16 January 2020
Melbourne, Australia

To:

Joint Standing Committee on the National Broadband Network
Parliament of Australia

Submission on Australia's National Broadband Network

Thank you for the opportunity to make a submission to the Joint Standing Committee on the National Broadband Network.

I have worked for over 30 years in the telecommunications sector in Australia, Hong Kong, Germany and Singapore. Most recently I was Chief Technology Officer of Hong Kong Broadband Network Limited from 2015 to 2019. Prior to that I was Chief Technology Officer of NBN Co, reporting to the Chief Executive Officer, Mike Quigley from 2009 to 2014.

My first hand experience with fixed broadband technologies over my career has been extensive in both the technological and commercial sense. I have studied and graduated as an engineer and lawyer from the University of Melbourne and most recently I am undertaking a Masters of Science in Applied Economics at Johns Hopkins University in Washington DC.

I have commented critically on Australia's broadband experience extensively over the last 5 years since leaving NBN Co in 2014. My blog site, www.mclarenwilliams.com.au, contains numerous entries on the NBN.

I have also made detailed submissions previously to the ACCC's Communications Market Study in late 2017 and the Productivity Commission's inquiry into the Telecommunications Universal Service Obligation in late 2016[1].

Two detailed articles were also published in Australian Journal of Telecommunications and the Digital Economy on the NBN[2,3] and a presentation made at the 2019 CommsDay Summit on 8 April 2019[4].

This submission provides a summary of what I believe are the key issues that need to be addressed in Australia's broadband policy going forward. For a deeper background on these positions please refer to the articles and my blog referenced above.

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[1] These submissions are available at https://www.accc.gov.au/system/files/Submission%205%20-%20Gary%20McLaren.pdf and https://www.pc.gov.au/__data/assets/pdf_file/0016/202282/sub018-telecommunications.pdf respectively.

[2] Gary McLaren. 2014. *Australia's fixed broadband deficit*. ajtde, Vol 2, No 4, Article 71. http://doi.org/10.18080/ajtde.v2n4.71. Published by Telecommunications Association Inc. ABN 34 732 327 053. https://telsoc.org

[3] Gary McLaren. 2018. *What Now for Australia's NBN?.* ajtde, Vol 6, No 4, Article 162. http://doi.org/10.18080/ajtde.v6n4.162. Published by Telecommunications Association Inc. ABN 34 732 327 053. https://telsoc.org

[4] A copy of this presentation is available at https://www.mclarenwilliams.com.au/wp-content/uploads/2019/04/australias-broadband-policy-failure-commsday-k2ixispybptw.pdf

Economics of the fixed broadband networks

The core problem with Australia's telecommunications policy settings over the last 30 years has been the fixation that fixed broadband is a natural monopoly in urban environments. Australia's policy decision makers have failed to recognise that the huge technological developments of the last 30 to 40 years have broken the natural monopoly that existed under the legacy fixed line telephony network built in the 20th century.

The growth of the computer industry, the internet and mobile telecommunication networks in this period has dramatically expanded both the demand for telecommunications and also the different means to supply these services.

While mobile telecommunications was born in a time when competition was driving new innovations and services, fixed telecommunications has been in a longer transition with new technologies (eg. cable hybrid fibre coaxial networks, Digital Subscriber Line, optical fibre and mobile networks) slowly but steadily increasing the range of technologies for providing fixed telecommunications services.

The dominant incentive for all monopolies is to restrict the supply of goods and/or services in order to maximise shareholder profits. Monopoly telcos are reluctant to invest in new technologies as this only increases the supply of bandwidth and hence reduces the price they are able to obtain in the market. Government regulation may be able to regulate prices to limit monopoly rents, however government regulation is unlikely to ever stimulate investment in new technologies and services in a timely manner.

Policy makers in most telecommunications markets have recognized these developments for over a decade. Competition from new entrants willing to invest in new fixed telecommunication technologies (eg. fibre, DSL, cable TV) has been encouraged rather than obstructed by government policy. Asian markets have seen government policy focus on industry policies that promote broadband investment by competing private companies. North American and European markets have encouraged cable TV operators to compete with older style telephone companies in the provision of fixed broadband services.

Subsidising the bush

Of course, some geographies will continue to remain uneconomic because the costs of deploying these new technologies still remain too high compared to the potential revenues.

Australia's geographic size and relatively small population has been used as the justification for Australia's unique broadband policy of near universal monopoly provision of fixed broadband services. This was the case under Telstra (after its success in the Pay TV wars of the 1990s against Optus) and over the last decade with NBN Co.

However, Australia is one of the most urbanised countries globally with 86% of its population living in urban environments, despite its large land mass. This is higher than the United

Kingdom (83.4%), United States (82.3%), South Korea (81.5%), Canada (81.4%) and France (80.4%)[5].

Australia's broadband experience compared to these less urbanised countries has been severely lacking. All of these markets have allowed competition to drive investment in their urban markets rather than rely on monopoly operators to invest in the necessary network upgrades.

