

The logo for Optus, consisting of the word "OPTUS" in a bold, teal, sans-serif font.

Submission in response to
ACCC Issues Paper

**Competition in evolving
communications markets**

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Section 1. EXECUTIVE SUMMARY

- 1.1 Optus welcomes the opportunity to provide input into the ACCC's study of the communications sector. This market study is both timely and appropriate given the wide range of developments affecting the communications market.
- 1.2 To some degree the sector is in a state of transition as technological developments and structural changes flow through the market. Each of these has the potential to influence the future nature of consumer preferences and level of competition in the market. These key developments include:
 - (a) New technologies that are bringing new services and applications to consumers and facilitating the entry of new global players into the market;
 - (b) The changing nature of consumers preferences and priorities causing a decline in traditional fixed voice services and a major increase in data usage as broadband (both fixed and mobile) becomes the primary means of communication;
 - (c) The increasing reliance on fast and reliable communications services for business and commerce; and
 - (d) The structural changes being implemented as a result of the roll-out of the NBN, which is now starting to approach scale in terms of premises passed.
- 1.3 Whilst these developments are identifiable, what is less clear is the effect they are having on competition within the sector. There are some deep rooted features of the market that continue to persist.
- 1.4 Telstra continues to dominate the fixed line sector even as the NBN roll-out approaches scale. The roll-out of the NBN is gradually delivering structural reform of the fixed line aimed at providing a level playing field. However, Telstra remains somewhat inoculated from the full effects of the reforms by virtue of its incumbent advantages and the favourable terms of its Definitive Agreements with NBN Co.
- 1.5 In contrast, competition remains vigorous in the mobile sector with three scale mobile network operators competing nationally at the retail and wholesale level. Mobile competition has been built on the foundations of significant investment in mobile infrastructure and technology combined with regulatory settings designed to encourage such investment. Much infrastructure-based competition is being focused increasingly in regional and other previously under-served areas.
- 1.6 Whilst there are new challenges facing the market Optus does not believe that a radical overhaul of the current regulatory settings and policies is required. However, there is likely to be a range of policy initiatives available to the ACCC to improve on current levels of competition. But it is important that any initiatives the ACCC ultimately recommends are targeted at specific and identifiable areas of market failure. Further, given the integrated nature of the communications sector, it is important that the likely effects of these initiatives is fully considered and any policies are properly coordinated so that they do not result in disconnected outcomes.
- 1.7 Optus does not believe there is any case for a wholesale change in the approach to the regulation of the mobile sector. The level of investment, competition and consumer benefits delivered in this sector suggest that current policies are working well and that market forces are delivering positive outcomes for consumers. There is merit, however, in looking at targeted policies to facilitate investment and improve competition in the

more remote communities and locations where there is a limited commercial case for investment. However, any policy initiatives should be proportionate and targeted. Specifically, Optus recommends that:

- (a) There is no case for the ACCC to mandate mobile roaming. Mandated roaming will have real and immediate adverse consequences for MNOs that have invested in regional infrastructure; yet it is not clear that it will deliver benefits to competition or consumers;
- (b) Any decision in relation to the domestic mobile roaming declaration inquiry must be taken after the conclusion of this market inquiry;
- (c) Competition in regional areas can best be promoted by policy measures focused on facilitating joint investment in passive infrastructure; and
- (d) The ACCC should also consider measures to better equalise spectrum holdings through appropriate competition caps in future spectrum auctions, such as the forthcoming auction of 700 MHz spectrum.

1.8 Consistent with the approach to mobile there is no case for wholesale change in the approach to the regulation of the fixed line sector. Whilst Optus supports the broad NBN regulatory policy settings, we believe there is merit in some additional targeted initiatives aimed at improving the prospects for competition to develop in the transition to the NBN. To maintain the scope for competition on the NBN the ACCC should:

- (a) Revisit NBN Co's pricing construct and the impact of CVC charging;
- (b) Reaffirm the current POI arrangements that promote differentiation on the NBN and are facilitating the emergence of a workable wholesale market;
- (c) Examine whether the current migration arrangements promote contestability and customer choice; and
- (d) Consider the benefits to end-users of establishing more comprehensive wholesale service performance obligations on both Telstra and NBN Co.

1.9 In addition, Optus believes there is merit in the ACCC considering whether new rules might be required to address sources of market power that are not directly related to the ownership of infrastructure as we transition to an NBN environment.

Section 2. TOTAL MARKET SNAPSHOT

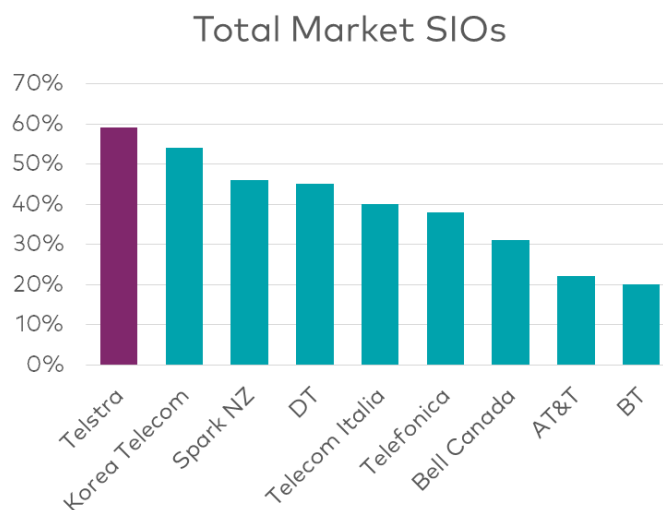
- 2.1 The state of competition, and the size of the market, has evolved considerably since the process of deregulating the telecommunications industry began in 1991.
- 2.2 Major operators in the Australian communications market operate at both the wholesale and retail levels – providing services and products that traverse across the core, access and service layers to provide end-to-end services for all Australian end-users.
- 2.3 In fact, it is becoming increasingly more difficult to delineate the boundaries between traditional telecommunication services and platforms, and the increasingly prevalent over-the-top (OTT) services and converged networks. For example,
 - (a) The mobile sector primarily comprises of mobile network operators and mobile virtual network operator (resellers).
 - (b) The fixed sector continues to grow, particularly with developments in technology and changes to business models. The NBN rollout will further change the dynamics of key players in this sector.
 - (c) There is an increased focus on converged networks, where services are being developed and offered that rely on a hybrid of fixed and wireless solutions to provide end-user products. OTT services and content streaming are also changing the consumer landscape for the consumption of communication services.
 - (d) Underlying the customer access networks are separate markets for backhaul transmission, switching, hosting and other passive layer services. With the exception of domestic transmission, most services at this layer remain unregulated.
- 2.4 The focus of this market inquiry will naturally be on the identification of specific communications markets and will assess the level of concentration and competition in each respective market.
- 2.5 However, any assessment of competition in the communications sector cannot escape the fact that Telstra remains one of the most dominant operators, in terms of subscribers, revenue and profit, not only in Australia but among its incumbent peers globally. More than twenty years of ‘competition’ regulation has facilitated competitive entry, but Telstra remains dominant.
- 2.6 Telstra’s dominance is largely due to its vertically integrated ownership of the only national fixed network and associated national transmission network. This enabled Telstra to have significant cost and first mover advantages across a range of communications markets. Telstra has been willing to aggressively defend its dominance – with no better example than Telstra overbuilding Optus’ HFC network in the 1990s to prevent a viable alternative fixed network. Whilst Telstra’s vertical integration is being addressed through the roll-out of the NBN, this policy is not without its issues.
- 2.7 Notwithstanding the roll-out of NBN, Telstra is retaining a strong position across the overall communications market. This is partly assisted by the ‘compensation’ it receives from NBN Co as part of the structural separation reforms. This compensation is estimated at more than \$95 Billion over the lifetime of the agreement. Optus and other industry players have consistently highlighted the chilling effect this is likely to have on competition in the medium to long term. Furthermore, it is becoming increasingly clear that the annual payments to Telstra are enabling it to aggressively market to new or

existing end-users during the transition to NBN. The ability to defend its existing dominance is troubling given:

- (a) Telstra has the highest subscriber market share across voice, broadband, mobile and pay TV markets;
- (b) Telstra has the highest EBITDA market share out of its global peers; and
- (c) On a per capita basis, Telstra's profit is almost 90% higher than the next international incumbent.

2.8 Figure 1 below shows total communication subscriber market share across voice, broadband, mobile and Pay TV for a global group of Telstra's incumbent peers. It shows that Telstra retains the highest SIO market share. Telstra is unique amongst its peers due to its scope of horizontal integration, owning both fixed and mobile networks, and national backbone transmission networks. In addition, Telstra is also dominant in corporate and government markets as well as a joint owner of the dominant pay TV company.

Figure 1 Market Shares (Total Market SIOs, FY16)



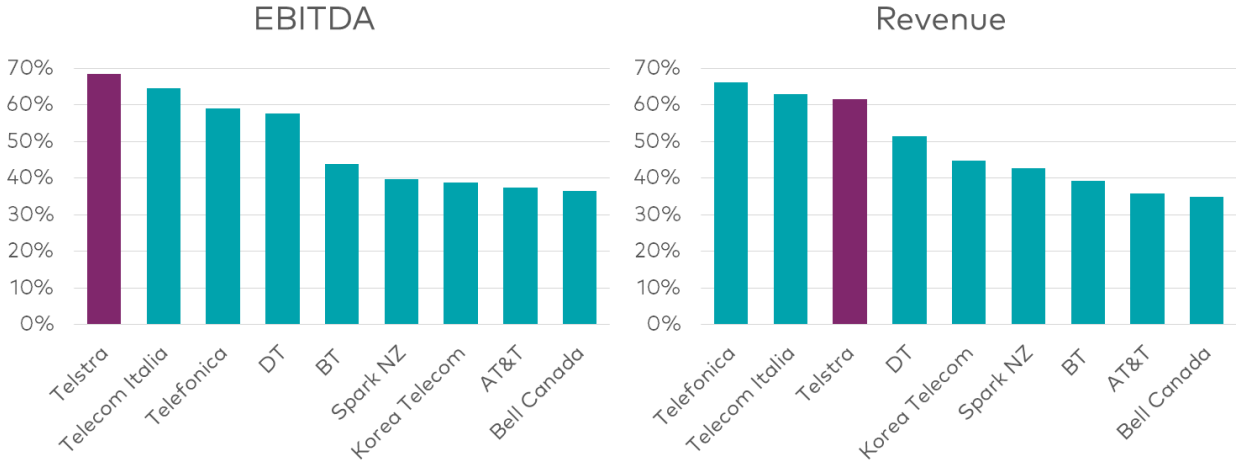
Source: Company Reports.

- 2.9 Many of the international markets have been subject to competition regulation that has been effective in addressing competition concerns. For example:
- (a) New Zealand has implemented structural separation of the fixed line network. Further, Spark NZ has no ownership in the dominant pay TV company.
 - (b) The UK has a long history of functional separation of British Telecom, with wholesale fixed line services delivered through a separate division called Openreach. Separation combined with 'Equivalence of Inputs' tests to ensure BT competes on equal terms in retail markets has led to a higher level of competition in fixed markets. These rules are being further strengthened. BSkyB is the dominant pay TV provider, enabling it to offer quad play propositions, further promoting competition.
 - (c) The other European markets that have vertically and horizontally integrated incumbent operators, Germany, Italy and Spain, all have incumbent market shares less than Telstra. And typically do not have the extent of vertical integration across all four communications markets seen in Australia.

2.10 Subscriber market share is one measure of dominance. It is also instructive to look at Telstra’s share of revenue and EBITDA. After all, it is revenue and profit that enables firms to re-invest in networks and subsidise the acquisition and retention of end-users.

2.11 Figure 2 shows revenue and EBITDA market shares of Telstra’s incumbent peers across comparable markets.

Figure 2 Market Shares (EBITDA and Revenue, FY16)

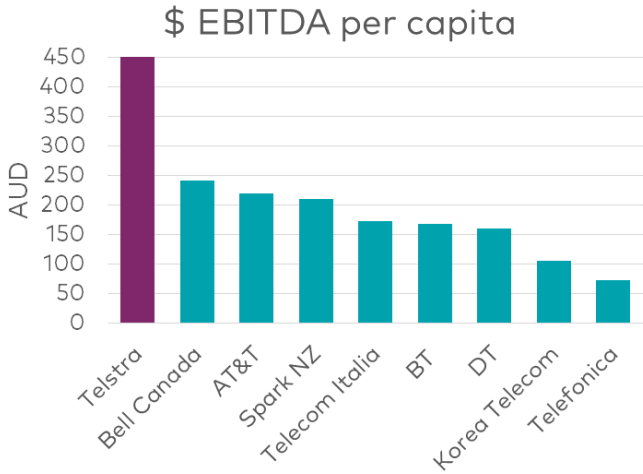


Source: Company Reports

2.12 Telstra’s significant profits can also be seen by comparing the absolute EBITDA amounts. Telstra earned in 2016 almost as much EBITDA as British Telecom; slightly more than Telecom Italia; almost three times more than Telefonica; double that of Korea Telecom; and almost 25% more than Bell Canada.

