OptiComm Co Pty Ltd

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Submission regarding the *Telecommunications Legislation Amendment (Competition and Consumer) Bill 2017* and the *Telecommunications (Regional Broadband Scheme) Charge Bill 2017*.

3 February 2017

1. Introduction

OptiComm welcomes the opportunity to comment on the exposure drafts of the *Telecommunications Legislation Amendment (Competition and Consumer) Bill 2017* and *Telecommunications (Regional Broadband Scheme) Charge Bill 2017* (together, **the Bills).** Our submission concentrates on the new tax proposed to assist with funding the NBN's services in non-economic areas.

OptiComm is one of a small number of carriers that own high speed fixed line telecommunications networks and will be required to pay the new tax. The size of this new tax is enormous and represents up to 30% of the operational revenue that we earn through providing wholesale only broadband services. As such, the new tax is particularly damaging to OptiComm's business and we ask that the Government give serious consideration to our submission. A tax of this magnitude placed against revenues, rather than profits, is unprecedented and sets a new record high level mark in Australian taxation.

OptiComm understands that the NBN will operate at a loss in the non-economic regional and rural areas that will be serviced by NBNCo's fixed wireless and satellite infrastructure and that the Government's intention has previously been to fund services in non-economic areas via cross subsidisation from NBNCo's services in profitable areas. The Bills propose altering this funding arrangement by placing a new tax on all high speed fixed line services unless subject to listed exemptions, which in effect creates a narrowly targeted levy applied only against a small segment of the industry. Industry levies for funding telecommunications services in rural and regional Australia are a long standing and generally accepted part of the telecommunications industry, i.e. the Universal Service Obligation (**USO**). The Bill's proposed new tax, however, is different as the tax will be collected only from a narrow segment of the telecommunications industry rather than the industry in general. Most carriers and carriage service providers will not be required to pay the levy and the burden of paying for the NBN in non-economic areas will fall on a small number of carriers and their end-user customers. This results in the captured carriers being required to pay a far higher tax than would be necessary if the tax was collected from the broader industry.

We believe that this narrowly targeted tax:

- will fail to achieve the Bills' funding objectives;
- is based on a view that underestimates the rapidly growing competitive importance of mobile and fixed wireless broadband as well as the ongoing relevance of ADSL and HFC networks; and
- will seriously distort competition in telecommunications markets.

This submission sets out our concerns, which were also described in our November 2015 submission to the Bureau of Communications Research's (**the BCR**) consultation on NBN non-commercial services funding options (**attached**). We consider that the relevance of mobile and fixed wireless broadband to this debate has grown in the 14 months since our submission to the BCR. This is demonstrated by almost weekly media announcements about further advances in mobile broadband technology and its increasing market share.

We ask that the Government amend the Bills in order to replace the narrowly targeted new tax with a levy similar to the existing USO and collected from all participants of the telecommunications industry including carriers operating mobile and fixed-wireless broadband networks, in the same manner as currently recommended by the Productivity Commission in its review of the USO.[1]

[1] Australian Government Productivity Commission, *Telecommunications Universal Service Obligation, Productivity Commission Draft Report,* November 2016.

2. Executive Summary

The new tax should be levied on the industry (not a small number of industry participants)

- In order to be sustainable and minimise distortion of competition in telecommunications markets, any new tax imposed to assist in funding the NBN must be levied broadly against the telecommunications industry and not only applied against a narrow segment of carriers.

The new tax should replace the current USO (as per Productivity Commission)

- We agree with the Productivity Commission's view that this tax should replace the USO and be collected from the broad telecommunications industry. The policies underpinning the USO and the provision of non-commercial services on the NBN are fundamentally the same. It is inefficient to have two funding arrangements to fulfil the same purpose and will result in unnecessary cost and duplication.

The new tax catchment must recognise reality of mobile broadband and wireless

- An ever-growing percentage of consumers receive their high speed broadband via mobile and fixed wireless services and it is without question that the providers of these services should contribute to a tax that is imposed to fund NBNCo's non-commercial services. Advances in mobile technology have already resulted in mobile and wireless broadband services taking a large share in retail broadband markets. Evidence clearly shows that mobile and wireless services are not merely complementary to fixed line services but are in fact already complete substitute services that are winning market share from high speed fixed line operators. Mobile and wireless networks are a serious competitive threat to NBNCo and their ability to out-compete fixed line services is being steadily enhanced by current and imminent technological advances. Mobile and fixed wireless carriers should be treated as the strong competitors that they are and, as such, should be included in the collection base of the new tax.

