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Submission in response to ACCC consultation paper 'Variation to NBN Co Special Access Undertaking' dated 20 July 2016

1. Summary of submission

- 1.1 This submission is provided by the Competitive Carriers' Coalition (**CCC**) in response to the ACCC's consultation paper titled 'Variation to NBN Co Special Access Undertaking' released on 20 July 2016 (the **Consultation Paper**).
- 1.2 The CCC welcomes the opportunity to comment on the proposed Special Access Undertaking (**SAU**) variation submitted to the ACCC by NBN Co Limited (**NBN Co**) on 27 May 2016 (the **Variation**).
- 1.3 Under section 152CBG(3) of the *Competition and Consumer Act 2010* (Cth) (the **CCA**) the ACCC must either accept or reject the Variation. The CCC submits that the ACCC has no option other than to reject the Variation in its current form. This is primarily because acceptance of the Variation would have the effect of applying the existing price terms of the SAU to a range of new services in a manner which is neither reasonable, nor in the long term interests of end users (**LTIE**).
- 1.4 In response to question 3 of the Consultation Paper, the CCC submits that NBN Co's proposal to broaden the definition of the NBN Co Network, to enable it to adopt future technologies without varying the SAU, is also unreasonable and is not in the LTIE.

2. Background

- 2.1 The SAU was accepted by the ACCC under section 152CBC(2) of the CCA on 13 December 2013. The analysis and reasoning which was adopted and applied by the ACCC in accepting the SAU is largely as set out in following documents:
 - 2.1.1 *Final decision: NBN Co Special Access Undertaking – December 2013* (the **Final Decision**); and
 - 2.1.2 *Draft decision on the Special Access Undertaking lodged by NBN Co on 18 December 2012 – April 2013* (the **Draft Decision**).
- 2.2 While the Final Decision was made in December 2013, it is important to note that this was the culmination of a process that had commenced when NBN Co lodged its initial SAU (which was subsequently withdrawn) in December 2011. This is significant because much of the thinking and analysis that was applied to the ultimate approval of the SAU was based on the state of the market and telecommunications environment as it stood approximately 5 years ago. There have been a range of dramatic developments since that time, including the emergence of new technologies, changes in the competitive landscape and the adoption of a



radically different NBN model. As detailed below, the CCC submits that all of these factors need to be appropriately considered by the ACCC in assessing the Variation.

3. Criteria for consideration of the Variation

3.1 In considering the Variation, the ACCC must have regard to the criteria outlined in section 152CBD(2) of the CCA. Applying section 152CBD(2), the ACCC must reject the Variation unless it is satisfied (relevantly, and in summary) that:

- 3.1.1 the terms and conditions specified in the SAU (as varied) which relate to the Category B standard access obligation (**SAOs**) are consistent with the Category B SAOs, and are reasonable (section 152CBD(2)(b));
- 3.1.2 the terms on which NBN Co will engage in conduct specified in the SAU (as varied) in relation to access to services supplied by NBN Co will promote the LTIE, and those terms are reasonable (section 152CBD(2)(ca)); and
- 3.1.3 the terms on which NBN Co will engage in conduct specified in the SAU (as varied) in relation to the matters referred to in section 152CBA(3C) will promote the LTIE (section 152CBD(2)(cb)).

3.2 In determining whether particular terms and conditions are reasonable, the ACCC is required by section 152AH of the CCA to consider:

- 3.2.1 whether the terms and conditions promote the LTIE;
- 3.2.2 the legitimate interests of NBN Co;
- 3.2.3 the interests of RSPs;
- 3.2.4 the direct costs of providing the service;
- 3.2.5 the operation and technical requirements of the service; and
- 3.2.6 the economically efficient operation of a carriage service, a telecommunications network or a facility.

3.3 For the reasons detailed in this submission, the CCC does not believe that the Variation meets the reasonableness and LTIE criteria set out in sections 152CBD(2)(ca) and 152CBD(2)(cb), and submits that the Variation must therefore be rejected by the ACCC applying section 152CBG of the CCA.

4. Subject matter for consideration

4.1 In its *Supporting Submission to the ACCC – Variation to the Special Access Undertaking*, dated 27 May 2016 (**Supporting Submission**) NBN Co notes (in a footnote) that it understands that the ACCC's assessment of the Variation will:

include an assessment of the interaction of the subject matter of the variation ... with the existing SAU provisions.¹

4.2 The ACCC has confirmed that its approach when assessing a variation to the SAU, as outlined at page 109 of the Final Decision, will be to "...make a decision to accept

¹ NBN Co Supporting Submission, footnote 26.



*or reject the variation proposed by NBN Co, and not the existing terms and conditions in Modules 0 and 2 (unless NBN Co proposes to change these existing terms in its variation)". However, it will remain open to the ACCC to "...decide that a proposed variation does not meet the statutory criteria by virtue of its interaction with an existing term or condition in Module 0 or 2 (and therefore that the variation should be rejected)."*²

- 4.3 The CCC therefore confirms its understanding that the ACCC's approach, as stated at section 2.4 of the Consultation Paper, will be to consider the Variation by 'assessment of the varied terms, the effects of the varied terms and the interaction of the varied terms with unchanged provisions of the SAU'.
- 4.4 NBN Co also states that, in applying the criteria for assessment of the Variation, the ACCC may only consider whether the provisions of the SAU which are varied satisfy the requirements of section 152CBD of the CCA. Specifically, it states that the ACCC is:
- ...not permitted to reconsider afresh the SAU as a whole or reconsider any provisions of the undertaking that are not affected by the variation.³
- 4.5 While NBN Co is at pains to stress this point, the CCC submits it is the assessment of the interaction of the subject matter of the Variation with the existing SAU provisions that is the critical task for the ACCC. It is the interaction of the varied provisions with the existing provisions which gives meaning and effect to the Variation. While there is no need for the ACCC to reconsider provisions that are not varied and which do not interact with varied provisions, the ACCC clearly cannot consider the proposed variations to the terms of the SAU in isolation. It is therefore essential for the ACCC to apply the section 152CBD(2) criteria to the SAU (as varied) as a whole, when considering whether to accept the Variation.
- 4.6 Further, the CCC submits that the ACCC must undertake its assessment of the interaction of the subject matter of the Variation with the existing SAU provisions afresh, and with reference to current market conditions and all currently available information. Section 152CBG(4) provides that section 152CBD applies to the Variation (and therefore the interaction of the Variation with the existing SAU provisions):

...in a corresponding way to the way in which it applies to an undertaking.

That is, in considering the way in which the Variation interacts with the existing provisions of the SAU, the ACCC is required to apply the section 152CBD criteria based on its current state of knowledge of the market, giving appropriate consideration to all of the knowledge and material currently at its disposal, regardless of whether that knowledge and material was available to it at the time it approved the SAU.

- 4.7 The CCC therefore submits that the ACCC cannot be bound to assess the Variation based on the state of its knowledge and the available information at the time the SAU was originally approved. To do so would be for the ACCC to fail to properly exercise its power under the Act. As was extensively discussed by the ACCC in the Final Decision, the SAU is designed to provide an appropriate balance between the degree of certainty necessary to provide regulatory stability for NBN Co, and the

² Consultation Paper, paragraph 2.4.

³ NBN Co Supporting Submission, paragraph 40.



flexibility necessary to enable the SAU to adjust to meet changing market conditions.⁴ Accordingly, the Variation must be assessed by applying the LTIE and reasonableness criteria to the Variation having full regard to the current state of the telecommunications market.

