

Independent Cost-Benefit Analysis and Review of Regulation

Submission of NBN Co to Expert Panel in response to the
Regulatory Issues Framing Paper issued 13 February 2014

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1 Introduction

NBN Co welcomes the opportunity to respond to the Framing Paper.

The Panel has identified the following key regulatory areas for consideration: the overall structure of the Australian wholesale broadband market, including infrastructure based competition; the mechanism, and level of transparency by which services are subsidised, and the role of NBN Co. The Panel has acknowledged that it is not working from a clean slate and NBN Co agrees that this is the appropriate starting position for the Panel's Review.

The purpose of this submission is to highlight the matters NBN Co considers the Panel should have regard to in considering the key regulatory matters identified above. By way of summary, these matters are:

- The starting point of the Review should be how best to achieve the Government's objective of ensuring that very fast broadband services are available to all end-users at an affordable price.
- The fact that NBN Co operates on a wholesale only, open access basis, coupled with the need for NBN Co to recover its costs and earn a reasonable rate of return, minimises the risk of NBN Co engaging in anti-competitive conduct and is conducive to the development of a vibrant digital economy. The broader regulatory framework in which NBN Co operates, including the recent amendments to Part XIC of the *Competition and Consumer Act 2010* (Cth) (**CCA**), provides additional protections.
- In considering the issue of infrastructure based competition, regard must be had to the feasibility or likelihood of superfast broadband networks being rolled out in Australia, having regard to the economics of rolling out such a network.
- The object of the recent amendments to the *Telecommunications Act 1997* (Cth) (**Telecommunications Act**) and the CCA concerning the roll out of superfast broadband networks is to ensure that NBN Co, and any competing superfast broadband networks, operate on a level playing field. Any amendments to those provisions may increase the existing impact of those provisions on NBN Co's ability to deliver on the recommendations of the Strategic Review, including implementing an Optimised Multi-Technology Mix. These provisions, including their existing operation, require careful consideration.
- There is international precedent for developing a market structure involving a recognised broadband network provider which is structurally or functionally separate from any downstream provider and which is subject to non-discrimination and open access arrangements. There is also international precedent for ensuring that a minimum standard of broadband services are universally available at affordable prices.

2 Structure of submission

This submission is structured as follows:

- Section 3 describes the current market structure and regulatory landscape, with a particular emphasis on those aspects which relate fundamentally to the structural reform of the Australian fixed-line telecommunications industry.
- Section 4 addresses the economics underpinning the Australian fixed-line telecommunications industry based on NBN Co's experience in rolling out a national broadband network.
- Section 5 comments on the Panel's working assumptions.

Throughout this submission, NBN Co references the relevant questions posed by the Panel in the Framing Paper.

3 The National Broadband Network – current market structure and regulatory landscape

3.1 Introduction

The current market structure and regulatory landscape ensures limited incentive and scope for NBN Co to seek to earn economic profits and exercise any market power to the detriment of competition. This follows inevitably from:

- the major policy decisions made to date concerning the roll out of a high speed broadband network by NBN Co on a wholesale only, open access basis; and
- the substantial amendments which have been made to the telecommunications regulatory regime to support this new structural model.

NBN Co's limited incentive and scope in this regard is a factor of fundamental importance in assessing whether any amendments are necessary to the current structural model, and whether NBN Co should continue to be subject to a wholesale only, open access requirement. These issues are the subject of questions one and three of the Framing Paper.

In NBN Co's view, an examination of the structural and regulatory models adopted overseas may usefully inform the Panel's consideration of questions one and three of the Framing Paper. The wholesale only, open access model adopted in Australia for the delivery of the NBN, is similar to models adopted in several overseas jurisdictions. Each of Singapore, New Zealand and the United Kingdom has sought to supply high-speed broadband services using structural and/or functional separation between passive infrastructure and active infrastructure layers, so that the services are provided efficiently and pro-competitively. Consistent with the approach in Australia, in each of these jurisdictions:

- open access obligations have been implemented in relation to the network provider;
- non-discrimination rules apply, set out in undertakings entered into by the network provider and/or operating by virtue of the separation models; and
- there is a universal service obligation in some form, either through legislation or as part of other regulations surrounding the establishment of the high-speed broadband service.

3.2 Instructions to NBN Co and NBN Co's current approach

Statements of Expectations

The Government has expressed its objectives for NBN Co in a series of Statements of Expectations and communications from Shareholder Ministers.