2.13 Telstra’s level of monopoly profit earned is further compared in Figure 3 below. This compares the EBITDA (in AUD) earned per capita across the comparable markets. It is axiomatic that operators in larger markets, like European markets and the USA, are able to acquire greater EBITDA due to larger markets. Normalising total EBITDA on a per capita basis clearly demonstrates the dominance of Telstra.

Figure 3 Market Shares (EBITDA per capita, FY16)



Source: Company Reports

- 2.14 It is clear that Telstra is earning profits at a level much higher than its international peers. In FY16 Telstra earned around \$450 of profit per Australian – almost 90% greater than the next market Canada. And more than double that of AT&T in the USA.
- 2.15 It is against this background that the assessment of individual communication markets should be undertaken. The ACCC should be mindful that Telstra is without peer in its ability to fund the protection of its incumbent position during the transition to NBN, and to extend its dominance into other related markets.

Section 3. MOBILE SERVICES

- 3.1 Competition for mobile services continues to be relatively strong – the mobile market has been one of the most successful areas for competition in the communications sector. There are three large competing mobile networks operating across a large portion of Australia, and retail prices have fallen significantly over the last decade. Australia has also been at the forefront of LTE deployment and smartphone adoption.
- 3.2 Notably, the mobile services market in Australia has been characterised by fast growth, with mobile penetration surpassing population and usage surpassing fixed line usage. Since 2012, there have been *“twice as many mobile phones than fixed line phones, and currently more calls are made on mobile phones than on fixed line.”*¹
- 3.3 To put this into perspective, the ACMA acknowledged research that during the period 2006 to 2013 the economic value to consumers and businesses created from mobile take-up and use, generates an estimated a \$33.8 billion increase in economic activity in 2013.²
- 3.4 These benefits reflect the competitive infrastructure investment by the three MNOs: Telstra, Optus and VHA. These mobile networks each provide coverage to at least 97 per cent of the population, and support a range of mobile virtual network operators (MVNO) through well-established wholesale supply arrangements – with over 30 MVNOs currently providing services in Australia.³
- 3.5 This section sets out key trends and market developments in the mobile service sector:
- (a) The state of competition in the retail mobile market remains strong. The three MNOs each operate national 3G networks, with 4G network coverage increasingly being rolled out to more regional areas.
 - (b) Price competition is increasingly focused on data. Growth in MVNO market share has also been a driver for changes in retail offerings. The structures of retail plans now offer more data inclusions, while unlimited voice and SMS are becoming common features.
 - (c) The importance of data services is also encouraging competition to focus on network quality and coverage. The rollout and accessibility to 3G and 4G networks will continue to grow, particularly as demand for mobile data services continues to increase.
 - (d) Continued infrastructure competition focussed on regional and under served areas.
 - (e) Network accessibility is also further driving network investments. Much of the success in the mobile sector has been built on a pro-investment objective. Regulation of the sector has focused on encouraging efficient investment, which has been stepped up in recent years – particularly in regional and rural area; assisted by targeted Government schemes.

¹ ACCC, 2013, Review of the declaration of the Domestic Mobile Terminating Access Service, Discussion Paper, May, p.11

² ACMA, Communications Reports 2013-14, p.1

³ ACCC, 2016, Competition in evolving communications markets, Issues Paper, September, p.39

- 3.6 This analysis suggests that the market (which supports over 30 million services per day) is operating successfully and there is no case for broad regulatory intervention. Optus cautions that certain interventions could even be counter-productive for future mobile investments – for example, the prospect of mandated domestic mobile roaming appears to be an inappropriate policy response that could undermine strategic investment incentives particularly in regional areas.
- 3.7 Where further regulatory intervention is to be considered appropriate, then policy should continue to promote efficient investment. In this respect, the relevant areas for consideration may include; for example, improvements to co-location arrangements, especially in the more remote areas where it might only be economic to support a single tower/facility.

Competition is strong and is delivering real benefits to end-users

- 3.8 The ACCC concluded in 2009 that the retail mobile services market had strong competition, and a general consensus amongst MNOs that the retail mobile services market has become more competitive or is improving in its competitiveness.⁴
- 3.9 This view was reiterated in 2013, with the ACCC acknowledging that:

... the three MNOs have all reached significant scale and have acquired key infrastructure assets, brand name and customer bases such that each has the ability to exert competitive pressure on the others. While the ACCC considers that each has some flexibility to adjust retail offerings in order to maximise profit, the overall market dynamics tend to force each to respond competitively to competitors and consumers.⁵

Mobile subscriber growth continues and competition remains strong

- 3.10 The mobile services market in Australia is characteristic of one of the fast growing telecommunications markets, with mobile penetration surpassing population since 2007.
- 3.11 This is similarly recognised by the ACMA which notes a continual year-on-year increase in the number of mobile services in operation (SIO). At June 2015, there were 31.77 million mobile SIOs in Australia, up from 29.28 million at June 2011.⁶ Over this period, Telstra has increased its market share by 12 percentage points to 53.9 per cent,⁷ which is significant and in part attributed to increases in machine-to-machine communications.⁸
- 3.12 Figure 4 shows the subscriber market shares between the three MNOs.⁹ This largely reflects the current state of the mobile handset market, and excludes machine-to-machine SIOs.

⁴ ACCC, 2009, Mobile Terminating Access Service: An ACCC final report on reviewing the declaration of the mobile terminating access service, May, p.18

⁵ ACCC, 2013, Domestic mobile terminating access service declaration inquiry, Final Decision, June, p.16

⁶ This includes all voice and data services available over 2G, 3G and 4G services including mobile wireless internet services provided via data cards, dongles or USB modems. ACMA, Communications Report 2014-15, pp.17-18

⁷ ACMA, Communications Report 2010-11, p.39; ACMA, Communications Report 2014-15, p.18

⁸ ACMA, Communications Report 2014-15, p.3

⁹ The subscriber market shares have been calculated based on company financial results. Total mobile SIOs include the sum of postpaid, prepaid, mobile broadband, and wholesale mobile SIOs.

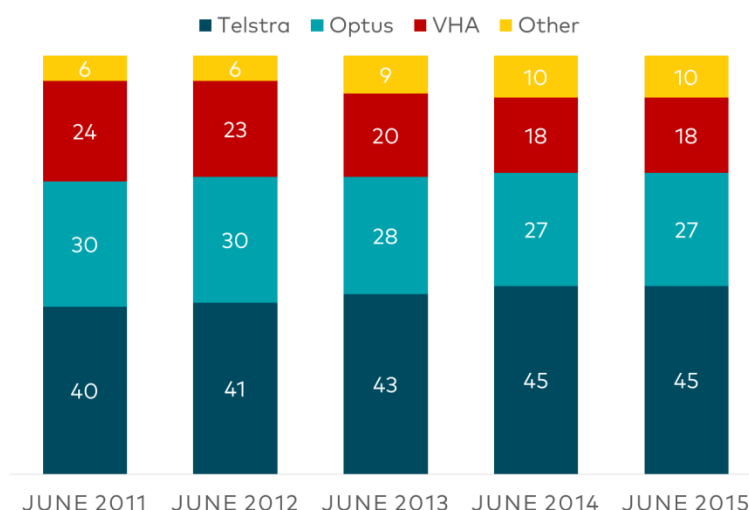
Figure 4 Subscriber market shares

	June 2013	June 2014	June 2015	June 2016
Total mobile SIOs ('000)	29,878	29,715	30,195	30,711
Telstra	47.9%	50.8%	51.5%	51.7%
Optus	31.9%	31.7%	31.1%	30.4%
VHA	20.2%	17.5%	17.4%	17.9%

Source: Company reports

- 3.13 Within these overall carrier subscriber market shares, there is also a considerable share of MVNO subscribers. Figure 5 shows the development of market shares since June 2011 within the traditional mobile voice and data (i.e. mobile handset) segment, and shows that MVNO market share has stabilised at around 10 per cent of the market.¹⁰

Figure 5 Retail market share for mobile handset services



Source: ACCC

- 3.14 The growth in MVNO market share over this period also suggests that price competition plays an important role in encouraging take-up and meeting consumer demands. Notably, the ACCC has recognised the presence of MVNOs as being “beneficial to end-users, providing greater product differentiation, innovative pricing and better value plans.”¹¹

Mobile pricing environment is becoming more competitive

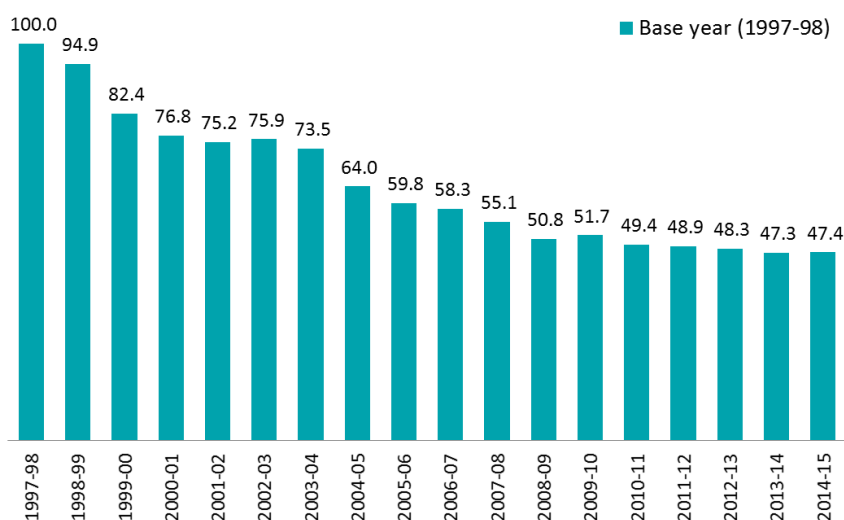
- 3.15 Improvements in the value and price propositions for both postpaid and prepaid plans is driving competition as carriers continue to compete for market share. For example, many plans now offer increased data allowances, which thereby increase value and appear as price decreases from all carriers.
- 3.16 The overall mobile services price index shows a continued downward trend in mobile prices since 1997-98 (see Figure 6). While there is an observed increase in price in

¹⁰ ACCC, Telecommunications report 2014-15, p.29

¹¹ ACCC, 2013, Domestic mobile terminating access service declaration inquiry, Final Decision, June, p.18

2014-15, the ACCC has acknowledged that this was also accompanied by an increase in data allowance offered by the major mobile service providers.¹²

Figure 6 Overall mobile services index, 1997-98 to 2014-15



Source: ACCC

- 3.17 Price competition remains strong – competition among MNOs is moving towards higher data inclusions in mobile plans. Other features being used to make offers more attractive include offers such as; data sharing, data rollover and free subscriptions to media and entertainment services. Unlimited voice and SMS inclusions are also becoming a common feature in many mobile plans.
- 3.18 Driven by the opening up of 4G networks by all three MNOs, MVNOs are also adding competitive pressure with improved data and voice inclusions in their plans. Mobile plan offerings are also increasingly becoming more innovative to meet consumer demands. For example, in 2016 Vodafone introduced a new prepaid product called ‘MyMix’ which offers consumers the ability to personalise their own plans from 76 possible combinations.¹³
- 3.19 The introduction of new services and technologies, such as OTT messaging apps and entertainment streaming services, promote changes in the usage of mobile services by consumers. As a result, there has been a significant shift of mobile services moving towards a more data-centric paradigm.

Data-driven revenue growth

- 3.20 The state of the market can also be seen in the growth of industry revenue. While the ABS does not report separately on the mobile sector, it can be observed that the total industry value added for telecommunications services has grown steadily to \$21.4bn in 2014-15 (CAGR 2% since 2006-07).¹⁴
- 3.21 This is largely driven by evolving consumer demands for access and service availability, in particular, the need to remain connected through many platforms as well as multi-device ownership. Mobile handsets generally feature as one of the many devices owned and used by most consumers.

