

# Next Generation Broadband Regulation: NBN Co. and the Government's New Role in the Market

Kelvin Liew considers the potential of the NBN to address ongoing competition issues in telecommunications. This essay won the 2009 CAMLA essay competition.

The Australian Government's \$43 billion dollar National Broadband Network (NBN) represents a major shift not only in the way Australians will communicate in the future, but also for the role of government in market regulation. Australia's broadband penetration, speed and prices lag behind most of the developed world. Within the OECD, Australia ranks 16<sup>th</sup> on penetration, 15<sup>th</sup> for fastest speed and has the 7<sup>th</sup> most expensive broadband per megabit.<sup>1</sup>

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This paper aims to explore the conditions behind, reasons for and the potential effectiveness of government addressing competition and market shortcomings through being an active participant, rather than external regulator. The paper is divided into three sections. The first argues the current situation is a result of regulation that discourages investment and a market structure that has allowed the incumbent to exercise monopoly power to stifle competition. In seeking to address these shortcomings, the government has established NBN Co to build and operate a wholesale only fibre network to 95% of the population. The second section considers the hypothesis that the NBN represents a shift in the way in which government is willing to address market shortcomings. It argues that this approach is a departure from the traditional responses that are open to government including those contained in the *Trade Practices Act 1974* (Cth). The third section considers the inherent tension between the role of the NBN addressing competition failures and the stated desire to earn a commercial return. The Government will have to answer the critical questions of who will determine prices, how will the government avoid past mistakes and ultimately will it work.

## One – current situation

Australia has had a deregulated telecommunications industry since 1997 when the current regulatory regime was implemented in the *Telecommunications Act 1997* (Cth) and Part XIB and XIC of the *Trade Practices Act 1974* (Cth) (the TPA). The industry is characterised by a large incumbent, Telstra whose regulated natural monopoly in its telephone exchanges and copper phone lines forms the basis

on which the majority (69.2%) of broadband services are provided, either directly through BigPond, on a wholesale basis or through third party owned equipment co-located at exchanges.<sup>2</sup> Telstra also owns 51% of Foxtel, which provides broadband through a hybrid fibre coaxial network (HFC). Optus HFC is the only significant fixed line competitor and passes approximately two million homes.<sup>3</sup> Australia's broadband is expensive, relatively slow and not universally available. These problems are linked with a lack of competition and underinvestment.

## Linkages: competition, investment, take-up & lower prices

Broadband take-up, much like other areas of technology is circular. The first movers pay a premium for a new technology. As the technology matures, efficiencies are created, economies of scale are generated and prices inevitably come down. With the lower prices those who avoided the new technology before jump on board. A critical mass is formed and companies start to see business opportunities in providing services that make use of high-speed always-on internet. In Australia this includes ABC's iView, provision of online government services and communication technologies. This turns the tables, as it is now the demand for services that drive broadband demand. However, high prices have limited penetration. Correspondingly, low penetration rates restrict the business opportunities to provide new services. The innovation cycle slows and Australia falls behind countries where this cycle is driving novel uses of broadband in medical services, education and e-government.

A brief examination of the broadband industry appears to suggest a competitive active market. Australia has two competing HFC networks passing roughly two million homes, 13 competitors have installed their own equipment in over 537 Telstra exchanges<sup>4</sup> and over 324 providers compete on a retail level.<sup>5</sup> Indeed the Connecting Regional Australia Report described competitive interest and activity as high and recommended that government expenditure should therefore be directed at promoting competition.<sup>6</sup> However this competition is largely based around Telstra's existing infrastructure.

## Regulatory uncertainty and underinvestment: Optus case study

The current regulatory system has been argued to not reflect the commercial realities and high-risk nature of investing in next generation broadband.<sup>7</sup> The role of the regulatory system in competition and investment will be considered in light of Optus's HFC network. Ergas argues that this network is technically and commercially capa-

1 Organisation for Economic Co-operation and Development, *Broadband Statistics for December 2008*, (2008) OECD Broadband Portal, at 1d, 5h & 4f.

2 Australian Bureau of Statistics, 8153.0 – *Internet Activity*, Australia, June 2008.

3 Singapore Telecommunications Limited and Subsidiary Companies, *Management Discussion and Analysis of Financial Condition, Results of Operation and Cash Flows for the First Quarter Ended 30 June 2009*, at p 45.