In December 2010, the Government issued its first Statement of Expectations to NBN Co which reflected the Government's central policy objective for NBN Co "*...to deliver significant improvement in broadband service and quality to all Australians, address the lack of high-speed broadband in Australia, particularly outside of metropolitan areas, and reshape the telecommunications sector.*"¹ Further, NBN Co was instructed to achieve the objective of uniform national wholesale pricing (**UNWP**) for NBN services by charging access seekers uniformly for services across NBN Co's network for all technologies and for the basic service offering.

¹ Minister for Finance and Deregulation and Minister for Broadband, Communications and the Digital Economy, *Statement of Expectations*, December 2010

In September 2013, the Government issued an Interim Statement of Expectations to NBN Co that outlined the Government's commitment to completing the construction of the NBN and '*in doing so ensure that all Australians have access to very fast broadband as soon, as cost-effectively and as affordable as possible*'.² The Interim Statement of Expectations formalised the Government's instructions to transition the rollout of the NBN, having regard to the approach described in the Coalition's broadband policy '*The Coalition's Plan for Fast Broadband and an Affordable NBN*', published April 2013.

The Government's objective is to ensure that, among other things, the NBN is rolled out in the most cost-effective way using the best-matched technology, and that NBN Co has flexibility and discretion in technology and network design decisions within the constraint of limited available capital.

The Interim Statement of Expectations does not refer to an objective of UNWP. The Coalition's broadband policy of April 2013 suggests that any UNWP in an NBN Co undertaking accepted by the ACCC would become uniform national wholesale price **caps** for directly comparable products.³

The Statement of Expectations and the Interim Statement of Expectations make it clear that, in achieving the Government's policy objectives, NBN Co is to operate commercially (see also Rule 4.1.2 of the Company's constitution). This expectation is in turn to be reflected in each corporate plan endorsed by the Shareholder Ministers under the terms of the Equity Funding Agreement with the Commonwealth and as required by the Government Business Enterprise (**GBE**) guidelines that NBN Co must follow.

Strategic Review and Revised Rollout

Consistent with the discretion conferred by the Government in its Interim Statement of Expectations, NBN Co is currently working to implement a multi-technology mix rollout model.

In December 2013, NBN Co released its Strategic Review which set out several possible scenarios in which NBN Co could continue its rollout of the NBN. In its Strategic Review, NBN Co recommended that it develop an *Optimised Multi-Technology Mix* rollout model (**Scenario 6**), with an aim to deliver access to download data speeds of at least 50 Mbps to about 90 percent of the fixed line footprint by calendar year 2019. NBN Co is currently working to implement Scenario 6 pending formal confirmation of the detail of this implementation in an updated Statement of Expectations.

In implementing Scenario 6, NBN Co is working towards the business case referred to in the Strategic Review. That business case has been developed, having regard to the current regulatory and competitive landscape including the matters referred to in sections 3.3 and 3.6 below. The business case is intended to enable NBN Co to achieve the Government's broadband policy objectives on a commercial basis. This is consistent with the third working assumption identified by the Panel.

NBN Co expects to be in a position to begin the transition to the *Optimised Multi-Technology Mix* as described in the Strategic Review from calendar year 2015. NBN Co's existing FTTP rollout in the fixed-line footprint will continue throughout calendar year 2014 in order to stabilise and improve the efficiency of the rollout, and to help provide ongoing certainty for the Australian construction industry.

NBN Co is currently planning to use Fixed Wireless and Satellite technology to serve the premises outside of the fixed line footprint, in rural and low-density locations. The Strategic Review did not consider these plans in detail. A separate strategic review of NBN Co's Fixed Wireless and Satellite programs is due to be completed shortly.

3.3 NBN Co's wholesale only, open access mandate

NBN Co is required to operate on a wholesale only, open access basis. To ensure that NBN Co remains a wholesale only operator, the *National Broadband Network Companies Act 2011* (Cth) imposes restrictions on

² Minister for Finance and Minister for Communications, *Statement of Expectations*, September 2013

³ *The Coalition's Plan for Fast Broadband and an Affordable NBN*, April 2013, p. 8

the persons to which NBN Co can supply services and the nature of the services. The wholesale only mandate has been given effect to in the constitution of NBN Co (rule 4.1.1).