¹² ACCC, Telecommunications report 2014-15, p.87

¹³ Vodafone, “Vodafone gives power to customer with MyMix,” Media Release, 2 May 2016

¹⁴ See: Table 1 Key data by industry subdivision. ABS, 8155.0 – Australian Industry, 2014-15

3.22 Revenue growth is ultimately more important than the number of connections, as MNOs need to grow revenue to cover the increasing cost of deploying and running mobile networks. Figure 7 shows the change in mobile revenues between the three MNOs, according to each of their respective financial year periods.¹⁵

Figure 7 Mobile Revenues and EBITDA (\$ million)

	FY13	FY14	FY15	FY16
Total mobile revenues				
Telstra	\$9,202m	\$9,668m	\$10,651m	\$10,441m
Optus	\$5,711m	\$5,385m	\$5,749m	\$6,005m
VHA	\$3,552m	\$3,495m	\$3,652m	\$3,206m [^]
TOTAL	\$18,465m	\$18,548m	\$20,052m	\$19,652m¹⁶

	FY13	FY14	FY15	FY16
Total mobile EBITDA				
Telstra	\$3,567m	\$3,955m	\$4,250m	\$4,384m
Optus	na	na	na	na
VHA	na	\$771m	\$813m	\$412m [^]

[^] Estimate for FY16 only based on half-year results

Source: Company reports

3.23 Smartphone penetration is also increasing as Australians adopt higher bandwidth services to support increasing data downloads. The ACMA also notes that “Existing mobile phone handsets are increasingly being replaced with smartphones, with 12.07 million people using a smartphone at May 2014, an increase of eight per cent since 2013.”¹⁷ This has continued to increase with 13.41 million Australian adults (74%) estimated to be using a smartphone at May 2015.¹⁸

3.24 Furthermore, the average usage per mobile handset data has also steadily increased year-on-year since 2011. In the quarter to June 2015, usage per mobile handset subscriber was 3.4GB (up from 1.0GB in June 2013).¹⁹ This has further increased to 5.5GB in the quarter to June 2016.²⁰

3.25 This is illustrative of the shift in the industry from a voice-driven network to a data-driven network. As a result, both data subscriber and revenue growth has underpinned mobile industry performance, offsetting declining performance of non-data services.

Data growth has changed market dynamics

3.26 A key trend in the sector is that mobile networks have seen continual growth in the demand for non-voice services. For example, mobile handset internet demand has increased by 85% (from 38,734TB to 71,572TB) over a 12 month period for the quarter

¹⁵ Financial reporting periods differ for each MNO – Telstra financial year-end is 30 June; Optus financial year-end is 31 March; and VHA financial year-end is 31 December.

¹⁶ The total for FY16 currently only includes HY results for VHA.

¹⁷ ACMA, Communications Report 2013-14, p.4

¹⁸ ACMA, Communications Report 2014-15, p.13

¹⁹ ACMA, Communications Report 2014-15, p.9

²⁰ ABS, 8153.0 – Internet Activity, Australia, June 2016

ending June 2015.²¹ This translates to average data usage per subscriber increasing from 1.9GB to 3.4GB,²² despite only a 2% increase in the number of mobile handset internet subscribers over the same period.²³

3.27 The continued challenge for industry is how to grow revenue and maintain sustainable profitability in an increasingly data-centric environment. The historic market behaviour of price competition to capture new subscribers in an ever growing market is being replaced with a focus on retaining profitable subscribers, greater cost control, and achieving network efficiency through scale.

3.28 This section:

- (a) Outlines the extent of the three national mobile networks;
- (b) Highlights that the MNOs continue to make significant investments to provide increased coverage and increased data performance;
- (c) Shows increasing investment in spectrum assets, although there are concerns over the concentration of sub-1GHz spectrum ownership; and
- (d) Examines the extent to which competition is being driven by consumer perceptions of network performance which may not reflect actual network performance.

National mobile networks

3.29 The three MNOs each operate a national mobile network, offering services to at least 97% of the population; access to 4G is currently offered to at least 95% of the population. As acknowledged by the ACCC, this difference in population coverage can equate to a large difference in geographic area.²⁴ Market research also generally finds that network coverage remains the most important criteria when selecting a mobile operator.

Figure 8 Mobile network coverage (as at mid-2016)

Network Population Coverage	Telstra ²⁵	Optus ²⁶	VHA ²⁷
2G / 3G network	99.3%	98.5%	97%
4G network	98%	95%	96.9% ²⁸

Source: ACMA

3.30 Carriers have made a number of significant mobile investment announcements in recent months, including updates on recent network rollouts facilitated through the Mobile Black Spots Programme (MBSP). Over recent years, billions of dollars have been invested in improving mobile 3G and 4G networks. For example;

²¹ ACMA, Communications Report 2014-15, p.48

²² ACMA, Communications Report 2014-15, p.9

²³ ACMA, Communications Report 2014-15, p.21

²⁴ ACCC, 2016, Competition in evolving communications markets, Issues Paper, September, p.39

²⁵ Telstra, Telstra Annual Report 2016, p.4

²⁶ Optus, "Optus delivers resilient Q1 results," Media Release, 11 August 2016

²⁷ Based on total national population estimated to be 24 million. Vodafone, "VHA solid growth trends continue," Media Release, 29 July 2016

²⁸ VHA reported that it provided 4G services to 96.9 per cent of the Australian population. Hutchison Telecommunications, Appendix 4E Preliminary final report for the year ended 31 December 2015, p.15

- (a) Optus has invested over \$1.5 billion in its mobile network last financial year, including on acquiring spectrum, expanding 4G coverage, boosting capacity and switching on new mobile towers.²⁹ Further investment commitments have also been made in recent months for improved regional coverage.³⁰
- (b) Telstra has stated that it invested \$1 billion in its mobile network over 2014–15,³¹ and that it will invest \$5 billion in its network over the three years to June 2017.³² A further \$3 billion has also been committed for network investments over the three years to June 2019.³³
- (c) Vodafone notes that it has invested \$3 billion in its mobile network in the last three years.³⁴ Recent network announcements also include commitments for improved regional coverage, with 100 new sites by FY 2017;³⁵ and the completion of 850-1800 carrier aggregation across its 4G metropolitan network.³⁶

3.31 To further facilitate the transition to a more data-centric world, carriers have also announced their forthcoming 2G shutdown dates. Telstra will complete its 2G switch off by December 2016,³⁷ Optus from 1 April 2017,³⁸ and VHA from 1 October 2017.³⁹ Closing down 2G networks to support newer technologies therefore opens up options to re-allocate some of this spectrum to improve customer experience and mobile services.

3.32 It follows that, as consumers move from voice to data, market success is dependent on the ability to deliver fast mobile broadband with a high quality of service. Increasing network capacity and investing in high speed networks is therefore driving network costs, as evidenced by the combination of network investment announcements by MNOs, and spectrum costs faced by the industry.

Increasing investment in spectrum assets

3.33 Spectrum is an important network input for the operation of mobile networks – it is required to provide coverage and capacity; to expand geographic reach, to improve coverage in existing areas, and to accommodate newer technologies. Mobile towers together with the amount of spectrum assets held determine the capacity of the mobile networks. Without access to sufficient spectrum, network operators have historically deployed more sites.

3.34 Responding to the increase demand in data, the industry has spent significant capex on new spectrum in recent years. For example, in the 2013 Digital Dividend auction, Optus and Telstra both acquired 700MHz and 2.5GHz spectrum, investing around \$650 million and \$1.3 billion respectively. In the recent 1800MHz regional spectrum auction, all three MNOs (and TPG) acquired spectrum, each spending between \$68 million and \$196 million for their respective lots.

²⁹ See: 'Optus boosts mobile reliability and data speeds' Media Releases – dated 20 to 22 October 2015

³⁰ See for example, Optus media releases – “Optus furthers commitment to the Central West,” 17 August 2016; “Optus furthers commitment to Ballarat,” 29 September 2016; and “Optus furthers commitment to Bendigo,” 29 September 2016

³¹ Telstra, Telstra Annual Report 2015, p.23

³² Telstra, Telstra Annual Report 2015, p.6

³³ Telstra, “Telstra invests up to extra \$3 billion on next generation network leadership, digitisation and customer experiences,” Media Release, 11 August 2016

³⁴ Vodafone, “Better coverage, more choice for regional mobile customers,” Media Release, 25 June 2015

³⁵ Vodafone, “Vodafone brings increased coverage and choice to Invergowrie,” Media Release, 26 July 2016

³⁶ Vodafone, “Vodafone 4G+ puts customers in fast lane,” Media Release, 12 March 2015

³⁷ Telstra, “It’s time to say goodbye old friend,” Telstra Exchange, 23 July 2014,

<https://exchange.telstra.com.au/2014/07/23/its-time-to-say-goodbye-old-friend/>

³⁸ Optus, “Optus to cease 2G services from April 2017,” Media Release, 5 August 2015

³⁹ Vodafone, “Vodafone to switch off 2G network next year,” Media Release, 30 September 2016

3.35 Telstra holds a substantial amount of spectrum in regional areas. A total of 150MHz of sub-1GHz spectrum is allocated to the three MNOs in regional areas. Telstra holds 87MHz of this – 58% of total spectrum. Telstra holds an even higher proportion of sub-1GHz spectrum that can be used for 4G services. 100MHz of spectrum across the 850MHz and 700MHz bands are held by the MNOs. Of this, 70MHz is held by Telstra.

3.36 Importantly for regional network deployment, Telstra holds significantly more sub-1GHz spectrum in regional areas. The importance of sub-1GHz spectrum has long been recognised, especially in regional areas:

... all frequencies are not equal in terms of their techno-economic implications. Frequencies below 1 GHz which offer significantly superior propagation characteristics compared to higher frequencies close to and above 2GHz, will result in substantially lower network costs in deployment scenarios in which the cell size is coverage-rather than capacity-limited for operators who hold these lower frequencies compared to those who do not.⁴⁰

3.37 Sub-1GHz spectrum has significant advantages compared to higher frequencies in terms of lower capex and opex (fewer base stations) in coverage limited areas (e.g. rural), as well as better in-building penetration. It has also been highlighted that sub-1GHz enables more efficient pathways to invest in regional areas and to progressively increase number of sites as revenue increases.⁴¹

3.38 Optus has provided submissions to the ACCC that auction competition limits should focus on total sub-1GHz holdings. The three sub-1GHz bands (700MHz, 850MHz, 900MHz) are largely interchangeable and provide similar commercial advantages in both metro and less densely populated areas. It is the total ownership across these bands that impact competition in the market. Focusing on just one single band, or one single auction risks missing the impact of potential competition issues associated with the ownership of sub-1GHz spectrum.

3.39 Optus believes that Telstra should not be permitted to purchase more sub-1GHz spectrum since it already holds 70% of 4G sub-1GHz spectrum and 58% of total sub-1GHz spectrum. Allowing Telstra to acquire more of this spectrum could materially damage competition, especially in suburban and regional areas.

Network performance and consumer perceptions

3.40 It has been shown above that the three MNOs cover at least 97% of the population, all have large and fast 4G networks. MNOs have invested in network performance and spectrum over recent years to respond to the increase demand for data consumption. However, evidence suggests that consumer perception is lagging behind actual network performance. That is, while there is little practical difference in network performance, there remains substantial differences in consumer perceptions between the three MNOs. It is likely that it is these perceptions that drive the stickiness of some customers to certain MNOs.

3.41 The growth of data usage has re-focused the mind of consumers back to network quality and coverage as a key network differentiator. Market success depends on not only having a high level of network coverage, but also having a network that can provide consistent data services at the speed required. The end-user experience required for data usage means that operators cannot hide from bad network experiences. In the

⁴⁰ Arthur D. Little, 2009, Mobile Broadband, Competition and Spectrum Caps; An independent paper prepared for the GSM Association, p.3

⁴¹ Ibid., p.10

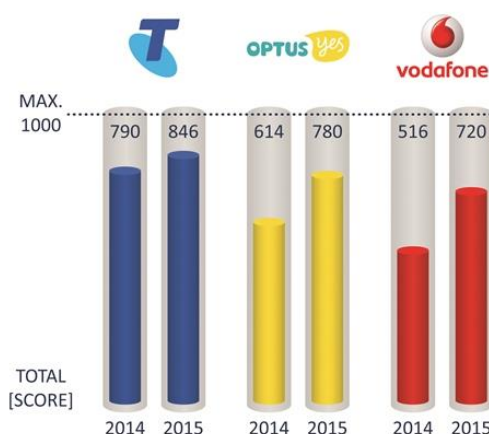
past, end-users could not readily differentiate between levels of voice quality,⁴² but data quality directly impacts on end-user experience.

- 3.42 It is clear that mobile investments have increasingly closed the network performance gaps between the MNOs, but the difference between consumer perception and reality of these network improvements remain less clear cut. For example, the P3 CommsDay Mobile Benchmark report is an annual survey that compares the three network operators against each other. As summarised by ACCAN,

The benchmark measures smartphone voice and data performance and is based on weeks of extensive testing around the country. The tests measure voice call quality, success rates, download and upload speeds, website access and video streaming performance. Major metro areas, small towns and cities and connecting highways were a part of the testing areas. The areas tested cover 70 per cent of the Australian population.⁴³

- 3.43 Figure 9 sets out the results from the 2015 survey – and shows marked improvements in network performance by all operators since the inaugural 2014 survey.