The new tax catchment must be equitably applied to industry participants

- Factually incorrect reasons have been relied on in deciding to exempt networks transferring to NBNCo from the new tax and they should be included within the ambit of the tax. Though it would be a financial burden for them to pay the tax as it is for all other carriers, there is no basis to believe that Optus and Telstra would experience any other burden in complying with the new tax obligations and administratively it would be simple.

The record level of the new tax and resulting damage to businesses must be reduced

- The level of the new tax is unprecedented in Australia, and will damage the businesses that are required to pay and will severely distort competition.

The unprecedented compliance and reporting obligations and uncapped risk must be reduced

- The Bills propose the imposition of unprecedented compliance arrangements, reporting obligations and risks on private companies. There should be no scope for the tax to be increased or for the Government to require carriers to provide bank guarantees for anticipated tax liabilities.

3. The new tax will fail to achieve the Bills' funding objectives

Though customers of NBNCo are expected to contribute the lion's share of the tax, i.e. about 90% of the $9.8B that the Government estimates is required to subsidise regional and rural services, we consider it is unlikely that the narrowly targeted tax will collect sufficient revenue to sustainably meet the shortfall. We consider that the Government has underestimated the growing threat that mobile and wireless broadband poses to NBNCo's market share and that to ensure ongoing funding of the NBN's fixed wireless and satellite services the new tax should be collected from the broad base of the telecommunications industry.

3.1 Inaccurate assessment of tax collection base

The Government has estimated that NBNCo's fixed wireless and satellite services will generate a net cost of $9.8 billion over 30 years. This is a very substantial amount and if its funding is to rely upon cross subsidisation and an industry tax then accurate measurements of the tax's collection base are vital. We understand that the tax's collection base, i.e. Superfast fixed line services in operation (**SIOs**) relies on research conducted by the BCR when considering funding options for the NBN's non-economic network. As detailed in our November 2015 submission, the BCR's assessment of current and future Superfast fixed line SIOs is inaccurate.

The BCR's assessment was based upon incomplete and incorrect data that was gathered from a range of sources including some non-credible sources such as online Whirlpool discussion forums. The BCR overestimated current SIOs and its estimate of future SIOs is unreliable. For example, the BCR substantially overestimated OptiComm's SIOs by a massive factor of five. Accurate data regarding OptiComm's SIOs was provided to the BCR in our November 2015 submission. The result of such inaccuracies will be under-recovery of funds that the government hopes to obtain in order to support the NBN's fixed wireless and satellite networks. This will necessitate either the new tax having to be increased or the Government contributing more funds to NBNCo via general revenue.

3.2 The tax should be collected from a general base of the industry

The NBN's non-commercial fixed wireless and satellite services in regional areas should be supported by a general tax that is collected from all facets of the telecommunications industry, i.e. much as the USO levy has for many years funded Telstra's provision of telephone services in non-commercial regional areas.

We respectfully disagree with the Department of Communication's view that mobile and fixed wireless broadband networks are not capable of providing NBN-comparable services and are unlikely to be a competitive threat to NBNCo's market share in profitable areas. The reality is that this is already occurring and it is growing by the day. Consumers judge telecommunications services by the service's ability to meet their needs not by the delivery method. Significant and growing percentages of the population are now solely using mobile services for their telephony and broadband requirements. We consider that if the Government wants to apply a tax to subsidise regional and rural broadband services then mobile and fixed wireless networks must be included in the collection base to ensure the sustainability of the tax. This is discussed further in paragraph 3.3.

We also disagree with the decision that existing fixed line services providing telephony only or with broadband speeds below 25Mbps, satellite services and networks transitioning to NBNCo should be exempt from the tax. The only cogent reason to exempt these networks from the new tax is that they existed before the NBN was contemplated. However, networks operated by OptiComm and others also predate the NBN. Further, the technology in mobile networks has been replaced and upgraded since the NBN commenced. This has significantly altered the way that mobile services are

used by consumers and rather than being used for telephony, mobile services have predominantly become a device for broadband access.

