Joint Standing Committee on the National Broadband Network

SUBMISSION BY VODAFONE HUTCHISON AUSTRALIA

April 2017

Executive Summary

Vodafone Hutchison Australia (**VHA**) is pleased to provide this submission to the Joint Standing Committee's inquiry into the rollout of the National Broadband Network (**NBN**).

The availability and take-up of fixed broadband will be one of the critical determinants of whether Australia is able to compete with the rest of the world in the 21st century. VHA is a strong supporter of the NBN and we believe the project has enormous potential to support Australia's future growth by capturing the economic and social benefits of the digital economy. VHA has announced that it will be entering the fixed broadband market this year as an NBN Retail Service Provider (**RSP**).

The NBN is finally starting to build scale with more than 4.2 million premises across the country now able to order a service[1]. The NBN is on track to pass the halfway point of its rollout in the middle of this year, extending that to three-quarters of the nation a year from then. Across such a huge landmass, this is a major achievement that deserves to be recognised.

We are now at a critical juncture with the NBN where policy-makers must start to look beyond the debate about the mix of technologies being used in the NBN rollout, where there are diminishing possibilities given the scale of NBN's deployment. We believe that there are broader key issues which will determine whether the NBN is able to deliver its true potential as an enabler of long-term social and economic growth and productivity for Australia.

Firstly, there needs to be a serious examination of whether the current NBN wholesale charging model is the best way to encourage customer take-up and experience, especially in relation to performance and speed.

Secondly, the NBN involves a significant taxpayer investment and, as such, further synergies and opportunities to maximise the value from this investment need to be front of mind for policy-makers. The NBN fixed wireless network for example could be leveraged to improve and expand mobile coverage in rural and regional areas through access to lower cost backhaul, co-locations and equipment sharing.

Thirdly, policy-makers must ensure that the NBN and associated policies do not unintentionally introduce inefficiencies and barriers to efficiency, investment and competition, particularly in regional and rural areas. An example is the proposed Regional Broadband Scheme (**RBS**), which if enacted, is effectively a new tax of ~$400 million per year, rising to $814 million per year by 2022.

Finally, the NBN must collaborate with telecommunications providers rather than compete with them for the benefit of all Australians. For example, the NBN has the potential to play a significant role in the deployment of leading edge IoT applications across the agricultural, resources, utilities, transport and logistics and other sectors. NBN Co. needs to work with the

[1] NBN Co.'s half-year fiscal results June to December 2016.

mobile sector in relation to sharing resources such as spectrum which will be critical to the rollout of 5G services and deployment of IoT applications in Australia.

VHA is happy to discuss any aspect of this submission with the Committee.

NBN's wholesale charging model

The rollout of the NBN is finally starting to see an improvement in Australia's historically poor fixed broadband speeds, with a 24 percent gain in average speed in the last 12 months[2]. However, this was not enough to stop Australia slipping from 48th to 51st on the global average broadband speed league table and from 57th to 60th on the average peak speed table. According to a recent OECD report[3], Australia ranks fourth last in the OECD in terms of broadband speed and penetration, ahead of only Mexico, Chile and Greece.

The biggest challenge currently facing the NBN's business case and the take up of services is NBN's wholesale pricing arrangements (the fee that RSPs are charged to purchase bandwidth on the NBN). While NBN Co. has made some recent positive changes to its wholesale pricing, it is critical that further improvements are made to ensure consumers will utilise the NBN to its full capacity. According to the OECD, *"In fixed-line technology, the wholesaler (National Broadband Network) needs to address concerns that it is not lowering its prices sufficiently quickly as the market develops."*[4]

As a result, while the NBN offers higher speeds, 83 percent of NBN customers are on plans with download speeds of 25Mbps or less, while only 13 percent of customers are on the highest performance100Mbps plan[5]. NBN Co. has acknowledged it will need to entice more consumers onto plans above 25Mbps if it is to meet its revenue goals. The combination of low levels of network utilisation and the high capital investment involved in building the NBN will inevitably put a lot of pressure on NBN's business case. Unless urgent changes are made to NBN's pricing model and the NBN is able to maximise its returns and improve its business case through other methods, this situation is not likely to significantly improve.

The NBN has the potential to deliver a worry-free user high speed broadband service. Unfortunately this capability is not translating into improved customer experience because the industry is not currently incentivised to deliver the full potential benefits of the NBN, and because NBN is still working through mechanisms which give RSPs greater visibility of NBN performance issues, faults and maintenance.