Figure 9 P3 CommsDay Mobile Benchmark results⁴⁴ – 2015 vs 2014



2014 results adjusted to provide a like-for-like comparison with 2015 data

Source: P3 CommsDay Mobile Benchmark

- 3.44 Importantly, it highlights that each MNO has improved on its network performance from the previous year – especially in rural and remote areas, which is a positive improvement for consumers (based on physical test results). It is arguable that there is little difference between the practical performance achievable by end-users on the three MNOs.
- 3.45 Nonetheless, there remains a consumer perception problem. This is likely perpetuated by perceived strong attributes of an MNO by a potential customer. For example, research shows that network availability and performance – and importantly consumers perceptions on this – is a large driver of network choice by regional consumers. This may also result from factors such as customer experience, marketing reach, brand visibility and consumer willingness to pay.

⁴² Although customers are sensitive to voice dropped call rates.

⁴³ ACCAN, "Australian mobile benchmark shows improved network coverage," 14 October 2015, <https://accan.org.au/hot-issues/1117-commsday-mobile-benchmark-15>

⁴⁴ As cited in ACCAN, "Australian mobile benchmark shows improved network coverage," 14 October 2015, <https://accan.org.au/hot-issues/1117-commsday-mobile-benchmark-15>

Source: Analyst reports

- 3.46 As highlighted above, Telstra continues to have a competitive advantage in each of the key indicators – such as network performance perception; and retail footprint. However, this in itself is not evidence of market failure or a driver of differences in mobile market shares, and therefore does not support the need for regulatory intervention.

There is no need for regulatory intervention

- 3.47 As discussed throughout this chapter, there is no case for significant intervention in the mobile sector. This chapter shows that:
- (a) Mobile subscriber growth continues and competition remains strong with year on year price declines;
 - (b) The growth of data has changed the dynamics of the market with a greater focus on network performance;
 - (c) To meet this, MNOs have invested substantially to improve network performance however, consumer perceptions on network performance is taking a longer time to catch up; and
 - (d) There is no need for significant regulatory intervention.
- 3.48 The existence of imbalanced market shares does not automatically lead to the need for regulatory intervention. Any intervention should follow best practice; namely, to identify network bottlenecks or other durable market failures that prohibit the development of effective competition.
- 3.49 Optus cautions that certain interventions could be counter-productive for future mobile investments. In particular, it is not the role of the ACCC to regulate for discrepancies in consumer perceptions when it is clear that network competition remains strong.

⁴⁵ [CiC]

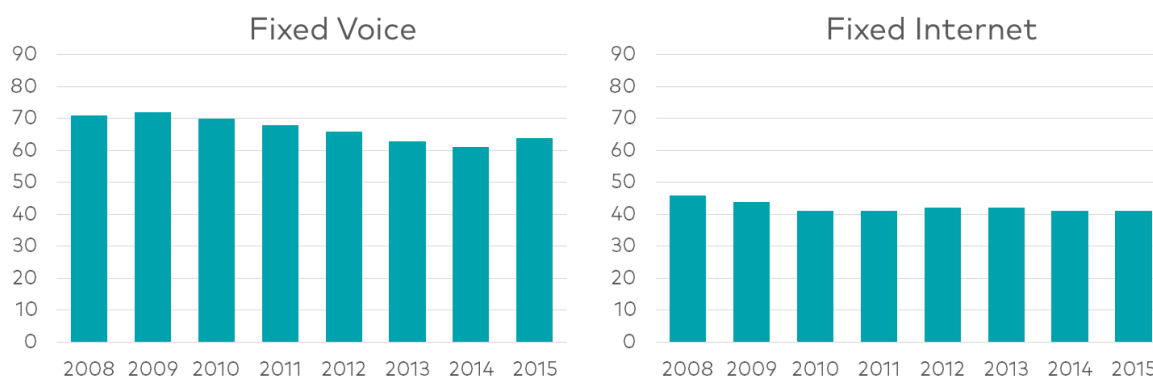
Section 4. RESIDENTIAL FIXED LINE MARKET

- 4.1 Optus finds that the market for fixed line services is not working as efficiently as it should be; and is not delivering the competition benefits expected from the recent structural reforms of the sector.
- 4.2 Since 1997 the fixed sector has witnessed significant regulatory intervention to stimulate competition in the market. This is to be expected given Telstra's monopoly over the provision of fixed line services. This has included important initiatives under the access regime to open up Telstra's fixed line copper network to competition through the regulation of resale and unbundling. It also includes setting the price and non-price terms of access for such services.
- 4.3 More recently, the NBN policy changes have aimed to deliver significant structural reform of the market through addressing some long-standing issues related to vertical integration and establishing a level playing field for RSPs to compete.
- 4.4 There can be no doubt that regulation has had some success in driving competition in the market. Telstra's market share has declined and competition has opened up new markets; and delivered significant price reductions and improvements in product offers.
- 4.5 However, competition appears to have achieved a high water mark. There has been little change in market shares in the past four years. There are signs in initial NBN roll-out areas that Telstra is maintaining or increasing its market share.
- 4.6 Whilst the NBN policy settings aim to drive increased competition, there are a number of practical impediments to achieving this outcome.
 - (a) Firstly, there are elements of the policy settings that act as natural stabilisers for Telstra and limit the scope for competition. This includes the various payments streams from NBN Co which are both significant and enduring. It also includes Telstra's close involvement in the NBN migration arrangements and its ability to leverage its trusted customer base.
 - (b) Secondly, the commercialisation of NBN Co and its need to generate a return on investment may act to limit the scope for RSPs to compete and develop a sustainable fixed line presence.
- 4.7 Optus outlines some important regulatory initiatives that can foster enhanced competition in the provision of fixed line services. To maintain the scope for competition on the NBN the ACCC should:
 - (a) Revisit NBN Co's pricing construct and the impact of CVC charging;
 - (b) Reaffirm the current POI arrangements that promote differentiation on the NBN and are facilitating the emergence of a workable wholesale market;
 - (c) Examine whether the current migration arrangements promote contestability and customer choice; and
 - (d) Consider the benefits to end-users of establishing more comprehensive wholesale service performance obligations on both Telstra and NBN Co, given the evidence of problems the ACCC has already had to address on an ad-hoc basis.

Competition in fixed line markets has stagnated

- 4.8 The fixed line markets are in a period of transition from dominance by the vertically integrated incumbent to a separated wholesale-only monopoly model. The central aim of the NBN policy was to 'rejuvenate' competition in fixed line markets as the NBN is rolled out.
- 4.9 Optus considers the following fixed line markets to be relevant. These markets are consistent with those identified by the ACCC in the 2014 Fixed Line Declaration Inquiry. The residential markets are:
- (a) Wholesale fixed line markets;
 - (b) Retail fixed voice market; and
 - (c) Retail fixed broadband and bundled market
- 4.10 The wholesale fixed line markets, which are being impacted by the roll-out of the NBN and the associated regulations, are addressed in more detail in section 5 of this submission.
- 4.11 A review of ACCC Telecommunications Reports shows that the level of competition in the relevant downstream fixed line markets has not materially improved since the introduction of structural reforms during 2010-11. Telstra remains the dominant retail provider for the fixed voice, fixed broadband and the fixed bundled markets.

Figure 11 Telstra Subscriber Market Shares (%)



Source: ACCC, Telecommunications Reports

- 4.12 These data show that:
- (a) Telstra's market share in the retail voice market has slightly declined from 71% in 2008 to 68% in 2012 and increasing to 64% in 2015.⁴⁶ Optus notes that 2015 represented a three percentage point increase in Telstra's retail fixed voice market share from 2014.
 - (b) Telstra's market share in the retail fixed broadband market increased from 41% to in 2010 to 42% in 2013, and falling back to 41% for 2015.⁴⁷
- 4.13 The data show that the only improvement in competitive outcomes, in terms of the ability of access seekers to acquire subscriber growth, has been in the declining fixed voice

⁴⁶ ACCC, Telecommunications Reports, various years.

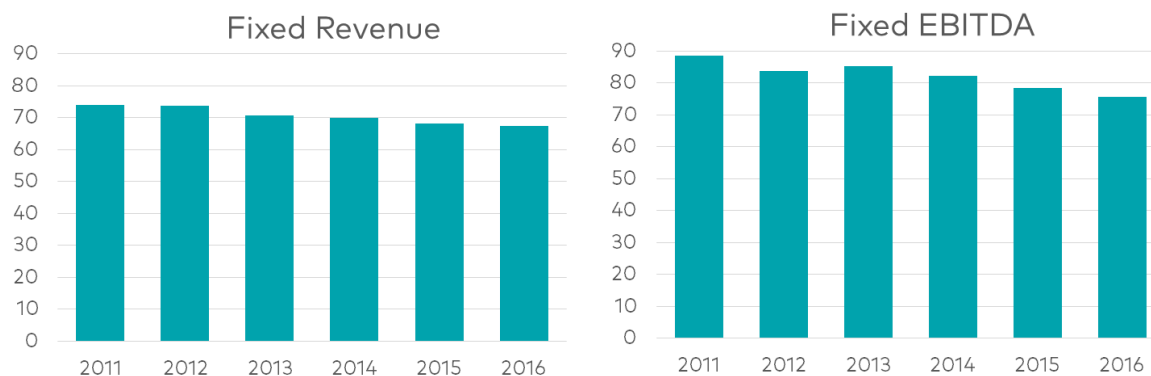
⁴⁷ ACCC, Telecommunications Reports, various years.

market. Optus notes that this improvement has been marginal at best, and that Telstra gained market share in 2015.

- 4.14 Fixed line service revenue for Telstra has declined from \$7.5B in 2013 to \$7B in 2016. Offsetting this decline in fixed revenue is the increase in NBN-related definitive agreements revenue, which amounted to over \$1.1B in 2016.⁴⁸ Telstra's revenue from fixed products, combined with its 'compensation' for structural separation, has actually increased since 2013 despite a fall in fixed line connections. Fixed and NBN-compensation revenue contributed 30% of Telstra's total service revenue. This is the same contribution as in 2013.
- 4.15 These data show that the continued regulation of Telstra's fixed line network has not prevented Telstra from generating significant revenue on the back of its fixed line dominance. Any loss in its dominance in the voice market has been more than offset by gains in the data market, combined with the NBN compensation payments.
- 4.16 Most concerning for the future development of competition, the data show there has been no improvement in competitive outcomes in the national fixed data market – the growing market that transitions into the NBN. Telstra retains its 41% retail market share. Telstra fixed data revenue has grown by 20% since 2013 to over \$2.5B.
- 4.17 With regards to total fixed line revenue, Telstra still retains a dominant market share of around 67.5%. Since 2011 Telstra's share has reduced from 74% in 2011 to 68% in 2015. Despite this, Telstra's revenue market share still dwarfs that of its nearest rivals TPG and Optus both with shares above 10%.
- 4.18 Telstra's dominance in fixed line revenue is more than matched by Telstra's share of fixed line EBITDA. Not only is Telstra acquiring (by some measure) the greater share of revenue, but it is acquiring an even greater share on industry profit. As shown in figure 12, Telstra generated 76% of industry profits in 2016, slightly lower than 2015. Telstra's next nearest competitors are Optus and TPG with around 10% market share each.

⁴⁸ Telstra 2016 Annual Report states "Other income includes gains and losses on asset and investment sales (including assets transferred under the nbn Definitive Agreements), income from government grants under the Telstra Universal Service Obligation Performance Agreement (TUSOPA), income from nbn disconnection fees (Per Subscriber Address Amount (PSAA)), subsidies and other miscellaneous items. The increase in other income of 95.0 per cent during the period is largely a result of an increase in one-off PSAA and Infrastructure Services Agreement receipts in line with the progress of the nbn rollout." p.25

Figure 12 Telstra Fixed Market Shares (%)



Source: Annual Reports

DSL market remains highly concentrated

- 4.19 The stagnation in competition is also observed in the lack of additional DSL SIOs over last few years. The data show that since the announcement of the NBN reforms there has been little investment in competitive DSL infrastructure. Where competitive investment has occurred it is more likely due to augmenting capacity and upgrading legacy DSLAMs for existing customers.
- 4.20 The share of competitive DSL SIOs has only marginally increased since the end of 2010. At that time, Telstra's market share of DSL SIOs across bands 1-3 (which are subject to the same access price) was 62%.⁴⁹ At the end of September 2013, this market share had declined slightly to 59.4%.⁵⁰ However, since then Telstra's market share had marginally increased to 59.6% by the end of March 2016. In other words, over the last six years there has been no meaningful growth in the competitive supply of DSL across bands 1-3.
- 4.21 Telstra's market share of band 4 DSL SIOs remains entrenched at 99%, representing no real change since December 2010.⁵¹
- 4.22 Notwithstanding the significant reduction in access prices since the adoption of the building block approach in 2011, Telstra's share of DSL SIOs remains entrenched above 99% in band 4 and around 60% in the 'competitive' bands 1-3. The ACCC observed in 2013 that *"the supply of DSL services over Telstra's CAN remained highly concentrated."*⁵² The 2016 market evidence confirms that the level of concentration remains.

