

Submission to the NBN Regulatory Review

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About the Authors:

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1. Summary

This submission suggests that long term affordability and medium term integration with mobility are more important than the short term issues that have dominated the debate to date (i.e. structural separation of Telstra, fixed regulation and a focus on short term pricing) in the context of unrealistically high absolute speeds, and a false assumption of fixed broadband being independent of mobile.

Australia is at a fork in the development of fast and ubiquitous broadband. It is in danger of taking the wrong path towards further industry consolidation, higher prices and under-utilisation of an important national asset. In this “more of the same” scenario, the current NBN Co. pricing and POI policies¹ continue to support the emerging oligopoly of retailers.

The other fork, or scenario, can still be navigated and leads to greater retail competition, improving the affordability of access and quicker convergence of broadband communications putting Australia at the head of global broadband innovation rather than playing a game of catch-up from far behind in fixed broadband. In this “more innovation” scenario, the brakes are taken off the NBN service, more affordable entry-level pricing is made possible and opportunities for service innovation are opened up.

Neither February’s Regulatory Issues Framing Paper (RIFP) nor December’s Strategic Review explicitly address the impact of the high cost of the NBN (still high after policy changes) on affordability. The Strategic Review shows that the situation is worse than previously understood and the culprit is the ACCC approved ICRA which underpins the high CVC charges. Both need to be replaced. These recommendations are discussed in Section 2.

Neither the RIFP nor the Strategic Review explicitly address the convergence of the fixed and mobile sectors and the role that the NBN may play. Fibre to the premise is not necessarily the end game. Broadband that utilises elements of both fixed and mobile access (e.g. using LTE small cells for the lead-in from fibre in the street) may emerge more readily in other countries where there is greater scope for combining fixed and mobile assets – and this might occur even before the NBN is completed. This would be particularly ironic as Australia is presently the global leader in mobile broadband adoption. This is discussed in Section 3.

1.1 Recommendations

The six recommendations which emerge from the following submission are:

1. Restructure NBN Co.’s balance sheet to abolish the ICRA, make prices more affordable and NBN Co. sustainably commercial.
2. Replace CVC (capacity) pricing with traffic (cents/GB) pricing and reduce the number of POIs to stimulate retail service-based competition.
3. Allow infrastructure-based competition with an “excise tax” administered under revised USO arrangements.
4. Abolish speed (AVC) tiers and introduce an affordable entry-level access price.
5. Use commercial mobile networks more in rural and remote areas.
6. Ensure urban fibre can contribute to (and benefit from) urban small cell models.

¹ See de Ridder J., Australian retail broadband – price competition has stalled, September 2013 at www.deridder.com.au

2. Affordability

The RIFP correctly identifies affordability as the first Key Issue:

- *how best to ensure end-users have ready access to affordable and fast broadband and affordable and reliable voice services – this includes the issue of servicing rural and remote areas in a cost-effective manner;*

Before we consider rural and remote areas, let us review some of the important issues that were apparent in earlier NBN Co plans and now clearly quantified in the Strategic Review, which reported in December.

2.1 The ICRA “time bomb”

Under the second (still current) NBN Co. Corporate Plan, the real increases in wholesale ARPU disturbed many in the industry. This was characterised as the “CVC time bomb” but the real “time bomb” driving the magnitude of CVC (or any other usage based charge) is actually the unusual (ICRA) deal agreed by the ACCC.

One of the few things that NBN Co. got right with access pricing was to charge for usage. Previously, wholesale access prices were flat monthly rates (e.g. unbundled local loop). However, instead of simply charging for traffic, NBN Co. said in its first corporate plan that it would use “CVC” (capacity) pricing as a “proxy” for traffic pricing. Some people would like to go back to flat rate pricing; but that would be a mistake. In the new, all-IP world (discussed in Section 3), infrastructure providers have to rely more on usage based prices.

NBN Co. foreshadowed that the \$20 per megabit per second CVC charge would start to rise from mid-2017 to \$24/Mbps by 2033. But, whether usage is charged per GB or by CVCs, the unit price should go down with increases in traffic, not up. The reason it won’t, or will fall only slowly, is that the ACCC condoned artificially low initial NBN prices by under-writing “loss capitalisation” with the Initial Cost Recovery Account² (ICRA) which it has allowed as a “temporary” measure in only two previous cases:

“the regulated firm will only have a temporary period to earn a return on a shortfall or loss, and that the period will end once full economic cost recovery begins.....Loss capitalisation may not, of course, be the only method of encouraging investment in these circumstances, and the particular form of its implementation may require scrutiny.....loss capitalisation is a relatively new concept in the regulation of access pricing, and consequently a conservative approach should be taken at these early stages to mitigate the risk of regulatory uncertainty in later decision”³ (emphasis added).

With the Revised Outlook constructed in the Strategic Review, the situation is now worse owing to a more realistic assessment of costs: the 50% to 80% **price increases** to 2040 shown in the table below are derived from two different revenue trajectories⁴.

