



Australian Government

The Treasury

Submission to the independent cost-benefit
analysis and review of regulation for the
National Broadband Network

Regulatory issues framing paper

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INTRODUCTION

The regulation of telecommunications services, particularly broadband internet, has important impacts on Australians' wellbeing and productivity, with implications for the Budget and competition policy. Furthermore, given the long useful life of telecommunications assets and the sector's key role as an input to most other sectors, decisions about how to regulate telecommunications made now have the potential to affect Australians' wellbeing and the economy for many years to come.

In preparing this submission, we were cognisant of the difficulty of the task that the Panel has been asked to undertake. The Panel cannot consider the appropriate regulatory settings for the telecommunications industry as if it were starting with a blank sheet of paper. The Panel's work is instead constrained by a number of factors, including history, sunk investments and clear Government policy objectives for telecommunications. As such, this review must be based in the practical realities that the Government and the industry find themselves in 2014.

The Panel has helpfully outlined the world they are working in by providing assumptions up front. Our submission is likewise written with these factors in mind. We are conscious that in some instances compromises will be necessary to rectify apparent conflicts between policy objectives.

This submission seeks to address most of the questions raised by the Panel in the Regulatory Issues Framing Paper (the Paper). We begin with a discussion of the context and our assumptions about the telecommunications environment, including suggesting an additional two assumptions to those provided by the Panel. We then move to define and argue for four high level features of the industry structure that Treasury would like to see emerge from the current reforms in the sector. In the next section we provide some comments on brownfields, greenfields and the existing Universal Service Obligation, before finally making some comments about the institutional arrangements.

Context

The fixed line telecommunications market in Australia continues to be dominated by a former Government-owned vertically integrated incumbent (Telstra) despite more than twenty years of pro-competitive reforms. Significant components of the former Government's National Broadband Network (NBN) are either complete or unavoidable. Furthermore, NBN Co has entered into commercial agreements with Telstra to lease its infrastructure and transfer its customers (and with Optus to transfer its customers) to NBN Co. The structural separation of Telstra's (and Optus') fixed line business is being delivered progressively by these agreements.

It is also worth noting that Australia is generally regarded as being at the forefront of mobile broadband technology.¹ While mobile broadband has significantly less capacity than fixed line technologies, it can compete with fixed line in some circumstances.

¹ See, for example, OpenSignal's state of LTE report: [http://opensignal.com/reports/state-of-lte/OpenSignal-State-of-LTE-Report_\(Feb-2013\).pdf](http://opensignal.com/reports/state-of-lte/OpenSignal-State-of-LTE-Report_(Feb-2013).pdf) and Economic drivers and contribution of mobile communication in Australia, commissioned by Telstra and available at: <http://exchange.telstra.com.au/wp-content/uploads/2014/02/Mobiles-Report-for-Telstra-FINAL.pdf>

Assumptions

Treasury supports the essential features of the Panel's working assumptions as set out on page five of the Paper. We note, in particular, that the assumptions about universal access at an affordable price (assumptions one and two) and structural separation of existing (Telstra) and future (NBN Co) wholesale providers (assumptions four and five) reflect the Government's policy for the NBN.² There are two further assumptions we have made, and would encourage the Panel to consider:

- that the extent of the Government's financial contribution to NBN Co is limited to \$29.5 billion in equity; and
- that the 121 points of interconnect are a workable definition of the boundary between the natural monopoly elements and other parts of the network.

The Australian Government has entered into an Equity Funding Agreement with NBN Co. The agreement commits the Government to provide NBN Co with \$29.5 billion in equity, conditional on the annual appropriation process. Both the nature (equity) and quantum (\$29.5 billion maximum) of this funding should be regarded as fixed. It is worth noting here that government contributions to NBN Co are only classified as equity where a real return over the life of the project is anticipated.

The extent to which the Australian fixed line telecommunications network is a natural monopoly is the subject of much debate amongst economists and commentators. However, most economists and commentators seem to agree that at least part of every fixed line telecommunications network exhibits natural monopoly characteristics. That is to say, part of the network can be provided at lower cost by one as compared to multiple providers. Even if the network is a natural monopoly, this does not necessarily mean that multiple network providers might not be able to operate profitably in at least some areas, but it does affect how efficient that might be from a cost minimisation perspective.