To ensure NBN Co operates on an open access basis, amendments were made to Part XIC of the CCA. Relevantly, these amendments provide that **all** eligible services supplied by NBN Co, must be declared services for the purpose of Part XIC. In supplying those services, NBN Co is therefore obliged to comply with the 'Category B' (NBN Co specific) standard access obligations, which require NBN Co to:

- supply any declared services which relate to NBN Co to an access seeker, upon request, so that the access seeker can provide carriage services and/or content services to end users;
- not discriminate between access seekers in:
 - supplying declared services (in relation to both price and non-price terms and conditions);
 - developing a new eligible service;
 - enhancing a declared service;
 - extending or enhancing the capability of a facility or telecommunications network by means of which a declared service is, or is to be, supplied;
 - planning for a facility or telecommunications network by means of which a declared service is, or is to be, supplied;
 - an activity that is preparatory to the supply of a declared service;
 - an activity that is ancillary or incidental to the supply of a declared service; and
 - giving information to service providers about any of the above activities.
- not supply an eligible service which has not been declared by the ACCC, unless NBN Co has in place a special access undertaking (**SAU**) or a standard form of access agreement in respect of that service, at which time the relevant service is deemed to be declared;
- enter into an access agreement with a service provider, on request, on the terms and conditions set out in the standard form of access agreement;
- lodge with the ACCC all access agreements to which NBN Co is a party and all variations to those access agreements; and
- provide the ACCC with a statement about any differences between an access agreement it has entered into and a special access undertaking or access determination that relates to the service the subject of the access agreement.

NBN Co's SAU, approved by the ACCC in December 2013, now regulates key aspects of NBN Co's products and pricing. NBN Co faces the constraint of long-term price controls in the context of very substantial up-front capital commitment, with cost recovery dependent on users migrating to higher speed services with higher data usage. As the ACCC has recognised:

*'this creates incentives for NBN Co to keep costs to efficient levels and to encourage take-up of higher speed services and greater usage. NBN Co's proposed pricing structures, particularly for data throughput charges, should also provide incentives for NBN Co to continuously upgrade the network to meet developing demand for those services'*⁴

Given this, as the ACCC has acknowledged, NBN Co will have incentives that are likely to be more effective than those typically faced by other regulated infrastructure providers.

⁴ ACCC, *Determination on Applications for Authorisation lodged by NBN Co Limited in respect of provisions of the HFC Subscriber Agreement entered into with SingTel Optus Pty Ltd and other Optus entities*, 19 July 2012, p. iv.
See also: NBN Co, *Supporting Submission NBN Co Special Access Undertaking*, 28 September 2012, p.167

3.4 Regulatory oversight of NBN Co's network architecture

The ACCC has played a role in determining NBN Co's network architecture. In particular, the ACCC was involved in deciding the number and location of NBN Co's points of interconnection. It did so to secure optimal outcomes for competition in transmission markets and to best promote retail and wholesale competition across geographic markets.

A point of interconnection (**POI**) is the inter-network location where traffic is exchanged between one network and another. The geographic location of NBN Co's POIs determines the extent to which backhaul is required by each Retail Service Provider.

In October 2010, the Government requested that NBN Co seek to reach agreement with the ACCC on the number and location of initial POIs that would best meet the long-term interests of end-users. After conducting a public consultation process, the ACCC provided its Advice to Government in November 2010, recommending a 'semi-distributed' approach to the location of NBN Co's initial POIs. The ACCC concluded this approach was likely to result in optimal outcomes for competition in transmission markets and would best promote retail and wholesale competition across all geographic markets.⁵ In its advice, the ACCC developed a set of Competition Criteria to determine the best location of NBN Co's POIs.

NBN Co subsequently worked with the ACCC to develop a set of POI network planning rules and a proposed list of POIs based on the ACCC's Competition Criteria, which were published on 20 December 2010. Between December 2010 and November 2012, the ACCC conducted a public consultation and confirmation process in respect of the proposed POIs. The ACCC published a final list of 121 POIs on 5 November 2012, as required by s151DB of the CCA.

3.5 NBN Co's current reporting obligations to achieve transparency

NBN Co is subject to a detailed reporting and governance framework, in addition to the transparency related obligations relating to NBN Co's access agreements described above. This framework arises as a consequence of:

- NBN Co being a Commonwealth company⁶ and a prescribed Government Business Enterprise⁷;
- the particular provisions of NBN Co's constitution;
- NBN Co being a party to an Equity Funding Agreement with the Commonwealth; and
- the application of other Commonwealth legislative instruments to NBN Co's operation including the *National Broadband Network Companies Act 2011* (Cth) and the *Freedom of Information Act 1982* (Cth).

