



**Optus Submission**

**To The Senate Select Committee on the  
National Broadband Network**

**July 2009**

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## Executive summary

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- Optus has welcomed the Government's plans to build a National Broadband Network (NBN) that will deliver superfast broadband services based on fibre-to-the-premise technology to homes and businesses right across Australia. The NBN offers a truly transformational opportunity for Australia, with the prospects of delivering tangible improvements in the delivery of health and education services, improving the productivity and competitiveness of Australian businesses and delivering new and innovative services and social applications to consumers at affordable prices.
- The Government should be applauded for its recognition of the need to address the flaws in the current fixed line market structure. In particular, the Government has indicated that it will take positive steps to address issues associated with vertical integration in the fixed line market, through its stated commitment to ensuring that the NBN will be operated as a wholesale only, open access network that is subject to strong ACCC oversight. Whilst the precise details of the new rules have to be determined, they would appear to represent a world's best practice model. In Optus' view this offers the best opportunity for sustainable competition to emerge in the fixed line services market and for the benefits anticipated by the Government to be delivered.
- There will be many decisions for Government to make to turn its NBN plan into a reality. One of the most critical questions is how to secure the long term viability of the NBN. Optus considers that this will be achieved by ensuring that; prices on the network are affordable so that they can be accessed by as many Australian consumers and businesses as possible; and the network earns an appropriate rate of return to enable it to attract the necessary private sector investment help fulfil this project. Each of these outcomes will turn on the ability to maximise take-up of services on the NBN.
- Optus submits that for the NBN to be viable over the longer term it must provide services to more than 60% of Australians. Such levels of penetration are entirely achievable, but only if we adopt a single national network solution for the NBN. A critical risk factor for the NBN is that in its present vertically integrated form Telstra may choose to compete against it rather than fully embracing the NBN and putting its traffic on the new network. Such an outcome would be damaging for Australia.
- Having two networks running side by side is likely to result in one or both of these networks failing to deliver to their full potential or indeed failing altogether. Prices on either network are likely to be higher than they ought to be because of the lower economies of scale. Accordingly, take up of services is likely to be depressed, levels of innovation would be lower and Australia is unlikely to be in a position to realise the anticipated benefits of high-speed broadband.
- The clear implication of this for the NBN is that Government policy should not retain its present focus on encouraging facilities based competition with competing fixed line networks. Rather it should focus on how to encourage all present participants to use the NBN so that it carries almost all of Australia's broadband traffic.
- Optus considers that the key to this policy dilemma is contained within the Government's parallel consultation on proposed changes to the current regulatory framework. In that consultation process, Optus, and others (including the ACCC), have argued strongly that Government should take the bold step of implementing the structural separation of Telstra. This should take the form of establishing a separate Access Services company to provide wholesale-only services to all access seekers and a separate Retail Company. Each of these should be managed as truly independent entities.

- Optus has argued that this is the critical policy response required to; address the clear failings with the present market structure; to set the foundation stone for a competitive fixed line market to emerge; and, to deliver the sort of competitive services Australian consumers and businesses deserve. More specifically, for the purpose of this submission Optus submits that implementing the structural separation of Telstra now is critical to help underpin the future viability of the NBN.
- Firstly, the separated Access Services Company would provide an appropriate foundation vehicle for the NBNCo. As a separated wholesale-only provider it would have a strong interest in working cooperatively and in partnership with Government to play a key role in the NBN.
- Secondly, Optus considers that separating Telstra immediately offers the best prospects of enhancing competition in the fixed line services market today. This in turn will help the NBN to succeed since it will help to improve customer choice and affordability thereby helping to further drive broadband take-up in the lead up to the NBN. This will put the industry in the best jump-off point for the mass migration of customers and businesses to the NBN once it becomes widely available.
- In summary, Optus considers that the foundation stone for the future success of the high-speed broadband network in Australia could be securely laid by making the necessary fundamental reforms to the existing market structure and regulatory framework today in response to suggestions raised by Optus and others on the Government's consultation paper on Regulatory Reform for the 21st Century.

## 1. Introduction

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- 1.1 In June 2008, the Senate established the Select Committee on the National Broadband Network (NBN) to inquire into the Australian Government's proposal to partner with the private sector to upgrade existing networks to fibre, to provide a minimum broadband speed of 12Mbps to 98% of Australians.
- 1.2 Optus made two submissions to this inquiry and appeared before the committee at two of the public hearings.
- 1.3 In April 2009, the Government announced that it had cancelled its original plan to build a Fibre to the Node NBN (FTTN) "*on the basis of advice from the independent Panel of Experts*" that none of the proposals it has received in response to its Request for Proposals "*offered value for money*". The Government also announced its new plan to establish a new company, the NBN Co, to build a new Fibre to the Premise (FTTP) network, providing 100mbps to 90% of the population, with the remaining 10% delivered speeds of 12mbps through satellite and wireless technologies.
- 1.4 The Senate Inquiry subsequently expanded its terms of reference to mirror the change in broadband policy direction by the Government.
- 1.5 The Senate Select Committee on the National Broadband Network will now consider the implications of the NBN for consumers in terms of:
  - (a) service availability, choice and costs;
  - (b) competition in telecommunications and broadband services; and
  - (c) likely consequences for national productivity, investment, economic growth, cost of living and social capital.
- 1.6 The committee has called for submissions in connection with its consideration of the above issues. This submission is put forward on behalf of Optus.

## 2. Broadband will transform Australia

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- 2.1 Broadband is a critical productivity enabling piece of infrastructure that has become an important feature of our modern society. It is an example of what is referred to as a transformative “general purpose technology” (GPT). Examples of past GPT’s include; the printing press; electricity distribution; railways; and the internal combustion engine. Each of these have had a significant positive impact on society at their respective points in history.
- 2.2 Access to broadband services is the basis of our knowledge economy and has become essential part of the economy and peoples day-to-day lives. The breadth of applications that use broadband services is wide, varied and ever increasing as faster speeds and greater bandwidth is able to increase the range of activities that can be undertaken.
- 2.3 Broadband has the ability to deliver a wide range of both direct and indirect benefit. These in turn can be maximised by increasing coverage and ensuring that all citizens can gain access to broadband services at a reasonable speed and quality of service and at an affordable price for speed and quality of service.