Services supplied over NBN

- 4.23 The recent NBN Wholesale Market Indicator Reports indicate that the structural separation of Telstra through the migration of CAN-based services to the NBN network is not achieving the competition benefits that were assumed. The Indicator Reports for the quarters ending March and June 2016 show that Telstra acquired an overall NBN

⁴⁹ ACCC, 2011, Snapshot of Telstra's customer access network as at 31 December 2010

⁵⁰ ACCC, 2013, Snapshot of Telstra's customer access network as at 30 September 2013

⁵¹ ACCC, 2011, Snapshot of Telstra's customer access network as at 31 December 2010 & ACCC, 2013, Snapshot of Telstra's customer access network as at September 2013

⁵² ACCC, 2013, Fixed Services Review, Public inquiry into the fixed lines services declarations, Draft Report, December, p.36

market share of 49% and 50% respectively.⁵³ For the copper-based FTTN/B technologies, Telstra's dominance was higher, at 58% and 56% respectively.⁵⁴

- 4.24 There are growing concerns in the market that the competitive benefit of the NBN is not being achieved, for example:

In theory the NBN should open up regional markets to competition and be an opportunity for alternative providers to win market share. However, this does not appear to be happening at the moment and Telstra is actually growing its market share. We believe this reflects the fact that Telstra is defending its position in regional markets aggressively and at the same time is fighting back in metro (better pricing and bundling additional products).⁵⁵

Summary on the state of fixed line competition

- 4.25 The fixed line sector has been subject to a significant degree of regulatory and policy intervention over the past twenty years to stimulate competition. As can be seen above, this intervention has been successful in driving a gradual decline in Telstra's market share so that it no longer operates as the sole retail supplier of fixed communications services. Increased competition has driven benefits to consumers with recent ACCC annual reports noting reductions in prices, access to new products and services and improvements in service levels.
- 4.26 However, the above analysis also demonstrates the stark reality that the benefits of incumbency are deep rooted and difficult to fully neutralise. Whilst competition has developed, Telstra remains dominant in the fixed line sector. Further, there is early evidence that competition has stagnated and might be retreating even as the NBN policy initiatives are being implemented.
- 4.27 This outcome is concerning to say the least given that much faith has been placed in the NBN policy to deliver improvements in competition on the back of implementing structural reform of the sector. However, this outcome is not wholly surprising since the NBN policy covers a range of objectives not all of which are necessarily aligned to the competition objectives. For example, the NBN has the goal of delivering universal broadband access at certain specified standards and by certain specified dates. It is also to be operated on a commercial basis and aims to generate a return on capital invested.
- 4.28 The state of competition in markets supplied over NBN networks is discussed below.

The effect of the NBN on fixed line competition

- 4.29 It has been discussed above that the level of fixed line competition has stagnated over the last few years. Telstra is maintaining its dominant position notwithstanding significant regulatory interventions. Moreover, it appears that the competition benefits of structural separation may not occur as Telstra maintains, and increases, its market share over the NBN network.
- 4.30 Optus submits that a key questions for this inquiry is whether there are elements of the NBN policy that are working against the overall competition objectives. Optus believes there are and we discuss three specific issues in this section;
- (a) The interim migration and equivalence arrangements;

⁵³ ACCC, NBN SIO RKR, Quarters ending March and June 2016, Table 6

⁵⁴ ACCC, NBN SIO RKR, Quarters ending March and June 2016, Table 4

⁵⁵ Credit Suisse, TPG Telecom, 20 September 2016, p.10

- (b) The impact of NBN compensation payments to Telstra; and
- (c) The pricing of NBN products.

The interim migration and equivalence arrangements

- 4.31 When the NBN policy was announced in 2010 it was recognised that it would take a number of years for the structural reforms associated with the NBN to be fully implemented. It was also recognised that there was an immediate need to improve the environment for competition in the interim. As a result, the regulatory framework was amended to improve competitive outcomes during the transition period. Telstra is subject to equivalence obligations imposed through a formal Structural Separation Undertaking (SSU) and the ACCC's power to make various regulatory decisions has been strengthened
- 4.32 At a high level, the obligations in the Telstra SSU and its associated Migration Plan provide for; equivalence in the terms and condition of supply of specified services between Telstra's retail and wholesale customers; and, equivalence in how retail and wholesale services supplied over the Telstra copper network are migrated to the NBN.
- 4.33 Whilst the principles are welcome, it is difficult to identify examples of how the equivalence arrangements have advanced competition. Further, as the NBN migration arrangements have developed and been amended (for example to take account of the new multi-technology mix products), Telstra has become ever more pivotal in the transition to the NBN.

Breaches of the SSU have not led to enforcement action

- 4.34 The ACCC has found several breaches of the equivalence obligations. These are listed in the annual reports it has to prepare for the Minister on Telstra's compliance with its obligations under the SSU. However, no enforcement action has been taken against Telstra, rather the ACCC's focus has been to seek remediation of the issue after the event:

In responding to the reported breaches, the ACCC's focus to date has been on stopping the conduct and ameliorating its impact.⁵⁶

- 4.35 Further, Optus notes that breaches in service performance equivalence by Telstra, as set out in its quarterly equivalence and transparency reports are routinely excused by the incidence of weather events or statistical anomalies.⁵⁷ Optus notes the following statement from Telstra explaining an adverse performance for wholesale BTS activation services from the latest quarterly report:

Inclement weather in the March Quarter resulted in a significant number of Mass Service Disruptions (MSDs) being declared and a large spike in fault volumes which flowed through into the June Quarter. There were a number of MSDs in the June Quarter as well that exacerbated the issue. Telstra has focused on remediating the faults as a priority over tickets of work for activation. Whilst this issue impacted both Wholesale and Retail, it affected Wholesale to a slightly greater extent.⁵⁸

⁵⁶ Telstra's Structural Separation Undertaking Annual Compliance Report 2011–12 Report to the Minister for Broadband, Communications and the Digital Economy

⁵⁷ See SSU Quarterly Equivalence Reports

⁵⁸ Operational Equivalence Report for the June 2016 Quarter 30 August 2016

- 4.36 Whilst Optus acknowledges that the ACCC has done considerable work to monitor compliance with the SSU and seek remediation of specific breaches it appears that the ACCC has focused narrowly on technical compliance issues with insufficient attention given to a more holistic assessment of Telstra's compliance with the overarching equivalence obligation.
- 4.37 Optus notes the constant announcements of SSU breaches support these concerns. For example, the 2016 annual compliance report shows breaches with respect to:
- (a) Protecting confidential wholesale customer information;
 - (b) Maintaining operational and organisational separation of the business units;
 - (c) Compliance with reporting requirements; and
 - (d) Blocking service orders to promote migration to NBN.⁵⁹
- 4.38 We note the ACCC's adopted position is to work with Telstra to rectify breaches and to minimise chances of recurrence. Further the ACCC excuses many of the compliance issues because of Telstra's legacy systems. Optus does not believe this is sufficient. We are concerned that while any one small breach of the SSU may not be material enough to warrant further action; the sum of the small breaches over time may indicate deeper cultural or systemic problems.
- 4.39 It appears that the ACCC is prioritising procedural compliance over compliance with the overarching equivalence obligations. This is disappointing since the SSU was in part accepted on the basis that it was amended to include overarching equivalence obligations.

Telstra has a controlling position at the centre of the NBN transition arrangements

- 4.40 Over time Telstra's role in the NBN migration process has increased. It has worked in lock-step with NBN Co to develop the NBN customer migration arrangements. These arrangements are often presented to industry following private discussions between NBN Co and Telstra as a *fait accompli* with limited opportunity for other RSPs to influence or change the arrangements. An example of this problem is the approach Telstra and NBN Co have taken to addressing faults in asset transfer areas. As a result of arrangements agreed between Telstra and NBN Co, Telstra notified its wholesale customers in December 2015 of changes to longstanding arrangements for addressing faults on copper based services in areas where the copper assets had been transferred to NBN. These changes have a major impact on wholesale customers, but there was no prior discussion or notification of the changes with industry.
- 4.41 Further, as a result of recent deals concluded with NBN Co, Telstra will now assist NBN Co in deploying and operating parts of the NBN network. Telstra will undertake network activation and assurance services on the NBN and provide planning, design, construction and construction management services for the NBN HFC network. The ACCC has recently flagged concerns that these agreements may:
- (a) Give Telstra a "head start" in connecting customers to NBN HFC broadband services;
 - (b) Provide preferential service activation and/or repair of NBN broadband services for its own customers; and

⁵⁹ <https://www.accc.gov.au/media-release/accc-reports-on-telstras-compliance-with-its-structural-separation-undertaking>

- (c) Provide greater insight than its competitors into the NBN rollout.
- 4.42 It is also becoming clear that the shift to a multi-technology mix by NBN Co which incorporates the use of Telstra's copper and HFC assets will facilitate a more seamless customer migration to the NBN. Connection to the NBN on some of the new technologies can be done remotely with less need for a truck-roll to the customer premise. Whilst this may reduce customer disruption it comes at a potential cost to customer choice and competition. It will provide greater scope for RSPs to lock-down their existing customer base by pre-conditioning them prior to the transfer to the NBN. Telstra is actively pursuing this opportunity by mailing out free modems to customers, which once activated commits a customer to move to the NBN with Telstra.⁶⁰

Recommendation

- 4.43 Optus recognises that it would not be productive to re-open the Telstra SSU and the Migration Plan arrangements as part of this market review. Indeed, it is unclear whether the ACCC has the powers to do so.
- 4.44 However, in recognition of the issues Optus has raised above it would be opportune for the ACCC to:
- (a) Re-consider its approach to Telstra's obligation under the SSU. In particular, the ACCC should engage more proactively in investigating Telstra's compliance with the overarching equivalence obligation with less focus on the technical aspects of the SSU; and
 - (b) Consider whether there are impediments to competition in the way the current NBN Migration arrangements are being implemented and to identify ways to address these.
- 4.45 In respect of b) above Optus believes that the ACCC should consider ways to improve customer contestability and customer choice in the transition to the NBN. It appears incongruous that Telstra can receive compensation for the impact of customer contestability in the NBN transition, whilst locking-up its customers by virtue of the fact that they have activated a new modem simply because it is mailed to them "free of charge". Improved customer contestability is a policy measure that would promote competition and improved customer outcomes and could be achieved by the adoption of some simple measures. This could include:
- (a) Notifying customers of their ability to switch providers at the NBN RFS date;
 - (b) Preventing RSPs from locking customers into long-term contracts;
 - (c) Enabling customers to exit existing contracts within the NBN RFS period; and
 - (d) Preventing RSPs from locking customers into contracts through the use of customer equipment (such as modems).

Impact of NBN payments on competition

- 4.46 A further factor that acts to neutralise competition is the impact of the compensation payments from NBN Co to Telstra. These are expected to amount to around \$95B in free cash flow provided to Telstra over the lifetime of the Definitive Agreements. This is not an insignificant amount. The fact that Telstra receives the payments as free cash

⁶⁰ <https://www.telstra.com.au/broadband/nbn/nbn-kit>.

results in Telstra being able to use it for investments in other communications market – potentially transferring its dominance to related markets.

- 4.47 The latest financial reports show that Telstra has received over \$3.2B in NBN DA payments since FY13, with \$1.4B for FY16 alone. This amount includes the infrastructure payments; PSAA payments and other Government DA-related payments (including USO).⁶¹
- 4.48 Optus notes observations by market analysts that NBN payments are likely to contribute half of Telstra revenue growth guidance in FY17, and explains all of Telstra’s EBITDA growth guidance. These payments are forecasted to grow to over \$4B annually for both FY18 and FY19 using NBN Co’s migration schedule; after which the payments are forecasted to fall to around \$2.5B annually for FY20 to FY22. The majority of these totals are due to the significant increase in PSAA payments as end-users migrate to the NBN.⁶²
- 4.49 In the decade from FY15 to FY25 analysts forecast Telstra will receive around \$25B in free cash to ‘compensate’ it for structural separation. It should be of concern that such large amounts of free cash – which are not being returned to shareholders – can be used to cement Telstra’s dominance during the transition to NBN. The money can also be used to fund greater investment in mobile infrastructure; potentially transferring market power to the competitive mobile sector.
- 4.50 In addition to the \$95B in expected cash flow over the 50 years of the DAs, Telstra is winning supplier contracts with NBN Co to design and manage network rollouts. For example, Telstra received \$233M in FY16 and \$167M in FY15 for ‘commercial services’ supplied to NBN Co. These relate to the HFC Delivery Agreement; Copper Sub-Loop Agreement; Operate and Maintain Master Agreement; and network planning and design.⁶³ Rather than facilitating the structural separation of Telstra, it appears Telstra is becoming an important facilitator of NBN Co.