NBN's wholesale pricing arrangements discourage RSPs from offering their customers the faster speeds that the NBN is capable of delivering. In providing a service over the NBN, RSP's must purchase both the "Access Virtual Circuit (**AVC**)" and "Connectivity Virtual Circuit (**CVC**)" services

[2] Akamai Technologies, Inc. Fourth Quarter, 2016 State of the Internet Report, March 2017.
[3] The Organisation for Economic Co-operation and Development (OECD), Economic Survey of Australia, March 2017.
[4] Ibid.
[5] NBN Co.'s half-year fiscal results June to December 2016.

from NBN Co. In essence, the AVC is the fixed cost to supply a customer with an NBN service, and the CVC is the variable capacity charge which depends upon how much dedicated throughput the RSP buys per customer. The amount of CVC an RSP purchases is one of the most significant influences on the quality of the service experienced by that RSP's customers. The current structure of this CVC pricing penalises RSPs for provisioning higher guaranteed capacity and therefore more consistent guaranteed performance for their customers.

The fixed AVC monthly charge increases steeply for higher speed plans. This, combined with higher CVCs to guarantee the higher throughput customers would expect on higher speed plans, means that the pricing model discourages RSPs from offering higher speed data plans. There is little incentive for an RSP to market them to customers as margins are thinner and the price at which RSPs must sell the plans to customers are so high as to raise questions as to how attractive they will actually be. The market is therefore currently migrating services from historic DSL copper and HFC cable services (which could already offer up to 20 Mbps and 100 Mbps respectively) to the lower speed NBN 12Mbps and 25Mbps speed services rather than migrating to faster NBN 50Mbps and 100Mbps services. This means that the full potential of the NBN is not currently being delivered.

NBN Co. has recently announced some improvements to its CVC pricing which give RSPs some discount if that RSP purchases more CVC capacity and therefore guaranteed minimum performance per customer. However, the discount is relatively modest and is unlikely to provide a substantial incentive to migrate customers to the higher speed plans. As NBN Co. acknowledges there needs to be further consideration of either more substantial discounts or even a move to different charging models.

The New Zealand "Ultra Fast Broadband" project for instance provides flat rate charges for each of the speed tiers offered rather than variable charges depending on guaranteed capacity, and the differences in pricing are relatively modest as the speed tiers increase. It is relatively more attractive for New Zealand RSPs to offer faster speeds than it is for Australian RSPs. As the NBN's major shareholder, the government needs to make this change a priority in order to benefit the NBN business case and also to benefit the Australian economy.

Another key component which needs to be reviewed is the current broadband speed tiers. Currently these start at very low speeds (12 Mbps) and are therefore comparable to or lower speed than historic DSL (the first generation of broadband over copper) speeds. Given taxpayers have funded a network which has been dimensioned to deliver speeds significantly faster than DSL, it is not clear that these low speed tiers should even be on offer. Since the majority of the costs of a fixed line network are "fixed costs" (i.e. do not vary according to capacity or usage), once the NBN network is rolled out, there are only relatively modest additional costs to the NBN to offer higher speeds.

Improving NBN's business case and value for taxpayers

NBN Co. is spending large sums of taxpayers' funds to build its fixed wireless and satellite infrastructure in rural and regional areas. For most people in rural and regional areas, the NBN will provide services over a fixed wireless network of 2,700 towers, or via satellite, at a total cost of $6.1 billion. Since such substantial sums of money are being dedicated to this infrastructure, and it appears likely that significant money will be collected from the rest of the industry to fund this via the RBS levy, we must look seriously at any further synergies and opportunities to maximise the benefit to rural and regional Australia from this significant investment. This would also reduce the pressure for NBN to maximise returns through its current wholesale pricing arrangements.

The NBN fixed wireless network is underutilised as an asset and should be leveraged to improve and expand mobile coverage in rural and regional areas. The NBN fixed wireless network footprint as it is currently stands reaches many areas where there is some, but relatively patchy mobile coverage. In these regional areas it does not make sense for every mobile network operator to attempt to duplicate infrastructure and have the NBN also build a fourth wireless network which duplicates the substantial costs of deployment yet again. Given the large land area and low population density of regional Australia, it has to be asked whether scarce investment should be directed towards fewer networks which are either shared or provide wholesale services to multiple retailers.

The NBN could be used to support mobile service delivery through one or all of the following approaches:

- Access to lower cost backhaul, particularly through NBN Co.'s extensive transmission network and satellite capacity which could be used extensively for backhaul for mobile base stations. Although the NBN does currently provide a fixed wholesale transmission service, the fact that only one mobile site has so far been connected raises questions as to whether the pricing is competitive enough and whether the NBN has an incentive to drive the deployment of this service;

- Improved fixed wireless tower sharing, by designing towers that can more easily accommodate the co-location of mobile infrastructure on NBN's towers;

- Delivery of a wholesale mobile service via fixed wireless towers. NBN Co.'s fixed wireless is effectively delivered on the same "LTE" 4G network as is deployed by mobile operators, so could be accommodated relatively easily; and

- Spectrum sharing, particularly as NBN Co. has been provided spectrum to use for its fixed wireless network which can also be used for 4G LTE services over mobile networks, and in future 5G services.