Defining the boundary between the natural monopoly elements of the network and the parts of the network that may efficiently accommodate one or more competitors in the abstract is notoriously difficult (perhaps intractable). For this reason, empirical observation has become the preferred approach. The Australian Competition and Consumer Commission (ACCC) adopted such an approach to specifying the 121 points of interconnect (PoI) for the NBN.³ For the purposes of this submission, we have assumed that this analysis is a workable definition of the boundary between the natural monopoly elements and other parts of the network.⁴ That is to say, the natural monopoly element of the network is the fixed lines between each premise and the relevant point of interconnect.

The Panel also called on submissions to identify the relative priority of competing objectives inherent in the assumptions (question two). We have sought to prioritise competition, focused on preserving the structural separation of existing and future wholesale providers, to the extent possible within the funding envelope provided by the Government.

² 'The Coalition's Plan for Fast Broadband and an Affordable NBN,' April 2013. See: <http://www.liberal.org.au/fast-broadband-and-affordable-nbn>

³ See: <https://www.accc.gov.au/regulated-infrastructure/communications/national-broadband-network/nbn-points-of-interconnect-pois>

⁴ It is also worth noting here that the boundary is not fixed, with the ACCC required to review the specification at regular intervals under legislation (section 151DC of the *Competition and Consumer Act 2010*). The first review was completed in February 2013, but recommended no change.

INDUSTRY STRUCTURE

As the Panel observes, the answer to many subsequent questions flows from the expected industry structure. In Treasury's view, the fixed line telecommunications industry in Australia should be characterised by the following four structural features in the long run:

1. promoting competition in the retail and wholesale sectors, by having at least one wholesale only provider of natural monopoly fixed line infrastructure in all parts of Australia capable of delivering some agreed minimum standard of broadband services to end users;
2. price, access and exit regulation should apply to the wholesale only provider;
3. where there is more than one provider of natural monopoly fixed line infrastructure (presumably in low cost geographies), regulation of competitors should be limited to that which is sufficient to fund the 'cross-subsidy' of higher cost geographies (if required at all); and
4. minimal intervention in related markets.

This implies that in the long run, we might see one wholesale only open access network serving all of Australia, or a number of wholesale only open access networks serving various regions. In the long run, recognising that the boundaries of natural monopolies are uncertain and may change over time, there may also be scope for other network providers (both wholesale only and integrated with retailing functions) to build their own networks to compete with the wholesale only open access providers.

Transitioning from the existing industry structure will take time. It is not realistic to expect that the regulation that would be appropriate for this industry structure in the long run can be implemented overnight to good effect. That said, it is reasonable to expect that regulation would progressively move toward the end state over time in concord with the evolution of the market. We return to these temporal issues later.

1. Wholesale only network of a minimum standard

Structural separation of network owners

As outlined earlier, we have assumed that the network between the PoI and the premise is a natural monopoly. We also consider that the costs of construction mean that the scope for competition in this part of the supply chain is, at best, limited to higher density geographies. Other parts of the supply chain are more likely to be able to support and benefit from competition. Given this, we think it is important that the structure of the network sector contributes to these potential benefits from competition.

The way the network operates can create issues for competition in related markets in two key ways. First, the network owner can refuse or frustrate access to its network. Second, the network owner can exercise its monopoly power in relation to the terms and conditions of access, including pricing. Upfront structural separation is the key to ensuring vibrant retail competition, aided by effective access and pricing regulation in the wholesale market.

We recognise that a network provider that also competes in the downstream market (that is, vertically integrated) may be able to reap some efficiencies from integrating their

operations. However, against this must be set the powerful incentive they have to refuse or frustrate access to other downstream competitors. This incentive can only be mitigated by regulation: it cannot be eliminated. This has an inevitable negative impact on competition in the downstream market and, in turn, consumer welfare.