² To get initial prices to match current wholesale prices, wholesale average revenue per connection (WARPU) has to increase at 6% p.a. for thirty years under the current Corporate Plan (before the Revised Outlook). Even then, the accumulated losses relative to allowed revenues (the ICRA) were still over \$6 billion by 2040. See de Ridder, J “NBN – Comments on ARPU and the ICRA”, March 2013 at www.deridder.com.au

³ PP80-81 Australian Competition and Consumer Commission Position Paper in relation to the Australian Rail Track Corporation’s proposed Hunter Valley Rail Network Access Undertaking 21 December 2010

⁴ “The Strategic Review assessed the revenue trajectory of NBN Co to be significantly below the trajectory described in the Corporate Plan. Two alternative trajectories were assessed. Trajectory A represents a telecommunications market without significant change, and includes real wholesale residential ARPU decline to

Table 1: Required retail and wholesale pricing to reach specific economic returns

Illustrative NBN Co package	Illustrative retail priced package (\$ per month)	Price increase to achieve a 7.1 percent IRR ⁵⁶		Price increase to achieve a 4.5 percent IRR ⁵⁷	
		Wholesale price increase (percent)	Additional retail cost ⁵⁸ (\$ per month)	Wholesale price increase (percent)	Additional retail cost ⁵⁵ (\$ per month)
12/1 Mbps – 'voice only'	\$24-30	50-80 %	\$14-22	20-45 %	\$5-12
12/1 Mbps	\$45-70	50-80 %	\$17-28	20-45 %	\$7-15
25/5 Mbps	\$60-90	50-80 %	\$21-33	20-45 %	\$8-18
50/20 Mbps	\$75-95	50-80 %	\$27-43	20-45 %	\$10-24

Source: Exhibit 2-30, Strategic Review, December 2013

This projected increase in retail prices is clearly a matter for the Panel to ponder. Continued allowance of the not-so-temporary ICRA by NBN Co. will clearly lead to higher wholesale and retail prices. There are alternatives.

2.2 Direct subsidy

One alternative implied in the ACCC quote above is a **Commonwealth subsidy**, which is also mentioned in the Strategic Review:

“If the Government wishes to avoid these price increases and still enable an IRR of 7.1 percent, it could provide a specific direct subsidy to NBN Co. Under the Revised Outlook this would need to be a \$1.9 billion to \$2.5 billion subsidy per year, rising in line with inflation every year to FY40, assuming it was first paid in FY15” (p 68, Strategic Review).

Starting at \$2 billion with an assumed CPI of 3% pa, this grows to over \$4 billion at 2040. With a 7% discount rate, the NPV is over \$30 billion.

Economists approve of direct subsidies. Anticipating the discussion below on rural and remote areas,

“There is no reason the government’s pursuit of uniform pricing should be financed through a tax on NBN Co.’s customers. Such a tax is an extremely inefficient way of financing subsidies to consumers in high cost areas ... the Commission should disallow NBN Co, from recouping subsidies to high cost areas from its overall allowed revenues. Instead, NBN Co. should be required to set prices in low cost areas at levels that reflect costs in those areas. If it chooses to set prices in high cost areas at levels that match those in low cost areas, the consequent losses should be recouped through a charge on government. Such a charge would obviously be reflected in the government’s budget process and hence would be subject to the disciplines, transparency and public accountability that process involves” (Professor Henry Ergas, reported in Communications Day, 24th October 2012).

While NBN Co. is government owned, these direct subsidies will be automatic:

NBN Co of 0.3 percent per annum. Trajectory B has lower NBN Co revenues even than Trajectory A. Trajectory B might result from a range of market changes. It includes real wholesale residential ARPU decline to NBN Co of 2.5 percent per annum” (p17, Strategic Review).

“If NBN Co fails to generate sufficient revenue and incurs recurring operating losses, it could require a government subsidy in order to remain a going concern. A subsidy is treated as an expense in the government’s operating statement. NBN Co would treat the subsidies as income in its financial accounts....If payments to NBN Co were to qualify as, or to be accounted for as a subsidy expense, it would represent an increase in expenses in the operating statement. This would increase a budget deficit or reduce a budget surplus (as measured by the fiscal balance)”⁵

Geographic uniform pricing is social policy matter. Government is responsible for social policy and should fund it directly. Ideally, that is true. But, how would TPG (or Telstra) feel about NBN Co. matching their prices in low-cost areas, as suggested above? NBN Co. has already been challenged on the issue of competitive neutrality on new developments (as reported at p4 of the RIFP)⁶.

Also, if NBN Co. prices access to cost in low cost areas, will it do that in high cost areas? The ACCC has been silent on geographically de-averaged access prices in the case of the NBN. Historically, it has insisted on this for unbundled local loop with the result that nobody (apart from Telstra) was interested in providing services to regulated high cost areas. The same could happen again with retail providers (including Telstra?) reluctant to provide service using NBN access in high cost areas (but they may look for alternatives like mobile broadband).

