required rate of return from investments in its core business units, such as mobile. The pre-taxation cost of capital used was 9.92%.

### Revenue challenges for sample of Telstra-only sites



<sup>&</sup>lt;sup>17</sup> R Joice Statement, Tables 3 and 4.

<sup>&</sup>lt;sup>18</sup> Average revenue was calculated by Ovum using reported FY 2016 mobile service revenue (excluding termination revenues) and approx. 8,500 mobile sites operated nationally by Telstra.





 $^{\rm 20}$  R Joice statement, paragraph [40], Table 4.

<sup>21</sup> See M Wright statement at paragraphs [46]-[47]









### Value of coverage

- 4.34 Based on the above analysis, it is clear that many of Telstra's sites that are located in the most remote parts of the country are not generating a return as a standalone site. As such, Ovum considers the decision to continue to make investments in these areas must consider broader factors.<sup>22</sup>
- 4.35 In particular, Ovum considers the business case for regional and rural incremental coverage involves the following revenue considerations:
  - Increased retail revenues from increased market size due to new mobile customers who would otherwise not be a mobile customer without the existence of the incremental coverage;
  - (b) Direct retail revenues from mobile usage within the incremental coverage (including from customers who normally reside elsewhere);
  - (c) Increased retail revenues from a greater share of the total mobile market (outside of the incremental coverage); and
  - (d) Increased retail revenues from higher pricing reflecting customers' willingness to pay for the extra coverage (outside of the incremental coverage).
- 4.36 For Telstra, the decision to build in remote areas therefore considers the whole network and the perceptions of customers of the network as a whole (as described in sections 3 to 6 above).<sup>23</sup> The opportunity to market "Australia's largest network" is highly valuable, securing not only the

<sup>&</sup>lt;sup>22</sup> We note that this view is supported by M Wright statement paragraphs [81-85].

<sup>&</sup>lt;sup>23</sup> Also see M Wright statement paragraphs [81-85].

customers that have the need for coverage in remote areas, but also building the perception within the community of continued market leadership.

# 5 The business case for other providers' future investment in regional Australia

- 5.1 This section examines the current business case for Optus and Vodafone for continued investment in mobile services infrastructure in regional and rural areas of Australia.
- 5.2 This analysis reviews the same sites considered in the previous Telstra analysis, and assumes a share of revenues can be won if the operator/s co-locates on the Telstra-only site and can utilize regulated backhaul to connect back to the nearest existing site.



- (a) Co-location gives the right to access the tower built by another network operator, alleviating the need to build their own structure. As a result, the cost of annual rental, site acquisition and build costs can be significantly reduced, especially for the more remote sites.<sup>25</sup>
- (b) Backhaul investment may be avoided, or deferred, by purchasing capacity under the Domestic Transmission Capacity Service regulations. The DTCS sets pricing for wholesale capacity up to 1Gbps, a throughput sufficient to support a modest market share in low population areas. (The median capacity required for the sites reviewed was 4Mbps, and average 6Mbps, but a 20Mbps minimum was assumed to support services for at least a single mobile broadband user.)

<sup>24</sup> See also R Joice statement [Section 2]

<sup>26</sup> See R Joice Statement, Table 4.

<sup>&</sup>lt;sup>25</sup> See R Joice Statement [Section 5]



- 5.9 In determining the sites where Telstra is currently the only provider of network access (described in paragraph 4.18 above), Ovum has noted that Optus already has coverage expansion plans, with many rural localities set to receive coverage from Optus<sup>30</sup> in the next six months, including:
  - (a) Augathella, Queensland;
  - (b) Barcaldine, Queensland;
  - (c) Morven, Queensland;
  - (d) Mungindi, Queensland;
  - (e) Paraburdoo, Western Australia; and

<sup>&</sup>lt;sup>27</sup> This represents approximately 1% of total market revenue as calculated by Ovum's WCIS – World Cellular Information Service and market disclosures, less a 10% discount for Optus' lower prices

<sup>&</sup>lt;sup>28</sup> This represents approximately 1.5% of total market revenue as calculated by Ovum's WCIS – World Cellular Information Service and market disclosures, less a 10% discount for Optus' lower prices

<sup>&</sup>lt;sup>29</sup> This represents approximately 2% of total market revenue as calculated by Ovum's WCIS – World Cellular Information Service and market disclosures, less a 10% discount for Optus' lower prices