4 Kate McKenzie, 'Commsday Summit Speech' (Speech delivered at the Commsday Summit, Sydney, 31 March 2009) at p 1-2.

5 Broadband Choice, *All broadband ISPs* (2009) Whirlpool, <http://bc.whirlpool.net.au/bc/?action=list> at 18 August 2009.

6 Regional Telecommunications Inquiry, Parliament of Australia, *Connecting Regional Australia*, (2002) at p 263.

7 KPMG and Alcatel, *Fostering investment in broadband infrastructure – the need for regulatory certainty* (2006).

## *The wholesale-only nature of the company completely changes the incentive structure.*

ble of being a fully-fledged competitor.<sup>8</sup> However a failure to complete the cable rollout, upgrade the network to higher speeds and an inability to service almost 36% of passed homes for 'commercial' reasons means it has failed to reach any such potential.<sup>9</sup>

This has occurred for three reasons. First, the current access regime does not adequately strike a balance between creating competition and encouraging investment. Second, the combination of regulatory uncertainty and a large monopolistic incumbent creates an environment that is not conducive to large investment in new broadband technologies. Third, linking the first two points, underinvestment and over-reliance on copper means that there is no facilities based competition, service offerings are largely homogenous and flowing from this, the incumbent has no incentive to invest in new technology.

### **One part regulatory regime, one part industry structure**

The basic policy for regulating natural monopolies is to set access prices low enough to prevent the incumbent from attaining monopoly profits and encourage retail level competition, but high enough to avoid rent seeking and provide large market participants with the incentive to invest in their own networks. The argument here is that the ACCC has erred too much in favour of the former. First, underpricing access has been one factor that has skewed the incentive structure for Optus to invest in its HFC network. Rather Optus can utilise Telstra's copper network for less than the cost of upgrading its own network. This was the primary argument made by Telstra in applying for an access exemption where access would be excluded within the Optus HFC footprint.<sup>10</sup> Telstra argued that underpricing Unbundled Local Loop (ULL) means that it is only commercially attractive to put a customer on HFC in a limited range of cases because for the vast majority ULL is cheaper.<sup>11</sup> While this has allowed for an explosion in the number of ISPs rolling out their own infrastructure to Telstra exchanges, it is an approach that has been argued to bring short-term competitive gains while ignoring long-term effects.<sup>12</sup> In this way Optus has been aggressive in seeking new customers but has shown little interest in upgrading its own network.

The second problem concerns regulatory uncertainty and industry structure. Gilles argues that access pricing principles, the scope of obligations of access providers and definitional ambiguities in the regulatory regime create an "environment of commercial uncertainty."<sup>13</sup> He argues that this ultimately works against the long terms interests of end users by hampering growth and damaging innovation. Coupling regulatory uncertainty with an industry structure characterised by a highly vertically and horizontally integrated incumbent acts as an active deterrent against large-scale investment.<sup>14</sup> The rationale behind the access regime is to prevent inefficient duplication. How-

ever, this didn't stop Foxtel from almost exactly duplicating Optus's HFC network.<sup>15</sup> Anybody contemplating the economics of building a new network would clearly be concerned about Telstra responding by chasing the new entrant up and down every street with its own fibre. It is not difficult to see that any telco with the investment clout to deploy a new network would be deterred by a regulatory regime that has not changed significantly since Foxtel/Optus-Cablevision debacle or adopted an adequate balance between monopoly profits and rent seeking.

Third, rent seeking and regulatory uncertainty has caused underinvestment that has resulted in a lack of facilities based competition. Service offerings are largely homogenous and flowing from this, the incumbent has no incentive to invest in new technology. Indeed in the past, Telstra has been able to artificially hold back the speed of its' ADSL1, ADSL2 and cable service when its equipment and capacity were more than capable of supplying higher bandwidth broadband at little or no additional cost.