Regional connectivity and competition

As the NBN is rolled out and becomes the pre-eminent broadband infrastructure across Australia it must not recreate serious market distortions. Similarly the policies surrounding the NBN must not continue the historic practice in Australia of protecting the dominant player from competition. VHA considers that the appropriate principle is that for the full benefits of the NBN to be achieved, it should promote competition 'on the merits', and not allow past advantages to be extended into the NBN world.

In particular VHA believes that the Parliament must assess how the funding of uneconomic NBN infrastructure can play an effective role in promoting both fixed and mobile competition in regional and rural Australia.

The Government is planning to shortly introduce legislation to establish the Regional Broadband Scheme to fund the long term costs of regional and remote Australia's NBN satellite and fixed wireless networks. This would require all eligible fixed-line superfast broadband networks to make a proportionate contribution to the long-term cost of these non-commercial services. The current arrangements implicitly expect that other NBN users will fund net costs on fixed wireless and satellite services through the prices charged for NBN's commercial services.

It is surprising that the Government's response to this issue is to introduce yet another large subsidy mechanism into the telecommunications sector without following through on the commitment to review the large, inefficient and anti-competitive subsidy regime already in place (the USO). It is important to recognise however that there is not a shortage of taxpayer investment in regional telecommunications infrastructure. Rather, it is a lack of efficient coordination to maximise the impact of this investment.

Currently there are several large pockets of funding that are currently not aligned. For example, there is:

- $300 million each year in USO funding, which includes $100 million of direct taxpayer funds and $200 million raised from taxpayers by the industry;
- $220 million in total Mobile Black Spot Program taxpayer funding plus hundreds of millions in state government mobile black spot funding;
- Hundreds of millions of dollars of funding for multiple networks used by emergency services;
- Hundreds of millions of dollars in investment by the three existing mobile operators; and
- Billions of dollars of NBN investment.

Instead of introducing a new separate tax/subsidy scheme through the RBS on top of all this existing funding, greater thought needs to be given to how this funding could be streamlined and aligned to ensure the maximum reach and efficiency of infrastructure deployment.

The Productivity Commission's Draft Report on the USO notes that:

"Critics of the TUSO rightly argue that it duplicates other government programs... *In addition to the telecommunications universal service obligation, there is a plethora of policies and programs that subsidise the provision and use of telecommunications services across Australia and across different cohorts of users. Conservatively (and excluding the NBN), at least $1 billion per year is allocated to telecommunications programs broadly associated with supporting universal service objectives. There would be benefits from removing duplication and moving towards a more integrated approach to meeting universal service objectives.... Efficiency gains could be achieved by taking a more coordinated and whole of sector perspective when allocating funding and developing policies regarding universal access to telecommunications."*[6]

The Productivity Commission also notes that any levy on telecommunications services is likely to constitute a regressive tax, in other words a tax in which those who can afford less are required to pay proportionally more. For this reason, funding through the general taxation system is always greatly preferable to establishing bespoke subsidy schemes:

"Since virtually all Australians pay telecommunication carriers, the use of an industry levy is likely to be a more regressive form of taxation than general Treasury funds".[7]

The Productivity Commission will shortly provide its final report to the Government on the telecommunications USO scheme. Each year under the USO, the telecommunications industry and Australian taxpayers contribute $253 million ($5.06 billion over the 20 years of the current USO arrangements) which is supposedly to support the delivery of a standard telephone service over the legacy copper wire network in regional Australia. This is despite the fact that taxpayers are already paying for these areas to be overbuilt by the NBN fixed, fixed-wireless and satellite networks, and that the Commission believes that around 25 percent of Telstra copper lines in regional Australia have already actually been decommissioned.

Each year under the USO, an additional $44 million (a further $880 million over the 20 years of the USO) is given to Telstra supposedly to support loss-making payphones. However the Commission points out the apparent lack of demand for payphones and the fact that Telstra appears to have shut down 50 percent of its payphones in recent years.

The Commission's draft report on the USO is damning in its assessment of the scheme's lack of transparency and accountability and its anti-competitive impact and recommends phasing out the USO as soon as possible. The Commission points out that the USO funding is fixed at $300 million per year with no obligation for Telstra to maintain particular infrastructure. Telstra's incentive is in fact to shut down as much USO infrastructure as quickly as possible to pocket a larger and larger windfall gain at the expense of taxpayers and its competitors.