<sup>&</sup>lt;sup>30</sup> Optus & Vodafone Mobile coverage maps, accessed online November 2016

- (f) Stonehaven, Victoria.
- 5.10 Optus' regional coverage plans are extensive and appear to be targeting the many smaller communities between the larger towns already covered by its network. In Queensland this will also translate into improved coverage of a number of highway routes. That is consistent with Ovum's determination that a significant portion of these sites would be profitable themselves, and Optus expects to earn an increased market share to subsidise those that are not.
- 5.11 In addition, we consider that for Optus in particular, the opportunity to narrow the gap in coverage is likely to offer marketing benefits. This translates into the chance to close the perceived mobile network coverage gap with Telstra and in time reduce the premium Telstra can secure from its network leadership.<sup>31</sup>

<sup>&</sup>lt;sup>31</sup> See also M Wright Statement paragraph [88-89]

### **Appendix A – Letter of instruction**

Partner Peter Waters Contact Genevieve Rahman T +61 2 9263 4194 grahman@gtlaw.com.au Our ref 1030364



L 35, Tower Two, International Towers Sydney 200 Barangaroo Avenue, Barangaroo NSW 2000 AUS T +61 2 9263 4000 F +61 2 9263 4111 www.gtlaw.com.au

### 2 December 2016

#### By email

Stephen Myers Principal Consultant Ovum Level 4, 267 Collins Street Melbourne, VIC 3000

Email: Stephen.Myers@ovum.com

### Confidential

Dear Mr Myers

### Response to the Australian Competition and Consumer Commission regarding potential declaration of a wholesale domestic roaming service on behalf of Telstra Corporation Limited

#### 1 Background

- 1.1 We act for Telstra Corporation Limited (Telstra).
- 1.2 On 5 September 2016, the Australian Competition and Consumer Commission (ACCC) commenced an inquiry into whether to declare a wholesale domestic mobile roaming service (ACCC Inquiry). As part of that inquiry, on 26 October 2016, the ACCC released a Discussion Paper seeking views on a range of issues it considers relevant to whether such a declaration should be made.
- 1.3 The ACCC has invited submissions to the Discussion Paper from mobile network operators, including Telstra. Set out in the ACCC's Discussion is a description of the legal framework and the assessment approach.
- 1.4 In accordance with section 152AL under Part XIC of the Competition and Consumer Act 2010 (Cth) (CCA), the ACCC may only declare a telecommunications services if (among other things) it is satisfied that doing so will be in the long-term interests of end-users (LTIE). Under section 152AB of the CCA, in deciding whether the declaration will promote the LTIE, the ACCC must consider whether declaration is likely to result in the achievement of the following three objectives:
  - (a) the objective of promoting competition in markets for telecommunications services;
  - (b) the objective of achieving any-to-any connectivity in markets for telecommunications services; and
  - (c) the objective of encouraging the economically efficient use of, and investment in, telecommunications infrastructure.

- 1.5 In determining the likelihood to which a particular thing is likely to result in the achievement of promoting competition in markets for telecommunication services, regard must be had to the extent to which the thing will remove obstacles to ensure users of telecommunications services gain access to those telecommunications services.<sup>1</sup>
- 1.6 In determining the likelihood to which a particular thing is likely to result in the achievement of encouraging the economically efficient use of, and investment in, telecommunications infrastructure, regard must be had to the following matters:<sup>2</sup>
  - (a) whether it is, or is likely to become, technically feasible for the services to be supplied and charged for, having regard to:
    - (i) the technology that is in use, available or likely to become available; and
    - (ii) whether the costs that would be involved in supplying, and charging for, the services area reasonable or likely to become reasonable; and
    - (iii) the effects, or likely effects, that supplying, and charging for, the services would have on the operation or performance of telecommunications networks;
  - (b) the legitimate commercial interests of the supplier or supplier of the services, including the ability of the supplier or suppliers of services to exploit economics of scale and scope;
  - (c) the incentives for investment in:
    - (i) the infrastructure by which the services are supplied; and
    - (ii) any other infrastructure by which the services are, or are likely to be become, capable of being supplied.
- 1.7 In determining incentives for investment, regard must be had to the risks of making the investment<sup>3</sup>.
- 1.8 We have been instructed to engage you, on behalf of Telstra, to prepare a report based on your expert opinion, for use by Telstra in relation to the ACCC Inquiry. Telstra may seek to rely upon your report in any subsequent review of the ACCC's final decision. If that occurs, we will contact you.
- 1.9 By this letter, we set out our written instructions to you.