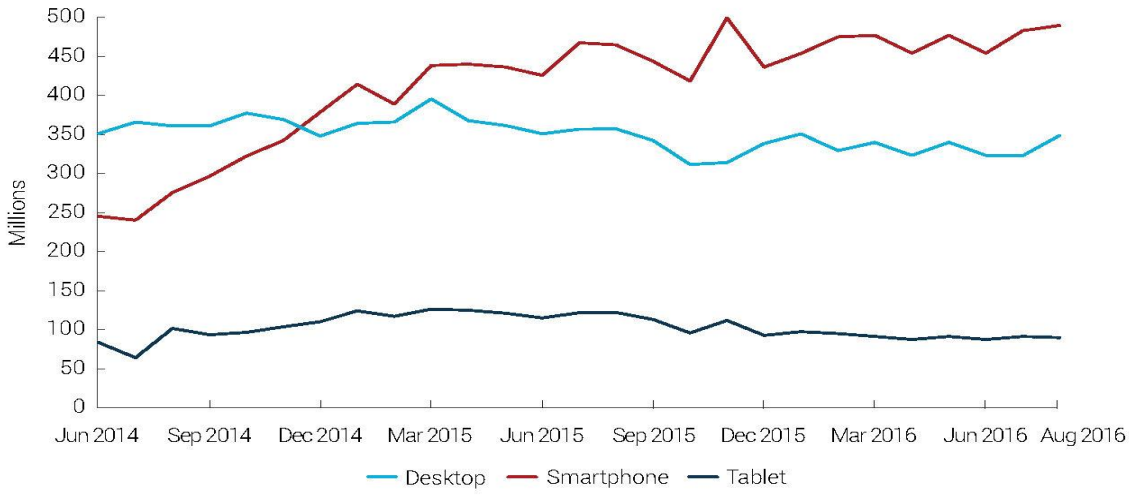
In its report, the BCR said that Telstra and Optus networks being sold to NBNCo and transitioning to the NBN should be exempt from the new tax to avoid creating a significant compliance burden on Telstra and Optus.[2] This is factually incorrect and the origins of this erroneous position need to be investigated to ensure that probity is adhered to. The simple fact is that all carriers have accurate SIO data and it would place absolutely no administrative burden on Telstra and Optus to work out their payment obligations if they were subject to the tax.

3.3 The competitive threat of mobile and wireless broadband

The BCR's recommendations regarding funding for the NBN's non-economic services underestimated the relevance and growing importance of mobile broadband, despite this fact being recognised in other studies recently published by the BCR. For example, in the BCR's October 2016 report titled "The communications sector: recent trends and developments", the BCR stated:

> In Australia, despite making up only a small portion of the total volume of data downloaded, downloads by mobile handsets grew by more than 70 per cent over the 12 months to June 2016. Smartphone usage has also overtaken the desktop in terms of total number of online sessions (figure 2). Illustrative of this trend, Google announced in 2015 that, for the first time, more searches in the US were made on mobile devices than on a personal computer. [3]

Figure 2. Total online sessions by device, per month



Source: Nielsen (2016), Traffic data provided by Nielsen's Market Intelligence around device-type comparison: trend analysis, Nielsen Online Ratings—Market Intelligence, August.

> Mobile carriers are increasingly offering competitive high-speed mobile broadband plans, with better coverage and much more generous data allowances. While fixed-line services have traditionally offered much better quality and value compared to mobile broadband, the advancements in 4G mobile network infrastructure have significantly reduced this gap. A consequence of the contraction of mobile prices, in addition to the greater availability of OTT services offering 'free' calls and the rising cost of line rental, has been the growing number of people without a fixed-line home service. As at June 2015, the number of adult Australians without a home telephone service was more than five million, up from two million in June 2010. Similarly, the number of mobile-only internet users grew from 19 per cent in December 2013 to

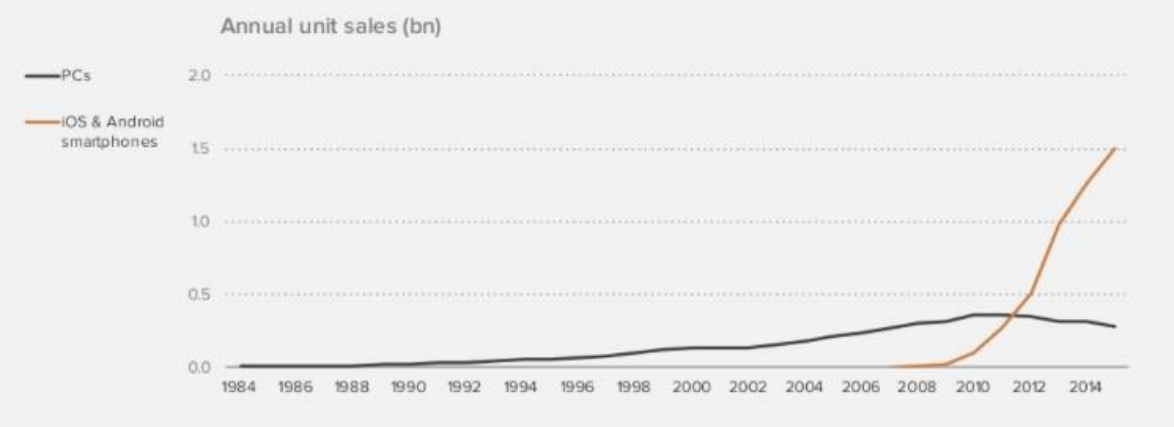
[2] Australian Government, Department of Communications and the Arts, Bureau of Communications Research, *NBN non-commercial services funding options*, Final Consultation Paper, October 2015, p 9
[3] Australian Government, Department of Communications and the Arts, Bureau of Communications Research,, *The communications sector: recent trends and developments*, p 6