Governments are not keen on direct subsidies as they are reflected in the Commonwealth Budget deficit/surplus. Also, consumers have little confidence that direct subsidies will not suffer the exigencies of budget processes in the future. While NBN Co. is government-owned, government bears any losses that NBN Co. makes. But what happens if/when NBN Co. is privatised?

If higher prices (to pay for the network and/or subsidise rural and remote communities) are unacceptable, what is left? There are three more options for consideration.

2.3 Debt

The next option is **debt**. Commercial companies routinely acquire debt to fund capital programmes and part of the reason for the Revised Outlook is that delays in the roll-out have delayed the accretion of revenues. However, even before the current tribulations at Qantas, the Strategic Review concluded that the chances of NBN Co. obtaining \$42bn in debt financing are slim:

“The Independent Assessment concluded that based on the Revised Outlook it is highly unlikely that debt funding will be available from a third party financier in the near to mid-term in the absence of a Government guarantee” (p 12, Strategic Review).

2.4 Write-down

It is surprising that the Strategic Review did not consider an **asset write-down**. The current government inherited an incomplete gold-plated network. Even with changes in the technology mix to reduce the cost of the network (and deploy it faster), the NBN will cost too much to support affordable pricing – as noted with Table 1 above.

⁵ P11, The national broadband network and the federal government budget statements – 13 January 2012 <http://tinyurl.com/ParliamentLibrary>

⁶ The issue of whether public investment complements or crowds-out private investment is difficult. The EU has developed some guidelines which I applied to the two extreme positions taken on this issue in Chattanooga and by Australian NBN. See “EU guidelines for public investment in broadband”, October 2012 at www.deridder.com.au

2.5 Cross-subsidy

Another option is to modify the USO arrangements to allow an **internal cross-subsidy** within the industry. The previous policy, which required moth-balling networks that could compete with the NBN to enable an internal cross-subsidy, was a policy travesty. The prevention of fixed broadband infrastructure competition is not necessary to support universal pricing. Another approach that is compatible with infrastructure competition and ensures that all providers make a contribution to connecting non-commercial customers is an “**excise tax**”, as explained below.

Ideally, access prices should be cost-based to ensure efficient by-pass decisions by, say, TPG or Telstra. The geographically uniform prices set by NBN Co. conceptually contain two elements: the cost based access price and a contribution to the deficit incurred serving non-commercial customers. When these are lumped together, as now, there is an economically inefficient incentive to by-pass NBN Co. because the cost of doing that is less than the uniform access price. But, if a contribution from by-pass providers is obtained through an “excise tax” this can reconcile the objectives of universal access and the recovery of costs by NBN Co. in the presence of infrastructure competition (i.e. by-pass). In some countries:

“such a tax is politically unlikely and it is almost never mentioned in the regulatory debate, even though it could in principle be repackaged as a tax on the whole industry (as will be the case for the funding of universal service) in order not to make it look discriminatory”⁷.

But, such a scheme could be considered within the USO arrangements in Australia⁸.

2.6 Entry level pricing⁹

A key objective for the NBN is ubiquitous access. If everyone has access to fast broadband, e-government and other on-line services will take-off. Current NBN pricing will not do that.

If affordable pricing initiatives are targeted, very affordable pricing is possible. Analysys Mason notes that UK statistics show that almost half of the UK’s adult population who do not use the Internet live in social housing and are in lower socio-economic groups. In Australia, there are about 350,000 households in social housing¹⁰. Other economically challenged groups are shown below (and it is interesting to note that every youth in the survey with a Newstart Allowance had a mobile phone).

Table 2: Deprivation by income source, 2010

	All	Age Pension	Disability Support Pension	Parenting Payment	Newstart Allowance
No. recipients 2010-11		2,158,000	793,000	440,000	513,000
No Internet at home	5.6%	12.5%	24.5%	26.3%	22.2%
No mobile phone	2.4%	8.1%	16.7%	5.3%	0%
No telephone	2.9%	0.4%	14.6%	21.1%	17.7%

Sources: ACOSS and Morsillo from a PEMA survey

⁷ See p119, Laffont J.J. and Tirole J. “Competition in Telecommunications”, The MIT Press, 2002

⁸ The Strategic Review has redacted so much cost information that it is difficult to calibrate the “excise tax”.

⁹ This section with table draw on de Ridder J. and James R, “Entry Level Pricing for Fixed Broadband”, August 2013 at www.deridder.com.au The definitive version of the work as certified and accepted after peer review has been published in the *Australian Journal of Telecommunications and the Digital Economy* [volume number 1, issue number 1, October/November 2013, paper number 5] and is available at <http://telsoc.org/journal/2013>