### *Broadband services today*

- 2.4 Broadband is an essential tool for the conduct of government from keeping citizens informed about government initiatives to providing access to services on-line and maintaining vital public infrastructure. It is increasingly important in the delivery of health care and education services. In fact, internet access is increasingly being used an important component of education for school children. As a result, high-speed broadband access should be used in conjunction with traditional avenues of communication, interaction and trade to maximise the total benefit of broadband connectivity to the global economy.
- 2.5 For consumers, broadband and access to the internet is increasingly seen as a necessary part of daily life, to access information, entertainment or to conduct business such as on-line banking or purchasing goods and services through on-line sites. The recent Digital Britain report notes that people without access to the internet can be disadvantaged or “*compromised by exclusion from the digital world*”<sup>1</sup>.
- 2.6 For business, from the sole traders to large corporations many aspects of day-to-day activities are conducted on-line or rely on broadband applications. This covers a wide and varied field from simple information management, to transacting with customers and suppliers, through to more complex logistic and supply chain management systems and highly complex real-time banking or financial trading systems.
- 2.7 The importance of broadband to economic growth has been widely recognised by governments and international economic bodies, such as the OECD, ITU and EU. The development of Information Communications Technology and more specifically broadband, have made a significant contribution to innovation across a range of industry sectors. In manufacturing, for example, broadband has enabled step-change reforms to supply chain management by enabling real-time sourcing and supply of commodities. In financial services, broadband has generated innovative applications to enable companies to exchange information with each other, and for those companies to do the same with their customers. The demand for online services has exploded as customers are increasingly able to carry out transactions using broadband applications.

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<sup>1</sup> Digital Britain Final Report June 2009, page 32

- 2.8 When estimated in financial terms, the economic benefits are considerable. In 2003, for example, Crandall, Jackson and Singer<sup>2</sup> estimated that the total annual consumer benefit from broadband in the US would be between US\$64 billion and US\$97 billion per year if 50 per cent of US households adopted broadband. If broadband achieved universal penetration, the benefit could be more than US\$300 billion and it would increase total US GDP by US\$180 billion per year and create 61,000 new jobs.
- 2.9 Similarly a 2003 study by the Centre for Economics and Business Research (CEBR) in the UK found that, based on forecast growth in the number of broadband connections, by 2015 annual UK GDP could be up to 21.9 billion pounds higher than it would otherwise have been. In addition, CEBR found that annual UK fixed investment would be approximately 8 billion pounds per annum higher and annual government borrowing around 13 billion pounds per annum lower than it would have been without broadband connection. To put these estimates into perspective, the forecast productivity gains of between 0.5 and 2.5 per cent from broadband by 2015 equate to an extra hour of work per week for all workers in the UK and compare well with other general purpose technology impacts, such as railways and electricity, whose impacts were 2-17 per cent 'social saving' after 35 years and 3.3 per cent after 65 years respectively<sup>3</sup>.
- 2.10 Further, a study of the economic impact of broadband in the US, by Carnegie Mellon found that;
- "... between 1998 and 2002, communities in which mass-market broadband was available by December 1999 experienced more rapid growth in employment, the number of businesses overall, and businesses in IT-intensive sectors, relative to comparable communities without broadband at that time".<sup>4</sup>*
- 2.11 In Australia, work by Accenture in 2001 estimated that next generation broadband could produce economic benefits for Australia of between AUD\$12-30 billion.<sup>5</sup>

#### *Future potential of broadband*

- 2.12 Whilst the above analysis indicates the importance of broadband today, there is little doubt that its potential is much greater. However, our existing infrastructure provides a key limitation to Australia realising this potential. The vast majority of broadband services and applications rely on access to the copper wires that were deployed over fifty years ago. Whilst the copper network is able to meet the needs of customers today, it will not be able to do so in the future. It will not be capable of coping with the traffic demands that are likely to be placed upon it from the increasing array of bandwidth hungry applications and services. There is, therefore, a clear and present need to upgrade the present technology.
- 2.13 Recent analysis by the Centre for International Economics (CIE) in 2008 similarly notes that *"widespread access and use of genuine broadband would expand economic activity – an increase of around 1.4 per cent of GDP (equivalent to \$15 billion in terms of GDP in 2007-08) could be expected after about 5 years."*<sup>6</sup>

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<sup>2</sup> Crandall and Jackson, Dot Econ & Criterion Economics Study, "Competition in broadband provision and its implications for regulatory policy", 2003, p.10

<sup>3</sup> Broadband, fulfilling our potential, Broadband Industry Group UK, November 2003,

<sup>4</sup> "Measuring the Economic Impact of Broadband Deployment", Carnegie Mellon – page 3

<sup>5</sup> Innovation delivered – Broadband for Australia, An economic stimulus package, Accenture, 2001, p.8.

<sup>6</sup> Centre for International Economics, *Impact of genuine broadband for Australia*, Summary, 5 November 2008, <http://www.thecie.com.au/content/news/Impact%20of%20genuine%20broadband.pdf>

- 2.14 Optical fibre is the technology for future. Optus is supportive of the Government's proposal to build a National Broadband Network based on a fibre to the premise (FTTP) solution. Optus considers that this is the most appropriate long-term technical solution for Australia and is likely to deliver the greatest economic and social benefits for Australia over the longer-term.
- 2.15 Under the Australian Government's NBN proposal, 90 per cent of households and businesses will have access to a super fast 100 megabit per second broadband connection. This will be almost five times the top speed available today and some thirty times faster than the speed available to an average user. As noted above, the socio-economic advantages of broadband connectivity cannot be underestimated, as broadband has a strong positive impact on societies around the world. However, the capabilities for this new network are likely to be a quantum leap from those that are available today. The following are all major features of our society that are likely to witness significant positive changes from the advent of new applications capable of being delivered over this network.
- (a) Education & Learning;
  - (b) Health & Medicine;
  - (c) Workforce productivity;
  - (d) Entertainment & Infotainment;
  - (e) Smart infrastructure; and
  - (f) Environment.

#### *Education and learning*

- 2.16 Taking the first of these above, it is increasingly recognised that we live in a knowledge society where access to broadband forms an important, if not vital element of e-education by promoting the use of internet for educational purposes and improved access to resources. However, for Australia to remain internationally competitive it is important that we continually invest in upgrading our universities and schools. Australia has over 10,000 schools, but in 2008 less than half had a direct optical fibre connection – limiting the speeds at which they could access the internet and particularly rich content.<sup>7</sup> Nonetheless, this issue is slowly being addressed through initiatives such as the Australian Government's Digital Education Revolution (DER) suite of initiatives recognises that Australian students need greater access to, and more sophisticated use of ICTs. For example, the fibre connection to schools (FCS) initiative has been allocated \$100 million to support the deployment of high-speed broadband connections to Australian schools.<sup>8</sup>
- 2.17 Similar issues exist at the tertiary level – particularly for universities outside the metropolitan areas. Southern Cross University stated in 2008 that it could offer rich

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<sup>7</sup> Department of Education, Employment and Workplace Relations, 'Strategies for realising the national vision of connectivity for Australian schools', October 2008, accessed 2/2/09, <http://www.deewr.gov.au/Schooling/DigitalEducationRevolution>