As a wholly-owned Commonwealth company and a GBE, NBN Co is subject to the following requirements designed to enhance transparency around resource management and planning and accountability to the Parliament:

⁵ ACCC, *Advice to Government - National Broadband Network Points of Interconnect*, November 2010, p. 1

In relation to access to backhaul by RSPs, see also the ACCC's current Domestic Transmission Capacity Service (DTCS) declaration process, including the revised competition methodology and NBN Co's Submission on the ACCC's Draft Report on the review of the declaration for the DTCS, February 2014

⁶ NBN Co is a wholly-owned Commonwealth company for the purposes of s34(2) of the *Commonwealth Authorities and Companies Act 1997* (**CAC Act**) and s90 of the *Public Governance, Performance and Accountability Act 2013* (**PGPA Act**). With effect from 1 July 2014, the PGPA Act will replace the CAC Act by consolidating in one Act the governance, performance and accountability requirements for Commonwealth entities and Commonwealth companies

⁷ NBN Co, as a Commonwealth company, is also a GBE because it has been prescribed as such for the purposes of s5 of the CAC Act (and it is intended to be prescribed as such for the purposes of s8 of the PGPA Act)

- consistent with any written guidelines that might be given by the Minister for Communications, a statutory obligation on the directors of NBN Co to keep the Minister informed of certain significant events, including acquiring or disposing of a significant shareholding or business;
- a statutory obligation on the directors of NBN Co to keep the Minister for Communications informed of the operations of NBN Co and its subsidiaries and to give such reports and documents as required;
- a statutory obligation to prepare a three year corporate plan, at least once a year and provide it to the Minister;
- a statutory obligation to prepare a four year corporate plan, at least once a year and provide to the Shareholder Ministers, after 1 July 2014 and commencing with the 2015 - 2016 financial year;⁸
- a statutory obligation to prepare and provide to the Minister for Communications (and the Finance Minister, under the PGPA Act) NBN Co's annual report in the form and having the content required by the Corporations Act 2001 (Cth),⁹ for tabling in both Houses of Parliament.¹⁰

Under the terms of an Equity Funding Agreement with the Commonwealth, NBN Co's ability to receive continued funding from the Commonwealth is dependent upon NBN Co complying with the reporting and governance framework in the CAC Act, the PGPA Act and in the *Commonwealth Government Business Enterprise Governance and Oversight Guidelines* (October 2011).

3.6 Level playing field arrangements

As the Framing Paper describes, amendments have also been made to the Telecommunications Act and the CCA to ensure that NBN Co competes on an equal footing with any other superfast broadband networks being rolled out in Australia. We describe these amendments and their objectives below.

NBN Co's business case, including the Strategic Review, is necessarily premised on the current regulatory landscape, including the provisions described below. In addressing questions three to nine of the Framing Paper, the Panel should have regard to the potential implications, for NBN Co's business case, of these provisions as they currently stand, and of any proposed changes to those provisions.

NBN Co also considers that the elements listed in question 9 Framing Paper represent a reasonable starting point for essential characteristics relevant to considering what constitutes a level playing field.

To establish a level playing field, a number of legislative amendments were made, including:

- Parts 7 and 8 of the Telecommunications Act require superfast broadband networks built or upgraded after 1 January 2011 servicing residential and small business customers, to operate on a wholesale only basis and to offer access seekers a Layer 2 bitstream service. The Minister has the power to exempt networks from the requirements of Parts 7 and 8. To date, five exemptions have been granted as follows: Telstra's South Brisbane Exchange Service Area; specified Telstra Velocity networks; specified TransACT fibre networks; upgrades to TransACT VDSL networks; and TransACT's very small scale networks.
- Under amendments made to Part XIC of the CCA, the ACCC is required to declare that a specified layer 2 bitstream service supplied using a designated superfast telecommunications network is a declared service. Providers of these layer 2 bitstream services are then subject to the same standard access obligations as NBN Co including an obligation to supply on a non-discriminatory basis. The ACCC may make an access determination or binding rules of conduct in relation to these services.