The political, rather than economic, benefit of Australia's monopoly policy has been the ability to hide the cross-subsidy necessary to overcome the costs of providing telecommunications services to rural and remote Australians. The monopoly provider (previously Telstra and now NBN Co) has been responsible for juggling the competing commercial objectives of investment in new technologies in urban and rural/remote areas.

Most markets use a mixture of government direct subsidies and industry levies to subsidise services to rural and remote areas rather than relying on a monopoly provider to manage internally the cross-subsidy. The political benefit of the Australian approach is obvious – all decisions and complaints can be deferred to the monopoly network operator rather than policy makers being held accountable.

Retail Competition and the Wholesale NBN model

Australia has retained a veneer of competition with NBN Co restricted to the wholesale supply market and private telcos competing for retail consumers and small businesses.

However, at the near completion of the NBN rollout, it has now become clear that this competition is extremely thin and of limited value while bringing a large range of complications.

The extent of retail competition is limited to price only. No competitive offers that distinguish quality or performance are available in the market. Consolidation of the once competitive ISP industry has led to a retail fixed broadband market dominated by three companies (Telstra, Optus and TPG Telecom).

The complicated interactions between NBN Co and the retail service providers have resulted in degraded service levels and responsiveness for retail customers. Consumer levels of frustration involving service installation and fault repairs have been reported numerously in the media. The ACMA and ACCC are attempting to regulate better outcomes for consumers but the likely outcome will be even more complicated interactions and requirements that will lead to worse rather than better outcomes.

NBN Co, challenged by its commercial objectives to make a minimal return on investment, is acting more in the style of a 'white label' retailer of services for resale rather than a true wholesale provider. Pricing, quality and performance of end user services are predominantly determined by NBN Co rather than the RSPs.

[5] See Wikipedia - https://en.wikipedia.org/wiki/Urbanization_by_country

In the Enterprise market, NBN Co is engaging directly with large customers in order to lock in long term network contracts to help fund its fibre network build it out in urban areas. Ironically, this amounts to a case of one-sided infrastructure competition, where NBN Co is permitted and encouraged to compete with the private operators (Telstra, Optus, TPG Telecom and Vodafone) in the Enterprise market while these operators are discouraged by explicit government policy and regulation from investing in competing fixed infrastructure in the Residential and Small Business market,

Economic Challenge for NBN Co

Despite its monopoly position NBN Co will find it difficult to meet its commercial return objectives.

It has become clear that a wholesale ARPU of $51 per month is driving NBN Co to narrow the range of services it offers in the market to avoid price erosion at the lower end of the market. Pressure from the ACCC and political constituencies for NBN Co to drop lower end pricing will put pressure on this ARPU objective.

The take-up target of 8 million premises is within reach (although unlikely to be achieved in 2020 as originally forecasted) but under medium to long term pressure from fixed wireless technologies such as 5G. NBN Co's relatively high wholesale pricing is driving incentives for mobile operators to develop wireless NBN bypass services that will put pressure on this 8 million premise target that is necessary for cash-flow break even.

Investment in deeper fibre networks to improve speeds and performance will be jeopardised if NBN Co is unable to reach sustainable positive cashflows. More taxpayer subsidies will likely be necessary to modernise and develop the network for future service requirements.

To date the policy response to these challenges has been to strengthen NBN Co's monopoly. The Labor Government introduced the so-called 'level playing field' provisions requiring fixed line fibre broadband new entrants to offer wholesale-only regulated services. The Coalition Government, with help from the ACCC, extended these provisions to cover new competing DSL networks (eg. TPG Telecom's FTTB network) as well as proposing a levy on new fixed broadband networks to help NBN Co subsidise its Fixed Wireless and Satellite networks. These anti-competitive, pro-monopoly regulations have specifically targeted fixed broadband technologies in the belief that wireless technologies would not be a serious threat to NBN Co's monopoly. However, the development of 5G technologies combined with NBN Co's high wholesale pricing structures at the lower end of the market have opened up opportunities for Telstra, Optus and Vodafone to pursue NBN Co bypass strategies in some market segments.

The threat from wireless to NBN Co is a form of limited infrastructure competition and should be welcomed as it will produce better outcomes than regulation of NBN Co. It is also highlights that even better and more efficient outcomes would be possible across a wider range of market segments if the technology specific restrictions on deploying fixed broadband infrastructure were also removed.

Clearly such competition would be detrimental to NBN Co's finances and would ulitimately lead to a significant write-down of NBN Co's valuation. But the benefits to consumers would be substantial. As has been seen with many privatisations of government infrastructure businesses, monopoly rents can be used to justify higher business valuations but that this comes at the expense of higher prices and lower service levels to consumers[6].

The late introduction of infrastructure competition into the Australian fixed broadband market must be carefully planned and executed in order to ensure a smooth transition for customers. Higher efficiencies will come if this competition is introduced in a technology neutral manner. The current policy trajectory, that permits wireless competition with NBN Co, but restricts fixed broadband competition, is likely to be more inefficient and disruptive to NBN Co's finances than a well-planned evolution to an infrastructure competition based market.