<sup>8</sup> DEEWR, *Towards a national vision of connectivity for Australian schools: Fibre connections to schools initiative, Digital education revolution*, August 2008, page 2



media content online to its students – but the other half of the equation was whether students had the bandwidth to access that content.<sup>9</sup>

- 2.18 The high speed GrangeNet network connects Australian universities for research purposes; but as recently as 2007, while the backbone to Brisbane was 5 Gbps, the link up to James Cook University in Townsville was only 22 Mbps.<sup>10</sup>
- 2.19 But if every student and every institution is connected to a high speed network, then not only do we solve these problems we will unlock the potential of the internet to make education much more widely available.
- 2.20 As an example, universities such as Harvard are already at the forefront of developing multi media learning tools. These let students participate in interactive and highly tailored online case studies and tutorials. The widespread availability of these teaching tools in Australia should reduce teaching costs while dramatically improving access for larger numbers of participants. Ultimately broadband will help bridge the digital divide, and can be used to encourage equal opportunities for all individuals irrespective of their location.

### *Health and Medicine*

- 2.21 In health care there are significant potential benefits from the NBN, such as providing earlier diagnosis of health care needs for the patient through remote monitoring of patients in their own homes. E-health uses information technology to provide better and more efficient health and medical services, particularly through the practice of telemedicine services. Telemedicine focuses on improving patient health through the exchange of medical information from multiple sites via an electronic communication medium.
- 2.22 In Australia, a recent report by the IDC found that the potential of the NBN, combined with recommendations from the National Health and Hospital Reform Commission will lead to an increase in ICT spending in the Australian healthcare industry, “from \$2,076 million in 2008 to \$2,378 million by 2012”<sup>11</sup> as part of its long-term national health reform plan for modern Australia.
- 2.23 As a result, telemedicine can extend the benefits of e-health by increasing the range of services and facilities available to individuals in areas where specific facilities are currently required but not yet available. A good, reliable broadband service can therefore be beneficial to this service which can facilitate large volumes of data transfers and from time-to-time may require real-time video streaming services. An example is provided by Cisco, who are currently trialling the use of very high bandwidth video technology to allow remote diagnosis of patients and ongoing monitoring of patient well being.
- 2.24 The CSIRO-developed Virtual Critical Care Unit (ViCCU®) is another prime example of healthcare technology used to overcome the tyranny of distance. ViCCU® is a synchronous service utilising high bandwidth advanced networking technology to enable

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<sup>9</sup> Southern Cross University, Submission to NSW Parliament Standing Committee on Broadband in Rural and Regional Communities, 30 April 2008, [http://www.parliament.nsw.gov.au/prod/parliament/committee.nsf/0/9111cfb9187c6e5aca25744300008819/\\$FILE/15%20Southern%20Cross%20University%20Submission.pdf](http://www.parliament.nsw.gov.au/prod/parliament/committee.nsf/0/9111cfb9187c6e5aca25744300008819/$FILE/15%20Southern%20Cross%20University%20Submission.pdf), downloaded 2 June 2009

<sup>10</sup> ‘Broadband Use in the Higher Education Sector’, [www.archive.dcita.gov.au/2007/12/broadband\\_in\\_education...initiatives.../broadband\\_use\\_in\\_the\\_higher\\_education\\_sector\\_-\\_20k](http://www.archive.dcita.gov.au/2007/12/broadband_in_education...initiatives.../broadband_use_in_the_higher_education_sector_-_20k), downloaded 2 June 2009.

<sup>11</sup> IDC, “IDC: The Australian Health Industry Teeters on the Edge of Significant ICT Transformation,” Press Release, 18 June 2009, <http://www.idc.com/getdoc.jsp?containerId=prAU21895309>

specialists to treat critically ill patients at remote locations. The system currently links three hospitals in New South Wales (Nepean Hospital, Blue Mountains District ANZAC Memorial Hospital and Lithgow Hospital). It is, however, dependent upon a high speed broadband connection and cannot be supported by existing ISDN based technology.<sup>12</sup>

- 2.25 These developments also have the potential to reduce health care costs by reducing the demands placed on hospitals. A recent US study estimated that remote monitoring of health conditions could reduce the need for hospitalization of the elderly by at least 40%.<sup>13</sup> One US expert estimates that using broadband to help care for older and disabled people will deliver savings and productivity benefits of \$927 billion between now and 2030.<sup>14</sup>

#### *Workforce productivity*

- 2.26 The third major potential benefit to be delivered by the NBN relates to workforce productivity. Whilst the focus has largely been on the benefits the NBN will deliver to consumers, we must not lose sight of the enormous potential this plan will open up for businesses. Australian households spend around \$\* billion a year on fixed line telecommunications, including broadband. But the business sector spends another \$9 billion.
- 2.27 As broadband transforms our business sector, then, its overall impact will be profound. The ability to access and share complex applications and databases and to work remotely will allow much lower costs and greater innovation for business.
- 2.28 In the NBN world, businesses of all sizes will be able to use high-tech tools for collaboration and working together. One obvious application is videoconferencing. It is widely used today – but in many cases it uses a low bandwidth ISDN link. However, when there is a 100 Mbps connection to every premise, then the opportunity to use much higher quality ‘telepresence’ services will open up. With telepresence it will feel like all participants to the conference are sitting in the same room.
- 2.29 As an example, Hewlett Packard offers the ‘Halo’ system, which was originally developed inhouse by the Hollywood studio Dreamworks Animation – to let teams of animators, actors and other creative artists collaborate from different locations. The top end ‘collaboration suite’ uses a 45 Mbps connection.<sup>15</sup>
- 2.30 Broadband-enabled internet is not just opening up doors for existing businesses, but can also stimulate entrepreneurial activity through the creation of new business opportunities. For example, a plethora of companies that didn’t exist before the launch of the internet including YouTube, eBay and Skype, now largely rely on a broadband-enabled internet to operate.

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<sup>12</sup> CSIRO, “Award-winning healthcare technology overcomes the tyranny of distance,” last updated 17 March 2009, <http://www.csiro.au/science/ViCCU.html>, accessed 29/6/09

<sup>13</sup> Neil Neuberger, ‘Advancing Healthcare Through Broadband: Opening Up a World of Possibilities’, Internet Innovation Alliance, October 2007.

<sup>14</sup> Robert E Litan, ‘Great Expectations: Potential Economic Benefits to the Nation from Accelerated Broadband Deployment to Older Americans and Americans with Disabilities’, New Millenium Research Council, December 2005.