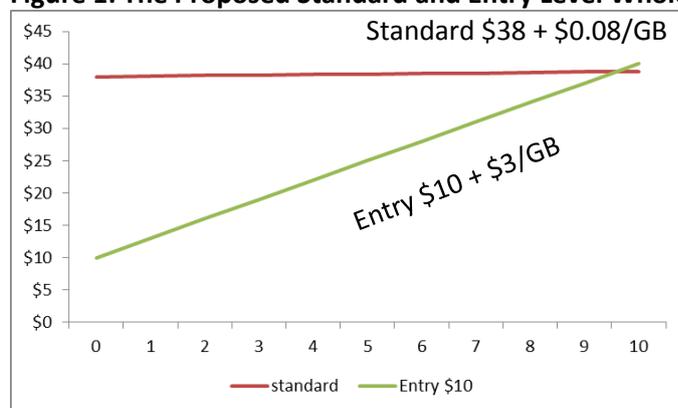
¹⁰ ABS Cat 4102 shows 3.9% of households in public housing in 2010. <http://www.abs.gov.au/ausstats/abs@.nsf/mf/4102.0>

However, instead of trying to quarantine the entry level plan to a target group (e.g. low income households), it is possible to establish an affordable entry level for all households designed such that many will move up to other plans as they use more.

In other papers¹¹, we have shown how replacing NBN Co.'s current AVC/CVC charging structure with a simpler model stimulates competition and unleashes the potential of the NBN. For now, consider that a simple Standard NBN wholesale price of \$38 + \$0.08/GB is complemented by an Entry Level Plan of \$10/month plus \$3/GB. This is much cheaper than the current NBN wholesale prices which start at \$24/month for 12/1 service. This plan provides affordable broadband for those on low incomes or simply with low needs (e.g. voice only). It does not rely on pre-qualification and administers itself.

As can be seen below, once usage exceeds 9.6 GB per month, the wholesale customer will move the end customer's line from the Entry to the Standard wholesale plan to save money – and, hopefully, those savings will be passed on to the end customer.

Figure 1: The Proposed Standard and Entry Level Wholesale Plans



Source: the authors

Assuming a 30% retail mark-up and 1GB pm usage, the retail cost of the Entry Level plan would be \$18.59 pm after GST. This should hit the sweet spot for those with little income or on-line experience. It should also be made available to those connected by fibre, wireless or satellite consistent with a philosophy of maximising the benefits for all of Australian users regardless of income level, place of residence or technology used.

Higher adoption and use made possible by low entry level prices reduces the average cost per customer. The NBN is a largely a fixed cost so the more end customers there are and the more they use, the lower the unit cost per customer; increasing the potential for affordable prices for all.

3. Technology

We need to consider whether we are making unstated assumptions about broadband that need to be questioned (see 3.1). The NBN could become a white elephant if trends in consumer preferences and mobile capabilities are ignored (see 3.2). The Strategic Review considered a range of alternate network architectures but none with significant convergence of fixed and mobile access (see 3.3). The competitive landscape has changed more than is generally understood (see 3.4).

¹¹ See "A Final(?) word on CVC pricing" in July 2013; "CVC pricing discriminates" May 2013 and "NBN pricing should be rejected" of December 2012 available with related papers at www.deridder.com.au

3.1 Are there unstated assumptions about broadband?

It is worth noting that many see fixed broadband access as having some standard or natural definition – perhaps based on what copper networks once looked like or how NBN Co defined FTTH. There remains however considerable scope for change and we should be alert to preconceived ideas that could limit options:

- a. Neither the traditional exchange nor 121 POIs are natural end points. The exchange was a natural endpoint based on the transmission characteristics of copper in the voice era, but the 121 end points is emulating the traditional breakdown between long distance and local – possibly counter productively.
- b. The start point doesn't have to be a connection inside the house, or on an outside wall – it could be a wireless point outside the premises.
- c. Many forms of access have uncertain speed performance and insisting on minimum speed capabilities will not always lead to higher typical speeds. Combine technology limitations with speed based pricing and the effect may be to withhold much of the available and expensively created speed potential from most of the customers.
- d. Pre-conceived ideas of cellular wireless (mobile) being markedly inferior to fixed broadband often date to a time when speeds were much slower and reliability poorer. Mobile only users were myopically excluded from broadband statistics in some countries. This is now changing in the USA and UK at least as LTE is seen as a viable form of broadband access.
- e. Cellular and fixed may look less like competing access networks over time - perhaps becoming a natural pairing of fibre to a point near the end consumer, device and sometimes premise - with wireless as the most common means of ultimate connection (though with non-wireless options where needed). The combining of DSL and LTE in a single service with the peak speeds of LTE and high gigabyte capacity of DSL in Germany is another example of how these services might be combined beneficially.
- f. TransACT in Australia and FTTH in Japan illustrate how the provision of the broadband access service can be decoupled from the much lower value provision of ISP access – churning ISPs doesn't require churning the network connection. Should the future broadband market look like past communications markets, like electricity retailing, or something different?

3.2 Mobiles and customers

The Strategic Review considered “*lower mobile network operator pricing– albeit with low data allowances*” as a threat to NBN revenue, but it did not look at how fixed and mobile might be packaged and retailed. It is suggested that the Panel take the opportunity to consider how global trends in customer usage and network deployment could impact the relevance of the NBN and the associated business case.