On the other hand, a natural monopolist that does not compete in the downstream market has an incentive to maximise competition in the downstream market to expand demand for its product. Thus, in natural monopoly markets where competition is neither feasible nor likely to improve efficiency, we consider that regulation should insist that the owner of the natural monopoly element should be precluded from competing in downstream markets. This position is consistent with the original National Competition Policy Review.⁵

Considerations about the structure of network providers are marginally more complicated in markets that may be able to support more than one network, either in the long term or temporarily. It is worth noting that, in practice, 'more than one network' generally means two networks – rare or small are markets that can support more than two networks, particularly so given Australia's geography. In these markets, the prospect of competition on price may be limited by the need to recover the costs of two networks. Where the technology deployed is the same, non-price competition is generally limited to technology improvements. Thus, competitors in this situation would appear to enter the infrastructure market to eliminate the prejudice its retail operations suffered at the hands of the incumbent. Structural separation delivers this outcome without potentially wasteful duplicate infrastructure.

Where the technology is different (superior) and non-price competition is significant, competitors would appear to enter the market with a view to displacing the incumbent. Of course, the incumbent may respond by rolling out equivalent technology to defend its monopoly, creating a repeat of the duplicative infrastructure seen in the former instance. The competing rollout of hybrid-fibre coaxial (HFC) cable by Optus and Telstra in the 1990s is an interesting case study in infrastructure competition. One view is that it was an example of an existing monopoly protecting itself from a competitor seeking to displace it. In this instance, such competition appeared to lead to modest quality improvements and modest reductions in price in the short run. However, these improvements gradually receded over time and, after about ten years, consumers began to pay the same price for different technologies of differing qualities (ADSL, ADSL2+ and HFC) in the same areas.

The HFC rollout example reveals the key benefit of competition in this area: upgraded infrastructure. However, with hindsight, the other benefits of competition in the natural monopoly infrastructure market appear to be, at best, limited (oligopolistic) and/or temporary (during transition, or aborted transition, from one monopoly provider to another).

⁵ National Competition Policy Review Report (The Hilmer Report), August 1993: 'where the owner of [natural monopoly infrastructure] is not competing in upstream or downstream markets, the owner [...] will usually have little incentive to deny access, for maximising competition in vertically related markets maximises its own profits' (p. 240-241); and 'the preferred response to [natural monopoly] is usually to ensure that the natural monopoly elements are fully separated from potentially competitive elements'. (p. 241).

On balance, we prefer at least one wholesale only, open access provider across all geographies. However, we note that this, of itself, does not:

- require the same provider in every geography; or
- preclude competition in low cost geographies, including from vertically integrated firms.

We return to these issues under the heading 'Infrastructure competition' below. We also note here that, in areas where competition does not emerge, care will need to be taken to ensure that the regulatory arrangements include appropriate mechanisms for the natural monopoly infrastructure owner to upgrade at the appropriate time in the future.

Minimum standards

The Government's policy currently includes delivering a broadband service offering at least 25 megabits per second download speeds to all Australians at an affordable price. To deliver this policy, we consider that it is necessary to define minimum standards for universal broadband services. These standards would need to be applied to the services offered by the wholesale only provider in each area across Australia, which we expect will predominantly be NBN Co.

While it is outside our expertise to specify the appropriate settings for each of the possible standards set out below, we have expressed a view about whether each is an appropriate dimension of the agreed minimum standard to which we refer.

- **Minimum speeds** – the agreed standard should clearly incorporate minimum speeds, both download and upload (or some aggregate), noting the interaction with performance characteristics, connection and restoration below.
- **Performance characteristics** – other standards, particularly around network speeds, are meaningless if they are not paired with reasonable performance characteristics. For example, it would be obviously unacceptable to have a network capable of delivering 25 megabits per second only five per cent of the time.
- **Connection and restoration** – as for performance characteristics above, other standards are meaningless without reference to connection and restoration standards (noting the interaction of the latter with overall network availability).
- **Open access** – as mentioned above, there should be at least one wholesale only, open access provider of the minimum standard nationwide.
- **Geographic service obligations** – given the natural monopoly characteristics of fixed line telecommunications, if non-NBN Co providers have a monopoly in a particular area, they should have a commensurate obligation to serve every premise bounded by, and where there is no other such network, immediately adjacent to, that area.⁶
- **Price** – NBN Co, and non-NBN Co providers where they have a monopoly, should be subject to price regulation, at least at the entry level. Not doing so risks the monopoly securing economic rents at the expense of consumers and efficiency.