<sup>15</sup> ‘HP shows off US\$ 350,000 Halo video conferencing room’, IT news, 11 November 2008, downloaded 2/6/09, <http://www.itnews.com.au/News/88742,hp-shows-off-us350000-halo-video-conferencing-room.aspx>

### *Entertainment and Infotainment*

- 2.31 Broadband has been a major contributor to the accessibility and widespread popularity of internet services. Its role as a platform for communication and content distribution has evolved significantly since 2003, with the introduction of new applications such as voice over internet protocol (VoIP), online music platforms, online gaming and other innovative interactive services, 'always on' functionality, and provision of broader bandwidth capacity.<sup>16</sup>
- 2.32 Broadband is also facilitating new mediums of communication. For example, the emergence of social networking sites, such as Facebook, MySpace and Bebo, are geographically widening friendship networks across international boundaries. Through broadband, internet use has also become more participative, allowing users to upload their own content.
- 2.33 Entertainment and other media applications, such as digital content services, video-on-demand (VoD), video conferencing and internet protocol television (IPTV) have yet to reach widespread adoption. Eventually, as demand for these services increase, this will put additional pressure on the existing capacity of the internet.
- 2.34 At 100 Mbps speeds it will be possible to provide multiple high definition video channels to the home. But the change is likely to be more fundamental: it will likely signal an end to today's business model in which media companies organise the content and present viewers with a single linear schedule. Instead, viewer will be able to access libraries of information based on their particular taste and preferences. A two hour high definition movie that would take hours to download today would be downloaded within two minutes using a 100 Mbps connection.

### *Smart Infrastructure and the Environment*

- 2.35 A high-speed NBN is also expected to play an important part in the delivery and arrangement of smart infrastructure in the future. A much cited example is the use of Smart grids that use broadband connections to help improve the efficiency of distribution of energy to customers. The benefits are likely to range from simple remote metering to more sophisticated use of monitoring technology to respond to customers energy needs by remotely adjusting temperatures and lighting in the home or businesses. Such technology in turn is likely to drive reduced consumption and costs for consumers with flow on benefits to society in lower energy needs.
- 2.36 A smart grid actually provides an example of the positive impact an NBN is likely to have on the environment and climate change. Benefits are likely to manifest themselves through reduced consumption of energy – meaning fewer power generators are likely to be needed thereby placing less strain on the environment. Further, improvements in communications technology such as telepresence conferencing, teleworking, and the remote delivery of services will reduce the strain on our transport infrastructure. Such benefits are likely to be more pronounced in a country such as Australia with its significant distances between capital cities.
- 2.37 Ultimately it is anticipated that NBN will deliver a significant net benefit to the Australian economy. The Government has estimated that this project will employ an average of 25,000 workers over its eight year roll-out, with 37,000 employed at its peak. In addition to the direct benefit this will inject into the economy there will many additional tangible benefits as local businesses seek to service the needs of this direct workforce.

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<sup>16</sup> OECD, *Broadband growth and policies in OECD countries*, 2008, page 92

2.38 Recent analysis by Access Economics suggested that the roll-out of a High Speed Broadband network *“in any of its forms is an economically beneficial project to be pursuing when compared with the option of doing nothing”*<sup>17</sup>. Access Economics also notes that:

*“The positive economic benefits will be noticeably greater in terms of a weak economy”.*

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<sup>17</sup> Access Economics “Impacts of a national high-speed broadband network”, page vi

### 3. Making Sure the New Network is Viable

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- 3.1 Whilst the potential benefits of the NBN are clear, much needs to be done to make it a reality, and to ensure that those benefits are delivered. A key consideration for Government will be ensuring that the network is financially and economically viable.
- 3.2 Since the Government's announcement many naysayers have criticised the proposal. Questions have been raised about the Government's role in the NBN, and whether its plan is viable. Given the right set of circumstances, Optus considers that the answer to each of these questions is positive.

#### *Role for Government*

- 3.3 There is little doubt that the investment required to undertake a major upgrade of the existing copper based infrastructure to support Australia's future broadband will be significant. Since the discussion on a new fibre roll-out began in August 2005, with the original Telstra Digital Compact proposal, there has been clear recognition that the private sector alone cannot fund the capital investment required for such an upgrade and that Government support must be required. This is certainly the case if the infrastructure is to extend to all Australians, including the many millions of consumers and businesses that reside outside the major metropolitan centres of Australia.
- 3.4 In its recent decision to cancel the Request for Proposals on its Fibre to the Node NBN plan, the Government highlighted the difficulties faced by the private sector in undertaking a national roll-out, citing "*advice from the independent Panel of Experts that none of the national proposals offered value for money*". Accordingly, in outlining its new proposal for the NBN the Government identified a more significant role for Government in supporting this initiative.
- 3.5 Australia is not alone in recognising the need for Government assistance with the roll-out of this next generation technology. The UK Government has recently noted that whilst "*realising the full value of the copper network cost tens of millions of pounds of investment; replacing it with a fibre network will take billions. Investment of this order poses a new set of strategic challenges*"<sup>18</sup>. Given this, it has recognised that the private sector alone will not be able to build Britain's Digital future;

*"The increasingly widespread conclusion from industry and economic analysis is that there is no obvious means whereby the market, unaided, will serve the final third of the population. We therefore propose a Final Third Project to deliver at least 90% coverage of Next Generation broadband for homes and businesses by 2017 (and, it is hoped, accelerate the expansion of the boundary of market provision from 50% to the two thirds coverage level)".<sup>19</sup>*

- 3.6 Other examples of Government lead initiatives to stimulate the roll-out of higher-speed broadband services include;
- (a) In New Zealand the Government has committed to invest up to NZ\$1.5 Billion to stimulate an FTTH roll-out to 75% of the population. This is notwithstanding the fact that the incumbent has announced its own FTTN roll-out and has been subject to functional separation;

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<sup>18</sup> Digital Britain Final Report, page 47

<sup>19</sup> Digital Britain Final Report, page 63

- (b) In the US, the Obama administration has allocated US \$7.2 Billion for broadband projects as part of its stimulus package; and
  - (c) The Singapore Government will invest up to S\$750 million to assist the roll-out of a Next Generation Broadband network in Singapore.
- 3.7 Clearly, there is a role for Government to assist with the upgrade of the national infrastructure to help Australia keep pace with its peers in the development of broadband technology.