Recommendation

- 4.51 Optus acknowledges that the payments from NBN Co to Telstra were commercially negotiated and we do not challenge the validity of these. We have no expectation that the ACCC should or could query the nature of the payments. However, the market inquiry provides an important opportunity for the ACCC to reflect on the likely effects of the compensation payments to Telstra and its role in operating and maintaining parts of the NBN infrastructure. These effects should be considered not only for the fixed line market, but also related markets (such as mobile and content acquisition). Further, the competition benefits to Telstra from these payments should be taken into account in any weighing-up by the ACCC of new policy initiatives that it might recommend as an outcome of the market review.
- 4.52 In addition, the ACCC should consider whether new rules might be required to address sources of market power that are not directly related to the ownership of infrastructure. In an NBN environment it is not clear that Part XIC could provide adequate regulatory recourse for competition issues that arise in retail markets downstream of the NBN. Optus has provided several submissions demonstrating the benefits of adopting a European style *ex ante* substantial market power (SMP) regime. A SMP regime would allow the regulator to assess the level of competition in any communications market; identify dominant players; and address competition problems through the adoption of

⁶¹ Telstra Company Reports, various years.

⁶² [CiC]

⁶³ Telstra, 2016, FY16 Financial Result Presentation

appropriate and proportionate remedies. The main difference between the current Australian and European regimes is the scope of remedies available. Objections to this approach on grounds this is a telecommunications specific approach are not valid. History shows that the telecommunications specific Part XIB was able to operate independently of the economy wide rules under s.46 for instance.

- 4.53 Optus recommends the ACCC investigate the extent to which the benefits of an SMP regime could be brought to the Australian market. This may or may not require legislative change. There is scope to amend the provisions of Part XIB to make it more consistent with the *ex ante* SMP approach.

NBN Co economics depend on CVC growth but this damages end-users

- 4.54 A further issue that will affect the development of fixed line competition in this transition period is the price structure of NBN services.
- 4.55 The basic NBN product is split into two key product components; an access charge (AVC) and an aggregation capacity charge (CVC). The original intent of this structure was to set the connection charge (AVC) low to encourage take-up, and set the usage charge (CVC) at a level that allowed for revenue growth over time.
- 4.56 The balance between AVC and CVC pricing has been designed to enable NBN Co to drive – and benefit from – substantial increased usage in the future. This has been achieved by keeping the AVC as low as possible in order to encourage consumers up the speed tiers, and relying on CVC revenues to drive ARPU growth.⁶⁴
- 4.57 However, market behaviour has altered significantly since the AVC-CVC construct was designed, with much greater emphasis placed on the CVC component than was originally envisaged. The introduction of mainstream SVOD services (such as Netflix, Stan and others) since 2015 is changing the nature of internet usage and the demand for constant bandwidth availability. Internet usage is changing from downloading webpages – requiring little concurrent usage – to the increasing use of streaming services that require constant bandwidth usage. This has influenced overall demand and CVC usage. For example, in FY2015 CVC revenue contributed over 31% of NBN Co revenue – nine years ahead of the 2025 assumption.⁶⁵
- 4.58 The CVC structure remains a concern for industry as it requires RSPs to make trade-offs between quality and price, which are not required on a cost causal basis. These concerns have been previously recognised by the ACCC:

In the absence of reliable service levels for the CVC, access seekers may be unable to design a network that fulfils their contractual obligations to end-users around service quality. If this were to be the case, it may reduce the scope of competitive behaviour that is possible in downstream markets, and result in reduced complementary investment to service these markets or, alternatively, inefficient investment to bypass the NBN.⁶⁶

- 4.59 The CVC product component essentially operates as an upstream bottleneck with implications for all retail offers, irrespective of the RSP. It cannot be avoided nor can it be provisioned with a level of absolute certainty to meet the needs of end-users. Moreover, the current CVC price levels can make it uneconomical to supply adequate bandwidth for end-users at prevailing retail prices.

⁶⁴ NBN Co, 2010, Corporate Plan 2011-2013, 15 December, p.103

⁶⁵ NBN Co, 2016, Full Year Results 2016, p.8

⁶⁶ ACCC, 2012, NBN Co Limited Special Access Undertaking, Supplementary Consultation Paper, February, p.32

- 4.60 The latest NBN Co market indicator data demonstrates how the market is managing CVC capacity to ensure commercially-viable pricing. It shows that the average access line speed acquired by end-users is 32 Mbps. This represents the maximum theoretical capacity of the NBN access line. The average throughput for the CVC component is 1.05 Mbps per end-user.⁶⁷ Of course, not all subscribers are online at the same time, and not all applications require bandwidth usage at the same time. Network provisioning takes this into account. The NBN Co market indicator data show that in order for the average NBN end-user to achieve the 30 Mbps speed during peak times only one in 30 end-users can be connected to the internet at the same time. This does not seem realistic. It is very likely that the average level of CVC per subscriber acquired is not sufficient to ensure end-users can achieve their AVC line speed at times when they are likely to be using the service. Importantly, the market reality is in contrast to NBN Co's assumed impact of CVC pricing.⁶⁸
- 4.61 Optus is concerned that the current NBN pricing model may damage competition by limiting RSPs' ability to compete and to provide peak throughput speeds that meet customer expectations. This is not to say there should be no place for a usage-based charge, but rather too much reliance is placed on CVC revenue. A re-balancing back to the AVC component would also make NBN Co more mindful that it does not operate in a vacuum and that wholesale prices have to be reflective of the limited household communications budget that must cover a range of services.

Impact on RSPs can already be observed

- 4.62 Recent financial announcements demonstrate that the current NBN pricing structure is already negatively impacting the margins of RSPs. The current NBN pricing limits RSPs' ability to generate a positive margin at prevailing retail prices.
- 4.63 **[CiC]**
- 4.64 Other RSPs have publicly reported on the margin decline due to the migration of end-users from ULL-based access to NBN access. TPG's results show that its consumer business is facing a significant reduction in margins from the current c.40% to single digit over the NBN as it migrates its customers.⁶⁹ Another analyst forecasts that TPG's NPAT will reduce by 5% in FY17 and by almost 13% in FY18 as the subscriber base moves to NBN.⁷⁰
- 4.65 It has been recognised that this decline is being driven by the CVC pricing issue:

... the shortfall is mostly in retail broadband, where CVC charges and higher marketing costs driven by competitor activity are set to have a negative impact.⁷¹

- 4.66 And further:

Today also provided a reminder of the pending deterioration in customer economics as NBN ramps. Last mile costs will rise from c\$15 per on-net sub today to c\$43 under existing NBN pricing. Higher network costs are only partly offset by a c\$8 lift in the NBN ARPU, resulting in c\$20 fall in gross margin per subscriber.⁷²

⁶⁷ ACCC, NBN Wholesale Market Indicator Report, March 2016

⁶⁸ NBN Co, 2016, Corporate Plan 2017, Exhibit 6

⁶⁹ **[CiC]**

⁷⁰ **[CiC]**

⁷¹ **[CiC]**

⁷² **[CiC]**

- 4.67 The ‘value challengers’ in the fixed broadband market (TPG and Vocus) have recently increased their NBN unlimited bundles earlier this year by \$10 and \$5 per month respectively.⁷³ Optus also increased its fixed broadband pricing in early 2016.
- 4.68 It is increasingly foreseeable that the ‘value’ end of the broadband market may disappear under the current NBN pricing structure. One could observe that this is required in order for NBN Co’s financial projections to hold – where it requires an average wholesale ARPU of over \$100 in the future.
- 4.69 This can be contrasted to Telstra which is seeing increased EBITDA and NPAT due to NBN payments.⁷⁴ This medium term support by NBN Co could materially impact competition in the retail NBN market. Telstra is likely to be one of the few RSPs that will have the financial ability to compete aggressively on the NBN platform. This combined with first mover effects and cross-subsidisation could result in Telstra’s continual dominance; especially given its brand positioning and regional mobile market considerations.
- 4.70 Absent material change to the AVC-CVC pricing construct, it is foreseeable that competition is likely to be restricted under the NBN. The financial realities of current NBN pricing is that the low end of the market may cease to operate. In order to address this decline in competition, CVC prices need to be adjusted drastically, and approach levels closer to \$1 per Mbps. Optus notes that such reductions in CVC pricing would not necessarily impact NBN Co revenues, as RSPs would purchase more CVC volume to satisfy consumer demand. It is likely that total CVC revenue may remain constant.

Recommendation

- 4.71 Optus acknowledges that NBN Co requires a certain level of revenue per customer to achieve its required returns – and that this requires end-users to double their broadband costs over the next decade. However, the structure of the current NBN product components results in end-users not receiving the quality of service they expect to receive. Moreover, end-users appear to be unwilling to pay the price required to achieve their expected quality of service. Optus submits that the ACCC should take a more active role in ensuring the efficient and competitive pricing of NBN products.

Non-price terms and conditions impact competition

- 4.72 The above discussion on competition issues and remedies has focused largely on price terms and conditions. In recent years the ACCC has effectively removed itself from intervening on non-price terms and conditions; non-price terms and conditions were removed from the NBN Co SAU during the approval inquiry; and FADs routinely do not include operational non-price terms and conditions.
- 4.73 However, that is not to say that non-price terms and conditions of access have not, and do not, lead to competition problems. Experience in the telecommunications sector has demonstrated that where there is a monopoly supplier of wholesale services, the non-price terms and conditions are as likely to raise competition concerns as price related terms of access. The non-price terms of access can raise:
- (a) Barriers of entry and competition by imposing unnecessary costs on access seekers; and/or

⁷³ [CiC]

⁷⁴ Although these are forecasted to also see a decline in EBITDA and NPAT post 2022.

- (b) Processes that are unaligned with customer expectations making it harder for access seekers to develop the services that meet end-user demand.
- 4.74 More importantly, non-price terms directly impact on the end-user experience of services. The benefits of new services or lower prices can be negated by having to wait several days for connections or fault repairs.
- 4.75 Whilst attempts have been made in the past to regulate the non-price terms and conditions of supply, existing regulations are far from comprehensive. Much reliance is placed on the Customer Service Guarantee (CSG) arrangements. However, these are retail-level obligations and there are no comparable obligations on suppliers of wholesale access services. Further, the CSG arrangements are subject to broad exceptions, such as the incidence of Mass Service Disruptions (MSDs).
- 4.76 There are limited, if any, service performance obligations at the wholesale level. Through its SSU Telstra has committed to meeting various service performance metrics related to the supply of services and addressing service performance issues, such as faults. However, the arrangements focus on achieving equity in performance between retail and wholesale customers not on the actual service level. It is not a problem if, for example, faults are fixed outside the service performance metrics so long as the metrics are missed equally for wholesale and retail customers.
- 4.77 The fact that NBN Co will operate as a wholesale-only entity will likely address a number of problems this sector has historically faced – namely, since NBN Co will not operate in retail markets it should have no incentive to discriminate in setting access terms for its wholesale services. Moreover, there are legislative obligations to prevent NBN Co from discriminating in the provision of services between access seekers.
- 4.78 However, while NBN Co will have limited incentive and ability to set non-price terms of access that are discriminatory, it does not follow that its interests in setting non-price terms of access will fully align with those of access seekers or end-users. A key objective of NBN Co is to make a return on investment first and foremost, and where non-price terms (while maintaining full discretion to introduce associated charges) can be designed to reduce costs for NBN Co, it is likely it will do so.
- 4.79 Optus notes that there has been no recent attempt to regulate the non-price terms and conditions of supply for NBN Co. These arrangements have largely been delegated to the NBN Wholesale Broadband Agreement and other commercial agreements between NBN Co and RSPs. In practice, NBN Co currently has broad discretion to set the non-price terms and conditions of supply and RSPs have limited ability to influence these.
- 4.80 NBN Co has established a detailed Service Level Schedule in the WBA which sets out various performance targets for connections and fault handling etc. However, these performance commitments are subject to a broad range of exceptions and ultimately there is no recourse if NBN Co does not meet the performance level. NBN Co is required to take “Corrective Action”, but failure to perform is not considered a breach of the WBA. NBN Co has made wholesale CSG compensation payments available to RSPs, but the arrangements are complicated and, to date, Optus does not believe any RSP has claimed CSG payments.
- 4.81 The TIO has noted an increase in complaints from users of NBN services:

The rollout of the NBN has also had an impact on these complaint issues. A quarter of the issues we recorded about unusable landlines were from consumers connected to the NBN, and 40 per cent of the issues we recorded

*about connection delays were from consumers trying to connect a service on the NBN.*⁷⁵

- 4.82 There have also been ongoing problems with NBN Co's satellite product launched in April 2016, as acknowledged by the NBN Co CEO:

*... there have also been some problems. These issues include having to wait for extended periods of time between order and install, and 30 per cent are not completed on time. Furthermore, over the last few months we have seen multiple network service disruptions that further frustrate end users.*⁷⁶

- 4.83 The importance of services assurance arrangements has been acknowledged by Ofcom in the UK. In its recently completed Strategic Review into the communications sector in the UK, Ofcom has identified the importance of quality of service arrangements for customers of communication services.