21 per cent in December 2014, with 3.9 million adult Australians relying exclusively on a mobile device for their home internet connection.[4]

We note that the BCR's report goes on to state:

> Most of the population who use mobile broadband appear to use it as a complement to, rather than as a substitute for fixed-line services. While on the one hand, increasingly affordable mobile broadband plans could encourage more households to give up fixed-line services, there could also be an incentive to retain or even to return to fixed-line services for their download capacity.

However, the BCR's view that mobile broadband is a complement and not a replacement of fixed line broadband is based upon total download statistics gathered by the Australian Bureau of Statistics in late 2015[5], which fail to have regard to the changing consumer preferences towards mobile broadband communications technology and significant advances in mobile technology. With the launch of multi-touch smartphones in 2007 and app stores in 2008, global smartphone sales have steadily increased and since 2011 have absolutely outstripped PC sales. This is demonstrated clearly in the graph below.



Smartphone sales overtake PC sales globally from 2011[6]

The increasingly prevalence of mobile over fixed data is broadly recognised in the telecommunications industry. For example, Cisco estimates that by 2020, Wi-Fi and mobile-connected devices will generate 78 percent of Internet traffic.[7]

With regard to the spread of revenue in the telecommunications industry and the growth in mobile services compared to fixed line services, the BCR recently stated:

> As a result of the increasing demand for mobile services among consumers, as discussed above, the mobile service industry has experienced rapid growth over the past 30 years. Since the introduction of Australia's first analogue mobile network in 1981, mobile technology has expanded to allow for the delivery of a broad range of services, including voice, messaging and internet access. While fixed-line revenues have been in decline over the last decade, the provision of mobile or wireless services has been a growth industry, generating an estimated $22 billion in revenue in 2015–16 (figure 7).[8]

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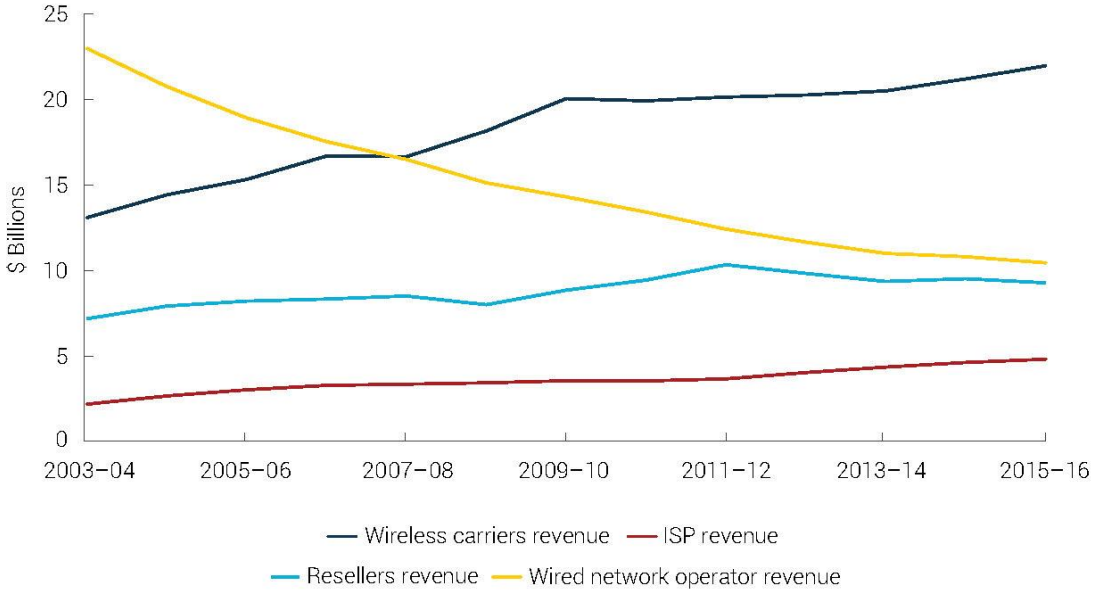
[4] Australian Government, Department of Communications and the Arts, Bureau of Communications Research,, *The communications sector: recent trends and developments*, p 8, referring to data from ACMA (2015), Research snapshots: Australians get mobile.
[5] Ibid, p 9
[6] Benedict Evans, Mobile is eating the world, March 2016.
[7] Cisco Visual Networking Index Predicts Near-Tripling of IP Traffic by 2020, https://newsroom.cisco.com/press-release-content?articleId=1771211
[8] BCR, *The communications sector: recent trends and developments*, p 11

Figure 7. Telecommunications services revenue by industry, 2003–04 to 2015–16



Source: IBISWorld (2016), 'J5911 Internet service providers in Australia industry report', February; 'J5803 Telecommunications resellers in Australia industry report', February; 'J5802 Wireless telecommunications carriers in Australia industry report', March; 'J5801 Wired telecommunications network operation in Australia industry report', April.