5. Impact of the Variation

- 5.1 While the intent of the Variation may be simply to broaden the definition of the NBN Co Network to reflect the multi technology mix (**MTM**) model which has now been adopted, its actual effect will be to apply all existing terms of the SAU to services supplied using the MTM model. One of the principal effects of the Variation is therefore to broaden the application of the existing price terms and conditions of the SAU (which are currently specific to the fibre to the premises (**FTTP**) architecture⁵) to services which will now be delivered using fibre to the node (**FTTN**), fibre to the building (**FTTB**) and hybrid fibre coaxial cable infrastructure (**HFC**).
- 5.2 The CCC submits that this is neither reasonable nor in the LTIE, for the reasons summarised below:
- 5.2.1 Firstly, the pricing which would apply to FTTN, FTTB and HFC services under Module 1 if the Variation were to be accepted fails to meet the test for reasonableness that the ACCC articulated at the time that the SAU was accepted;
- 5.2.2 Secondly, market data and analysis which has emerged since the SAU was accepted has clarified that there are significant problems with the pricing structure enshrined in the Initial Prices in the SAU, and that this pricing structure is hindering efficiency and competition. If the Variation were to be accepted, this would not be in the LTIE; and
- 5.2.3 Thirdly, the nature of the MTM model is such that the services covered by the Variation are far more similar to existing services currently being provided by operators other than NBN Co than was, or is, the case with FTTP. This makes it all the more important that NBN Co's product offerings (including FTTN, FTTB and HFC) must be priced in a manner which is consistent with any functionally equivalent products currently available in the market.

Each of these arguments is discussed in further detail below.

The Variation fails to meet the ACCC's own reasonableness test

- 5.3 In approving the initial regulated pricing terms contained within the SAU the ACCC outlined its reasoning in detail in the Draft Decision. This reasoning was then largely confirmed in the Final Decision. In summary, the ACCC applied the following three principles to assess whether the proposed price related terms and conditions of the SAU were reasonable⁶:

Principle 1: End users should not be made worse off by virtue of their migration to the NBN.

⁴ See for example section 5.1.2 of the Final Decision.

⁵ This submission focuses primarily on FTTP and MTM technologies; Satellite and Fixed Wireless services are of limited relevance to this submission.

⁶ As detailed at paragraph 5.3.3 of the Draft Decision.



Principle 2: NBN Co must expect to be able to recover its efficient costs of investing in the network.

Principle 3: NBN Co should face incentives to invest and incur expenditure in an efficient manner.

5.4 In relation to Principle 1, the ACCC went on to state that:

5.4.1 the prices for services supplied over the NBN Co Network during the Initial Regulatory Period should be comparable to prices for the equivalent copper or HFC service, to ensure that there would be no price shock associated with migrating to the NBN; and

5.4.2 any increase in price for equivalent functionality on migration to the NBN Co Network would have the potential to decrease use of the NBN below an efficient level.

5.5 In approving the initial maximum regulated prices in its Final Decision, the ACCC referred back to and confirmed its reasoning in the Draft Decision, stressing in particular the importance of Principle 1 and stating (at paragraph 7.1):

To the extent that a functionally equivalent service is available, the ACCC considers that end-users should not be made worse off by virtue of their migration to the NBN. In particular, to ensure that initial maximum regulated prices will promote the long-term interests of end users, it is important that end users do not experience a 'price shock' due to migration to the NBN. Hence, where a NBN service is functionally equivalent to a current service being offered on copper or HFC, the price for that service should be comparable to the price of the equivalent copper or HFC service.

5.6 While the relevant information may not have been readily available to the ACCC when making its Final Decision, it is now clear that the pricing structure adopted by NBN Co and enshrined in the SAU did not then, and certainly does not now, in fact meet the reasonableness test established and applied by the ACCC in the Final Decision. Specifically, the practical application of the CVC pricing structure under the SAU means that wholesale prices for NBN services which are functionally equivalent to services being offered on copper or HFC are not comparable to the price of the equivalent copper or HFC service. In fact, they are demonstrably higher. The CCC is aware of a number of commentators who have illustrated this point recently.⁷ The CCC has also provided (at Schedule 1, paragraph 1.1) worked examples of the applicable pricing to demonstrate this point.

5.7 Similarly, when compared to the price of equivalent products which are currently available from other operators (but were not anticipated at the time the SAU was accepted, such as the FTTB service provided by TPG), the NBN Co services are more expensive and, again, have the potential to cause price shock. The CCC has provided (at Schedule 1, paragraph 1.2) worked examples of the applicable pricing to demonstrate this point.

5.8 Principle 1 should not be narrowly interpreted to apply only to services offered over copper or HFC. At the time the SAU was originally approved, the ACCC's focus was, unsurprisingly, solely on customers migrating from existing HFC and copper based services to the NBN, as the only services available at that time offering functional equivalence to NBN Co services would have been offered over copper or

⁷ See for example: Boyd T, *Broadband costs will soar*, Australian Financial Review, 13 August 2016; Slattery B, *Time for Rod Sims to resign*, Communications Day, 1 August 2016.



HFC. The CCC submits that, properly construed, Principle 1 requires that NBN Co services should be priced at a level that is no higher than the price of functionally equivalent services, regardless of the infrastructure over which they are provided. It is equally important in applying Principle 1 that, if that customer moves from an area not served by NBN Co to a location which is served by NBN Co, that customer should not be made worse off by virtue of the move.

- 5.9 The CCC therefore submits that due to the SAU pricing structure, end users are potentially being made worse off by virtue of their migration to the NBN (or by virtue of relocating from a non-NBN location to a NBN served location), contrary to the intentions of the ACCC when considering and approving the SAU.
- 5.10 While the CCC acknowledges that ACCC does not have scope in its consideration of the Variation to reconsider the initial pricing as it applies to FTTP, it does have scope to ensure that NBN Co is not permitted to perpetuate initial pricing errors in the SAU and broaden their application to services supplied using the MTM model.
- 5.11 The CCC therefore submits that, to the extent the Variation seeks to apply existing price terms of the SAU to services delivered using the MTM model it fails to meet the ACCC's reasonableness test, is not in the LTIE and therefore cannot be considered reasonable applying section 152CBD and 152AH. The CCC submits that the ACCC therefore has no option other than to reject the Variation under section 152CBG(3) of the CCA.

The SAU pricing structure is hindering efficiency and is not in the LTIE

- 5.12 As detailed above, the pricing structure implemented by the SAU does not pass the ACCC's own reasonableness test in practice. In fact, following acceptance of the SAU in 2013 it has quickly become apparent that the initial pricing enshrined in the SAU is not economically efficient. NBN Co's CVC pricing in particular has now clearly been demonstrated to be driving perverse market outcomes whereby end users are being required to pay significantly more for equivalent services provided via the NBN Network, and are not able to obtain access to adequate bandwidth for a reasonable price.
- 5.13 In summary, NBN Co's AVC plus CVC pricing structure, when combined with the 121 point of interconnect (**POI**) architecture for the NBN Network results in a wholesale price for which RSPs are unable to provide an acceptable service level to end users for a reasonable price. This is primarily because the CVC construct and pricing is imposing artificial restrictions on bandwidth and unreasonable costs on RSPs (see Schedule 1).
- 5.14 This price disparity is further exacerbated because the NBN Co pricing model is unable to cost effectively 'scale up' as bandwidth usage increases, as illustrated below:
 - 5.14.1 As bandwidth demands increase with increased consumer demand, the CVC pricing model requires corresponding increases in CVC acquisition on a 1:1 basis (in other words, without any economies of scale). For example, the Maximum Regulated Price for CVC (TC-2 and TC-3) is \$1,000 for 50 Mbps, \$2,000 for 100 Mbps \$3,000 for 150 Mbps, etc.
 - 5.14.2 This, combined with the unreasonably high price for CVC capacity means that the price of services becomes dramatically more unreasonable and



unrealistic as demand for bandwidth increases (see Schedule 1, paragraph 1.1).