The Commission proposes that the rollout of the NBN means that the objective of universal service can be reframed to provide a baseline (or minimum) broadband service to all premises in Australia, having regard to its accessibility and affordability. This encapsulates access to both the

[6] Productivity Commission Draft Report on the USO, Draft Finding 4.2 and page 92.
[7] Productivity Commission Draft Report on the USO, page 248.

internet and voice services, as the internet will increasingly be the medium for voice communication. VHA believes there are many potential benefits to reforming the USO arrangements in combination with the current NBN cross-subsidy arrangements and NBN Co.'s role as the default Statutory Infrastructure Provider (**SIP**) across Australia. Given the USO was set up a funding mechanism to provide subsidies for uneconomic infrastructure it seems obvious that the USO scheme must be brought into the technology agnostic NBN reality.

The most obvious benefit is the capturing of economies of scope, deriving from the ability of existing infrastructure to deliver both broadband and voice services. Fixed wireless services are more than capable of delivering both kinds of services, but given the USO is at the same time subsidising the provision of services over the legacy copper network, there is no incentive for NBN Co. to invest for provision of these services.

The cost savings that are feasible through the economies of scope of a single network and the revenues associated with existing USO subsidies should mean that the extent of losses attributable to the supply of services in non-commercial areas should be reduced.

Caution is required with allocation of scarce resources, especially spectrum

5G mobile technology will bring substantial benefits to Australia and the Australian economy. It will be the key enabler for IoT applications which will drive substantial economic and social opportunities for Australia, especially in the areas of water resource and energy monitoring and management, transport and logistics, mining, precision agriculture. It will drive innovation and productivity across virtually every sector of the economy, making Australia more competitive and retaining and building jobs and infrastructure in regional Australia.

Appropriate resources clearly need to be NBN Co. in order for it to fulfil its objectives. Since NBN Co. must deploy a fixed wireless network, it must of course have access to sufficient spectrum resources for it to deliver that network.

However, spectrum is a very scarce resource. The benefits of mobile communications to the Australian economy have been well documented in terms of direct economic contribution, increases in efficiency, productivity and innovation.[8]

If spectrum is set aside for NBN Co., the costs, benefits and trade-offs must be seriously considered. The potential benefits which flow from the efficient use of spectrum are so large, that the costs of reserving spectrum for alternative uses can easily be orders of magnitude higher than the benefits which could flow from making that same spectrum available for commercial use by the mobile operators.

[8] Mobile Nation, The Economic and Social Impacts of Mobile Technology, Deloitte Access Economics, February 2013.

The risks are particularly significant given the dynamic nature of technological change in the mobile industry. Spectrum bands which do not have a clear use at one time can rapidly evolve to be prime candidates or even the only possible solution for major technology evolutions which could bring substantially higher economic benefits to Australia, particularly regional Australia.

A prime example is the 3.4-3.7 GHz spectrum bands. In 2014 these were considered one of a number of possible internationally-aligned spectrum bands for the next generation of mobile technology (5G). However a decision to set aside this spectrum for NBN was made just before the 2015 World Radio Conference agreed an internationally aligned approach to 5G under which this spectrum band is the only internationally-aligned 5G band which is likely to be available in Australia.

The spectrum was set aside for NBN on the basis that NBN Co. had insufficient spectrum to serve ~80,000 fixed wireless customers on the fringes of metropolitan areas. However NBN Co. was also given options over spectrum right across all major capital cities, meaning that around half of the most likely 5G spectrum band cannot be used for 5G.

VHA is not suggesting that this spectrum be immediately withdrawn from NBN Co., however there should be a serious examination of the alternatives and options and the costs and benefits of each. For example, other spectrum bands could be fit for use for NBN Co.'s fixed wireless network and NBN could be allocated appropriate other spectrum bands which are not primary candidates for 5G.

The costs of delivering NBN via alternative technologies to these 80,000 premises should be examined. These 80,000 customers appear to be on the edge of metropolitan areas which are likely to be served by Fibre to the Node (FTTN) technology. For example, the average cost of FTTN deployment indicated in the latest NBN Corporate Plan is $2,257. Even if we assume that the extension of the FTTN network is likely to be significantly more expensive than the current FTTN footprint, the costs of alternative deployment are likely to be a fraction of the proceeds of the sale of 5G spectrum at auction. For example, if FTTN deployment to these 80,000 premises was 50 percent more expensive than the existing FTTN footprint, the total cost of FTTN deployment would be ~$270 million while the spectrum is likely to be worth several billion dollars at auction.

It should not be assumed that the interests of government, the NBN and the mobile industry are in conflict. Several western economies have utilised a form of auction called an "Incentive Auction" to resolve very similar concerns where incumbent users of spectrum need to be given an incentive to release the spectrum for higher value uses with greater public benefit. Under these auctions, a portion of the proceeds of the auction is set aside to cover any incremental transition costs for the incumbent user. A portion of 5G auction proceeds could be set aside for NBN's costs in migrating those customers to an alternative spectrum band or alternative technology.

The costs of any such transition are likely to be minimised the earlier the problem is seriously considered, so establishing a clear process for examining these issues on their merits should be seriously considered.