The above graph makes it abundantly clear that the ability of fixed line operators to pay new taxes is being rapidly eroded, in complete contrast to the revenue and ability of wireless carriers.

With regards to improved data caps and lower prices for mobile broadband services, the BCR stated:

> The industry-wide improvements in network performance, and increasingly comparable national coverage maps, have meant increased efforts by carriers to grow their market share. This has placed downward pressure on pricing and, with increased data availability, supporting increased value to mobile consumers. Despite high levels of capital expenditure, the average mobile subscriber cost per megabyte is falling, having already halved between 2005 and 2013 while there has been a 1000-fold increase in the amount of data available on Telstra data plans over the past 13 years. For example, there is some anecdotal evidence that Telstra lowered its premium price point in 2015 and started offering cheaper mobile plans with much larger data offerings.[9]

In comparing the amounts of data downloaded between fixed line and mobile operators and the effect of mobile competition on fixed line revenue, the BCR stated:

> Fixed-line telecommunication networks are the heavy lifters in the provision of large data volumes. As at June 2016, around 93 per cent of all data downloaded in Australia was via fixed-line networks, compared to only 7 per cent downloaded over wireless or mobile networks. Since 2011, downloads across all technologies have grown at a very fast rate, which has resulted in fixed-line carrying a constant proportion of total downloads. However, despite its importance in providing internet services, the revenue generated by Australia's fixed network industry has more than halved in recent years, from $23 billion in 2003–04 to $10.3 billion in 2015–16. This drop can be attributed to a number of factors, including the introduction and widespread adoption of mobile and OTT communication services, which in turn have reduced the need for households to utilise landline telephony for everyday communications.[10]

[9] Ibid, p 13 (The BCR's references are removed from the quote)
[10] Ibid, p 14 (The BCR's references and graphs are removed from the quote)

In regards to the impact of new technology, the BCR noted that:

- 5G, the fifth generation of mobile technology will supersede the current 4G technology.
- Telstra has announced plans for its 5G network launch in 2020.
- 5G networks are expected to support far greater levels of data growth compared to current mobile networks, creating a greater reliance on small cell technology.

The BCR estimated that of all new communications technology, 5G mobile technology would have the greatest impact and that this impact would occur within a short time frame, i.e. within 3 years' time.[11] It is evident from the data that the BCR has referred to in its report that even though fixed line broadband is currently the heavy lifter in terms of download, consumer preference is to actually use their mobile device when using the internet far more frequently than their fixed line service. Added to this is the fact that, even when at home, consumers tend to use their mobile devices more than their readily available desktop computer, but just connected through their home's WiFi. With increasing data caps and decreasing mobile broadband costs, it is very likely that ever increasing numbers of consumers will continue to disconnect their fixed line service and rely solely upon their mobile broadband service.

A great deal of the bandwidth used in fixed line's heavy lifting is video streaming. However, advances in compression technology, caching content closer to end-users and adaptive streaming technology is significantly reducing video's bandwidth requirements.[12] This is now resulting in large increases in video streaming to mobile devices. This preference has been particularly prevalent amongst young people, with Ericsson's research showing that between 2011 and 2015 teens increased their TV/video viewing at home on smartphones by 85% percent.[13]

Evidence shows that most consumers are unwilling to pay higher amounts for faster broadband speeds. The graph below is from a report prepared by Communications Chambers for Deutsche Telekom and published in January 2017.[14] Interestingly, Communications Chambers based the graph on connection data collected from NBNCo's annual reports and stated:

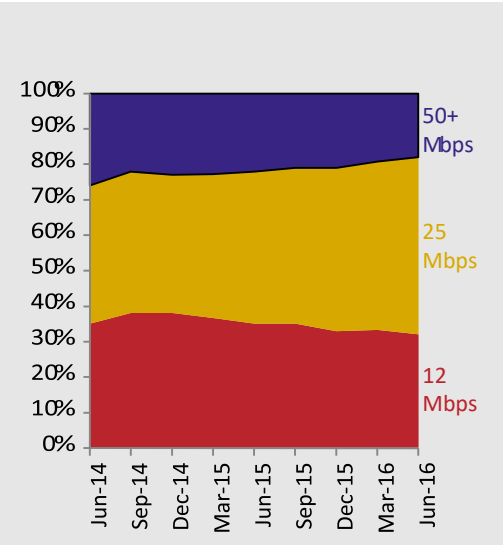
> A market test of demand for bandwidth to the premise is provided by the NBN in Australia, where different speeds are offered at different price points. [The graph below] shows revealed behaviour, with 84% of fixed line customers taking a speed of 25 Mbps or less. The distribution of customers across packages is consistent with research on stated consumer preferences which showed incremental willingness-to-pay falling to close to zero for speeds approaching 100 Mbps.

[11] Ibid, p 21

[12] For the specific sources that this paragraph relies on please see:
Brian Williamson, Communications Chambers, Mobile first, fibre as required – the case for Fibre to 5G (FT5G), January 2017, p10, available at
http://static1.1.sqspcdn.com/static/f/1321365/27426046/1485297189777/Mobile+first+fibre+as+required+-+the+case+for+%27FT5G%27.pdf?token=9h1P3bJFvJRAjEl%2BRMmsJN0HeYA%3D

[13]
Ericsson Mobility Report, June 2016, p 24 available at
https://www.ericsson.com/res/docs/2016/ericsson-mobility-report-2016.pdf

[14] Brian Williamson, Communications Chambers, Mobile first, fibre as required – the case for Fibre to 5G (FT5G), January 2017, p14



Graph: Declining willingness to pay for higher speeds

This demonstrates that most consumers do not consider the availability of higher speeds on fixed line networks is an important competitive differentiator over the range of speeds currently available on mobile and wireless networks. It also demonstrates that the Government's decision to exempt networks from the new tax on the basis that they offer speeds below 25 Mbps and therefore are not comparable to the NBN does not reflect the reality of how Australian consumers use the NBN as 84% of consumers choose to buy a service of 25 Mbps or less even though they could buy a faster speed if they wanted to and were willing to pay more.

The rapidly increasing data caps in mobile broadband plans mean that the single perceived competitive advantage of particular importance that fixed line broadband has because of higher data capacity is quickly eroding and price will become the most important competitive differentiator. This is particularly relevant in considering how to fund the NBN in non-economic areas as one thing that is abundantly clear is that Australian consumers are very unlikely to give up their mobile services. However, fixed to mobile substitution statistics show that consumers are very willing to give up their fixed line services. Mobile devices are basically ubiquitous and people virtually always have them on their person, so it is natural that they have become the communication tool of choice.

A $7.12 monthly tax represents about 30% of a fixed line carrier's operating revenue. Placing this tax solely on fixed line carriers means that they are significantly disadvantaged against their mobile competitors. This will open up a price gap that will result in consumers disconnecting fixed line services and shifting to mobile only or fixed wireless services. The decrease in fixed line end-users will place even more pressure on NBNCo's ability to cross-subsidise from economic areas in order to fund its non-economic areas and risks placing the NBN in a downward financial spiral.

A year ago, in February 2016 OpenSignal published the following commentary about 5G mobile technology:

> AT&T plans to get its feet wet in the still murky 5G pond this year, joining arch-competitor Verizon and operators around the world in conducting early trials of the technology.
> AT&T announced its 5G roadmap on Thursday, detailing plans to test out ultra-high-speed networks in the millimeter wavelengths this year in both the lab and in the wild. The first city on its list will be Texas state capital Austin, conveniently located down the expressway from AT&T's corporate HQ in Dallas.

> AT&T, however, appears to be taking a much more conservative stance on 5G unlike its competitor Verizon. Instead of promising an overnight revolution in mobile data, AT&T says its initial 5G focus will be on fixed wireless broadband – in essence using 5G connections as an alternative to cable, DSL and new fiber broadband links. For that reason, Austin may not only be a convenient choice for AT&T but also a strategic choice. Austin is a Google Fiber city, and a handful of its residents are starting to get their first taste of a 1 Gbps home broadband connection. AT&T is already experimenting with its own fiber-to-the-home service called GigaPower, but it may now be toying with the idea that it could provide the same kind of gigabit service without digging any trenches and stringing any cables.
>
> Trialing 5G as a fixed broadband technology is smart move by AT&T because it insulates it from the standards process. 5G standards are still years away from being final, so whatever so-called 5G networks operators deploy this year and next will use proprietary technology. That means there won't be smartphones and devices that can connect to them, and the networks themselves will be isolated from one another. That's not to say that these early trials won't be important from proving the merits of future 5G technologies, but it's almost impossible to build a commercially viable mobile network without standards. The same can't be said for a fixed wireless network. The residential broadband network AT&T builds only needs to connect with one kind of device, the modem installed in the customer's home.[15]