- 5.14.3 To meet minimum service delivery requirements of end users, RSPs are being required to pay significantly greater costs for CVC than they are able to recover from end users. This is clearly unsustainable.
- 5.14.4 In fact, relevant assessments of the likely costs of the average broadband plan required to achieve Netflix recommended speeds estimate increases in total monthly costs from approximately \$70 in 2016, to approximately \$675 in 2025.⁸ Such increases are clearly not sustainable. Nor are they in the LTIE.
- 5.15 The NBN Co Pricing model is also clearly distorted, and leading to inefficiencies in the market, in that:
- 5.15.1 it does not appropriately reflect the relative costs to NBN of providing the various components of the service. It stands to reason that the cost of providing the CVC service, which is a service that aggregates a large number of AVC services, must decrease dramatically on a per unit basis with increased capacity (but this is not reflected in the regulated pricing); and
- 5.15.2 it is so high that it currently exceeds reasonable market expectations and thereby forces RSPs to provide the minimum quantity (or in some cases less than the minimum quantity) of CVC capacity that is viable to provide a standard service. This limits the ability of RSPs to differentiate their offerings⁹, with the result that it will ultimately drive smaller RSPs out of the market. This in turn will reduce competition, eliminate opportunities for innovation and is likely to drive the market towards establishment of a very small number of tier 1 RSPs.
- 5.16 The CCC further submits that the LTIE would be best served by NBN Co pricing its services on a basis which would maximise consumers' take up of bandwidth, and enable NBN to maintain revenue by virtue of increased sales due to lower prices. However, the NBN Co pricing model currently demonstrates 'classic monopoly' characteristics, whereby NBN Co appears determined to limit supply of bandwidth to artificially inflate prices, rather than to increase revenue by promoting greater take up of bandwidth.
- 5.17 NBN Co has already found it necessary to partially reduce CVC pricing to meet market demand and to 'respond to the rapid increase in data consumption'.¹⁰ The CCC notes that NBN Co has made reference within the Supporting Submission to the fact that the Maximum Regulated Prices for certain NBN Co offers have been discounted and that those discounts are reflected in the relevant SFAAs. However, NBN Co has not taken steps to reflect (or to 'lock in') those discounts to the Maximum Regulated Prices in the SAU itself. Publicly, NBN Co has committed to

⁸ See for example the analysis of Branson and Sugo in *NBN: A Next Generation Wholesaler's View* in the Australian Journal of Telecommunications and the Digital Economy V 4 No. 2 June 2016 (A copy of which is annexed to this submission as Schedule 2).

⁹ The AVC/CVC model was partially designed to allow RSPs to differentiate their offerings by offering varying levels of CVC capacity – under the current structure it is completely uneconomic to offer uncontended CVC capacity. RSPs are reduced to offering highly contended CVC capacity or very highly contended CVC capacity.

¹⁰ NBN Co Media Release, *New discount-based pricing to encourage enhanced broadband experience*, 5 April 2016.



retain the discounts for a period of two years, following which they will be 'reviewed on an ongoing basis'.¹¹ The CCC considers that these discounts are manifestly inadequate, and that even applying the discounts, CVC charges are excessive, inefficient and uncommercial. This is demonstrated in the worked examples in Schedule 1. The undiscounted SAU CVC prices are therefore manifestly unreasonable.

- 5.18 Despite this public acknowledgement by NBN Co that the Maximum Regulated Price for CVC is too high, and requires discounting to meet industry expectations and public demand, NBN Co seeks via the Variation, to apply the same Maximum Regulated Prices to the MTM model.
- 5.19 The CCC submits that to seek to extend the application of what is now recognised to be an inflated and inappropriately structured pricing model to the MTM model cannot be in the LTIE. The Variation therefore cannot be considered to be in the LTIE and, applying section 152CBD, the ACCC has no option other than to reject the Variation.

The MTM model

- 5.20 The SAU was accepted on the basis that regulatory intervention on the scale proposed was reasonable and necessary for the roll-out of a universal FTTP network in Australia. Without intervention and public subsidies, market forces would not have led to development of a universal FTTP network. Therefore, all relevant parties agreed that significant regulatory intervention, including in the form of the SAU, was necessary to govern the terms on which services would be provided by NBN Co to ensure fair and equal terms of access for the benefit of all Australians.
- 5.21 In preparing these submissions the CCC has considered the application of the terms of the SAU (which are specific to the FTTP model) to the newly proposed MTM model, and whether those terms as they apply to the Variation are reasonable or in the LTIE. However, the nature of the FTTN, FTTB and HFC services which are to be incorporated into the MTM model are, in fact, far more similar to the existing ('non-NBN') services currently being provided than was, or is, the case with FTTP.
- 5.22 The CCC therefore submits that, when considering the pricing of MTM services, it is even more critical that these services are priced at a level that is no higher than other currently available services offering equivalent functionality. Extraordinary measures have been taken by the Government to protect NBN Co's position by preventing 'cherry-picking' and imposing a range of legal and regulatory constraints on potential competitors, such as TPG. Accordingly, where an operator such as TPG is offering a product which is functionally equivalent to NBN services, such as TPG's FTTB offering, it is clearly necessary and appropriate that NBN services are priced at a similar level.
- 5.23 While it is somewhat unclear whether NBN Co will overbuild areas covered by TPG's FTTB footprint, it is clearly unsustainable for NBN Co to be offering a competing product at a higher price. To do so would be to leave NBN Co RSPs in the unenviable position of having to either sell NBN Co services below cost or vacate the market.

¹¹ Ibid.



6. Amendment to the definition of the NBN Co Network [question 3 of the ACCC Consultation Paper]

6.1 The CCC also wishes to make submissions in relation to NBN Co's proposed amendments to the definition of the 'NBN Co Network' within Attachment 2 (Dictionary) of the SAU. The majority of the proposed changes are intended to reflect the MTM model, by inclusion of the FTTB network, FTTN network and HFC network, and the CCC does not make any comment on those changes.

6.2 However, NBN Co has also proposed broadening the definition of the NBN Co Network to include:

any other telecommunications network or other network elements, platforms, systems and functions owned or controlled by, or operated by or on behalf of, NBN Co or any Related Body Corporate of NBN Co over which any Product introduced or varied in accordance with Schedule 1I (Product Development and Withdrawal) or Schedule 2D (Product Development and Withdrawal) is supplied by NBN Co,¹²

6.3 In its supporting submission, NBN Co states that this change is intended to 'facilitate incorporation of future variants, such as FTTdp' (see paragraphs 64(a) and 67 of the Supporting Submission). In particular, NBN Co states:

For example, should nbn decide in future that it is in a position to develop and supply services over an FTTdp network, then it could bring such services within the scope of the NBN Co Network by introducing new Products and/or varying existing Products in accordance with the product development provisions of Schedule 1I (in respect of the Initial Regulatory Period) or Schedule 2D (in respect of the Subsequent Regulatory Period). At this stage, however, it would be premature to specifically include FTTdp-based Products (or Products based on any other potential technology variants) into the SAU.¹³

6.4 While the Supporting Submission refers primarily to FTTdp technology, NBN Co acknowledges that the proposed change is intended to apply broadly enough to encompass any future technology, and:

...is expected to limit, and in many cases obviate, the need for future variations of the SAU to incorporate new technology variants.¹⁴

6.5 The CCC submits that the proposed amendment to the definition of the NBN Co Network is not reasonable and is not in the LTIE, as it is overly broad and inherently uncertain in its application.

6.6 The SAU has been approved on the basis that it has specific application to the known technologies which constitute the existing NBN Co Network, following an extensive consultation process. As outlined in its submissions above, the CCC contends that unexpected technological advances and industry adaptations (such as TPG's FTTB model) which have emerged since the SAU was approved in 2013 are already resulting in market changes which were not anticipated at the time the SAU was approved. These changes to the telecommunications landscape during a relatively short period and against a backdrop of a significant global evolution in communications technology illustrate clearly that the future for the delivery of telecommunications is inherently uncertain.

¹² NBN Co's proposed amendment, for insertion at (new) sub-paragraph (g) of the definition of 'NBN Co Network' within Attachment 2 (Dictionary) of the SAU.

¹³ NBN Co Supporting Submission, paragraph 67.

¹⁴ NBN Co Supporting Submission, paragraph 68.



- 6.7 The CCC submits that it cannot be reasonable, or in the LTIE, to mandate application of the terms of the SAU to all future products which may be delivered using the NBN Network without knowledge or understanding of what the products are or how the SAU will apply to those products in practice.
- 6.8 Further, the SAU provides NBN Co with the benefit of wide-ranging exemptions from the regulatory regime which would otherwise apply under Part XIC of the CCA. The CCC submits that it is not appropriate for NBN Co to seek to apply, without appropriate consultation and regulatory scrutiny, the price and non-price terms of the current SAU to any possible future technology which may be adopted or become available.
- 6.9 The CCC further submits that it would be inappropriate for the ACCC to make a binding, and effectively unreviewable, decision to provide NBN Co an exemption from the regulatory regime in relation to technologies which do not exist, or cannot yet be specified in detail, and which NBN Co may be supplying in competition with other service providers.
- 6.10 NBN Co may contend that it is subject to obligations under the provisions of Schedule 1I (in respect of the Initial Regulatory Period) or Schedule 2D (in respect of the Subsequent Regulatory Period) of the SAU to undertake consultation with relevant stakeholders (including as to price) in relation to any such new products. However, those provisions do not impose binding obligations on NBN Co and, in any event, do not constitute a satisfactory equivalent to the regulatory framework established by the CCA. The fact that the current Variation is required demonstrates the challenges associated with imposing an inflexible regulatory framework in relation to an unknown future state.
- 6.11 The CCC therefore submits that the ACCC must exercise caution in relation to any proposed expansion of the scope of the services to be provided under the terms of the SAU, particularly without knowledge of what those services are and in the absence of adequate data with which to make an assessment of the likely impact. For these reasons, the proposed amendment to the definition of the 'NBN Co Network' must be rejected.