The focus of the NBN has been on delivering high speeds and enormous capacity. Consumers often work in the reverse direction – choosing the first product that meets their needs and sometimes foregoing some benefit such as hundreds of hours of HD video in favour of lower prices and perhaps just 10s of hours of video- for example as an extension to a mobile plan that they already have. The market will of course soon test the extent to which consumers prefer the rigor, capacity and price of

the NBN versus the greater convenience and potentially lower price of nominally “mobile” services. Also, retailers may choose to combine both, though perhaps in mobile led packages¹².

3.3 Mobiles and the NBN

In the previous iteration of the NBN, fixed network alternatives were considered on the basis of having to meet absolute speeds and deliver enormous capacity (Gigabytes/month). The resulting design was a “highest common denominator” approach with all other designs excluded; particularly cellular wireless technologies.

The approach coming out of the Strategic Review has relaxed the network technology requirements, but it seems likely to retain speed based pricing and presumably a relatively expensive network design to be able to deliver the guaranteed access line speeds that consumers have paid for.

The Strategic Review contemplates a greater role in mobile backhaul, which is to be applauded. It stops short, however, of considering convergence. Two further steps would be 1) greater use of commercial cellular networks in rural and remote areas (as substitutes for fixed) and 2) a greater role in urban small cell connection.

- 1) The USA was perceived until recently as being well behind other countries in rural broadband. But today it looks likely to benefit from having stepped directly to using LTE wireless from competing operators. In Sweden, mobile operators cooperate to extend rural coverage¹³. Australia must be careful to not solve the problem of remote area communications too many times and with too many networks - cellular, NBN fixed wireless, Telstra copper, USO and further dedicated emergency services networks.
- 2) Cost savings are potentially available from convergence with wireless in urban areas. The capacity of cellular networks depends on the absolute amount of spectrum available and how often the spectrum can be reused - for example by having smaller cells. Network operators overseas are examining models with small cells inside houses using consumer broadband for backhaul or in the street with a direct connection to broadband (ideally fibre). Providing backhaul to small cells should not be seen as being the same as providing backhaul to macrocells, which are large expensive one-off installations. Much cheaper small cell networks are possible when coordinated with fixed network deployment. Mobile capacity could then rival fixed or blur the distinction. Like the Cheshire cat that disappeared except for its smile, all that might remain of fixed broadband could be a discount for Gigabytes consumed at home (regardless of whether delivered by consumer fixed broadband and an LTE/WIFI cell in the consumer’s house or a neighbour’s, or from a small cell on a light pole in the street). Restating this - fixed broadband would just be the discount for “home gigabytes” on a personal or family broadband plan; most individuals, families and homes would not need a physical connection to the house in some scenarios. More fibre is needed however in all scenarios – but typically not all the way to the home.

¹² See “Over the Horizon – the Long Term Evolution of the NBN”, Bob James at the NBN Rebooted Workshop, 19th November 2013.

¹³ A licence and network sharing agreement has been entered into between Tele2 and the incumbent TeliaSonera (who unexpectedly failed to gain a licence) and a joint venture network operator, 3GIS, was set up by Hi3G, Vodafone and Orange. Orange has however since withdrawn from the Swedish market. Therefore Tele2 and TeliaSonera share one network and 3 and Telenor partly share a 3G network. Nordisk Mobiltelefon have their own separate network and this means that in all parts of the country where there is 3G coverage there are at least three overlapping networks <http://www.gsma.com/publicpolicy/wp-content/uploads/2012/09/Mobile-Infrastructure-sharing.pdf>

The danger is that an inappropriately narrow focus on solving today's admittedly very hard fixed issues could leave Australia first struggling to catch up in the next generation of contemporary broadband which might well be converged in technologies (lots of fibre and wireless on the end), packaging (normal and home gigabytes) and usage (wireless devices connecting to services in the cloud). And this might occur before the NBN is completed. This would be particularly ironic as Australia is presently the global leader in mobile broadband adoption.

Possible changes to the planning of the NBN might include a greater use of commercial cellular networks in rural and remote areas, entry level pricing addressing mobile substitution, ensuring urban fibre can contribute to (and benefit from) urban small cell models, and a focus on further constraining costs given likely revenues.

Overall, the focus of the NBN might shift from catch-up in fixed broadband to maintaining global leadership in converged fixed/mobile broadband.

3.4 Vertical separation

An unstated assumption seems to be that vertical separation has fixed structural competition issues. It does not seem to be widely appreciated that separation of networks and content has already occurred. With digitisation of the internet, "over-the-top" (OTT) services can be delivered to end customers without reference to either wholesalers like NBN Co. or retail providers like Telstra. The players are not the same.

Broadband decouples most of the services that customers use from the ISP and the next wave of access innovation may well be associated with how fixed and mobile access are packaged – some will emerge like FON from within the home, others like small cells in the street and some from traditional macro cells. The technical design of the NBN and the scenarios in the cost benefit should not assume that just one path forward is possible for fixed broadband.