*A viable business case*

- 3.8 For the NBN to be a viable proposition it will be important that it is both affordable – so that Australians in large numbers take up services over the network, and that it can generate a sufficiently attractive return to attract investment to the network be that in the form of debt or equity finance. Optus considers that each of these objectives is achievable given a set of core assumptions.
- 3.9 End-user pricing and the return generated by the investment in the NBN will largely be determined by two key factors:
- (a) The capital build costs associated with the network; and
  - (b) The level of take-up of services on the network.
- 3.10 On the first of these issues the Government has indicated that the capital build cost for the NBN could be up to \$43 Billion. Optus considers that this is at the top end of the potential range of capital costs and that the final costs could be significantly lower.
- 3.11 One way to reduce the build cost would be to utilise existing assets rather than to overbuild them. For example, Optus' HFC cable could be upgraded to an FTTP solution at a cost below that which would apply to deploy new fibre directly to each of the premises within the footprint of this cable.
- 3.12 Similarly, build costs could be reduced by increasing the use of aerial deployment of fibre as opposed to burying cable underground. On this point, it is worth noting that the visual and environmental impact of deploying fibre will be significantly less than was the case for the HFC cable which caused some controversy when it was rolled out in the mid1990s. Optus understands that the optic fibre cable to be used as part of an FTTP deployment will be thinner than the HFC cable. More importantly, since this cable does not have conductive properties it can be deployed close to the existing overhead electricity cables that run overhead down most streets in Australia. By contrast the HFC cable had to be deployed well below existing electricity cables because of its conductive capabilities and as a result, this caused the much criticised visual impact.
- 3.13 In respect of take-up of the services, for the NBN to be viable Optus believes it must reach penetration levels in excess of 60% over the longer term. Whilst we are at an early stage on FTTP deployments around the world, the examples that do exist suggest that such take-up is entirely achievable. For example, in Japan and Korea, the two leading markets for fibre to the premises broadband, residential and business penetration on the network has reached high levels in only a few years after launch.
- 3.14 If the NBN is able to achieve penetration of about 60% of Australian homes, with potentially higher take up in relevant businesses, then it would be possible to set a wholesale price of around \$50 for the consumer service. Such a price would compare very favourably with wholesale prices available today. For example, for a consumer grade bundled voice and a broadband package Telstra Wholesale charges access prices in the range of \$60 to \$78 per service per month. These prices only provide

broadband access at speeds of between 1.5 Mb/s and 8 Mb/s. Clearly an access price of \$50 per service per month would enable service providers to provide services at retail prices which are not out of line with those paid today – with the added benefit of a much improved speed of service.

- 3.15 Further, at such price levels and take-up we can confidently expect the NBN to generate an acceptable commercial rate of return, particularly considering the likely utility nature of its business.

#### *Single network solution*

- 3.16 An important implication of the above analysis is that to achieve the sorts of penetration required to make the NBN viable it is critical that there is only one national broadband network in operation, since only one network can reach the levels of penetration necessary to make the investment viable. This in turn will mean that Telstra needs to put almost all of its fixed line traffic on the NBN.
- 3.17 For a country of Australia's geographic scale and relatively modest population the economics of providing services over fixed line networks that require almost every premise in the country to be wired up is challenging. Optus' experience with its roll-out of its own HFC cable network in the mid 1990s is highly instructive in this regard. It demonstrates the difficulties a new entrant faces in seeking to win customers away from the incumbent carrier, Telstra. It also shows the lengths to which Telstra will go to protect its monopoly position.
- 3.18 Optus rolled out its HFC cable in the most commercially attractive areas of the capital cities of Sydney, Melbourne and Brisbane. Telstra similarly rolled out its own cable network side by side with the Optus network, following the Optus cable down every side street. Given that Telstra already had a copper network for serving customers within the cable footprint the rationale for Telstra to undertake this roll-out was not to secure new revenues but to defend its existing telephony revenues from the competitive threat presented by Optus. Hence the approach became known as the 'telephony defence strategy'. Professor Martin Cave has noted that the rationale for Telstra undertaking such a large scale investment was unambiguously to undermine a significant competitive threat to its fixed line dominance from Optus:

*"The well-known precedent in Australia of Telstra's Foxtel network is an illustration of a predatory access investment. As the chairman of Telstra then acknowledged, the investment was expected (or intended) to lose money in the supply of broadcasting services, but to be profitable overall by virtue of defending the company's telephone revenues from a competitor which sought to provide both telephone and broadcasting services on a single network".<sup>20</sup>*

- 3.19 After more than a decade, Optus' HFC network has reached penetration levels of around 40 per cent. Whilst Optus is proud of this performance, it has taken hard, persistent work to get to this level of penetration, but it is not high enough to generate an acceptable commercial return on the investment in the network. Both Optus and Telstra have been forced to make significant write downs on their cable investments totalling some \$2.4 billion. Such an outcome is socially wasteful and harms consumers because they necessarily result in higher prices for services on these networks.
- 3.20 The clear lesson from the HFC cable case is that if the NBN is rolled out alongside the existing Telstra network, then retailers using the new network will face the significant challenge of winning customers away from Telstra. Even though the NBN is likely to offer faster and better services, winning away enough customers will be a very difficult

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<sup>20</sup> "Separation and investment in telecommunications networks: A review of recent practice", Martin Cave, page 22

task. This will especially be the case in the event that Telstra chooses to adopt a similar defence strategy to the one employed against Optus in the HFC example above. Telstra could, for example, react to the arrival of the NBN with targeted price reductions; with selective upgrades of its network so in some areas it can match the NBN speed; and with using long term contracts to lock-in its customers.

3.21 Optus considers that such an outcome is likely to result in significant adverse consequences for both consumers and taxpayers. Having two networks running side by side is likely to result in one or both of these networks either failing to deliver to their full potential or indeed failing altogether. Prices on either network are likely to be higher than they ought to be because of the lower economies of scale. Accordingly, take up of services is likely to be depressed, levels of innovation will be lower and Australia is unlikely to be in a position to realise the anticipated benefits of high-speed broadband.

3.22 In summary, Optus strongly believes that if Australia has a single, open access national high-speed broadband network, then it is highly likely to be commercially viable. But if there are two competing access networks around the country, Telstra's and the NBN, then such a proposition becomes extremely challenging. This fact has recently been recognised by David Kennedy of Ovum, when writing in an article for Communications Day he observed that if:

*"FTTH is rolled out in competition with a recalcitrant Telstra, fragmenting the market and pretty much guaranteeing ongoing losses for – well, pretty much everybody. On this scenario, the challenge is to build an FTTH network, in competition with the legacy access infrastructure. But this is to fundamentally misunderstand what is required."<sup>21</sup>*

3.23 To be absolutely clear, this approach will require Telstra to put all of its fixed line traffic on the NBN. This in turn means that its legacy network assets will become redundant over time unless they are vended into the NBN and upgraded.

3.24 For clarity, this conclusion should not be taken to imply that there should not be platform competition or, indeed, some infrastructure based competition for certain services. Mobile Broadband services have an important position in the market and a strong future. However, these services will largely act as a complement and not a substitute to fixed line broadband services on the NBN. Further, we expect that competition will remain for current contestable services, such as wholesale inter-capital transmission services and the NBN will be a potential new entrant into this market. However, connectivity for end-users should be provided off the NBN.