The relevance of OpenSignal's commentary to the Bill's tax collection base is that the world's largest carrier, AT&T, is using 5G mobile technology to rollout a fixed wireless network in direct competition with an incumbent fibre network, despite the fibre network being owned by the world's second most valuable company, Google/Alphabet, and despite there being many other cities where AT&T could rollout the network without facing such a strong level of existing infrastructure based competition. To warrant such an investment, AT&T clearly considers that a 5G network can directly compete with a fixed line fibre to the home network. Believing that Australia's fixed line networks won't face the same competition from mobile/ networks is simply a head in the sand position, especially given that most of Australia's fixed line networks are a multi-technology mix and of a lower technical standard than Google's FTTH network in Austin.

On 31 January 2017, Telstra announced that its 4G LTE network is already capable of providing 1Gbps download and 150Mbps upload speeds in Sydney, Melbourne and Brisbane and that it expects to roll out the technology to Adelaide and Perth this year. Along with its partners Ericsson, Qualcomm and Netgear, Telstra also announced the release of a $360 wireless router that can connect up to 20 mobile devices via WiFi is scheduled for this month to coincide with Telstra's new mobile broadband plans and that it is targeting residential and business customers with the service. Telstra emphasised that the 1Gbps service is both a stepping stone and a key supporting layer for its future 5G rollout as it will provide network redundancy.[16] iTnews reported that:

> The telco also hopes the new service will tempt consumers in CBD and fringe areas to go mobile and not bother with a fixed line broadband connection at all. Telstra's director of wireless engineering Channa Seneviratne, said "We also see an increasing number of people who rent and who choose not to get a fixed line broadband service. This would be perfect if you've got a number of people in the family [or sharing the home connection]."[17]

Telstra clearly envisages that consumers will regard Telstra's 4G LTE services as a substitute for fixed line broadband services on the NBN. It is also clear that Telstra expects to win both residential and business market share in the lucrative metro areas where NBNCo needs high market share in order to cross subsidise its loss making services in rural and regional areas.

In January 2017, AT&T announced that its initial 5G lab trials are already achieving speeds up to 14 gigabits-per-second (Gbps) over a wireless connection. AT&T also stated that:

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[15] https://opensignal.com/blog/2016/02/12/att-will-trial-5g-this-year-pitting-it-against-google-fiber/
[16] Comms Day, 1 February 2017
[17] iTnews, 1 February 2017, https://www.itnews.com.au/news/telstra-to-boost-cbd-4g-speeds-to-1gbps-449349

In lab trials, we've successfully tested a connection with less than 3 milliseconds of latency, which surpasses any current LTE network technology. Latency impacts things like the time between pressing play and seeing a video start to stream or between hitting a web link and seeing a webpage begin to load. The industry expectation for 5G is latency less than 5 milliseconds.

AT&T also said:

Here's additional color around our 5G Evolution:

- **1 Gbps Speeds in 2017:** The continued deployment of our 4G LTE-Advanced network remains essential to laying the foundation for our evolution to 5G. In fact, we expect to begin reaching peak theoretical speeds of up to 1 Gbps at some cell sites in 2017. We will continue to densify our wireless network this year through the deployment of small cells and the use of technologies like carrier aggregation, which increases peak data speeds. We're currently deploying three-way carrier aggregation in select areas, and plan to introduce four-way carrier aggregation as well as LTE-License Assisted Access (LAA) this year. [**OptiComm note: this year, AT&T is getting speeds of 1 Gbps on its existing 4G mobile network, i.e. speeds comparable to the maximum speeds on NBNCo's fixed line network on a 4G mobile network even before 5G mobile networks are rolled out commercially. This is corroborated by Telstra's demonstration of live network trials to Australian media on 31 January 2017 described above.**]

- **5G Video Trial with DIRECTV NOW**: In the first half of 2017, we plan to conduct a trial in Austin where residential customers can stream DIRECTV NOW video service over a fixed wireless 5G connection. As part of this trial, we'll also test additional next-generation entertainment services over fixed 5G connections. The trial will include multiple sites and devices, and we expect to further advance our 5G learnings – especially in how fixed wireless mmWave technology handles heavy video traffic. And over time, the reach of our 5G deployments will be enhanced even more as customers discover new, innovative mobile-first video services.