4. RIFP direct responses

Many of the issues and questions raised in the RIFP have been addressed above. So, the following is a checklist.

We note that the Panel has paraphrased the original terms of reference in the RIFP, as shown below. While the object of the RIFP is to test "working assumptions" and "key principles, objectives, issues and possible ways forward", it is disappointing that the Panel is yet to share its approach to cost-benefit analysis¹⁴ and will tackle detailed regulatory issues only when the broader structural issues are resolved¹⁵. It is now March and the outcomes of this review will provide critical input for the next corporate plan expected mid-year¹⁶.

Table 3: Terms of reference

TOR (Dec 2013) http://tinyurl.com/VertiganTOR	TOR in RIFP (Feb. 2014) p2
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¹⁴ "Separately, the panel is developing and refining a methodology for its cost-benefit analysis of the availability of broadband of differing properties via various technologies. The panel plans to release this methodology when it is complete" Press Release, 13th February, 2013 <http://tinyurl.com/PressRelease13Feb>

¹⁵ "Once the way forward on these broader structural questions is clearer, the panel sees the next tranche of issues as relating to the more specific rules that should apply to NBN Co.'s operations" (p7)

¹⁶ Statement of Expectations, 24th September 2013: "We note that the outcomes of the Strategic Review will be a key input into the new corporate plan" <http://tinyurl.com/SOESept2013>

1 What is the direct and indirect value, in economic and social terms, of increased broadband speeds, and to what extent should broadband be supported by the government?	
1a. This should consider the economic and social benefits of bringing forward improvements in broadband speed and the respective benefits of alternative /potential technologies.	
1b. It should also consider the extent to which market pricing mechanisms can capture the value of benefits (including benefits to Australian governments).	
2. What are the optimal long-term ownership and regulatory arrangements for NBN Co?	the long term ownership and regulatory arrangements for NBN Co
2a. This should include coverage of the requirements of the statutory review of the telecommunication industry access arrangements required under the Competition and Consumer Act 2010.	
3. How should the activities of NBN Co be constrained given its mandate to efficiently build, operate and maintain a wholesale-only access network?	the role of NBN Co in that framework; operational constraints on NBN Co given its mandate to efficiently build, operate and maintain a wholesale-only access network;
3a. This should include consideration of the issues associated with infrastructure based competition and the economic benefit of alternatives.	
3b. Recommendations should be made on the structure of the Australian wholesale broadband market, including regulatory arrangements.	the overall structure of the Australian wholesale broadband market, including infrastructure based competition
4. How should NBN Co.'s capital investment, products and pricing be reviewed and regulated?	how NBN Co.'s capital investment, products and pricing should be reviewed and regulated
4a. This should consider advice on how products should be structured to promote efficiency, consumer choice and competition.	
4b. This should also consider, in the context of NBN Co's proposed pricing structure, the extent to which retail price controls should be continued.	the more detailed regulatory settings to apply in that industry structure.

4.1 Working Assumptions

We support the following stated “working assumptions” with comments as follows:

- *broadband services providing defined minimum upload and download data rates should be generally available to all end-users, along with such other broadband products as market participants (including NBN Co, in the case of wholesale products) choose to provide. The Government has expressed a policy objective of ensuring universal access to minimum download data rates of 25 Mbps (assuming the NBN Co fixed wireless and satellite programs are delivered as promised). The NBN Co Strategic Review has proposed an approach that would provide 50 Mbps to around 90 per cent of the fixed line footprint by the end of 2019*

The focus on guaranteed access speeds is understandable, but quite inconsistent with how broadband access is typically sold and the end to end performance of the global internet. Access speeds are rarely guaranteed by network operators as the guarantee greatly increases the cost to deliver a parameter that consumers rarely value in practice. The lack of value is driven in large part by the end to end performance depending on many factors and rarely reaching the headline access speeds even in countries such as Japan and Korea. The adaptability of the overall delivery chain has been a great strength of the internet and been fundamental to it being so affordable relative to corporate services that had guaranteed speed performance.

Australia is building a fast broadband network – but then the present NBN pricing model is rationing its availability; unnecessarily! NBN Co. has tried to price discriminate on AVC speed tiers. There is nothing wrong with price discrimination to recover fixed costs. But, we believe it is not working (over 40% of connections are for the 12/1 lowest tier) and forgoes a larger opportunity. Allowing unconstrained and unlimited speeds is possible and transformative. It would change the game – exactly what was hoped for in launching the NBN project.

- *regardless of where they reside or carry on a business, end-users should have access to designated services at an affordable price, with any subsidies inherent in that supply being as transparent and efficiently delivered as reasonably possible;*

This is discussed at length in Section 2 above. We further suggest that the government make a grant (rather than an equity injection) to fund capex used in pursuit of its social policy objectives. This will reduce the extent of direct or internal subsidies required and assist NBN Co. to eventually become commercial.

A direct subsidy could also be considered in using commercial operators to meet the needs of rural and remote customers.