⁶ NBN Co would already have such an obligation.

- **Upgrade paths** – we do not think this is necessary in an environment where NBN Co or another wholesale only provider has an obligation to provide a certain minimum standard (which may vary over time) throughout Australia. Other providers attempting to compete with the wholesale only provider will have an incentive to upgrade as the minimum standard is increased, or else be exposed to competition from the wholesale only provider offering a superior service. Meanwhile, as mentioned elsewhere, the regulatory framework will need to ensure that there are appropriate incentives for NBN Co to upgrade.
- **Legacy services** – obligations imposed on NBN Co to support legacy services should be imposed on other providers where they have a monopoly.

NBN Co's role and mandate

While we have left open the idea of there being more than one wholesale network operating across Australia, in practice we expect the bulk of the fixed line natural monopoly network to be owned and operated by NBN Co. Previous Government policy has led to NBN Co being established as the default wholesale only, open access provider and also to Telstra and Optus negotiating a structural separation through the decommissioning of copper and HFC networks.⁷ These latter agreements, and particularly the choice to decommission networks rather than structurally separate, means it is unlikely that an entity other than NBN Co at this time has the scale and financial backing to be the default wholesale provider.

As such, we consider that the structural features we have outlined above would need to apply to NBN Co and be reflected in its mandate. Put another way, as the default wholesale only, open access network, NBN Co's mandate must be to roll out telecommunications infrastructure across Australia that offers broadband services to all Australians that at least meets the minimum standards specified earlier. We consider that decisions about how to deliver on its mission would be a commercial matter for NBN Co. This would allow the company to keep in mind the limitations of its \$29.5 billion equity cap.

To take NBN Co's approach to the HFC network in the Strategic Review as an example, NBN Co concluded that the present value of delivering a structurally separated provider of wholesale services in the HFC footprint by accessing Telstra's and Optus's networks was higher than all other possible alternatives. It therefore proposed to pursue access, upgrade and augmentation as a strategy in this instance. In other instances with pre-existing networks, it may make sense to adopt other strategies, like overbuilding for example.

⁷ The Telstra HFC network can still be used to deliver pay television signals.

2. Additional Regulation

We consider that the wholesale only provider of natural monopoly fixed line infrastructure should also be subject to price, access and exit regulation for differing reasons.

Price regulation

An essential feature of the Government's commitment to delivering universal access to broadband services at an affordable price is either: limiting the price of the relevant wholesale product offered by NBN Co, or agreeing that the price NBN Co proposes to charge for the product is indeed affordable. In any case, NBN Co will be a monopoly in many areas, necessitating some intervention around price.

Non-NBN Co providers who have a monopoly should be subject to the same price regulation, focused, as for NBN Co, on the minimum standard product. Not doing so risks the monopoly collecting economic rents at the expense of consumers and efficiency and breaching the Government's policy for all Australians to have access to broadband services at an affordable price.

Access regulation

Wholesale monopolists, NBN Co or otherwise, should be subject to regulation requiring them to provide non-discriminatory access to its services. This regulation serves to guard against vertical integration by agreement. At the extreme, in the absence of regulation, the structurally separated monopoly could contract to provide access exclusively to one retailer. This has the potential to be worse than vertical integration, insofar as the consumer welfare loss is likely to be the same, while all the efficiency benefits of vertical integration are unlikely to be realised by two separate entities, however close.

Exit regulation

Non-NBN Co wholesale monopolists should be subject to exit regulation. By this we mean regulation that requires them to give the Government notice of any intention to discontinue services in a particular area and to put in place arrangements to transfer the network to NBN Co in the intervening period.

Different approaches to this could be considered. The requirements could go further than requiring good faith negotiations, given that the firm concerned has decided to cease operating the network, the price could be capped at salvage value plus transition costs. However, NBN Co should not be compelled to buy the network; it would be a commercial decision between buying the network and rolling out new infrastructure.