3.25 The question for Government, therefore, is how to achieve this outcome. Optus believes this issue is intricately tied up with the present consideration of the reform of the current regulatory arrangements as outlined in its discussion paper "Regulatory Reform for the 21st Century". As will be argued in the following section, the answer to the problem lies in Government mandating the immediate structural separation of Telstra.

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<sup>21</sup> Communications Day, 2 June 2009



#### 4. Regulatory reform a pathway to a successful broadband future

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- 4.1 In 2008 both the DBCDE and the Senate received an extensive number of submissions from the telecommunications industry regarding appropriate regulations for the NBN. DBCDE's recent consultation paper on Regulatory Reform for the 21<sup>st</sup> Century also generated an even greater number of submissions from industry on its proposed changes to the existing regulatory framework. Two common themes that emerge from the vast majority of these submissions are that Telstra's vertically integrated structure has represented a key impediment to competition in the fixed line market and that the present regulatory arrangements are not fit for purpose to regulate such a powerful vertically integrated incumbent. In response to these problems, there have been strong calls for fundamental structural reform as a basis for improving competition and consumer outcomes both immediately, and as the industry transitions towards the NBN<sup>22</sup>.
- 4.2 In announcing its proposal to build and operate the NBN the Government has given appropriate recognition to the problems with the current market structure, in particular the issues associated with vertical integration. To address these issues the Government has committed to ensuring that no retail provider will be able to control the NBN and that it will be operated as a wholesale only, open access network that is subject to strong ACCC oversight. Such principles would be ideally suited to a monopoly network.
- 4.3 Whilst the precise details of the governance arrangements and the regulatory rules that will apply to the new NBN have still to be determined, they would appear to represent a world's best practice model. The importance of this change has been recently recognised by Graeme Samuel:

*"The Government's commitment to ensure the new NBN company is structurally separated guarantees a definitive break from an industry structure dominated by the vertical integration of the incumbent.*

*Structural separation will mean the NBN operator has a clear incentive to treat access seekers on an equivalent basis. Therefore, the Government's announcement provides an opportunity to deal head-on with the difficulties arising from the vertical integration of the current incumbent".*<sup>23</sup>

- 4.4 More importantly this is a model that would best serve the interests of competition and consumers. As Minister Conroy has noted:

*"No retail company will be able to control the network in its own interests. Why is this important for consumers and the prices they will pay? Well, because, the discipline of genuine competitive pressure in the market drives lower prices, innovation and greater choice of different services and price points. It means companies have to fight hard to win and retain your business, or else you can switch providers. It means companies will likely offer a range of plans and price points to suit the needs of different individuals and businesses. Competition drives better outcomes for consumers".*<sup>24</sup>

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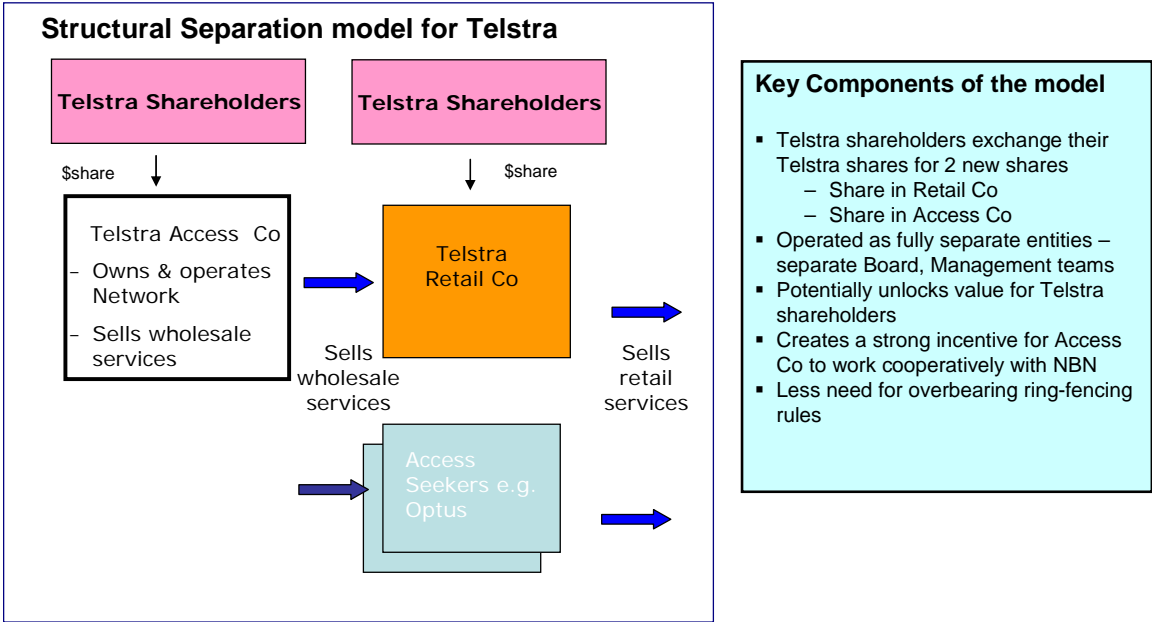
<sup>22</sup> Refer Optus' submission Optus Submission Regulatory Reform for the 21st Century - June 2009. See [http://www.dbcde.gov.au/data/assets/pdf\\_file/0016/115405/Optus-Main.pdf](http://www.dbcde.gov.au/data/assets/pdf_file/0016/115405/Optus-Main.pdf)

<sup>23</sup> Graeme Samuel – ATUG Regional Conference, 21 May 2009

<sup>24</sup> Senator Conroy "Address to National Press Club", 28 April 2009

- 4.5 Optus is fully supportive of the Minister’s comments and agrees that the proposed approach will clearly best support the emergence of a truly competitive market structure in the fixed line services market. However, in its submission to DBCDE on the proposed changes to the existing regulatory arrangements, Optus has argued that this policy must be implemented today both to improve competition in the near-term, but also to help ensure the viability of the NBN in the longer-term.
- 4.6 That is, Government should require Telstra to be structurally separated, through legislative change, into an Access Services Company (ASC) and a Retail company, each of which would be operated independently on arms length terms. In practice, this structure could be implemented by giving Telstra’s existing shareholders two shares for each share they hold today; one share in the existing Retail entity; and a share in the new ASC. This would ensure that Telstra shareholders are not denied any of their existing interest in Telstra. As a separate legal entity the ASC would have its own Board and management team, which would operate independently from the Board and management team of the Telstra Retail entity. Further, the Board of the ASC would have a clear fiduciary duty to operate in its own interests and not those of any other party, such as Telstra Retail. In fact this objective could be made explicit by being written into the constitution of the ASC.
- 4.7 The ASC would hold all Telstra’s existing fixed line infrastructure. It would have responsibility for providing wholesale-only network and access services to downstream retail providers, including Telstra Retail. This entity should be prevented from being affiliated to any existing retail provider or providing retail services directly.