*The single biggest issue attracting comment during our consultation has been quality of service. Consumer groups, industry bodies, communications providers and individuals reported their dissatisfaction with slow repairs and installations, missed appointments and poor customer service, among other issues.*⁷⁷

- 4.84 As a result of its findings, Ofcom has announced that it intends to introduce a range of measures designed to ensure that communications providers deliver a better quality of service to meet customer expectations. This includes measures at the wholesale level to ensure that the main wholesale provider, Openreach, is subject to tougher minimum requirements to repair faults and install new lines more quickly. Ofcom proposes to increase current minimum service standards and extend to other aspects of performance, such as how often faults occur.

*... we intend to set more demanding minimum standards for Openreach and establish them in new areas as appropriate. In addition we intend to set wholesale price controls that strengthen Openreach's incentives to make long term investments in service quality.*⁷⁸

- 4.85 Ofcom has started to implement these new rules, including setting tougher quality of service standards for Openreach, published performance data for all operators, and automatic compensation if things go wrong.⁷⁹

Recommendation

- 4.86 As the industry transitions to an NBN environment where almost all fixed line broadband and voice services will rely on NBN access services it would be appropriate to consider the benefits to end-users of establishing more comprehensive wholesale service performance obligations.

⁷⁵ TIO, <https://www.tio.com.au/publications/news/complaint-statistics-january-march-2016>

⁷⁶ Hansard, Senate Estimates, Environment And Communications Legislation Committee, Tuesday 18 October 2016, p.126

⁷⁷ Ofcom, 2016, Initial Conclusions from the Strategic Review of Digital Communications, February, p.46

⁷⁸ Ibid., p.55

⁷⁹ Ofcom, 2016, Strengthening Openreach's strategic and operational independence, p.2

Section 5. WHOLESALE NBN MARKETS

- 5.1 This section examines issues related to the wholesale supply of services over the NBN. In summary, Optus finds that the markets for wholesale NBN services are working well and are competitive. Given this, there appears to be no case for any intervention by NBN Co into these markets.
- 5.2 Further, Optus finds that NBN Co would likely breach its legislative provisions and act inconsistent with the Statement of Expectations if it provides services beyond the approved 121 POIs.
- 5.3 This section outlines:
- (a) The market for wholesale NBN services, identifying:
 - (i) Market for national aggregation of NBN POI traffic; and
 - (ii) wholesale transmission from NBN POIs;
 - (b) Concerns over the entry of NBN Co into these competitive markets.

Market for wholesale NBN services

- 5.4 Optus observes two wholesale NBN markets:
- (a) NBN resale, national aggregation market; and
 - (b) Wholesale transmission from NBN POI.
- 5.5 Optus believes that both of these markets are effectively competitive, with multiple providers competing to offer services to other RSPs. The competitiveness of these markets demonstrates that there is no justification for the government-owned NBN Co to enter these markets to offer services. The role of NBN Co is to provide broadband access services to give effect to the structural separation of Telstra. The broadband aggregation and POI backhaul markets are being supplied by several providers, not just Telstra.
- 5.6 Contrary to claims made by NBN Co, there is no case for NBN Co to be allowed to intervene in these markets. The policy principle that NBN Co is a last mile access only provider is well established. Any change to this policy could lead to irreparable market damages and/or will waste NBN Co's resources.
- 5.7 Both the ACCC and the Government have made clear statements that NBN Co is an access network provider providing services to 121 POIs nationwide. On the basis of these representations, Optus has invested heavily in providing backhaul capacity to the NBN POIs in order to offer its own services as well as to develop and provide wholesale services to other RSPs. Over the three financial years since FY14, Optus has invested more than **[CiC]** in capital expenditure to expand its backhaul services to all 121 NBN POIs. This is on top of the capital expenditure already invested prior to FY2014 to NBN POIs that already had Optus backhaul links.⁸⁰ Optus' investment is in addition to several other providers of backhaul, including Telstra, NextGen, PowerLink, and others.

⁸⁰ Many NBN POIs are located in Telstra exchanges, many of which already had Optus fibre links.

- 5.8 Permitting NBN Co to override these competitive investments would present an unacceptable sovereign risk for communications investment. Especially given the constant and clear statements by the Government that NBN Co will have 121 POIs.
- 5.9 Importantly, as shown below there are no policy justifications for such interventions – nor would there be any offsetting market or consumer benefits – given the level of effective competition for NBN aggregation and backhaul transmission services.

NBN resale wholesale services

- 5.10 Optus Wholesale provides a national product named “Retail Broadband over NBN” to its wholesale partners. This is a Layer 2 aggregation product with a single national hand-off in Sydney.
- 5.11 As at February 2016 Optus had **[CiC]** wholesale customers acquiring this service, representing around **[CiC]** of Optus’ NBN subscribers. At October 2016 **[CiC]**. The number of wholesale NBN SIOs has **[CiC]**. Such positive growth numbers are consistent with an effectively competitive and well-functioning wholesale market.
- 5.12 The prices charged **[CiC]**, thereby allowing an efficient and effective way for smaller RSPs to enter and grow the NBN market. Moreover, the use of a NBN aggregation provides smaller RSPs significant advantages over direct purchase from NBN Co. It enables small RSPs to avoid the fixed-charge nature of CVC provisioning, thereby bypassing the need to pre-purchase CVC capacity before it can acquire end-users.
- 5.13 **[CiC]**
- 5.14 Many other operators offer similar wholesale national aggregation products.
- 5.15 Market evidence demonstrates that the market for NBN aggregation services is working well and is addressing RSP demands. There is no evidence to support regulation or allowing the Government-owned NBN Co to intervene in this wholesale market.

Wholesale transmission from NBN POI

- 5.16 The backhaul market from POIs is working well. Optus both sells and acquires backhaul from other providers in this market. A number of NBN POI locations have been assessed as competitive and have been deregulated. Those that have not been regulated are subject to the declared domestic transmission pricing. There is no evidence to support further regulation or allowing the Government monopolist NBN Co to intervene in the wholesale transmission markets.
- 5.17 **[CiC]**
- 5.18 **[CiC]**
- 5.19 In summary, Optus finds that the current number of locations of NBN POIs, together with commercially provided backhaul links, facilitates a functioning and efficient wholesale NBN resale market that enables RSPs to acquire national aggregation products, or wholesale backhaul products at efficient levels.
- 5.20 Finally, Optus notes the ACCC market assessment in the DTCS declaration that has deemed most of the NBN POIs effectively competitive – and has removed those routes from regulation. Optus notes that this competition assessment should be applied consistently in all of the ACCC’s work on this issue. The 2014 declaration inquiry increased the number of competitive NBN POI routes from 51 to 75. Optus further notes that none of the **[CiC]** POI locations from where Optus acquires backhaul from other providers on commercial terms are part of the deregulated POI list. This indicates that

the level of backhaul competition is greater than observed by the ACCC in the 2014 declaration inquiry.

NBN Co intervening would damage competition for no benefit

- 5.21 Optus notes there has been reported claims from some smaller RSPs and NBN Co itself to enable NBN Co to move to a more aggregated POI structure either directly or indirectly. Indeed, NBN Co has undertaken one previous PDF consultation on a POI backhaul service; and is currently seeking feedback from the PDF on the same proposal.
- 5.22 Optus has a very clear view that NBN Co would be acting outside its legislative and policy remit should it provide wholesale aggregation services in direct competition to several commercial operators. The irony of NBN Co intervening in this market is demonstrated by the fact it would actually be providing its services over leased fibre links from Telstra.
- 5.23 Optus objects to NBN Co intervening because:
- (a) Providing backhaul services would appear not within permitted scope of activities for NBN Co; and
 - (b) Intervention in competitive markets is counter to government policy.
- 5.24 Finally, Optus has concerns that NBN Co is using the PDF process in an unreasonable way that could provide it with market sensitive information from its future competitors, with associated potential anti-competitive outcomes.

Backhaul service not within permitted scope of activities

- 5.25 Optus highlights that NBN Co providing backhaul or aggregation services appears to be counter to the semi-distributed POI structure as set out by Government policy in the Statement of Expectations and current network design rules.
- 5.26 The Government directed NBN Co to adopt a semi-distributed POI structure which extends NBN Co network to meet but not overbuild competitive backhaul routes.⁸¹ The Statement of Expectations states that the government expects that NBN Co will act to ensure that POIs are located in accordance with the competition criteria formulated by the ACCC.⁸² Following advice from the ACCC, which included a detailed assessment of the competition criteria, it was determined that the optimal number of POIs was 121.
- 5.27 The Government has acknowledged that the move to a multi-technology mix for the last-mile of the network, does not change NBN Co's overall design of the network, stating:
- NBN Co's network design is based on its ability to provide its product bundle, aggregate traffic back to 121 POIs, and for those POIs to still be linked by competitive backhaul providers.⁸³*
- 5.28 Optus would expect that any change to this fundamental aspect of the NBN design would involve extensive consultation with Government, industry and the ACCC. Optus does not believe that NBN Co should be allowed to unilaterally alter this design feature or undertake industry consultations on such policy changes.

⁸¹ See Clause 11.1.2 in the SAU.

⁸² Australian Government, 2010, Statement of Expectations, p.7. Optus notes that these statements were not altered in the 2014 update of expectations. We therefore expect that these directions still hold.

⁸³ Telecommunications Legislation Amendment (Access Regime And NBN Companies) Bill 2015, Explanatory Memorandum

NBN Co intervening in competitive market is counter to government policy

5.29 Optus submits that NBN Co, as a Government-owned enterprise, should be cognisant of any impacts it could have on competitive segments of the communications market. The role of NBN Co is to deploy a monopoly fixed-line access network to replace the legacy monopoly PSTN access network. In essence, it is government provision of communications within a segment of the market that could be described as having natural monopoly characteristics (i.e. high-speed broadband access network).

5.30 The wholesale transmission market for NBN POI routes have been assessed as being competitive by the ACCC. The POI locations were chosen so that NBN Co would not damage competition and strand large investment by many competitive transmission providers. The ACCC stated:

*The approach adopted for identifying the location of POIs promotes competition in the provision of backhaul transmission services and makes sure that existing transmission infrastructure is utilised.*⁸⁴

5.31 In rejecting a centralised POI structure, the ACCC was concerned that the implementation of either a consolidated or composite approach would not be consistent with NBN Co's stated objective to "occupy as small a footprint as possible in the overall value chain".⁸⁵

5.32 Further, the extension of NBN Co's network beyond the access network to also include a transmission network would represent a considerable departure from regulatory orthodoxy – namely that regulatory intervention should only focus upon markets where competition is not effective. And as a result, this would likely have a detrimental effect on competition in transmission markets as it would result in the removal of existing competition and the foreclosure of opportunities for future competition in the relevant markets.⁸⁶

PDF being used to acquire market sensitive information

5.33 Optus is further concerned that NBN Co is potentially seeking confidential competitive market intelligence through the PDF consultation process. For example, NBN Co has asked for:

- (a) Information on how current wholesale providers of backhaul to NBN POIs provide their service, and mitigate challenges in provision of backhaul;
- (b) Detailed solutions for each of the problems identified;
- (c) Information on how current providers of aggregation services from NBN POIs provide their service, and mitigate challenges in provision of aggregation services;
- (d) Detailed solutions for each of the problems identified to provide aggregation services; and
- (e) Market development expectations over the short, medium and long terms.⁸⁷

⁸⁴ ACCC, 2012, Media Release, <https://www.accc.gov.au/media-release/the-accc-publishes-the-list-of-points-of-interconnection-to-the-national-broadband-network>

⁸⁵ ACCC, 2013, NBN Points of Interconnection

⁸⁶ ACCC, 2013, NBN Points of Interconnection

⁸⁷ NBN Co, Consultation on product idea submission titled "CVC Trunking", October 2016.

5.34 To be clear, NBN Co is considering entering a competitive market and is asking its future competitors for market sensitive information, including detailed technical solutions. The use of the PDF for this purpose is deeply troubling.

Recommendation

5.35 Optus recommends that the ACCC reaffirm the:

- (a) 121 POI structure of NBN Co;
- (b) Level of competition across the 121 NBN POI transmission routes; and
- (c) Level of competition in the market for state or national aggregation of NBN services.

5.36 Finally, the ACCC should investigate this use of the PDF by NBN Co to attempt to acquire market sensitive information from its potential future competitors.

Section 6. THE CORPORATE MARKET

6.1 The ACCC's market study focuses on the state of competition and the changing landscape of the Australian communications market. In particular, the Issues Paper has largely focused on implications of residential consumers, more generally. This section addresses implications for the separate, but still distinct, corporate sector of the Australian communications market.