3. Infrastructure Competition

The third structural feature of the telecommunications market involves the impacts of infrastructure competition. It is important to note here that natural monopoly and competition are not mutually exclusive concepts. While it might be less costly for each geographic area to be served by a single network from society's perspective, it may nonetheless be profitable for firms to build duplicate infrastructure in certain low cost geographies. Further, it is quite possible that what constitutes the natural monopoly element of the network today will shrink in the future.

Despite costs, infrastructure competition in a potential natural monopoly environment can still deliver benefits. The key question is whether the benefits of competition outweigh the costs and whether this varies over time. For example, while competition may potentially deliver better services and prices to consumers in certain geographies, it may come at an overall cost to NBN Co's ability to minimise taxpayer expenditure in delivering the Government's policy of uniform affordable broadband.

This is the crux of the problem that requires analysis in the NBN environment. As taxpayers are footing some of the bill for competition, analysis of the issue must extend to more than just the benefits that individuals, as consumers, receive. It must also include the costs that consumers, as taxpayers, may incur. We consider that there are two feasible scenarios that could emerge and we have outlined the impact of these scenarios on NBN Co, the Government's policy objectives and consumers below.

Scenario 1 – a single nationwide wholesale only provider

The Government is committed to providing a minimum standard broadband product nationwide at or below a capped price, for no more than \$29.5 billion in equity. Should NBN Co emerge as the monopoly (or effectively so) nationwide, then it will likely seek to recover the average cost of the build from each user.⁸ There are a few key reasons that this result is probable.

First, in a natural monopoly environment, where the optimal result of charging a price at the marginal cost is unachievable without additional Government subsidisation, charging a price at (or slightly above) the average cost would be the next best outcome in terms of economic efficiency. This assumption appears to be implicitly acknowledged by the ACCC in the current NBN Co Special Access Undertaking, which imposes a pricing structure that allows NBN Co room to charge prices (with constraints) reflective of underlying costs.

A price close to the average cost would be sufficient to deliver a real return on investment. In the present case, NBN Co have consistently claimed that it will deliver at least a real return on investment, though the margin has tended to reduce over time. Thus, this should not result on a call for additional taxpayer money.

Recovering the average cost per user through uniform pricing of particular products would allow NBN Co to achieve the Government's policy objective of providing all Australians with a minimum standard broadband service at a uniform (capped) affordable price.⁹ We also note that, as a general rule, private telecommunications companies in Australia tend to apply uniform pricing structures to their products both in mobile and fixed line, suggesting there are good reasons for doing so.

The cost of allowing NBN Co to recoup an average cost from all users is that incentives for finding efficiencies are limited. For example, as a public company, NBN Co would not be driven by incentives to increase efficiencies to increase profits, as any profits are to be returned to taxpayers. Increasing costs, on the other hand, can always be recouped over

⁸ NBN Co's product offering is more complicated than contemplated here: we have adopted this simplification for ease of exposition. An alternate reading that seeks to reflect the complexity might be to say NBN Co 'can recover the average cost from the average user'.

⁹ It is important to note that we are not suggesting that uniform access prices apply to consumers regardless of the service provided. NBN Co is proposing to utilise differential pricing between its minimum standard and higher speed/higher data products. Treasury considers that it is reasonable for customers placing higher capacity demands on the network to pay more than lower use customers, given congestion can lead to a lesser experience for all users. Ideally, this kind of differential access charging would see fixed costs dispersed uniformly amongst users, but variable costs could be recouped on a user pays basis.

time in an environment where regulation allows NBN Co to recover average costs from users. This is an old problem and is best addressed (even if imperfectly) through regulation initially as we have outlined earlier. In the long run, privatisation with clearly established regulatory rules and settings may help drive further efficiencies.

A lack of competition may also mean there is no pressure on NBN Co to upgrade technology in the future and this will be an area future Government policy will have to consider, whether the company is publicly or privately owned.

Scenario 2 – the impact of infrastructure competition on the NBN rollout

Should infrastructure competition emerge, we are reasonably confident that this would only occur in low cost geographies, leaving NBN Co to continue to hold responsibilities for rolling out a network in higher cost geographies. In this regard, there is a direct link between infrastructure competition and the viability of the NBN project (including the key structural reforms it entails) that cannot be ignored.