Schedule 1 Worked Examples

1. The cost of NBN Co services is not equivalent to comparable services

1.1 NBN Co services compared to ULL based ADSL services

ADSL 2+ services are widely available in the market at retail prices typically ranging from \$49-\$79 per month.¹⁵ A typical retail service is likely to be approximately \$69 per month.

Taking account of GST and assuming that the retail provider is making a modest 10% margin on the service, this imputes a total cost to the retail service provider of making this service available of no more than \$57.

Due to the range of factors that may influence the speed of DSL services, it is difficult for RSPs to make definitive commitments about the speed of these services, however typical statements include statements such as “more than 50% of customers obtain speeds of more than 10 Mbps¹⁶ or ADSL2+ download speeds can be anything from 1500Kbps to 24000Kbps.¹⁷

Detailed analysis of the effective cost to RSPs of the acquisition of wholesale services from NBN Co has recently been conducted and published by numerous commentators, including both Bevan Slattery and Sarah Branson and Rene Sugo from the MNF Group.¹⁸ This analysis is consistent with, and supported by, the experience of other CCC members.

The following table provides a detailed comparative analysis of the costs required for RSPs to deliver minimum recommended download / upload speeds over the NBN Network.

¹⁵ See, for example: <https://www.iinet.net.au/internet-products/broadband/adsl/>;
<https://www.mynetfone.com.au/Residential/Home-Internet/NakedDSL-Plans>;
https://www.tpg.com.au/products_services/naked-adsl;
<http://www.iprimus.com.au/products/adsl-broadband/>.

¹⁶ See: https://www.tpg.com.au/products_services/naked-adsl.

¹⁷ See: https://www.mynetfone.com.au/media/Ts-Cs/Offer-Summaries-CIS/Resi-CIS-October-2015/DSL/CIS_MNF_Deluxe_DSL-20151007.pdf.

¹⁸ See article by Bevan Slattery in Communications Day of 1 August 2016 and *NBN: A Next Generation Wholesaler's View* in the Australian Journal of Telecommunications and the Digital Economy V 4 No. 2 June 2016.



Table: Estimated wholesale cost on NBN Network

AVC		Busy hour (min)	CVC per Mbps	Total CVC	CVC +AVC	Additional costs	Total wholesale costs/month	Discounted Rate*
12/1	\$24	1.5Mbps	\$20	\$30	\$54	\$17	\$71	\$64.25
12/1	\$24	3Mbps	\$20	\$60	\$84	\$26	\$110	\$96.5
25/5	\$27	5Mbps	\$20	\$100	\$127	\$38	\$165	\$142.5
25/5	\$27	25Mbps	\$20	\$500	\$527	\$158	\$685	\$572.5
50/20	\$34	25Mbps	\$20	\$500	\$534	\$158	\$692	\$579.5

* This shows the discounted CVC pricing currently offered by NBN Co, but not included in the SAU.

The table above sets out a series of calculations based on the cost of acquiring AVC and CVC capacity necessary to provide various configurations of service. The first two rows show services which are of a similar characteristic to services provided over ADSL 2+. A download speed of 1.5 Mbps is the broadband connection speed recommended by Netflix, and 3 Mbps is the broadband speed recommended by Netflix for streaming video of SD quality. 5 Mbps is recommended for HD quality while 25 Mbps is recommended for Ultra HD or 4K services.

\$20 per Mbps is the CVC charge which is set out in the SAU. In the final column of the table, we have set out an adjusted set of costs which takes account of the CVC discounted rate currently offered by NBN Co, which we have estimated for current purposes at \$15.5 per Mbps. We note that the Variation does not propose enshrining any discount to the CVC charge into the SAU, and so this data is provided for illustrative purposes only and demonstrates that, even applying the currently discounted rate, the wholesale price offered by NBN Co does not allow RSPs to provide services at an equivalent price to equivalent non-NBN services currently available in the market.

The additional costs have been calculated as a fixed cost of \$8 per subscriber to cover the costs of technical support and company overheads. In addition, these costs assume a per Mbps charge of \$6 to cover backhaul from the NBN Co POI to the RSP point of presence and to cover domestic and international internet access. This adopts the methodology used by Bevan Slattery referred to above. Based on the experience of CCC members, these amounts represent conservative estimates, and do not include any allowance for the high cost of establishing points of interconnect with NBN at potentially 121 locations.¹⁹

1.2 NBN Co services compared to TPG FTTB services

TPG has recently announced that its functionally separated wholesale provider, FTTB Wholesale, will offer FTTB services to RSPs at a rate of \$27 for a 25/5 AVC with a CVC rate of \$4 per Mbps²⁰. This would mean that for a 25/5 service with 5 Mbps minimum peak hour speed (as per row 3 of the table above), the cost of the

¹⁹ Discussed at page 5 and 6 of Branson and Sugo *NBN: A Next Generation Wholesaler's View*, Op cit.

²⁰ See Communications Day, 17 August 2016.



TPG service would be \$85/month as compared to \$165/month based on current SAU (or \$142.5 on NBN Co's discounted CVC price).

2. The pricing structure of NBN Co services is not in the LTIE

It is clear that demand for high bandwidth services continues to improve rapidly. This is well illustrated in the Branson and Sugo article in relation to the increasing take up of video on demand services. The table at paragraph 1.1 above clearly demonstrates that the NBN Co pricing structure is not fit for future increases in demand for bandwidth and therefore cannot reasonably be regarded as being in the LTIE. On the SAU pricing model, a service that provides a minimum peak hour speed of 25Mbps would have a wholesale cost of an outlandish \$692 per month. By contrast, the TPG price structure would result in a price of \$292 per month. This is still likely to be an unacceptably high cost, but demonstrates that the NBN Co price is some 236% of the price of a comparable service currently available in the market.

NBN; a Next Generation Wholesaler's View

How Retail Service Providers can succeed in an NBN world

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Abstract: The MNF Group has been operating in the Australian Telecommunications market since 2004 and was listed on the ASX exchange in 2006 (ASX:MNF). The author of this paper is an employee of the MNF Group and the opinions expressed are those of the author and do not necessarily represent those of the MNF Group.

Upgrading the infrastructure of an entire country is a huge undertaking and was deemed necessary with Government intervention in Australia. Had this task been left to private companies, the likelihood is that Australia would continue to experience a huge gap between the cost and availability of high quality, fast speed broadband services between metro and rural regions.

The NBN rollout is several years into the project and a recently released report from the ACCC has given insights into the wholesale market and an initial market indicators shows that the market is becoming less competitive.

This paper also examines the costs interconnecting with the NBN and demonstrates why the NBN has not achieved its goal of providing a level playing field for all telecommunication companies. By looking at the true cost of providing NBN services to NBN users, it is also clear to see that the NBN pricing model is flawed and will affect the quality of service being provided to Australians.

To succeed in the telecommunications industry, RSPs will need to work hard to differentiate their brand and provide added value to consumers through additional service offerings. Selling NBN services alone will not be enough to enable RSPs to survive in this tough market. Expect to see further consolidation and companies exiting the telecommunications industry as they won't be able to compete with the big 4 dominating the market.

Unless otherwise indicated, prices are taken from the current NBN price list, version 2.9 issued 16th June 2016, which is publicly available on the NBN website. ("Price List" 2016).

NBN and the Australian Telecommunications market

This paper examines whether four or five large companies operating in the telecommunications market is providing enough competition, taking into consideration how the telecommunications industry looked five years ago, how it looks now and what the purpose of the National Broadband Network (NBN) rollout project was in relation to competition.