- *NBN Co will operate on a commercial basis and is a key mechanism to ensuring that the government's broadband policy objectives are met;*

What is commercial? It is recommended that NBN Co. be seen and regulated like the other public pipe utilities (gas, electricity, sewerage and water). As part of putting it on a commercial basis, the current ICRA arrangements should be disallowed and any balance sheet re-structuring should be done sooner rather than later.

- *rollout of the NBN will achieve the structural separation of Telstra in respect of retail fixed network services supplied in the mass market*

What about HFC? The panel seems to hint that Telstra might continue to own and operate – but not retail or perhaps wholesale – HFC access: “were NBN Co to retain the role envisaged for it of primary wholesale provider of fixed network services, that need not imply that NBN Co builds, owns, operates and/or maintains all of the underlying fixed networks over which those services are provided” (p6). Structural separation is a means to an end and placing NBN Co as the wholesaler between the asset owner/operator and all retailers should achieve similar ends.

We should also monitor “mission-creep” on the part of NBN Co. The definition of “wholesale” can be slippery. Some of this is foreshadowed on p7 of the panel’s paper.

- *any restrictions imposed by policy, statute or regulation on commercial investment in and supply of telecommunications services should be no greater than needed to promote the long-term interests of end-users and should be subject to periodic, transparent and independent review to ensure their benefits exceed their costs;*

This is clearly about the diluting or removing the current infrastructure monopoly. As noted in the earlier sections, we concur.

4.2 Key Issues

The RIFP lists just five key issues.

- *how best to ensure end-users have ready access to affordable and fast broadband and affordable and reliable voice services – this includes the issue of servicing rural and remote areas in a cost-effective manner;*

This is certainly the most important issue and is addressed in Section 2 above.

- *how to ensure competition and contestability work effectively and efficiently where they can, while also ensuring regulation acts as a back-stop or alternative where market forces, left to their own devices, will not adequately meet consumer needs.*

The Panel notes that duplication of infrastructure may be untenable in, say, some rural and remote areas and also notes the OCED's commitment to promoting infrastructure competition. An issue it does not raise in this context is whether there may be "unfair" competition from NBN Co. The EU has guidelines (referred to in Section 2.2 above) on how to balance public and private investment in infrastructure.

We urge the Panel to look also at promoting service-based competition. Analysis of the margins of the now relatively consolidated ISP market suggests that an oligopoly has emerged and this is unlikely to change under current NBN Co. pricing policies. The Panel says: "*In considering the key issues, the panel intends to examine the implications of alternative market structures, while not losing sight of the constraints that are present in the existing environment*" (p6). What then would be the effect of new entrants such as Woolworths of the different wholesale pricing arrangements under the "go for innovation" scenario relative to those under the "more of the same" scenario?; Our previous work on these subjects was noted earlier.

- *how to encourage innovation and diversity in products and services, particularly in areas or markets that are less competitive.*

We have argued that a different approach to pricing would unleash innovation. An access service with unconstrained speeds would re-shape the communications market and put Australia in an enviable position globally. While other countries have more broadband, no country has – yet – bestowed full speed across all customers.

This point is particularly relevant to the forthcoming cost benefit analysis (CBA). We note that the original TOR at 1b seem to have the narrow focus of trying to get those who benefit from the NBN to make a larger contribution to it (i.e. internalise external public benefits such as e-health?). We think the CBA should consider what international investment and R&D would be attracted to Australia if widespread, unlimited fixed speeds were made available and leadership in mobile/converged broadband sustained.

- *by whom relevant services are best provided – for example, NBN Co and/or other providers; and*

We are not sure what this means.

- *how should any non-commercial or uneconomic services be funded, and what are the implications of alternative funding options for the design and functioning of the markets in which telecommunications services are provided?*

This was discussed extensively in Section 2.

4.3 Questions

Our contributions have been outlined above so the following is used as a cross-check that may help the Panel aggregate our input across that provided from others.

The panel is seeking stakeholders' initial views on the following structural questions:

1. *What broader structural model or models for the industry should the panel consider? Why? Should the panel be considering significantly different industry scenarios to those outlined above? If so, what are those scenarios and why should they be considered?*

We suggest that the “more of the same” scenario be contrasted with a “more innovation” scenario.

The “more of the same” scenario reflects the current state of thinking in NBN Co.: the AVC plus CVC pricing structure, a reliance on the ICRA to keep increasing wholesale ARPU, increased emphasis on FTTN but no imaginative fixed-mobile technology convergence by NBN Co. This scenario either tightens-up prohibitions on fixed infrastructure competition or (wrongly) dismisses it as non-material for its impact on NBN Co.

The “more innovation” scenario sees the replacement of current AVC pricing with just two fixed charges (one of which is the Entry Level wholesale price) and replacing the CVC charge with a traffic charge per GB (higher in the case of the Entry Level plan). This scenario includes balance sheet restructuring to remove the need for the ICRA and a cooperative deal between NBN Co. and the mobile industry to reduce costs. As noted in Section 3, we think that the Strategic Review’s technology scenarios (really 6 alternative technology approaches rather than 6 possible futures) could make more of the potential continued significant development of mobile broadband approaches and the potential for Australia to lead the world with an accelerated transition toward fixed-mobile convergence. This change to converged models is in-step with consumer attitudes to broadband and in the interests of NBN Co. itself - not only in reducing last mile costs but also in heading-off developments that may make it less relevant in future. The number of POIs might also be reduced.