Where NBN Co does not emerge as the nationwide monopoly (or effectively so) then it will not be able to recover the average overall network cost from all users in low cost geographies. Competition in low cost geographies would result in one or all of the following for NBN Co: an increase in costs (to fund quality improvements and due to loss of scale economies), a reduction in revenues (to fund price reductions) and a loss of market share. A smaller NBN Co network footprint would mean a smaller addressable market in low cost areas and reduced scale economies for NBN Co. This would have a negative impact on NBN Co's expected rate of return, potentially causing it to fall below the threshold for the Government's continued equity investment.

One potential response is for NBN Co to charge higher prices in high cost geographies. However, if those prices have to be substantially higher, this may not meet the Government's policy requirement for affordable broadband.

Another solution would be for NBN Co to seek taxpayer subsidisation to lower the prices it can offer in higher cost geographies to ensure that pricing across Australia remains affordable (even if it is not uniform). This will increase the costs of the NBN to taxpayers. In that regard, it is worth remembering that while premises in competitive areas will potentially accrue benefits from competition such as lower prices, better services and higher levels of investment in the network in their area, the same premises will bear increased costs as taxpayers. In this case, network competition results in shifting cross subsidisation, in part, from users of the network (low cost areas to high cost areas) to all taxpayers, whether they use the network or not.

A third alternative is for the universal service obligation on NBN Co to be formalised, and the costs associated with this obligation to be funded from network users generally, including users of competing networks.

Such a system may operate across the industry like a cross-subsidy would internal to a monopoly (or near monopoly). At the most abstract level, it could require all providers in low cost geographies to pay an amount equal to the difference between the cost of serving the particular geography and the Australian average cost into a fund which would be redistributed to providers in high cost geographies to cover the difference between the

cost of serving the particular high cost geography and the Australian average cost.¹⁰ Of course, implementing such a fund in practice would be extremely difficult and potentially costly. There is a trade-off between administrative costs and the potential for regulatory arbitrage: a very granular approach would be administratively expensive, while an insufficiently granular approach would undermine efficacy.

While it has challenges, this approach is not impossible to implement. Indeed, it would have similarities to the implementation of Telstra's Universal Service Obligation.

It is worth observing that this approach would increase the costs to infrastructure competitors, which may limit the extent to which competing infrastructure networks are constructed.

Conclusions on infrastructure competition

The costs and benefits of infrastructure competition versus a national monopoly may vary depending on whether you compare them during or after the build phase of the NBN and before or after privatisation of NBN Co. For convenience, we have assumed that the NBN is privatised shortly after the completion of the build. We will also assume that the competitor network is part of a vertically integrated enterprise, as seems likely in this regulatory environment.

During the build (and before privatisation), NBN Co's capacity to respond to competition that may emerge in particular geographies is constrained by its mandate to provide universal access to a certain minimum standard within its budget. Indeed, it would not be unreasonable to assume that NBN Co could be fully occupied with the build as opposed to responding dynamically to new competitors as they emerged. Thus, the benefits of competition during the build may be limited to the initial price reductions and/or quality improvements competitors could deliver to end users in geographies where they roll out. The additional potential risk during the build is that, in the absence of a wholesale only network that is able to respond, additional integrated networks are able to capture market share and lock in enduring reductions in long term competition.

This may all change in a post-build, post-privatisation environment. Of particular note is the potential emergence of dynamic benefits, with NBN Co at liberty to respond to entry or the threat of entry. This would be of particular value in maximising the likelihood that the private owner of NBN Co makes the right investments in upgrading the infrastructure at the right time in the future. Leaving this kind of decision to the private market has considerable advantages relative to the Government or some regulator trying to determine the right settings. Meanwhile, successful entry would also be valuable where the regulator still had a role in regulating NBN Co, for the purposes of benchmarking its performance.

While the benefits of competition may vary over time, the costs are more predictable and less time sensitive. The three most significant costs are partially¹¹ wasteful infrastructure duplication in geographies where competition emerges, the loss of scale efficiencies for NBN Co as a public asset (some of its non-network costs are fixed – IT systems for example) and the introduction of costly regulatory arrangements to facilitate affordable access charges across Australia.