For the purpose of this paper, when competition is examined, it refers to competition seen at a retail level i.e. the competition between organisations that benefits consumers when they make a choice about which telecommunications provider they will buy their broadband service from.

Some of the large companies referenced operate in the telecommunications market at both a retail and a wholesale level. What is meant by this is that they sell services via their own retail channels directly to consumers; they also sell their services on a wholesale basis to Retail service Providers (RSPs) who then on-sell these services to the same retail consumer market.

Not all wholesale business models look the same. The way a company operates may be largely dependent on their obligations to their shareholders, the amount of money they have invested in legacy infrastructure and their marketing strategy for their retail brand.

If we consider the incumbent telecommunications provider in Australia, Telstra, before the NBN was conceived; it could be said that due to the large amount of money they invested in their copper network, it is in their best interests to prioritise selling their copper services at a retail and wholesale level, as opposed to investing in new technologies. This would enable them to receive the best return on their investment and a best result for their shareholders. Therefore, there is a lack of incentive to innovate even if it would provide a better experience or cost benefit to the consumer.

This scenario demonstrates why it would be difficult for multiple telecommunication providers in a country to invest in new technology and achieve what the NBN has been put in place to achieve: a nationwide rollout of new technology to all premises across Australia with no price differentiation based on geographical location.

Even if an NBN rollout had been attempted by private companies, it would most likely result in preferential outcomes for metro based consumers as this would represent a more profitable market. This is especially true in Australia where there is large geographical distances between consumers and the cost of providing services to regional consumers has traditionally been more expensive.

By creating a Government run corporation tasked with implementing a nationwide rollout of fibre at a wholesale prices that are fixed for all consumers regardless of location, the NBN should achieve what private companies were unlikely to ever aspire to.

Insights into the NBN market

In April 2016, the Australian Competition and Consumer Commission (the ACCC) released its first report on the NBN wholesale market. (“NBN Wholesale Market Indicators Report” 2016).

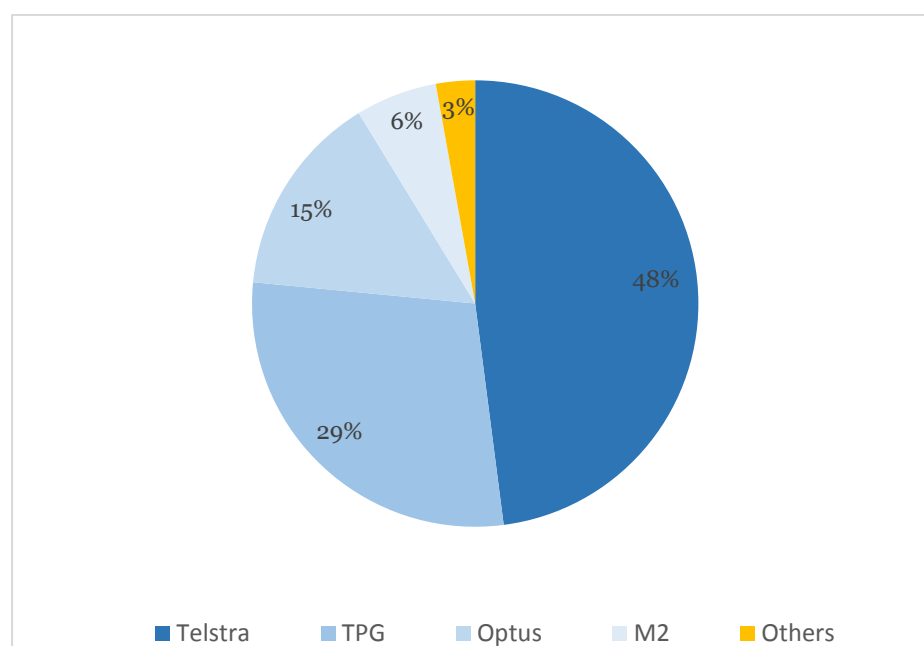
The statistics contained in the report were alarming to many across the industry, as it clearly shows market dominance by four large players.

Market share

The report from the ACCC showed that Telstra had around 48% market share across the three fixed technology types: Fibre to the Premises, Fibre to the Node and Fibre to the Basement (FTTP, FTTN and FTTB) this figure is higher if you only consider the newer technology types FTTN and FTTB.

Telstra’s average retail market share for fixed DSL broadband services was an average of 41% from 2011-2015 (“Competition in the Australian telecommunications sector” 2016). Given that the NBN was supposed to reduce Telstra’s monopoly power, it has proved counterproductive in that Telstra has gained higher market share of the NBN market than they previously held in the DSL broadband market.

Figure 1 – NBN market share of current connections by Network Access Seeker for FTTP, FTTB and FTTN.



Source: “NBN Wholesale Market Indicators Report” 2016

Number of providers at the POIs

The same report from the ACCC also showed that 71 Points of Interconnect (POIs) had just 4 Access Seekers (telecommunication companies) connected to it and providing services to that POI area.

The data also shows us that the maximum number of providers at any POI was 10 and that just 5% of POIs had more than 7 providers connected and providing NBN services.

The NBN website RSP list (List of NBN service providers, 2016) shows that there are currently 133 RSPs who are reselling NBN services to consumers, which means that even if hypothetically all 121 POIs had 10 providers connected, that represents just 7.5% of RSPs.

The significance of connecting directly to NBN's 121 POIs will be examined later in this paper.

CVC Bandwidth

The other insight the ACCC report provided was an indication of the amount of Connectivity Virtual Circuit (CVC) bandwidth which was being purchased by Access Seekers in order to service end users.

In the report, for Service class 4 table 2 shows that total contracted CVC is 952,561 Mbps. Table 1 shows that the total number of Fixed NBN services (FTTP, FTTB and FTTN) for Service Class 4 is 805,396 services in operation (SIO).

If you take the total CVC and divide it by the number of SIOs, this gives an average CVC bandwidth per service of 1.18Mbps. This calculation doesn't take into account the different plans that services are assigned to or the fact that CVC has to be purchased in minimum blocks, however it does give a very approximate indication of the CVC that is being provided to NBN end users.

Whilst this amount of CVC bandwidth might not cause immediate concerns for industry or end users, consider when an end user requires 5Mbps to watch High Definition Television (HD TV), and support multiple devices being connected to the same service in a household. This amount of bandwidth would result in buffering, slow speeds and a poor end user experience.

Creating competition or creating barriers?

Since 2010, we have seen the fixed market (that is, voice and broadband but not considering mobile services) consolidate from around 16 separate companies to just 4 large companies dominating the market¹.

Whilst this isn't as a result of the NBN rollout, it is market consolidation at a wholesale level; that has been approved by the ACCC, a Government organisation that is supposed to promote competition and fair trading.

Acquisitions

TPG acquired iiNet in 2015 after the purchase was approved by the ACCC; with ACCC chairman Rod Sims even stating that they expected this acquisition to lessen competition in the fixed broadband market in the short term ("ACCC to not oppose acquisition" 2015).

At the time, Sims gave the impression that the ACCC would be "much tougher on any further consolidation of the telecommunications sector, especially if the deal involved Telstra, Optus, TPG or M2" (Sadauskas, A. 2015). However, 3 months after approving this acquisition, the ACCC approved another when Vocus acquired M2 ("ACCC will not oppose" 2015).

The ACCC stated that in this case, the merged firm will face competition from Optus, Telstra and TPG and therefore it was approved.

As a result of these acquisitions, there is still several large companies in the operating in the industry which satisfies the requirement for competition, however, this does not take into consideration the effect of the mergers on the market.

The reality is that these companies are all very similar and there is very little incentive for them to innovate or support RSPs whilst they also own and operate large retail brands themselves

Barrier to entry

One of the initial objectives of the NBN was to create a level playing field for all Access Seekers (NBN Corporate Plan, 2010). This objective was expected to be achieved partly by separating Telstra from its network assets, and partly by the decision to use Uniform National Wholesale Pricing (UNWP) so that all Access Seekers would pay the same wholesale price for a service from NBN.