Where to next?

The economic challenges presented by the NBN are driving a number of different proposed alternatives to the currently policy framework. A continuation of the NBN Co monopoly is likely to result in limited investment in network upgrades without further taxpayer support. The privatisation of NBN Co as an ongoing monopoly through either a sale of equity or merger with Telstra's InfraCo is likely to result in a higher valuation, but as discussed above, higher prices for consumers and less ongoing private investment.

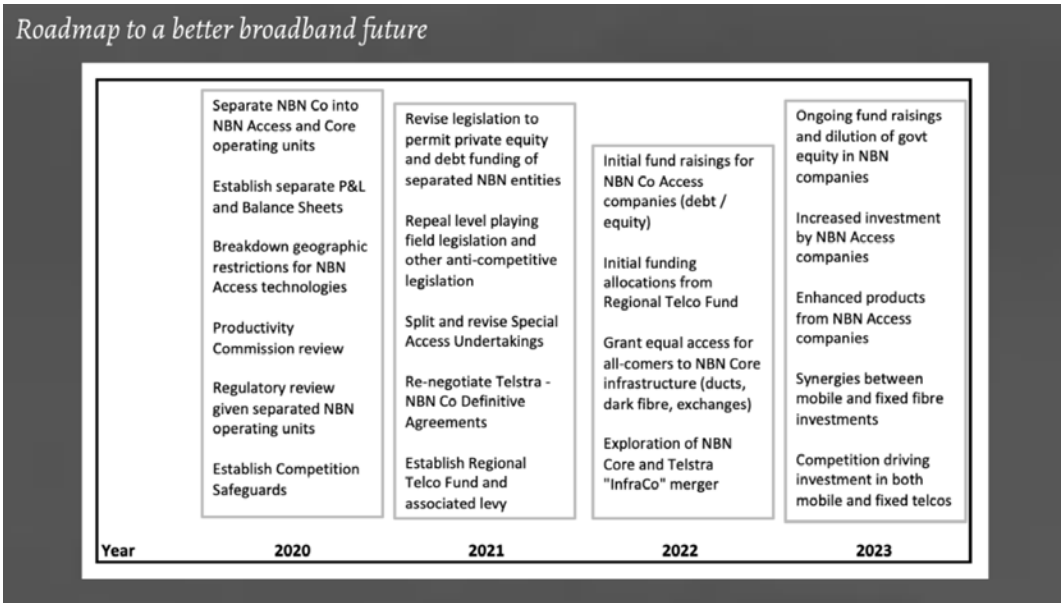
As detailed in my paper in the AJDTE I believe the best way forward is for NBN Co to be disaggregated in order to restore competition as the core driver of investment and customer service in Australia's urban broadband environments. The basis for this disaggregation, over a period of time, would be the different technology networks. One or two networks would be based on the fibre technologies of FTTP, FTTN, FTTB and FTTC. An additional network would utilise the HFC assets acquired from Telstra. The Fixed Wireless and Satellite networks would be the basis of a network that could also compete at the fringe of metropolitan areas and regional city networks. Finally, an NBN Core company would be needed to centralise control and operations of the NBN Transit, IT and duct arrangements.

After disaggregation it would be necessary to raise capital for network investment through progressive privatisation of these new network entities. Telstra's "InfraCo" would be a likely investor / partner in the NBN Core company given the Telstra assets that make a large part of this infrastructure.

A new government administered Regional Telco Fund should be instigated to fund investments in new technologies where broadband services (both mobile and fixed) are uneconomic. A 2.5% retail levy on Australia's $40 billion telecommunication market would generate $1 billion per annum for investment purposes on an ongoing basis.

[6] The ACCC Chairman, Rod Sims, has spoken frequently of the dangers of privatizing monopoly assets – eg. https://www.themandarin.com.au/68147-bad-privatisations-severely-damaging-economy-rod-sims/

This process would take a number of years as outlined in my presentation at the CommsDay Summit in April 2019 and reproduced below.



A multi-year, multi-election cycle strategy is needed in order to achieve a transition to a fixed broadband market that relies on infrastructure competition in urban markets and a Regional Telco Fund for rural and remote investment in 21st century infrastructure.

Conclusion

Australia's experience with fixed broadband over 20 years has been disappointing for both consumers and taxpayers. Investment in new technologies and services has been inefficient as a result of monopoly structures in urban markets and non-transparent cross-subsidies for regional services that have resulted from political rather than economic considerations. A transition away from monopoly to infrastructure competition in urban markets and a transparent subsidy scheme for regional investment would align Australia's broadband policies with other comparative markets which have outperformed Australia over these 20 years.

I would encourage the committee members to read more analysis of Australia's broadband plight on my blog and also in the in-depth articles referred to above.

Furthermore, I would be keen to discuss these topics in more detail at any public hearings that the committee undertakes in its work investigating Australia's National Broadband Network.

Yours sincerely,

Gary McLaren