¹⁰ For a detailed theoretical discussion see: Armstrong, M. 'Access Pricing, Bypass and Universal Service' *The American Economic Review*, Vol. 91, No. 2, Papers and Proceedings of the Hundred Thirteenth Annual Meeting of the American Economic Association (May, 2001), pp. 297-301.

¹¹ We say partially because value may accrue in the long run. For example, if demand eventually expanded beyond the capability of one network, a consumer could take a service from both providers as an alternative to one provider upgrading the network.

In our view, the costs of unfettered competition outweigh the benefits during the build phase of the NBN project. There appears to be an implicit recognition of this point in existing regulatory arrangements (wholesale only, open access legislation) and policy commitments (to introduce a levy to prevent opportunistic cherry picking). We would encourage the Panel to at least maintain these settings in relation to NBN Co competitors during the build phase.

Whilst it is more speculative, and perhaps need not be resolved at this stage, our preliminary view is that the potential benefits of unfettered competition may outweigh the costs in a post-build, post-privatisation environment. Therefore, we would encourage the Panel to consider the benefits of genuine infrastructure competition in the post build phase. This could include reconsidering the current protections against vertically integrated competition with NBN Co (including revisiting the blanket prohibition on Telstra participating in wholesale markets). We note that such a change would impact the ultimate price the Government will be able to achieve for NBN Co.

4. Minimal intervention in related markets

Treasury expects related markets to be highly competitive in this environment, minimising the scope and efficacy of regulatory interventions at the retail level. Untimed local calls in extended zones is an example of an existing intervention that may no longer be required.

A further issue worth noting here concerns the interface between the wholesale and retail markets. Limited or highly prescriptive wholesale products limit competition and stifle innovation in retail markets. For this reason, the threshold for refusing to offer a bespoke wholesale product demanded by a retailer at a reasonable price should be relatively high.

OTHER ISSUES

Regulatory settings for brownfields

We use 'brownfields' to refer to premises that already have access to a telecommunications service, which will include broadband internet in most, but not all cases. Some premises will already have access to a network that provides, or is capable of providing (with software or other minor upgrades), broadband services of the minimum standard discussed above. These networks will generally be owned and operated by vertically integrated firms, but may be wholesale only in some cases. Meanwhile, most premises do not have access to a network that is capable of providing the minimum standard. Each of these three types of premise raises different issues from the perspective of delivering on NBN Co's mandate.

- For premises served by a network that provides (or is capable of providing) the minimum standard owned and operated by a wholesale only incumbent, there is no imperative for NBN Co to build – its mandate is already fulfilled. This is not to say that NBN Co could not purchase the network or overbuild, just that it would be a commercial decision (and presumably a relatively low priority during the build phase). The existing part XIC of the *Competition and Consumer Act 2010* access regime would likely be sufficient to secure competitive access in this environment.

- For premises served by a network that provides (or is capable of providing) the minimum standard but is owned and operated by a vertically integrated firm, NBN Co should make a commercial assessment as to whether it is more efficient to deliver on its mandate by purchasing the network (and completing minor upgrades, where necessary) or build a new network. This is the approach NBN Co is taking in relation to Telstra's and Optus's HFC assets. While an alternate option may be for the vertically integrated provider to structurally separate and the new wholesale company continue providing services, we note that in relation to the two key network providers – Telstra and Optus – current contractual and regulatory arrangements would require significant amendment to make structural separation possible.
- Where the premise is not served by a network that provides the minimum standard, NBN Co will have to build. However, this does not preclude NBN Co negotiating to use part of the incumbent's network infrastructure. The previous Government's NBN made extensive use of Telstra's pits and ducts and, under the current Government, NBN Co intends to reuse part of Telstra's copper network. Again, the extent to which this occurs should be a commercial matter for NBN Co and not prescribed through regulation.

Regulatory settings for greenfields

NBN Co's role in ensuring there is a certain minimum standard of broadband available to all premises in Australia means that greenfields developments raise unique issues, at least with respect to timing.