We see the latter scenario leading to more service-based competition by moving the “proxy” of CVC to its underlying traffic charge, reducing the number of POIs and promoting infrastructure-based competition. As we have said above (and at many fora), unless there is a major shift in NBN Co.’s thinking on pricing, the industry will not change much – and that would be a missed opportunity for all Australians.

2. *Should the panel consider and adopt working assumptions other than the ones outlined on page 5 above? How should the assumptions be prioritised and trade-offs assessed?*

Yes. See above.

3. *Should NBN Co continue to be subject to wholesale-only (structural separation) and open access requirements? If so, to what extent and under what circumstances, if any, should those obligations apply to other market participants?*

The NBN is primarily a mass market platform. The current arrangements are that it should have no direct interface with end users; that being the province of RSPs (or ISPs, as we once knew them). But, that seems very cumbersome in terms of, say, customer fault reporting. TransACT made a distinction between providing basic connectivity and providing other services, for which the customer chooses an ISP. A similar approach has been used in Japan where the subscription for the FTTH is separate from the selection of ISP. A situation where the “splash” screen first offered to the customer belongs to NBN Co. with a menu of offerings – including choice of ISP and, perhaps, free access to government sites – is possible. NBN Co. is essentially a utility providing the basic pipe and allowing direct provision might encourage greater competition for the real value added components.

4. *Should all market participants, including NBN Co, be subject to the same regulations to the greatest possible degree or are specific regulations that do not apply across the board necessary and justifiable in some areas? To the extent to which there should be specific regulations, what is the purpose, nature and scope of the differences?*

The danger here is not seeing the broader context – how digitisation has re-shaped the industry.

5. *To what extent should competitive neutrality between NBN Co and other market participants be ensured and if so, how?*

The possible adoption of parts of the EU guidelines on public investment in broadband was suggested earlier.

6. *Where providers other than NBN Co supply fixed network services, should there be provisions that ensure consumers secure particular outcomes, for instance by comparison to those generally available from NBN Co?*

We need to be careful about over-specifying these requirements.

7. *Where an infrastructure provider other than NBN Co delivers outcomes comparable to those delivered by the NBN, what obligations or restrictions should apply on NBN Co? For example, should NBN Co be prevented from overbuilding that network?*

In TransACT’s unsuccessful NBN Mark I (value for money) bid, it asked for limited protection from Telstra over-build – “one pillar, one-provider”, for example. It had no objection to an FTTP build over the top of its brownfield FTTN network.

See also the EU guidelines mentioned above.

8. *Were NBN Co to be restricted in supplying services in areas serviced to a specified standard by other network operators, what undertakings, if any, should those operators be required to give about their ongoing performance? Noting links with question 3 in relation to wholesale-*

only and open access requirements, would it be sufficient to rely on Part XIC processes to secure access to services on these networks, or on Part XIC processes that were further refined?

No comment.

9. *What are the essential characteristics that service provided over a network other than NBN Co.'s should have to meet for those services to be seen as operating on an NBN-comparable basis? For example, should it include the following elements:*
 - i) *ability to support certain minimum broadband speeds;*
 - ii) *provision of wholesale services on an open access basis (possibly involving structural separation or some equivalent method of ensuring non-discrimination) and support for retail level competition;*
 - iii) *an obligation on at least one provider to service all customers within a service area;*
 - iv) *acceptable performance characteristics – for example in terms of latency, jitter, loss and network availability;*
 - v) *price structures and levels that provide affordable access;*
 - vi) *credible, transparent and predictable upgrade paths to higher speeds;*
 - vii) *the ability to support voice services and the various legacy services; and*
 - viii) *clear and reasonable timeframes for connection and service restoration.*
10. *To what extent should the provision of non-commercial services by NBN Co be funded through cross-subsidies, and if so, what safeguards, if any, should apply to those cross-subsidies?*
11. *Were it not feasible or sustainable in a competitive market for NBN Co to earn sufficient revenue to enable it to cross-subsidise uneconomic customers, how should services to those customers be provided and funded?*
12. *What approach should be taken in new developments? Do they raise particular structural regulatory issues?*
13. *Should responsibility for the economic regulation of telecommunications remain with the ACCC?*

The ACCC has been a poor economic regulator in telecommunications. But, if NBN Co. is simply another network utility, as we argue, it makes sense to keep access pricing issues for these organisations in the same stable. That leaves competition issues and technical regulation. It is not self-evident that hiving-off ex-ante telco competition regulation will improve matters. Maybe the poor quality of analysis and decision-making at the ACCC reflects the people and processes. ACMA seems to be doing a good job of technical regulation.