When considering the cost of interconnecting directly with the NBN, we can understand why this objective cannot be achieved. The 121 Points of Interconnect model used for the NBN roll out means that there are very few companies who are able to interconnect directly and therefore they cannot access NBN services at these fixed prices.

The cost to connect to each POI is \$1,000 per POI, based on the NNI 1000BaseLX Activation fee as per NBN's price list ("Price List" 2016). Therefore, to connect to all 121 POI's would require a substantial upfront investment of \$120,000.

The minimum ongoing monthly cost of being connected to a POI in order to provide NBN services is \$1,775 per month. This figure is based on the minimum commitment for RSP's for

CVC which is 100Mbps at the current price of \$15.75 per Mbps (based on industry average, price as at June 16), plus the minimum NNI cost which is \$200 (1 Gbps) – 10 km range) (“Price List” 2016). When you multiply this by 121 POIs the total minimum monthly cost is \$214,775 per month regardless of the number of end users that are being serviced.

NBN Co announced in April that they would introduce a dimension based discount (DBD) model to reduce the cost of CVC paid by RSPs, claiming that CVC costs could be reduced to \$11.50 per Mbps (“New discount-based pricing” 2016). Since this was introduced industry has seen the price reduce from \$17.50 per Mbps to the current DBD price of \$15.75. Even if we use the lowest theoretical cost of \$11.50 in the same calculation, it would be \$1,350 per POI and a minimum monthly commitment of \$163,350 to interconnect directly with all 121 POIs.

It should be noted that these calculations do not include the cost of backhaul to move data

These high costs of interconnecting directly to the NBN have ruled out many companies from being able to compete at a tier 1 level, resulting in a multi-tier market with price increases as we move down each tier as the large companies sell to the next tier level, who then on sell to the RSPs.

Whilst this has always been the case in the telecommunications market, the reason that creating competition is so difficult now is due to the huge amount of consolidation we have seen in the industry. Consider that the main large companies who can afford to interconnect with NBN directly and enjoy these fixed wholesale prices also have their own retail brands. Ultimately, this enables the big players to buy cheaply and sell cheaply direct to their retail consumers. Making it harder for RSPs to compete in the same retail consumer market.

The cost of providing NBN services

When supplying an NBN service to an end user, there are several parts that make up the final cost of an NBN service:

- Access Virtual Circuit (AVC)
- Connectivity Virtual Circuit (CVC)
- Backhaul
- Other costs (staff, overheads, marketing etc.)

To demonstrate why the current pricing model for NBN is flawed, below is the true cost to a business of supplying an NBN service based on the assumption that the service is being supplied at a tier 1 level i.e. the provider is buying directly from NBN and is selling this to its retail customers.

AVC

The Access Virtual Circuit (AVC) monthly access fee, put simply, is the monthly price a provider pays NBN to purchase a service from them. It is the port cost for the connection from the end user to the NBN network.

This AVC fixed price is only accessible to those who have directly interconnected with NBN. Anyone who is too small to connect will be buying at a higher price on a wholesale basis from a tier 1 or tier 2 provider.

The pricing detailed below is publicly available information from the NBN Price List.

Figure 2 - The recurring Charges per Billing Period for the AVC TC-4 and UNI bundle

AVC TC-4 downstream Mbps (PIR)	AVC TC-4 upstream Mbps (PIR)	NBN Co Network	Recurring Charge
12	1	Fibre, FTTB, FTTN, HFC, Wireless and Satellite	\$24.00
25	5	Fibre, FTTB, FTTN, Wireless, HFC and Satellite	\$27.00
25	5 - 10	FTTB and FTTN	\$30.00
25	10	Fibre and HFC	\$30.00
25 - 50	5 - 20	FTTB, FTTN and Wireless	\$34.00
50	20	Fibre and HFC	\$34.00
25 - 100	5 - 40	FTTB and FTTN	\$38.00
100	40	Fibre and HFC	\$38.00
250	100	Fibre	\$70.00
500	200	Fibre	\$100.00
1000	400	Fibre	\$150.00

Source: NBN Co Price List 2016.

CVC

The Connectivity Virtual Circuit (CVC) charge is the cost of aggregation from multiple households to the POI. It is effectively the bandwidth used by the end user and is currently set at \$17.50 per 1Mbps of traffic ("Price List" 2016).

To give some context to what the CVC charges might look like, take Netflix as an example of what consumer demands will be.

Netflix has provided on its website the recommended amount of bandwidth required for an Internet connection if an end user wishes to watch films and TV shows in High Definition (HD). The recommendation bandwidth for viewing in HD is 5Mbps. ("Internet Connection Speed Recommendations" 2016)

HD is already considered the standard in homes; in 2011 93% of households across Australia already had an HD integrated digital television (“Television sets in Australian households” 2012).

Therefore, if an end user wants to watch TV or a movie in HD, they would need 5Mbps of bandwidth. If you apply the CVC charge of \$17.50 per 1 Mbps and this equates to \$87.50 for 5Mbps of bandwidth.

It is easy to see why currently only 1.18Mbps is being provided to end users for their NBN service. Whilst this might be acceptable for today’s consumer needs, it is expected that within the next few years more Australians will consume TV and movies in Ultra HD (also known as 4K) with 40% of TVs expected to be 4K by 2020 (Player, C. 2016)

Consider also that the number of Australians with Subscription Video on Demand (SVOD) services has now reached 2.7 million (“Strong SVOD growth” 2016) and is expected to more than double to 4.7 million subscriptions by the end of 2019 (“Australian OTT Video” 2015). This means the industry will see a higher number of Australians requiring a higher amount of data and demanding more bandwidth to deliver Ultra HD quality.

Given that Netflix recommend you will need a connection providing 25 Mbps bandwidth to watch ultra HD content, the cost of purchasing this bandwidth to provide this experience to the end user will be unsustainable.

It is perhaps not surprising that Presto, a Video on Demand (VOD) service, when it launched in Australia in 2015 postponed their offering of 4K content as they did not believe NBN would be able to provide the bandwidth required to watch 4K TV (Dudley-Nicholson, J. 2015).

Backhaul

Backhaul put simply is the cost of moving Internet data from a series of locations back to a more centralised location i.e., from an NBN POI to a company’s Point of Presence (POP).

It is difficult to provide an estimated costs of backhaul due to commercial in confidence, therefore this cost will not be considered in the total cost of providing an NBN service.

Other

The Coalition’s plan for fast broadband and an affordable NBN document stated that they assumed retail prices to include a margin of \$28 as this is the current approximate figure (“The Coalition’s plan” 2013). Consider that this \$28 should not only cover the costs of labour, overheads, marketing and other costs, but it should also provide some profit margin to the provider.

Total cost of providing an NBN service

A company will pay a monthly fee for an NBN plan (AVC), a charge for CVC bandwidth, and Backhaul costs to transport data.

If we take the entry level plan available from NBN which is a 12/1Mbps plan priced at \$24 Ex GST, and add the 5Mbps of CVC bandwidth cost, but not including the backhaul cost, the total cost of that plan to an RSP is \$111.50.

Note that this is based on a tier 1 provider accessing NBNs UNWP pricing. Any provider who cannot connect with NBN directly and buys from a tier 2 provider will pay more than this.

Adding the \$28 margin that NBN included in its document (“The Coalition’s plan” 2013) plus GST gives the final retail cost of an NBN service for an end user of \$153.45.

Figure 3 – The total costs of providing a 12/1Mbps plan.

AVC charge	\$24
CVC charge (5Mbps)	\$87.50
Backhaul costs	N/A
Other costs/margin	\$28
Sub total	\$139.50
GST	\$13.95
Total cost to end user	\$153.45

Looking at a selection of telecommunication providers in the market place, many companies are selling an entry level (12/1Mbps) unlimited NBN plan for around \$60 to \$70. This could indicate that providers are selling at a loss to gain market share, or they may be selling services contended which means there is likely to be congestion on the network at peak times.

One might wonder why we are not seeing prices already at the \$153.45 price point if that is how much it is costing providers to supply that service to the end user. The reason for this is because companies are not currently providing consumers with 5Mbps of bandwidth as per their requirements; instead they are providing approximately 1.18Mbps. Whilst this means that the company can afford to provide the service and the end user can afford to buy it; in reality, the end user may experience some buffering and slow speeds, especially during peak times such as when most people are home and using their Internet connection in the evenings.