NBN Co is currently the provider of last resort for larger greenfields developments (100 lots or more). NBN Co provides these services at no cost to the developer, which means that it has, in effect, become the provider of first resort. This much is clear from the experience of the existing greenfields policy to date.¹² Two further things are clear from the practical implementation of the existing greenfields policy. First, that it is impractical for NBN Co to serve as many developments as it has been required to serve while effectively discharging its functions in brownfields. Second, that the nascent fibre network construction industry has been adversely affected. These dual problems would appear to have a complementary solution.

One option that the Panel could consider is requiring NBN Co to have a standing offer to acquire completed greenfields networks that comply with certain technical specifications¹³ for a certain price per premise. While the price would best be set by NBN Co, and could vary over time, we would not expect it to be less than NBN Co's average build cost per premise for a greenfields build. Indeed, we would expect the price to incorporate a small premium on the average cost, at least initially.

In this environment, in lower cost geographies, we would expect most developers to contract with third parties with a view to taking up NBN Co's standing offer after the build. Alternatively, developers could contract with third parties who intend to own and operate the network as a wholesale only provider. In the highest cost geographies, we would expect most developers to opt to have NBN Co undertake the construction. Here,

¹² In general terms, the existing policy makes Telstra the provider of last resort in new developments of fewer than 100 lots (copper network). For developments of more than 100 lots, NBN Co is the provider of last resort (fibre network). Neither Telstra nor NBN Co imposes charges on developers for their services, but both take ownership of the network, including the pits and ducts, once complete.

¹³ Assuming NBN Co deploys a multi-technology mix there would obviously be multiple specifications and some mechanism for discovering which applies to each development.

NBN Co might be allowed to seek to recover costs in excess of the standing offer in full, and therefore quote a fee for their service.¹⁴ NBN Co would be the owner of networks it constructs. These arrangements would reduce the scope of NBN Co's role in greenfields to the extent they encourage third party construction. Ideally, this would see NBN Co not competing in competitive markets and fully cost recovering in uncompetitive markets.

The Universal Service Obligation

Given NBN Co's role in providing universal access to a service that can support voice over internet protocol telephony, the Panel may also wish to give consideration to the ongoing need for a telephony universal service obligation which is currently imposed on the Telecommunications Universal Service Management Agency (who contracts Telstra to meet its obligations).

Institutional arrangements

The Framing Paper requests views (question 13) on whether the economic regulation of telecommunications should remain with the ACCC. In the absence of a compelling reason to shift the function, we consider that the existing arrangements should continue. Given the significant transition currently underway in the sector, there would need to be strong evidence of extra benefits to justify a change now.

Whilst it is the case that most countries do have industry-specific regulators for telecommunications, there are examples of regulators like Australia's (such as New Zealand, Germany, the Netherlands and Spain). Unlike Australia, countries with industry specific regulators are often large and consequently combined agencies would become unwieldy due to their size. If anything, the trend internationally is towards more linkages and conglomeration between agencies.¹⁵

Past OECD work suggests there is little evidence to suggest a disaggregated approach is superior.¹⁶ On the one hand, consolidating telecommunications expertise into one regulatory agency may be beneficial (that is, with the Australian Communications and Media Authority). Alternatively, the views expressed in the National Competition Policy Review remain relevant:

There are sufficient common features between access issues in the key network industries to administer them through a common body. As well as the administrative savings involved, there are undoubted advantages in ensuring regulators take an economy-wide perspective and have sufficient distance from particular industries to form objective views on often difficult issues.¹⁷

The Government has announced that it will undertake a comprehensive review of competition policy.¹⁸ This review will consider the regulatory institutions and so will provide an opportunity to consider this issue in a holistic context.

¹⁴ Developers retain the option to decline NBN Co's quote and contract with a third party.

¹⁵ The following paper outlines the regulatory arrangements for infrastructure in a number of jurisdictions around the world: <http://www.accc.gov.au/system/files/Working%20paper%20no.8%20-%20Better%20economic%20regulation%20of%20infrastructure%20-%20country-based%20review.pdf>

¹⁶ OECD 1999, Relationship between Regulators and Competition Authorities, Committee on Competition Law and Policy, 24 June, Paris (p. 8).

¹⁷ National Competition Policy Review Report (The Hilmer Report), August 1993 (p. 327).

¹⁸ See: <http://www.pm.gov.au/media/2013-12-04/review-competition-policy>