**Exhibit 1: Proposed model for separation of Telstra**



- 4.8 Such an approach would fairly and squarely address the key impediment to competition today from Telstra’s vertically integrated structure. As a vertically integrated company that is both the dominant supplier at both the wholesale and retail levels, Telstra has very strong incentives to discriminate against its competitors. However, as a separated

entity the ASC would have both a commercial and legal obligation to deal with all access seekers on genuinely arms length terms. Specifically the ASC should;

- (a) Seek a profit maximising position of driving up usage of its network;
- (b) Have no incentives to engage in price or non-price sabotage against a particular access seeker;
- (c) Respond favourably to requests by access seekers to develop innovative services;
- (d) Provide all access seekers with equal access to information important to their planning processes; and
- (e) Offer differentiated levels of access to the network – although these would be offered to all on a non-discriminatory basis.

4.9 In summary, such structural change can be expected to have a significant benefit for competition in the short-term since it would help to achieve a level playing field, thereby enabling all access seekers to compete on their own merits. Importantly this approach is endorsed by the ACCC, which has also recommended the structural separation as a necessary means to enhance competition in the fixed line market. In its recent submission to DBCDE it noted that:

*“The structural arrangements of Telstra during the transition to the NBN will be an important determinant of the nature and scope of competition which will exist in Australia’s telecommunication markets for at least the next 8–10 years while the NBN is rolled out.*

*The ACCC is of the view that structural separation of Telstra is the only framework that will ensure equivalence in access during the transition to the NBN and is the only form of separation consistent with the type of wholesale–retail market structure the Government envisages for the NBN environment of the future”.*<sup>25</sup>

4.10 However, Optus also anticipates that structural separation will also help to secure the longer-term viability and competitiveness of the NBN and address the issues set out in the previous section of this submission.

4.11 Firstly, the separated Access Services Company would provide an appropriate foundation vehicle for the NBNC<sub>o</sub>. As a separated wholesale-only provider it would have a strong interest in working cooperatively and in partnership with Government to play a key role in the NBN. Unlike, the present vertically integrated Telstra it is unlikely to consider a “telephony defence” strategy to be a viable option since it could not be confident of securing the long-term support of any downstream retail service providers that would be required to make such a strategy viable. As a separated company, Telstra Retail Company would have no intrinsic bias towards using the legacy network services of the Telstra Access Services Company in preference to the services offered by the NBN.

4.12 This approach will help address the implications of our analysis above that the current policy approach of encouraging competition through facilities based competition is not the way forward for the NBN and that we should be seeking to embrace the concept of a single NBN to deliver all of Australia’s fixed line broadband requirements. This conclusion is one that is supported by industry analyst David Kennedy from Ovum. In the

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<sup>25</sup> ACCC “Submission to the Department of Broadband, Communications and the Digital Economy - “National Broadband Network: Regulatory Reform for 21st Century Broadband”, June 2009 – page 9

article for Communications Day previously referred to he notes that a better alternative to having two competing networks is;

*“to conceive of the NBNCo’s task as upgrading Telstra’s copper to an FTTH network. And the logical way to do this that NBNCo should take over Telstra’s copper network, and set about a staged upgrade of copper to fibre... it is clear that this is where thinking is currently heading. Let’s hope so, because it makes enormous sense for two key reasons:*

*First, rather than have two separate commercial entities squabbling over the upgrade, rolling Telstra copper into NBNCo internalises all of the tensions. This reduces the upgrade from a commercial process to a purely engineering one, to be managed by the NBNCo CEO. Significantly, this will entail ripping out some of the copper to make duct space for fibre. In addition, we do not have dueling access networks, and customers are cut over automatically rather than having to be captured through an expensive marketing campaign. This avoids the fragmentation issue.*

*Second, we get a quick structural separation. Of course, Telstra gets a box seat in the new NGN industry, but only as a major shareholder in a structurally separated access network. No-one gets something for nothing”.*<sup>26</sup>

- 4.13 Secondly, as noted above Optus considers that separating Telstra today offers the best prospects to enhance competition in the fixed line services market. This in turn will help the NBN to succeed since it will help to improve customer choice and affordability thereby helping to further drive broadband take-up in the lead up to the NBN. This will put the industry in the best jump-off point for the mass migration of customers and businesses to the NBN once it becomes widely available.
- 4.14 From Optus own experience, competition is often the best catalyst to drive rapid technological change in this industry. With competition, once one entity makes the technology switch-over, then others will rapidly follow. The roll-out of ADSL 2+ provides a good example of this. Optus launched its ADSL2+ service in early 2006 and this was quickly followed by a number of other service providers. The launch of these new services by its competitors prompted a market response from Telstra, which announced the launch of its own ADSL2+ based services once competitor migration started to gain momentum<sup>27</sup>. Within eighteen months of the technology first being deployed some 1.5 million customers were taking higher speed broadband services<sup>28</sup>.
- 4.15 In summary, Optus considers that the foundation stone for the future success of high-speed broadband in Australia could be securely laid through the much needed fundamental reform of the existing market structure and regulatory framework in response to the recommended reforms proposed by Optus and others to the Government’s consultation paper on Regulatory Reform for the 21<sup>st</sup> Century.

### **Other Key reforms**

- 4.16 Whilst structural separation will address many of the problems with the present dysfunctional market structure and will be critical for the longer term success of the NBN,

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<sup>26</sup> Communications Day, 2 June 2009

<sup>27</sup> Telstra announced its upgrade to ADSL2+ on 10n November 2006, but only to “those exchanges where competitors are also offering those higher speeds” – see [http://www.telstra.com.au/abouttelstra/media/announcements\\_article.cfm?ObjectID=38597](http://www.telstra.com.au/abouttelstra/media/announcements_article.cfm?ObjectID=38597).

<sup>28</sup> Refer table 2.2 ACMA Communications Report 2007–08, internet subscribers taking services with speeds greater than 8Mbps

it will need to be supported by additional critical reforms. In particular, these reforms measures should include;

- (a) Implementation of a clear equivalence of access obligation;
- (b) Strengthening the powers available to the ACCC to take effective action; and
- (c) Establishing clearer price setting rules that better align access prices to the efficiently incurred cost of providing those services.

4.17 Each of these reforms is relevant to improve and safeguard competition in both the immediate term and the longer-term as the industry transitions towards the NBN. Further details on each of these issues are set out below.