The author notes that the CVC charge used in the calculation does not take into consideration the CVC rebate recently announced by the NBN (“New discount-based pricing” 2016). NBN

Co claim that CVC costs could be reduced to \$11.50 per Mbps, however, this reduction in price is dependent on the average CVC bandwidth that is provisioned to end users across the industry. Therefore the price that an RSP will pay for CVC bandwidth is determined by what the tier 1 providers directly interconnected with the NBN are choosing to provision for their end users. Even if the calculations were based on the lowest CVC charge possible of \$11.50, the total cost to the end user for the plan demonstrated would be \$120.45.

It should also be noted that this new pricing model, known as dimension based discount (DBD), has been put in place to “reward retailers with a discount (determined at an industry level) for delivering a better customer experience through the better allocation of CVC to end users.” (“New discount-based pricing” 2016). This reinforces the idea that NBN are well aware that services are being sold contended and that this will lead to a poor customer experience and large ramifications for the success of the NBN project. The author is of the opinion that the new DBD pricing does not go far enough to address the issue of high CVC usage based charging.

NBN Business case under threat

A risk to the NBN business model is the threat from alternative technologies such as mobile phones and tablets or alternative Fibre providers such as TPG.

NBN itself has also highlighted this risk in its corporate plan “competition could intensify from both mobile service providers and alternative fixed providers” (“Corporate Plan” 2016).

Improvements in the speed of data downloads on mobile devices is already positioning mobile services as a genuine alternative to the NBN. Mobile phone plans in the market are continually offering more data inclusions whilst maintaining current retail price points; this will ultimately make mobile an affordable alternative to an NBN service.

As demonstrated above, NBN plan charges at a retail level are likely to increase as consumer demands for higher bandwidth and data need to be met. The CVC pricing model means that theoretically NBN plan fees will become prohibitive and either consumers will not buy them, or RSPs will not offer them, resulting in consumer’s choosing alternative technologies.

This will compound the issue of high NBN prices even further as less consumers share the cost of the NBN meaning retail prices will remain high, or the time it takes for the NBN to pay back its cost will be extended.

The MNF Group – A Wholesalers View on the NBN

The NBN rollout presents exciting opportunities for businesses across the industry as well as bringing a better digital future for the Australian population.

It is important that companies and individual advocates in the industry have a voice and lobby for change. When the NBN network model was being discussed in industry, companies were invited to submit their responses to the ACCC. Many in the industry understood that the large number of Points of Interconnect (POI's) that were being proposed would result in a market where only the largest companies would be able to afford the investment required to connect to all of the POI's around the country, as has been demonstrated above.

In addition, the majority of the proposed POI's were based in Telstra's existing infrastructure giving them immediate competitive advantage over other companies as they would have had the required infrastructure and backhaul in place already. This arrangement gave them a head start in the market place more quickly than others who would have taken time to set up these arrangements and agree commercials.

The next major challenge presented in the business case for the NBN was the change of Government and following on from that, the change to the technology types that would be used to deliver the NBN to Australians nationwide.

The change of technologies hasn't necessarily presented commercial challenges to RSP's but there are operational difficulties to overcome.

Using the existing copper means that the transition for an end user from DSL to NBN is likely to result in downtime (time without an Internet service) giving a poorer end user experience during the changeover. This is unlikely to be as much of an issue for Telstra who have full control over the copper network and the migration of services and can offer a more seamless experience. This provides another competitive advantage for the incumbent carrier.

It is now generally accepted that there is little to be gained from continuing to lobby against these challenges since the rollout is too far advanced; although Former NBN CEO Mike Quigley has recently brought this issue back into the spotlight "pleading for a return to the NBN to the FTTH (FTTP) model" ("Quigley makes another election campaign" 2016) and the labour Government has revealed its plans for the NBN if it is voted in to power in the next election.

In addition to these challenges, there are still elements of the current business plan that continue to cause concern.

The NBN's approach to CVC pricing could seriously undermine the business case for the NBN and cause prohibitive and unsustainable pricing. In turn, this will lead to a strengthening of the case for alternative technologies (this is discussed further below).

The recent release of the pre-election budget presented an opportunity for the Government to write off some of the costs of the NBN network build. Understandably, this may not have won

the Government votes and support from the masses, but it would have garnered support from industry and would help to stabilise the future business model for the NBN rollout.

The opportunity to write off some of the build cost would mean that NBN would not have to pay back so much in revenue and a review of the way NBN services are priced could have been undertaken. Instead what we will see is prohibitive price increases as customers require more data.

The MNF Group - A Retail Experience

The MNF Group is multi tenanted business, owning a tier 1 Voice over Internet Protocol (VoIP) network, several consumer retail brands, and on sells wholesale services.

This range of service offerings gives a wide ranging and unique insight into the impact of the NBN across several different market disciplines.

The way telecommunication companies sell services

The Australian Bureau of Statistics (ABS) reports the average broadband downloads grew more than 33 per cent from December 2013 to December 2014 (“Internet Activity, Australia” 2014). Perhaps even more impressive is that the amount Australians downloaded jump 50% between December 2014 and December 2015 (“Internet Activity, Australia” 2015).

This change in consumer data consumption will be experienced by nearly all providers across the industry, especially since the introduction of Netflix in Australia. NBN has referenced this change in its corporate plan “continued double-digit growth in volume through changed consumer behaviour (e.g. new subscription video services, 4K streaming, devices per household, etc.)” in the context that they expect this to contribute to higher CVC earnings for the NBN (“Corporate Plan” 2016).

Given that many companies in the industry have modelled their commercial offerings on a usage based cost, this change in consumer behaviour will dramatically affect how DSL and NBN plans are sold and priced.

As an example, consider that an unlimited plan might be sold in 2013 for \$49.95 Inc. GST, but the cost modelling for this plan would be based on the fact that the end user will probably only download around 45.6GB per month (“Internet Activity, Australia” 2014). If the consumer increased their data usage in line with the statistics shown by the ABS, it is entirely likely that providers would be losing money on a plan modelled this way.

In 2015 the average data download on NBN was 112GB (“Half Year Results” 2016), that’s nearly 2.5 times the amount of data. Consumer data consumption will continue to increase as

VOD and other online services become more mainstream, and as technology such as 4K Ultra HD TVs enable the faster consumption of data.

Consumer Expectations

There are several things that influence consumer expectations when it comes to determining what they expect from a broadband service and what they expect to pay for it:

- The market
- Politicians
- Netflix effect

The Market

Consumers have long been able to access cheap, unlimited broadband plans thanks to the pricing strategy described above and the lowering cost of data on DSL services.

Prices for unlimited DSL prices are fairly stable at around \$40-50. Prices for NBN entry level plans (12/1Mbps) have settled in the market at around \$50-60, although as demonstrated above, customers are most likely only receiving 1.18Mbps based on the current contracted CVC and number of subscribers.

Politicians

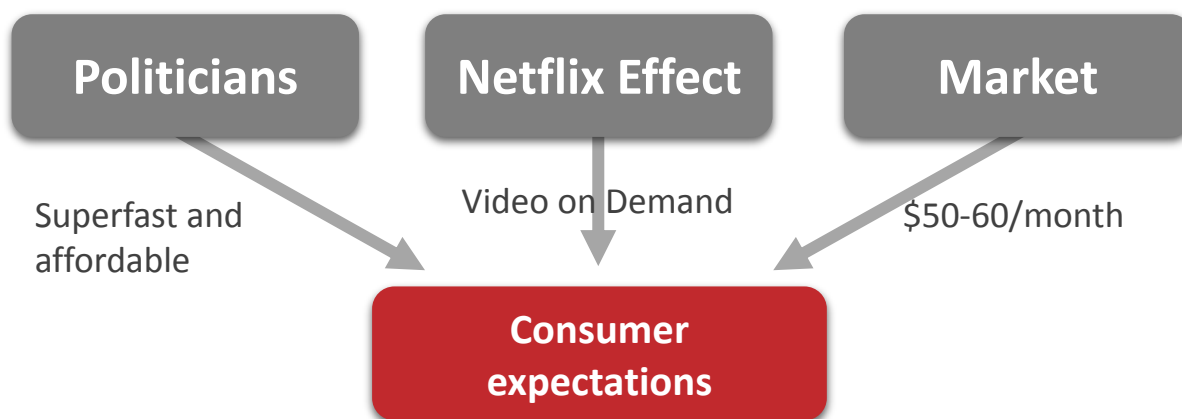
The Government on both sides has been promising to deliver fast and affordable broadband for all Australians. The coalition Government even specified a price point in their plan for fast broadband and an affordable NBN policy document of \$66 figure (“The Coalition’s plan” 2013).