⁸ PGPA Act, s95 and draft rule for corporate plans to support s95 of the PGPA Act (**draft PGPA rule**)

⁹ And the additional content requirements set out in the *Commonwealth Companies (Annual Reporting) Orders 2011*

¹⁰ CAC Act, s36 and PGPA Act, s97 and rules to be made under the PGPA Act

- Special arrangements apply in new real estate developments. These arrangements are set out in the Fibre in New Developments Policy Update of June 2011.

Any changes to the current regulatory landscape, including these provisions, would likely impact the business case of other industry stakeholders, for example, Telstra, which was required to structurally separate.

The Explanatory Memorandum to the legislation which implemented these amendments relevantly provides:

'Amongst other things, the NBN Implementation study identified that difficulties could arise for the delivery of the Government's NBN policy objectives as a result of NBN Co being subject to strict regulatory requirements while competing against other, less regulated, providers of superfast broadband. In particular, the study noted the scope for competing providers to target high-income and low-cost, high-density areas, operate as vertically-integrated providers and advantage themselves over independent retail service providers (RSPs) on the NBN and ignore technical specifications employed by NBN Co. This could mean that where other providers rolled out superfast networks in advance of the NBN, these would not deliver consumers in those areas the same benefits as the NBN. Moreover, by cherry-picking high-value markets such providers could undermine NBN Co's ability to deliver the Government's policy objectives for the NBN nationally. The Implementation Study therefore recommended that the Government look at measures to provide a more level playing field for all superfast broadband networks.

...

Together these amendments should ensure that end-users have access to the same high-quality superfast broadband services, regardless of the network provider, and assist the NBN in meeting its objectives nationally by ensuring it operates on a more level regulatory playing field.¹¹

In accordance with the amendments to Part XIC described above, the ACCC declared a local bitstream access service in February 2012. In October 2012, the ACCC issued a fixed access determination in relation to that service. Under the fixed access determination, a carrier or carriage service provider which supplies the declared local bitstream access service, is required to supply a wholesale service which has the following characteristics:

- a downstream data transfer rate of 25mbps;
- an upstream data transfer rate of 5mps;
- residential-grade service characteristics;
- use of a data port on the network termination device at the end-users' premises;
- if requested by the access seeker, a prioritised, symmetric bitstream of sufficient capacity to provide a voice service; and
- if available and requested by the access seeker, use of an analogue voice port on the network termination unit at the end-user's premises.

The fixed access determination also provides that in supplying this service, the service provider must not charge a price greater than \$27 per service in operation per month (excluding GST), which was benchmarked against the regulated price for NBN Co's equivalent product (the AVC). The fixed access determination does not specify any price terms and conditions for any other local bitstream access service supplied by the relevant service provider.

In determining that the price should be benchmarked against NBN Co's price for its equivalent product, the ACCC concluded that:

¹¹ Explanatory Memorandum to the *National Broadband Network Companies Bill 2010* (Cth); *Telecommunications Legislation Amendment (National Broadband Network Measures – Access Arrangements) Bill 2010* (Cth) p. 12-13

- the determination will ensure that retail service providers will not have to pay a price greater than the price for the similar NBN Co 25/5 Mbps access product in order to compete in retail markets affected by the declaration; and
- at the network level, the NBN benchmarking approach for the local bitstream access service means that providers of this service are likely to be able to continue to compete against NBN Co for greenfields tenders, and will do so under similar regulatory settings for their declared services.

3.7 Existing Adequately Served policy

The existing Adequately Served policy is intended to prevent unnecessary duplication of fibre networks, existing as at 1 January 2012, in residential estates that could deliver services that meet the Government's NBN objectives. The policy currently provides that NBN Co will not overbuild networks assessed as adequately served, except in circumstances where doing so will have a significant impact on NBN Co's ability to efficiently roll out the network.

As a result of a five month application process, the Minister of Communications made a determination in October 2013 to designate 29 networks, operated by OptiComm Co Pty Ltd and Pivit Pty Ltd, as Adequately Served.¹² As part of this determination, OptiComm and Pivit agreed to carrier licence conditions obligating them to act as the 'infrastructure provider of last resort' within the relevant network footprints, so that they are required to offer a connection to all premises in those footprints. OptiComm and Pivit are not otherwise specifically required to meet other 'level playing field' type obligations in respect of these networks (such as those contained in Parts 7 and 8 of the Telecommunications Act and discussed in section 3.6 above).

NBN Co understands that this policy is being further considered. Nevertheless, NBN Co notes that there is some potential tension between this policy and the level playing field arrangements discussed above. For example, there may be implications of the policy on NBN Co's ability to deliver on the recommendations of the Strategic Review and therefore achieve the Government's objectives. This issue will require further assessment.