## *There is an inherent tension between the role of the NBN addressing competition failures and the stated desire to earn a commercial return.*

### **Comparative analysis – the United States**

The situation is very different in Japan and the United States. Cable operators have challenged incumbent telecoms by providing voice and broadband services in addition to television. In response the incumbents have responded by announcing new fibre networks and the cable operators have countered again with upgrades to their HFC networks. For example, HFC in Japan is capable of speeds up to 160mb/s<sup>16</sup> and in the United States to 101mb/s.<sup>17</sup> Optus HFC supports a mere 20mb/s.<sup>18</sup> This dichotomy of market situations is well highlighted in the difference marketing strategies. Cablevision's broadband marketing slogan is "No one, *including the phone company*, even comes close."<sup>19</sup> Verizon's FTTH television advertisement stars Hollywood director, Michael Bay, being told that FiOS speeds "blows cable away" and carries the slogan "It's the network."<sup>20</sup> In contrast Optus makes no attempt to distinguish between the broadband services it provides using its own network and those it offers through Telstra's.

### **Two – a new regulatory paradigm**

#### **Regulation 2.0 – what makes the NBN different?**

The previous section established that the current broadband problems are a result of a lack of competition that have forced up prices and resulted in underinvestment. In response to this, the NBN will dramatically alter the broadband landscape. It is expected to "fundamentally transform the competitive dynamics of the Australian telecommunications sector."<sup>21</sup> This argues that the NBN represents

8 Henry Ergas, *Wrong Number – Resolving Australia's telecoms. impasse* (1<sup>st</sup> ed, 2008) at p 19-26.

9 Ibid.

10 *Application by Telstra Limited* [2009] ACompT 1.

11 Submission to Telstra application for fixed line services exemption in Optus cable networks areas, December 2007, (Telstra).

12 Short-termism of current competition approach.

13 P Giles, B Salter & N Selvadurai, 'Roadblocks on the information superhighway – reconsidering the telecommunications access regime' (2008) 4 Issue 1, *Monash Business Review* at p 22.

14 Commonwealth, *National Broadband Network: Regulatory Reform for the 21<sup>st</sup> Century*, Discussion Paper (2009) at p 4.

15 Ergas, n 8.

16 Organisation for Economic Co-Operation and Development, *Broadband Portal – Press Release*, (2008), OECD Broadband Portal.

17 Optimum, *Introducing Optimum Online Ultra*, (2009) Cablevision, <http://www.optimum.com/online/ultra.jsp> at 24 August 2009.

18 Optus, *Media Release – Optus Cable Network hits High Speed*, (17 December 2007) <http://www.optus.com.au/portal/site/aboutoptus/menuitem.813c6f701cee5a14f0419f108c8ac7a0/?vgnnextoid=4c3024a4ac6d6110VgnVCM10000029867c0aRCD&vgnnextchannel=daf6d7ef03820110VgnVCM10000029867c0aRCD&vgnnextfmt=default> at 23 August 2009.

19 Optimum, n 17.

20 Bobbi Henson, *Verizon Taps High-Octane Filmmaker Michael Bay for New FiOS Advertising Campaign*, Verizon, <http://newscenter.verizon.com/press-releases/verizon/2008/verizon-taps-high-octane.html> at 26 August 2009.

21 Commonwealth, *National Broadband Network: Regulatory Reform for the 21<sup>st</sup> Century*, Discussion Paper (2009) at iii.

## **At \$43 billion dollars the NBN is clearly a radical way to address market shortcomings.**

a shift in the role of government from one of market regulator to market participant. In doing so an analysis of what makes the NBN different as a response to a competition problem and a comparison with the existing regulatory regime's approach to promoting competition will be explored.

### **Fundamental changes to incentives**

The key advantage of the NBN is that it avoids the balancing act between allowing a natural monopoly network to attain monopoly profits, which haemorrhage competition, and rent seeking behaviour that discourages investment. The wholesale-only nature of the company completely changes the incentive structure. Currently, every extra Telstra wholesale or ULL based customer means a thinner profit margin compared to a BigPond subscription. Therefore there is incentive, as the provider of infrastructure that supplies the majority of broadband connections, to price at the profit maximising monopoly level. In contrast, with the NBN an additional wholesale customer will not come at the expense of a much higher margin retail customer since it will be wholesale only. This means that NBN Co. will have incentives to price at a level that will allow for fierce retail level competition in order to maximise penetration levels. The NBN will also be a competitor to existing technologies and drive innovation and investment in these networks.