<sup>&</sup>lt;sup>1</sup> See section 152AB (4) of the CCA, noting that this subsection does not limit the matters to which regard may be had (see section 152AB(5) of the CCA).

<sup>&</sup>lt;sup>2</sup> See section 152AB(6) of the CCA, noting that this subsection does not limit the matters to which regard may be had (see section 152AB(7) of the CCA)

<sup>&</sup>lt;sup>3</sup> See section 152AB(7A), noting that this subsection does not limit the matters to which regard may be had (see section 152AB(7B) of the CCA)

#### 2 Scope of work

- 2.1 You are retained to provide an expert report which addresses the following questions:
  - (a) What is Telstra's current business case for investment in mobile services in regional and rural areas of Australia?
  - (b) What is the current business case of other operators, Singtel Optus Pty Ltd and Vodafone Hutchison Australia Pty Ltd, for investment in mobile services in regional and rural areas of Australia?
- 2.2 Please explain the basis for your opinion.

### 3 Guidelines for preparing your report

- 3.1 While you have not been engaged in respect of any legal proceedings, Telstra is seeking a robust and rigorous independent expert report. We request that you prepare your report in accordance with Federal Court of Australia *Harmonised Expert Witness Code of Conduct*. A copy of the Code of Conduct is enclosed at **Attachment A**.
- 3.2 In particular, in preparing your report, we ask that you please:
  - (c) identify your relevant area of expertise and provide a curriculum vitae setting out the details of that expertise;
  - (d) only address matters that are within your expertise;
  - (e) where you have used factual or data inputs please identify those inputs and the sources;
  - (f) if you make assumptions, please identify them as such and confirm that they are in your opinion reasonable assumptions to make;
  - (g) if you undertake empirical work, please identify and explain the methods used by you in a manner that is accessible to a person not expert in your field;
  - (h) confirm that you have made all the inquiries that you believe are desirable and appropriate and that no matters of significance that you regard as relevant have, to your knowledge, been withheld from your report; and
  - (i) do not provide legal advocacy or argument and please do not use an argumentative tone.

### 4 Confidentiality and legal professional privilege

4.1 Presently, your report and all correspondence between us (excluding this letter) is subject to legal professional privilege. In addition, the information we have provided to you is commercially sensitive and confidential. For these reasons, we request you do not disclose or discuss your report, our correspondence or any information we provide to you with any third parties.

Yours faithfully Gilbert + Tobin

Peter Waters

Partner T +61 2 9263 4233 pwaters@gtlaw.com.au

**Genevieve Rahman** Lawyer T +61 2 9263 4194 grahman@gtlaw.com.au

### **Attachment A**

### Harmonised Expert Witness Code of Conduct (Annexure A to Federal Court of Australia Practice Note GPN-EXPT)

### APPLICATION OF CODE

- 1. This Code of Conduct applies to any expert witness engaged or appointed:
  - to provide an expert's report for use as evidence in proceedings or proposed proceedings; or
  - (b) to give opinion evidence in proceedings or proposed proceedings.

#### GENERAL DUTIES TO THE COURT

 An expert witness is not an advocate for a party and has a paramount duty, overriding any duty to the party to the proceedings or other person retaining the expert witness, to assist the Court impartially on matters relevant to the area of expertise of the witness.

### CONTENT OF REPORT

- 3. Every report prepared by an expert witness for use in Court shall clearly state the opinion or opinions of the expert and shall state, specify or provide:
  - (a) the name and address of the expert;
  - (b) an acknowledgment that the expert has read this code and agrees to be bound by it;
  - (c) the qualifications of the expert to prepare the report;
  - (d) the assumptions and material facts on which each opinion expressed in the report is based [a letter of instructions may be annexed];
  - (e) the reasons for and any literature or other materials utilised in support of such opinion;
  - (f) (if applicable) that a particular question, issue or matter falls outside the expert's field of expertise;
  - (g) any examinations, tests or other investigations on which the expert has relied, identifying the person who carried them out and that person's qualifications;
  - (h) the extent to which any opinion which the expert has expressed involves the acceptance of another person's opinion, the identification of that other person and the opinion expressed by that other person;
  - a declaration that the expert has made all the inquiries which the expert believes are desirable and appropriate (save for any matters identified explicitly in the report), and that no matters of significance which the expert regards as relevant have, to the knowledge of the expert, been withheld from the Court;
  - (j) any qualifications on an opinion expressed in the report without which the report is or may be incomplete or inaccurate;
  - (k) whether any opinion expressed in the report is not a concluded opinion because of

insufficient research or insufficient data or for any other reason; and

(I) where the report is lengthy or complex, a brief summary of the report at the beginning of the report.