¹² Pursuant to the policy paper '*Adequately served criteria and assessment process to facilitate the rollout of the NBN*', released by the former Minister for Broadband, Communications and the Digital Economy, 27 April 2012 – see: www.communications.gov.au/broadband/national_broadband_network/adequately_served

4 The economics underpinning the Australian fixed-line telecommunications industry

NBN Co agrees with the Panel that the regulation of broadband networks requires an understanding of their underlying economics.

The ongoing regulation of broadband, and other telecommunications infrastructure, is often justified by reference to the following key characteristics:

- Large sunk costs – local access broadband networks exhibit significant sunk costs. The presence and scale of these sunk costs mean that it may be more efficient to have a single network provider – a natural monopoly.
- Network externalities – positive network externalities exist if the benefits to individual users are an increasing function of the total number of users. In the case of broadband, a network or service becomes more valuable to individual consumers as other consumers connect to that same network or purchase that same broadband service.
- The legacy of a vertically integrated monopoly – In Australia, as well as other jurisdictions (such as the UK, New Zealand and the EU), government policy through much of the post war era, resulted in telecommunications services being delivered by a dominant vertically integrated monopoly provider. This provider faces strong incentives to restrict access to its retail and wholesale competitors to the detriment of competition.

Each of these characteristics is discussed in turn.

Natural Monopoly

It has often been contended that important segments of broadband markets are natural monopolies. A natural monopoly¹³ exists where one firm is able to produce a given set of outputs at a lower cost than two or more firms. In the presence of a natural monopoly, competitive entry by a second firm may be privately profitable but is economically wasteful. Hence, productive efficiency is maximised from having only one firm serve the entire market.

Broadband is often seen as a natural monopoly due to the presence of: economies of density (economies of scale at the local level), economies of scale and economies of scope. Of these the most important appears to be the presence of economies of density.¹⁴ Economies of density are the cost savings for a single firm from serving one or more customers in a given local market. Fixed broadband networks (like other fixed telecommunications networks) involve large sunk costs and very low marginal costs. Once the network has been installed, the cost of providing services over that network is not traffic sensitive. The economic significance of this is that duplicating the network requires large sunk investments of additional resources but is unlikely to produce any additional customer benefits.

The high sunk costs of installing the network in the presence of stable technology¹⁵, and where demand is below installed capacity implies that one network will be able to serve total demand at a lower cost than multiple networks. Hence the provision by a single infrastructure provider maximises productive efficiency.

¹³ Despite the concept of natural monopoly being relatively simple, in practice it is often difficult to determine when the cost conditions exist for a natural monopoly to occur. Accordingly, claims of natural monopoly are often strongly contested

¹⁴ See Productivity Commission, *Telecommunications Competition Regulation Inquiry Report*, 20 September 2001, p. 23

¹⁵ Even in the presence of rapid technological change a natural monopoly may endure. This is especially true in scenarios where the provision of the new technology or service does not bypass or displace those segments of the market which exhibit large sunk costs. For example, technological change resulting in the digitisation of fixed wire-line telecommunications networks did not diminish the significance of the sunk costs associated with trenching and civil works

In addition to economies of density there are two further contributors to natural monopoly in broadband markets. First, economies of scale at the non-local level are derived from a single firm serving many local markets. For example, a single firm is able to spread overhead costs (such as the cost of research and development, planning and design and the costs of billing and other IT systems) over more demand. Second, economies of scope arise from cost savings derived from the joint production of different types of services. For example, the simultaneous provision of pay-TV and broadband access or the provision of traditional telephony and broadband services.

It is recognised that in both broadband and telephony markets a network provider may achieve economies of scale and scope via vertical integration into retail or other downstream markets. Importantly however, vertical integration is not a necessary condition for the realisation of economies of scale and scope in the delivery of broadband provision.

The strong presence of economies of density, scale and scope in broadband networks is likely to limit the extent to which there can be sustainable infrastructure based competition in the Australian broadband market.

Network externalities

It is well recognised in the economics literature that broadband exhibits several kinds of positive externalities. Perhaps the most important of these are network externalities - especially when considering questions of market structure and competition regulation. An example of a network externality in the broadband market is an end-user application, such as email or a social network application, which becomes more valuable to an individual user if more people connect to, and use, that same application.