Corporate and Government markets

6.2 Optus believes that the ACCC should recognise that there is a separate 'corporate and government' (C&G) market which has distinct characteristics from the broader residential market.

6.3 The C&G market is a separate market specially catering for business with at least 200 customers and government agencies. Consistent with the residential market, competition in this market is dependent upon regulated access to Telstra's wholesale access services. However, there are some unique requirements that are not present in the residential sector where service requirements are less complex and more localised.

6.4 The competitive drivers unique to C&G customers include:

- (a) Procurement of services on a 'whole of business' (WOB) basis with preferences for single billing, multiple services and products included on a single invoice and single point of contact for all telecommunications needs;
- (b) Requirements for ubiquitous coverage of specialised and complex features on top of basic telephony services; and
- (c) High incumbent inertia with enduring impacts due to high costs of changing providers.

6.5 It follows that the ability to compete in this market is greatly dependent on being able to offer data connectivity at required bandwidths on a national basis on terms that are equivalent to those of Telstra retail. Whilst the price of access is an important factor in driving competition, the requirements of corporate customers also place an emphasis on the non-price terms and conditions of supply. Service restoration times can be an important competitive driver for business critical applications.

State of competition in the C&G markets

6.6 C&G businesses often have complex voice, data and mobile requirements covering large workforces that might be dispersed over several locations and a wide geography. Whilst some C&G businesses might split their telecommunications needs across multiple providers, it is more usual for C&G businesses to seek a Whole of Business arrangement. Such arrangements are often awarded for an extended term (3 years or more) after the completion of a competitive tender process.

6.7 The nature of their business often means that C&G customer have significant quality of service and risk mitigation requirements. These factors have traditionally created high barriers to entry for this segment of the market. Providers need to have a proven track record of stable performance at a national and even multi-national level. They are also factors that uniquely favour the incumbent, Telstra, given the breadth of its network coverage.

- 6.8 Key players in the Australian corporate communications market include the major fixed network operators and fixed line service providers. Figure 13 sets out the corporate revenues for the five key market players in the Australian corporate market. In FY16, total corporate revenues amounted to \$6,999 million, whilst Telstra continues to retain more than 57% market share for the provision of services in the corporate market.

Figure 13 Industry corporate market revenues

(\$m)	Telstra	Optus	TPG	Macquarie	Vocus-M2
Total FY15	\$4,123m	\$1,543m	\$642.5m	\$192.1m	\$418.4m
Total FY16	\$4,014m	\$1,574m	\$654.6m	\$202.6m	\$553.7m

Source: Company reports

- 6.9 Optus notes that the C&G sector is undergoing a generational shift in technology with the move to IP, Cloud and LTE and NBN based services. Such technology shifts by their nature are disruptive to the status quo since they create an opportunity for customers to look afresh at their needs and their suppliers. However, the window of opportunity is likely to be short-lived. Once a customer is locked-in and new technology is deployed it will face significant transactional costs to change its suppliers in the future. This environment is likely to drive aggressive price based competition in the short-term as providers seek to lock-in current and likely future business.
- 6.10 The confidential nature of bidding and tender processes for these customers creates opportunities for aggressive sales techniques to be employed. From time to time allegations have been made of accounts being locked-up through significant inducements being offered in the form of; multi-million dollar sign-on bonuses; “technology funds”; and retention of reciprocal business.
- 6.11 Such behaviour can undermine the competitive process if it results in accounts being secured on terms that are not commercial on a stand-alone basis. Deals being offered may only be justified on the expectation of the pull-through of future business, which an incumbent provider will be well placed to win once the new technology has been deployed and the initial costs sunk.

Recommendation

- 6.12 Optus notes that the C&G market is one that has had limited ACCC attention over the years. There is merit in a specific review of the features and nature of this market. Any such review should canvass input on a confidential basis from a sample of large corporate entities.

Section 7. INTERNET INTERCONNECTION

- 7.1 Optus finds that the market structure for internet interconnection is working well and provides significant benefits to end-users. The industry has moved on since the last inquiry in 2003. In 2003, emails and inter-internet service provider (ISP) traffic drove internet usage. Today, internet usage comes from streaming and multimedia content hosted by non-ISP parties. As a result, direct interconnection between ISPs is becoming less important in the internet ecosystem due to the separation of content hosts and end-user networks.
- 7.2 The Issues Paper states that the ACCC understands there are settlement-free arrangements between Telstra, Optus, TPG and Verizon. This has been referred to by some other ISPs as the ‘gang-of-four’ peering agreement. However, such claims misunderstand the nature of internet interconnection. There is no club of four RSPs that have access to free internet content to the exclusion of other ISPs.
- 7.3 This section:
- (a) Explains that the criticisms of the current peering arrangements are inaccurate and does not describe the nature of domestic internet interconnection in Australia;
 - (b) Addresses misunderstandings surrounding internet interconnection and shows that the nature of interconnection has materially changed since the ACCC last looked at this issue; and
 - (c) Concludes that the internet interconnection market is working well in Australia, delivering content to end-users with increasing quality and speed.

Nature of domestic internet interconnection

- 7.4 The section outlines the nature of domestic internet interconnection. Optus has various types of interconnect agreements with several other domestic communications providers. While these are confidential, Optus can confirm that the nature of these agreements are not consistent with the peering arrangements alleged by some players in the market.
- 7.5 [CiC]
- 7.6 [CiC]
- 7.7 [CiC]
- 7.8 [CiC]⁸⁸
- 7.9 [CiC]
- 7.10 [CiC]

⁸⁸ [CiC]

Internet interconnection has changed since last ACCC inquiry

- 7.11 Optus finds that the Issues Paper refers to terms and implies an industry structure which is outdated and does not reflect the drivers of traffic and interconnection.
- (a) First, the Issues Paper refers to interconnection and access to other ISPs to enable competition in downstream markets. This is an outdated view of the structure of the internet and the nature of consumer demand.
 - (b) Second, interconnection between ISPs is not a prerequisite to provide internet content or services. The increase in demand for dedicated entertainment content and the presence of open access internet exchanges enables any ISP to access internet content.
 - (c) Third, the internet (at its simplest) connects content providers (hosted in data centres) to end-users (hosted by ISPs). These two parties are connected by an array of vast transmission networks and routers.

Structure of internet has changed since 2003

- 7.12 Optus notes that the structure of the internet has changed substantially since the ACCC last considered this issue. In 2003 the internet was dominated by static text based content and email. Today, content rich video services are the predominant driver of internet traffic.
- 7.13 The majority of content is no longer hosted by ISPs or Internet Access providers (IAPs). Rather, content hosting has become a specialised market in itself. Some of the world's largest companies are internet content hosting companies, like Google (market cap of US\$540B) and Amazon (market cap of US\$366B). It is access to these large content hosts that is required in order to provide internet services in downstream retail markets. Other large content providers, like Netflix and Facebook, own their own servers and offer direct internet interconnection. Netflix, for example, promotes open exchanges where any ISP can interconnect with Netflix and acquire its content.
- 7.14 This structure is fundamentally different from that in 2003. Internet statistics show this development. ABS Internet Activity⁸⁹ shows that in 2003 there were 667 ISPs, and in 2016 there were 66 ISPs. The drop in ISPs largely mirrors the move from a dial-up structure (where ISPs were separate from telecommunications networks and dialled into the internet) to a broadband structure (where communications networks and ISPs are the same). In 2003, around 50% of internet access lines were dial-up; and almost 90% of household access was through dial-up. In comparison, dial-up represents only 0.7% of internet access connection in 2016.
- 7.15 In June quarter 2016, total volume of data downloaded was over 2,000 Petabytes; compared to 0.0045 Petabytes in September quarter in 2003. The majority of this content is hosted by content providers and dedicated-hosts in datacentres, and not within the control of any of the large ISPs.
- 7.16 There are two related features of the internet that drove the competition concerns over interconnection in the last ACCC inquiry; separation of ISPs and communications networks; and hierarchical structure of interconnection.

⁸⁹ ABS, Internet Activity, Australia, Cat. No. 8153.0. Data is compared between September quarter 2003 and June quarter 2016.

ISPs and networks are no longer separated

- 7.17 A potential competition concern arose from the separation of the ISP market and the infrastructure over which IP traffic flowed. The large infrastructure providers were also integrated ISPs and network providers. Access to the internet for the non-integrated ISPs was only possible through interconnection with the largely IAPs – that is, their direct competitors. As a result, a concern arose that integrated IAPs/ISPs could use interconnection terms and conditions in a manner which favoured their own integrated business in the downstream ISP market.
- 7.18 The ACCC was concerned in 2003 with end-users of smaller ISPs having to pay to send and receive emails to subscribers of large ISPs. The largest communications networks also ‘controlled’ the majority of the domestic internet traffic. It was estimated that in 1997, Telstra had 44% of domestic internet bandwidth, and that 45% of Australian ISPs directly obtained internet bandwidth from Telstra, with half of those ISPs also acquiring bandwidth from one other large communications provider.⁹⁰
- 7.19 The nature of internet traffic has changed. **[CIC]**

Interconnection is a mesh not hierarchical

- 7.20 At the time of the 2003 inquiry, internet interconnection was a simple hierarchy with an ISP buying transit services from top-level backbone provider and having these top-level backbone providers interconnecting with one another. That is, a backbone network layer of IAPs at the top, a wholesale layer of ISPs, and a retail layer of end users.
- 7.21 The current structure of internet interconnectivity is materially different. The structure of interconnection is a mesh of agreements between ISPs, content providers, content hosts (CDNs), and third party independent internet traffic exchanges. Content providers and hosts (CDNs) adopt both direct interconnection and internet exchanges models for interconnection. Under this mesh arrangement ISPs of any size can interconnect with the main providers of internet content. There are now multiple methods through which ISPs can gain wholesale access to internet traffic to suit the varying business models of different ISPs.
- 7.22 For example, an Arthur D Little report from 2014 highlights that:

The IP Interconnection value chain remains dynamic and competitive. Proliferation of Content Delivery Networks and Internet Exchanges, commoditization of IP Transit and CDN prices challenge existing interconnection models and enable new ones ... From the early days of “IP Transit” and “Peering”, a genuine mix of viable application/content-deliver strategies has been accessible to all players seeking connectivity.⁹¹

Access to IAPs is no longer required

- 7.23 The description of the market changes since 2003 above clearly demonstrate that interconnection with IAPs is no longer a pre-requisite for smaller, or new-entrant, ISPs to obtain access to internet content in order to compete in downstream retail markets.
- 7.24 The integration of ISPs and communications networks, together with the separation of ISPs and content hosts and the introduction of neutral Internet Exchanges enable all ISPs to have access to key internet content on competitive terms and without the need

⁹⁰ Ergas, 1999, Internet Peering: A Case Study of the ACCC’s Use of its Powers Under Part XIB of the Trade Practices Act, 1974. p.10. Available at: <http://www.greenwhiskers.com.au/papers/papers-ergas-peering-may99.pdf>

⁹¹ Arthur D Little, 2014, *The future of the internet; Innovation and investment in IP interconnection*, p.30

to purchase direct interconnection or transit with the 'large' ISPs/IAPs. This has removed any potential for the large ISPs to have market power in the market for internet interconnection; and removes any potential for large ISPs to use internet interconnection to impact competition in related downstream retail markets.

- 7.25 Australian end-users are demanding access to a broad range of content, media and business applications which are hosted both domestically and across the globe. Broadband access services, whether fixed or mobile, which provide end-user access are competitively priced and are mostly underpinned by regulated access prices. IP interconnection between ISPs represents a small component of the cost to serve (less than 1% of overall connectivity costs according to Arthur D Little).⁹² There is simply no evidence that the market is not functioning properly or that there are bottlenecks preventing ISPs from competing.
- 7.26 A key priority for ISPs is to invest in their networks to keep up with traffic demand for generated by their end-users accessing content and applications that are external to their networks and for which they generate no revenue.

Interconnection market is working well

- 7.27 There is no evidence to suggest the current interconnection arrangements are leading to adverse outcomes in downstream retail markets. The market is a mixture of direct interconnection agreements, transit agreements between ISPs, and neutral third party internet exchanges.
- 7.28 Optus has a range of direct interconnection agreements with other Australian networks for internet traffic. There is no one commercial model that applies to all. Each agreement is negotiated to suit the commercial needs of each party. This reflects the competitive nature of the market for internet interconnection. Moreover, the bandwidth required for domestic internet interconnection between RSPs is dwarfed by the bandwidth required for interconnection to content hosts and providers.
- 7.29 Optus data supports the observations on the modern nature of internet interconnection that it is access to content and content hosts that matters, not interconnection with other ISPs.
- 7.30 The evidence supports the conclusion that the current arrangements are working well and are facilitating high quality of service and better access to in-demand content – most of which comes from large multi-billion dollar companies located outside of Australia.

⁹² Arthur D Little, 2014, *The future of the internet; Innovation and investment in IP interconnection*, p.8