### SUPPLEMENTARY REPORT FOLLOWING CHANGE OF OPINION

- 4. Where an expert witness has provided to a party (or that party's legal representative) a report for use in Court, and the expert thereafter changes his or her opinion on a material matter, the expert shall forthwith provide to the party (or that party's legal representative) a supplementary report which shall state, specify or provide the information referred to in paragraphs (a), (d), (e), (g), (h), (i), (j), (k) and (l) of clause 3 of this code and, if applicable, paragraph (f) of that clause.
- 5. In any subsequent report (whether prepared in accordance with clause 4 or not) the expert may refer to material contained in the earlier report without repeating it.

### DUTY TO COMPLY WITH THE COURT'S DIRECTIONS

- 6. If directed to do so by the Court, an expert witness shall:
  - (a) confer with any other expert witness;
  - (b) provide the Court with a joint-report specifying (as the case requires) matters agreed and matters not agreed and the reasons for the experts not agreeing; and
  - (c) abide in a timely way by any direction of the Court.

#### CONFERENCE OF EXPERTS

- 7. Each expert witness shall:
  - (a) exercise his or her independent judgment in relation to every conference in which the expert participates pursuant to a direction of the Court and in relation to each report thereafter provided, and shall not act on any instruction or request to withhold or avoid agreement; and
  - (b) endeavour to reach agreement with the other expert witness (or witnesses) on any issue in dispute between them, or failing agreement, endeavour to identify and clarify the basis of disagreement on the issues which are in dispute.

## Appendix B

Source: Ovum

The source or derivation of each component of the calculations Ovum performed is as follows



### Material referred to

- 5.12 Ovum prepared this expert report on the basis of the expertise of its two authors as detailed in the Authors section below. In producing this report, we referenced external material as listed below, as well as Ovum published data and reports as listed in Further Reading.
- 5.13 External material referenced:
  - (a) Domestic mobile roaming declaration inquiry Discussion Paper, ACCC, October 2016
  - (b) Witness Statement M Wright
  - (c) Witness Statement R Joice
  - (d) 2016 DTCS pricing calculator, ACCC, April 2016
  - (e) Internal Telstra analysis of the costs and revenue of mobile coverage
  - (f) Registry of Radio Telecommunications Licenses, ACMA
  - (g) Telstra Annual Report, August 2016

### Further Reading

Australia Update, September 2016, TE0016-000317, November 2016 Best Practice in 4G Network–Focused Marketing Campaigns, TE0003-000936, September 2016 Digital Consumer Insights 2015/16: Connectivity, PT0073-000001, December 2015 Network Traffic Forecast: 2015–20, TE0006-001159, December 2015

### Copyright notice and disclaimer

5.14 The contents of this product are protected by international copyright laws, database rights and other intellectual property rights. The owner of these rights is Informa Telecoms and Media Limited, our affiliates or other third party licensors. All product and company names and logos contained within or appearing on this product are the trademarks, service marks or trading names of their respective owners, including Informa Telecoms and Media Limited. This product may not be copied, reproduced, distributed or transmitted in any form or by any means without the prior permission of Informa Telecoms and Media Limited.

- 5.15 Whilst reasonable efforts have been made to ensure that the information and content of this product was correct as at the date of first publication, neither Informa Telecoms and Media Limited nor any person engaged or employed by Informa Telecoms and Media Limited accepts any liability for any errors, omissions or other inaccuracies. Readers should independently verify any facts and figures as no liability can be accepted in this regard readers assume full responsibility and risk accordingly for their use of such information and content.
- 5.16 Any views and/or opinions expressed in this product by individual authors or contributors are their personal views and/or opinions and do not necessarily reflect the views and/or opinions of Informa Telecoms and Media Limited.



### **CONTACT US**

www.ovum.com askananalyst@ovum.com

### INTERNATIONAL OFFICES

Beijing Dubai Hong Kong Hyderabad Johannesburg London Melbourne New York San Francisco Sao Paulo Tokyo