#### *Achieving true Equivalence of Access*

4.18 Whilst structural separation is an important and necessary reform that seeks to address the present misalignment of incentives, it is only part of the equation. In particular, it needs to be combined with a clear legal obligation to provide access on a genuinely equivalent basis. The rationale for separation would be compromised if the ASC were able to give its largest customer (likely to be Telstra Retail) more favourable terms than other access seekers. The importance of equivalence in this equation has been noted by SPC Networks:

*“It is essential to recognise, therefore, that functional separation plays a supporting role to equivalence, and to other ex ante regulation such as price controls, and it makes little sense to try to assess functional separation in isolation and even less as a substitute for such regulation”<sup>29</sup>*

4.19 The most effective form of equivalence appears to be the equivalence of inputs obligation. This is the best practice standard that has been adopted in the UK, New Zealand, and Singapore and it is the approach that should be adopted in Australia. In practice, this would mean that, for a defined set of services, the ASC and subsequently the NBNC<sub>o</sub> would have to supply all access seekers with;

- (a) the same service;
- (b) on the same terms and conditions (including price);
- (c) using the same operational support systems (including ordering, provisioning, invoicing, billing, fault rectification and reporting);
- (d) with access delivered in the same timeframes; and
- (e) subject only to trivial differences.

4.20 In simple terms, such an obligation on both Telstra (in the interim) and the NBNC<sub>o</sub> (in the longer-term) would help to achieve a level playing field in the fixed line services market, thereby enabling all access seekers to compete on their merit.

#### *Providing the ACCC with more targeted and effective powers to regulate*

4.21 The recent consultation paper on “Regulatory Reforms for the 21<sup>st</sup> Century” and the resulting submissions from industry have identified that the current powers given to the ACCC under Part XIC and Part XIB of the Trade Practices Act are ineffective. Optus

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<sup>29</sup> SPC Networks, “Equivalence of Input and Functional Separation: A Framework for Analysis”, page 22

submits that the ACCC must be given stronger powers to regulate the terms and conditions of access for fixed line services. Such powers should operate both before and after the NBN is rolled out to regulate the provision of essential access services. In the table below Optus has outlined in summary form the minimum changes that are required to the present regulatory arrangements. Details of these matters are set out more fully in Optus' submission to DBCDE of June 2009<sup>30</sup>.

**Exhibit 1: Summary of reforms required to the existing provisions of the Trade Practices Act**

Category	Optus proposed reforms:
<p><b>Part XIC</b> (ACCC Powers)</p>	<ul style="list-style-type: none"> <li>• replace the failed negotiate/arbitrate model</li> <li>• eliminate access undertakings</li> <li>• empower the ACCC to set key terms and conditions (price and non-price) for declared services on an ex ante basis</li> <li>• require Telstra to submit Reference Interconnection Offer setting out non-price terms on Equivalence of Inputs basis</li> <li>• future-proof model by allowing for declaration of new services (eg bitstream) as appropriate</li> <li>• eliminate merits review of ACCC decisions</li> <li>• limit scope for judicial review of ACCC decisions</li> <li>• eliminate exemption applications</li> </ul>
<p><b>Part XIB</b> (Anticompetitive conduct)</p>	<ul style="list-style-type: none"> <li>• replace the ineffectual competition notice regime</li> <li>• empower the ACCC to issue 'cease and desist' orders where it has evidence of anti-competitive conduct</li> <li>• empower the ACCC to impose binding rules of conduct – in the form of a legislative instrument</li> </ul>

4.22 As indicated above, such reforms should apply both before and after the transition to the NBN.

*Aligning access prices to cost*

4.23 The approach to access pricing will be an important determinant in the competitiveness of the industry, both before and after the transition to the NBN. The fixed line infrastructure of Telstra is a monopoly asset. As Optus has indicated in this submission, we anticipate that by necessity the NBN will also be a monopoly infrastructure. Pricing, therefore will need to be appropriately regulated.

4.24 An important component of truly equivalent access is pricing that is based on efficient cost. Separation will reduce the incentives for discrimination, but not necessarily the temptation for the network owner to set monopoly prices. Further, even with a streamlined decision-making process as proposed above, pricing uncertainty would

<sup>30</sup> See Optus Submission Regulatory Reform for the 21<sup>st</sup> Century June 2009 - [http://www.dbcde.gov.au/data/assets/pdf\\_file/0016/115405/Optus-Main.pdf](http://www.dbcde.gov.au/data/assets/pdf_file/0016/115405/Optus-Main.pdf)

remain a key issue for access seekers, due to the lack of specific guidance in the present legislation on this point.

- 4.25 Not only has the ACCC adopted different pricing approaches for different services, but also its preferred pricing approach (TSLRIC) has been subject to divergent interpretations, resulting in radically different price estimates. Telstra, for example has used its own interpretation of TSLRIC to arrive at an access price for the ULLS (the key wholesale input for broadband services) which is three times the price estimated by the ACCC, ostensibly using the same pricing approach. This lack of certainty has serious implications for access seekers and for competition, as well as for access providers. Without predictable pricing it is impossible for access seekers to form accurate business plans for investment.
- 4.26 Optus considers that an important reform is to establish clearer and more certain rules on access pricing. In particular, the TSLRIC approach preferred by the ACCC is not sufficiently well defined and as a result is open to abuse. Further, the TSLRIC method has other well-recognised flaws: it provides compensation for 'hypothetical' expenditure that Telstra never actually incurred, and treats depreciated assets as if they were brand new, effectively giving Telstra double the return on its investment.
- 4.27 Optus proposes that the Government should adopt a new, fairer pricing approach with clearly specified parameters which should be set out in the legislation. In particular, Optus proposes that the Government adopt a pricing methodology under which a regulatory asset base (RAB) is established by valuing network assets at Depreciated Optimised Replacement Cost (DORC), and then 'rolled forward' into future regulatory periods. This is a fair and transparent method for valuation of network assets and pricing of telecommunications services which will ensure the network operator recovers its costs and no more. The advantages of Optus' proposed pricing approach in terms of promoting economic efficiency and competition are explained further in a recently published report by the Competition Economists Group (CEG). CEG conclude that the proposed method would:<sup>31</sup>
- "remove the volatility inherent in the current approach, reduce incentives for gaming, and lessen unnecessary windfall gains and losses that are pervasive in the current regime. ... It would also bring telecommunications regulation more in line with other infrastructure regulations in Australia and would streamline regulatory processes".*
- 4.28 Optus submits that this pricing approach should be adopted immediately since it would lead to a stable, predictable and pro-competitive access price for key wholesale inputs, and significantly improve certainty for all players in the industry. For the same reasons it would also be appropriate to take this approach forward into the new NBN environment.

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<sup>31</sup> CEG, June 2009, *Reform of Part XIC: Regulatory Certainty*, page 3