Network externalities have long been recognized in communications markets and accordingly underpin universal service policies. Indeed, in 2001, the Productivity Commission noted the importance of network effects in telecommunications:¹⁶

Network effects imply that competition policy may be desirable even if the technology of the incumbent would fail the conventional natural monopoly test – which is important in determining the criteria for declaration of telecommunications services.

Some have argued¹⁷ that broadband externalities are likely to be even more significant than in traditional telecommunications markets. This is in part because broadband will enable new services to emerge that will benefit broadband users.

The presence of network externalities in broadband markets may also dampen incentives to invest in new infrastructure. This effect is likely to be exacerbated if consumers incur switching costs when moving between networks or when there is a high degree of customer inertia.¹⁸

Legacy of a vertically integrated monopoly

In Australia ongoing microeconomic reform and access regulation has sought to address the persistent issues of market dominance arising from the presence of a **vertically integrated**, monopoly network provider. Parts XIB and XIC were introduced into the *Trade Practices Act 1974 (Cth)*, as part of the 1997

¹⁶ Productivity Commission, *Telecommunications Competition Regulation Inquiry Report*, 20 September 2001, p. 29

¹⁷ Atkinson, *The Case for a National Broadband Policy*, The Information Technology and Innovation Foundation, June 2007, p. 6

¹⁸ Telecommunications network markets are often characterised by a high degree of customer inertia. New entrants may find it difficult to persuade customers to switch from an incumbent that has served them for many years. This is particularly true for lower-volume users (e.g. residential customers) when marketing costs and customer switching costs and inconveniences can be high. For a discussion on this see Intven and Tétrault, *Telecommunications Regulation Handbook: Competition Policy*, ed. (2000), World Bank, Washington

industry-specific competition reforms to address the presence of a vertically and horizontally integrated dominant market player.¹⁹

More than a decade later, the legislative reform in 2010/2011 focussed on addressing the competition issues arising from the presence of a vertical integrated network monopoly. Telstra was required to either structurally separate or functionally separate, while at the same time NBN Co was established to be a new network provider, with clear lines of business restrictions and a wholesale only, open access mandate. Together, these legislative reforms attempted to 'once and for all' address the fundamental challenge to competition that Telstra presented.

¹⁹ See for example *Trade Practices Amendment (Telecommunications) Bill 1996* [1997] (Cth) – see: <http://www.comlaw.gov.au/Details/C2004B00150/Explanatory%20Memorandum/Text>

5 The Review Panel's working assumptions

The Panel has sought stakeholders' views on the working assumptions, including whether other working assumptions should be adopted (question 2 of the Framing Paper). NBN Co agrees in general with the working assumptions, and in this section sets out its comments in relation to them.

NBN Co's view on the relative importance of the working assumptions

As the Panel recognises, there are tensions between many of the working assumptions. It is therefore important to determine the relative importance of each assumption.

In this respect, NBN Co considers that the starting position of the review should be how best to achieve the Government's stated broadband policy objectives. These objectives are reflected in the first three working assumptions identified by the Panel, namely:

- that very fast broadband services be available to all end users;
- that all end users, regardless of where they reside, have access to designated services at an affordable price; and
- that NBN Co will operate on a commercial basis and is a key mechanism to ensuring that the Government's broadband policy objectives are met.

The industry structural model and regulatory framework which best achieves these objectives should therefore be preferred.

In seeking to achieve these policy objectives, NBN Co considers that the regulatory framework should continue to be guided by the principle which has underpinned the telecommunications regulatory landscape since the industry was deregulated in 1997, namely, promoting the long-term interests of end-users (the **LTIE**). The LTIE is a concept that has framed the design of legacy and current regulatory settings, including NBN Co's SAU. The objective of promoting the LTIE should therefore continue to play an important role in guiding any decision concerning the appropriate structural model for the Australian fixed-line telecommunications industry. Achieving infrastructure based competition should not be an end in itself; such competition should rather be objectively assessed as just one potential means of promoting the LTIE.

NBN Co's comments on the second working assumption

The second working assumption also provides that any subsidies inherent in ensuring that end-users have access to designated services at an affordable price, be as transparent and efficiently delivered as reasonably possible.

Achieving the Government's objective that all Australians have access to affordable very fast broadband, necessarily involves an element of subsidisation.