The Netflix Effect

The Netflix effect is a term adopted to describe the shift in consumer consumption of TV and movies since the introduction of Video on Demand (VOD) services such as Netflix, Stan, Presto and others. Netflix even ranks RSPs based on how good their download speeds are (<https://ispspeedindex.netflix.com/>).

The burgeoning Video on Demand industry has allowed consumers to watch content through their TV, meaning that they are consuming more data than ever before and yet they would have seen no change to the price of the broadband plan (assuming they are on an unlimited plan) as their RSP would bear the cost as a result of the cost modelling described above.

Figure 4- the different influences on consumer expectations.



Resulting Expectations

Considering these influences, it is easy to understand why the consumer expectation is that they should be able to buy an unlimited Internet plan, regardless of technology type and be able to watch Netflix and other Video Services on Demand (VSOD) as much as they like in HD for around \$66.

What this means for many RSPs is that they are selling NBN services at a price point to meet consumer expectations with minimal if any margin, most likely they are either selling at break-even pricing (or below) with the intention of gaining market share and making their profit from other services that they can offer.

Whilst this paints a tough and somewhat gloomy picture for telecommunication companies trying to compete, it also presents opportunities and forces companies to find new ways to differentiate themselves.

How to succeed as an RSP

Fixed wholesale pricing in the NBN model was intended to deliver fair pricing for all providers and would remove the ability to be able to compete on price. With a multi-tier industry, where the smaller RSPs are not able to buy directly from NBN, price competition hasn't been removed and it is more difficult to offer the cheapest plan if you are not a tier 1 company.

Price is not the only factor that a company considers when differentiating itself from its competitors. In an industry where everyone is selling the same underlying service, RSPs must look for other points of difference to give them a competitive edge.

Pricing

Whilst many providers offer very cheap pricing for an entry level plan, it has also been proven that you don't have to be the cheapest to be able to sell NBN services. Telstra is not the cheapest provider and yet they have gained the most market share.

The important thing is to ensure that you are not the most expensive either which may be challenging for some providers who have very low margins. Therefore, being able to obtain revenue and profit margin from other avenues (such as voice) is important.

Value proposition

Aside from pricing, there are other ways that an RSP can ensure they offer differentiation in the market place. This paper does not explore marketing theories in depth, however it will demonstrate a Company's point of view which is specific to the telecommunications industry.

A value proposition is made up of multiple facets which enable you to provide additional perceived value to your end user. Sometimes this additional value is quantifiable for example, promising to answer calls in a certain amount of time can be measured by both an organisation and a consumer. An example of a non-quantifiable benefit would be the quality of the customer service that a company provides to their end user.

Service and systems

Within the MNF Group, iBoss is a tier 2 wholesaler who provides wholesale services (such as NBN); these services are ordered, provisioned and managed via an online portal.

By offering a wholesale customer (the RSP) superior and intuitive systems that are easy to use to, iBoss is able to differentiate itself from its competitors. In turn, the benefit to the RSP is efficient systems that reduce their manual workload and the amount of operational staff required. The RSP will be able to operate more leanly which will provide cost benefits in the form of lower operational overheads.

An RSP will also usually use a billing system to bill their end user and provide the end user with the capability to manage their service and billing account. An RSP is able to leverage iBoss' billing systems to provide automated ordering solutions to their end users, meaning that the end user can have control over ordering their service and managing it. Invoicing and billing is also integrated and automated enabling the RSP to effectively run their businesses with minimal human input.

Superior software systems will provide an enhanced customer experience, and ultimately can reduce the overhead costs for an RSP.

Support

The quality of customer service and technical support that an RSP provides to its end users will provide a non-quantifiable customer benefit. Providing a quality and knowledgeable support service to the end user is an important part of a service offering in telecommunications as services can often present technical complications.

The way an RSP can achieve this is by providing high quality training to their customer support team. Implementing procedures to ensure that customer complaints or technical issues are escalated in the correct way and are resolved in a timely manner is an important element of customer service and relates back to the systems an RSP uses to manage their business.

Quality

When it comes to quality of service, on the face of it, it would seem difficult to differentiate on the quality of the NBN service being provided to an end user as the underlying infrastructure and product is the same for all providers. However, RSPs can differentiate on quality by purchasing more CVC bandwidth for their end users which would provide a better download experience and reduced likelihood of buffering. This will be difficult for any RSP who is not a tier 1 provider interconnected directly with the NBN as they will not have control over the amount of bandwidth that is being purchased for its end users.

So whilst it is difficult to compete on the quality of the service being provided, it does come into play when you consider that RSPs could be selling a service that is buffering and provides a poorer customer experience.

Netflix itself provides a rating system on its website to show the RSP which it says is performing the best in providing download speeds (<https://ispspeedindex.netflix.com/>)

This makes RSPs accountable for the quality of service that they offer, and will ultimately apply pressure to ensure providers at all tier levels are not selling contended services. This adds weight to the argument that CVC costs are not sustainable and need to be reviewed in order to provide end users with the experience they expect at a price they can afford to pay.

Add-ons

Telecommunication providers will need to look for innovative solutions and products that they can add-on to an NBN service to provide a point of difference to their competitors. An example of an add-on that would provide extra perceived value would be including a voice service with calls as part of a bundle offer, or providing free Netflix or another similar VOD service.

Niche suppliers

The rollout of the NBN has offered new opportunities to geographical and niche suppliers. Small local providers have been able to capitalise on the opportunity presented by the mass

switch on of fibre services in their local area. This has provided a competitive edge as they have captured the early adopters who wanted to migrate to the NBN network as soon as it was available. The vast amount of data available from NBN on rollout areas and estimated switch on dates has enabled specific targeting of customers in specific areas. This unique opportunity will become much less relevant once the rollout is complete.

Conclusions/Recommendations

Early market indicators from the telecommunications industry show some worrying insights. The NBN market is dominated by 4 large players and it is expected that small RSPs will exit the market as they find it too difficult to compete; this will lead to more consolidation and less choice for consumers.

There are widespread concerns across industry about the pricing model for NBN which has been proven to be flawed. By examining the challenges posed by the pricing model, the author has demonstrated that the quality of the service being provided to consumers is diminished.

The author predicts that without modification of this pricing model, not only will this result in reduced competition, but consumer adoption of the NBN is likely to falter as alternative technologies pave a faster, more affordable path to high quality, fast speed data connections.

The NBN rollout is expected to be completed in 2020 by which time the data demands from households will be much higher than we see today; without change to the pricing model consumer perception will be that the NBN rollout has been a failure.

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Endnotes

¹Examples of mergers and acquisitions in the telecommunications market between 2010 and 2016:

1. iiNet acquired AAPT's consumer division in 2010 <https://aapt.com.au/aapt/about-aapt>
2. iiNet acquired internode in 2011 <http://www.internode.on.net/news/2011/12/259.php>
3. iiNet acquired TransACT in 2011 <http://www.iinet.net.au/about/history/>
4. iiNet acquired Adam internet in 2013 <http://www.iinet.net.au/about/history/>
5. iiNet acquired 60% of Tech2 in 2014 <http://tech2home.com.au/>
6. TPG acquired AAPT in 2014 <https://aapt.com.au/aapt/about-aapt>
7. TPG acquired iiNet in 2015 <https://www.tpg.com.au/about/profile.php>
8. M2 acquired Primus in 2012 <http://www.iprimus.com.au/legal/about-us/>
9. M2 acquired dodo and Eftel in 2013 (https://en.wikipedia.org/wiki/M2_Group)
10. Vocus acquired Amcom in 2015 <http://www.vocus.com.au/news/vocus-and-amcom-faqs>
11. Vocus acquired M2 in 2015 <http://www.vocus.com.au/news/vocus-and-m2-merger-approved>