### **Market principles, not legal regulation**

Ultimately the problem with regulatory mechanisms is that they do not address structural problems within the telecommunication industry, they merely mitigate them. Regulatory responses operate by forcing or coercing a monopolist with a historically entrenched position and business model to open up its business. In contrast, by establishing the NBN "long standing structural issues"<sup>22</sup> will be addressed by using market principles rather than legal regulation to achieve these outcomes. In comparison, the Government has three primary regulatory mechanisms for addressing Telstra's significant market power. The first is the imposition of downstream price controls. Local calls and line rental paid by consumers are regulated by the ACCC. Second is an interconnection access regime. Third party ISPs are able to access Telstra exchanges to install their own Digital Subscriber Line Access Multiplexers (DSLAMs) in order to provide ADSL. Telstra's access rates to ULL paid by the ISP are regulated but the amount charged by the ISP to the consumer is not. Finally, anti-competitive conduct laws such as the industry specific Part XIB of the *TPA*, act as a deterrence against monopoly conduct.

### **Three – regulatory situation under the NBN**

Historically, governments established monopolies in postal, telecommunications and energy. As market principles became entrenched policy, industries were deregulated and monopolies sold off or corporatised. In this way the NBN will attempt to achieve the reverse, re-establish a government monopoly to instil market competition. Further, NBN Co. is to earn a commercial return and eventually be fully privatised. There is an inherent tension between the role of the NBN addressing competition failures and the stated desire to earn a commercial return. The critical questions facing the Government at the moment are who will determine prices, how will the government avoid past mistakes and prevent an abuse of market power and ultimately will it work.

### **A natural monopoly? – The role of government in setting price**

Access pricing is one of the most controversial aspects of infrastructure economics.<sup>23</sup> The Government has stated that it intends to play a role in setting access prices for an initial currently undetermined period. It was argued earlier that establishing the NBN as a wholesale only provider removes the ability and incentive for it to favour a retail arm as has become problematic with Telstra. This is consistent with the OECD recommendation that where a monopoly in fixed infrastructure is unavoidable that steps should be taken to prevent a monopoly in the services provided.<sup>24</sup> However, access pricing is still relevant as an opportunity to charge high access prices will discourage serviced based competition and lead to high retail prices.<sup>25</sup> In answering the question of the role of government in access pricing it is necessary to consider whether the NBN is a natural monopoly, the tension of the NBN promoting competition, providing affordable broadband and earning a commercial return.

While a toll-road or railway establishes a natural monopoly on the first day of operation, a 'natural' monopoly for the NBN will established after years of operation and after privatisation. In the short-term, while services and uses for broadband are being developed, consumers will be able to switch between technologies such as ADSL, HFC or wireless. However, if we accept the premise of the superiority of fibre for the delivery of high bandwidth services then as demand for these services drives take-up of fibre and as use of these services becomes the norm, then NBN Co. will have significant market power in what it can charge buyers of its wholesale access. This is the operation of the cycle referred to earlier and is supported by the KPMG-Alcatel whitepaper which argues that any next generation network must achieve both "scale in both reach and utilisation" before it can be classed as a natural monopoly.<sup>26</sup>

### **Conclusion**

At \$43 billion dollars the NBN is clearly a radical way to address market shortcomings. It is clear from the discussion that current regulatory approaches have actually resulted in the impasse that we are faced with today. Australia's lack of facilities-based competition is a result of an entrenched industry structure, a troubled access regime which skews investment incentives, and a lack of regulatory certainty. In this way the NBN will use market principles to fundamentally alter industry structure, drive innovation, and promote competition. While the Government faces a number of issues by being a market participant, structuring the company right from the beginning and establishing sound pricing principles before privatisation, will go some way to ensuring that the NBN is a success. In any event, it may very well be that the social and economic gains will outweigh the risk that this is not achieved from the word go.

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22 Commonwealth, *National Broadband Network: Regulatory Reform for the 21<sup>st</sup> Century*, Discussion Paper (2009) at p 1.

23 Productivity Commission, *Telecommunications Competition Regulation*, No. 16, (2001) at XXXIII.

24 Working Party on Communication Infrastructures and Services Policy, *Developments in Fibre Technologies and Investment*, (2008) Organisation for Economic Co-operation and Development at p 40.

25 Productivity Commission, n 23.

26 KPMG and Alcatel, n 7.