There are obviously a number of different methods by which universal access to broadband services, including in uncommercial areas, may be achieved. In Australia, universal access to a retail standard telephone service has been achieved by designating Telstra as the universal service provider. The subsidy involved in Telstra supplying services in accordance with its USO obligation has essentially been funded by the industry, via the payment of the universal service levy. An alternative method, which was required by the 2010 Statement of Expectations issued to NBN Co, was an implicit cross subsidy within NBN Co's business case, both within NBN Co's fibre network, and more importantly, between its different technology platforms.

The advantages and disadvantages associated with the various options for supplying telecommunication services in uncommercial areas has been extensively considered by the OECD. It has also been the subject

of extensive consultation processes by the Government, including for example in 2007, 2010 and 2011.²⁰ It is reasonable to say that a general consensus as to the preferred model and the costs of supplying services in rural and regional areas, has never been achieved.

NBN Co acknowledges that any subsidy to ensure that all Australians have access to broadband services at an affordable price should be 'as transparent and efficiently delivered as reasonably possible'. However, in considering question 11 of the Framing Paper (namely, the options for ensuring that broadband services are available to all Australians, including in uncommercial areas), NBN Co submits that regard should be had to the broad range of factors that are relevant to this issue and not only, for example, transparency.

NBN Co's comments on the fifth working assumption

A key aspect of the structural reforms in the telecommunications industry has been the structural separation of Telstra. This is reflected in the fifth working assumption identified by the Panel. Structural separation has been achieved by the commencement of Part 33 of the Telecommunications Act and the acceptance by the ACCC on 27 February 2012 of Telstra's structural separation undertaking and the migration plan. The migration plan sets out how Telstra will progressively migrate voice and broadband customers from its networks to the NBN as the NBN is progressively rolled out. NBN Co assumes that this working assumption will not be revisited by the Panel when addressing the structural questions in the Framing Paper.

NBN Co's comments on the eighth working assumption

The eighth working assumption identified by the Panel relevantly provides that, 'insofar as a network owner has a substantial degree of market power, there should be safeguards against behaviour that provides advantages to its own upstream or downstream operations over those of competing providers that cannot reasonably compete without access to its network'.

NBN Co agrees in principle with this working assumption. However, whether the safeguards are sufficient as a practical matter to prevent the network owner favouring its upstream or downstream operations is a complex question. Behavioural safeguards such as those set out in Parts XIB and XIC of the CCA have their limitations. NBN Co understands that the Panel will seek submissions on the operation of those Parts shortly. For that reason, NBN Co does not propose to address that issue in this submission. It suffices to say that NBN Co considers that seeking to address the market structure is generally a more effective tool in achieving appropriate outcomes than seeking to regulate conduct via behavioural rules.

NBN Co's comments on the final working assumption

The final working assumption relevantly provides that regulation should be no more intrusive or burdensome than needed, and should be proportionate, transparent, predictable and accountable in its operation.

NBN Co agrees with this working assumption and considers that the regulatory environment in which NBN Co operates should be subject to regular review to ensure that all aspects of that environment continue to be relevant and no more intrusive or burdensome than needed to achieve their objectives.

As mentioned above, NBN Co is subject to substantial regulatory oversight. NBN Co considers that the relevant line of business restrictions which ensure that NBN Co continues to operate on a wholesale only, open access basis, are sufficient to ensure that NBN Co does not conduct itself in an anti-competitive manner. While the additional protections set out in Part XIC, such as the non-discrimination rule, play a role in regulating NBN Co's conduct, it is important to ensure that those provisions are not overly burdensome

²⁰ See: Department of Communications, Information Technology and the Arts, *Telecommunications Universal Service Obligation Review – Issues Paper*, 2007;

Department of Broadband, Communications and the Digital Economy, *Implementation of Universal Service Policy for the transition to the National Broadband Network environment*, October 2010;

Department of Broadband, Communications and the Digital Economy, *Universal Service Obligation Legislative Reform for transition to the National Broadband Network*, June 2011

and operate in a manner which is disproportionate to the outcome they seek to achieve. For example, there is a risk that the broad non-discrimination prohibition applicable to NBN Co, may unduly limit the extent to which NBN Co may engage in conduct that promotes efficiency in telecommunications markets without adversely affecting competition in any wholesale and retail market. Similarly, in NBN Co's view, it is timely to consider the existing retail level regulatory settings (such as the Consumer Service Guarantee) and their interaction with NBN Co's wholesale only open access operation, to ensure that those settings do not give rise to inefficient outcomes.