- **First 5G Business Customer Trial:** Last fall, we launched what we believe to be the industry's first 5G business customer trial in Austin with Intel and Ericsson using millimeter wave (mmWave) technology, which can deliver multi-gigabit speeds using an unlicensed band of spectrum. We trialed several video streaming and conferencing experiences, and saw upload and download speeds around 1 Gbps during the first phase of the trial.

- **Additional 5G Trials**: We recently announced plans to team up with Qualcomm Technologies and Ericsson for mobile and fixed wireless trials in the second half of 2017. These trials are significant because they will be our first trials to use what we expect to be based upon the 5G New Radio specification being developed by the industry technology standards group 3GPP. Industry standards are important to enabling wide-scale 5G commercialization. The trials will test both mobile and fixed wireless solutions operating in mmWave spectrum accelerating commercial deployments in the 28Ghz and 39Ghz bands. They will showcase new 5G radio mmWave technologies for increasing network capacity while achieving multi-gigabit data rates.[18]

In September 2016, AT&T also announced Project AirGig, which it describes as a transformative technology that could one day deliver low-cost, multi-gigabit wireless internet speeds over power lines.[19]

The point that we are making is that very fast, high data capacity mobile and wireless broadband technology is not a pie in the sky idea, but rather it is already being made available and is increasingly likely to quickly be a substitute service rather than a complement service to fixed line broadband technologies. Mobile and wireless broadband should not be ignored in funding the NBN's non-commercial services as their potential to take a substantial share of NBNCo's market in commercially economic areas is very real and realistically very likely, particularly if competition between fixed line and

[18] http://about.att.com/story/att_details_5g_evolution.html
[19] http://about.att.com/newsroom/att_to_test_delivering_multi_gigabit_wireless_internet_speeds_using_power_lines.html

mobile/wireless broadband is distorted by a tax that discriminates against fixed line networks, such as the new tax proposed in the Bills.

Technologically advanced mobile and wireless services are already commercially available and entrenched in Australia. Some of the options include high speed mobile 4G, 4GX, 4G Plus services available nationally on Telstra, Optus and Vodafone networks, 4G LTE available in some capital cities on Telstra's network, fixed wireless Ethernet available via BigAir in major metro and regional areas, Vividwireless fixed wireless service available in metro areas on Optus's 4G network, Adam Internet's WiMax service in metro Adelaide, Aussie Broadband's Fixed Wireless network in regional Victoria and a raft of wireless broadband services on metro networks operated by new entrants such as Lightning Broadband, MyPort, Uniti Wireless and NuSkope. These high speed services offer a range of options to consumers, with increasing data caps and attractive pricing.

3.4 Financial and regulatory incentives to compete against NBNCo fixed line network on mobile and wireless networks

There are clear financial and regulatory incentives for Australia's carriers to invest in wireless and mobile broadband technology to directly compete with NBNCo. Carriers providing services as retail service providers (RSPs) on the NBN make far lower margins in comparison to the margins that for some years they have made by acquiring declared wholesale services on Telstra's copper network. When TPG announced this to the market in September 2016, describing the lower profit margins as "NBN headwinds", its share price plummeted from over $11.84 to $8.63 in two days and currently trades at around $6.50. This announcement has wiped about $4B from TPG's market cap. Vocus's share price took a similar hit for the same reason, losing over $2.5B in value and is currently trading at less than half the price that it was in mid- 2016.

Referring to TPG but the same applies to Vocus, New Street Research telco analyst Ian Martin said:

> "A major problem for future earnings was the higher cost of accessing and servicing customers on the NBN. The margin they make on consumers is largely the result of a $15 copper access price and over the next three years most of that business will migrate to the NBN, where they pay a $43 access price. A large part of the margin and the cash flow that drive TPG's consumer business is going to move from TPG to NBN in coming years."[20]

There is no doubt that Telstra, Optus and all other RSPs face the same "NBN headwinds" and will suffer substantially reduced revenue in providing fixed line services on the NBN rather than Telstra's copper network. The share prices of Telstra and the Singapore listed Optus are insulated because much of their revenue derives from their mobile networks and they have received and/or are receiving large sums from NBNCo for the transfer of network or customers.

The boards of these very sophisticated and large companies are not going to sit back and accept such significantly reduced earnings but will do everything possible to shift their customer base onto networks where they can earn a better profit and keep shareholders happy. For Telstra and Optus, the obvious strategy has been to steer their customers on to their mobile (and fixed wireless) networks with fixed line services becoming a complement to the mobile service where required. It is also hard to believe that TPG won't make use of the 2.5MHz and 1800MHz spectrum that it purchased in 2013 and 2016 for the same reason, to increase profits by reducing reliance on NBNCo's

[20] http://www.smh.com.au/business/markets/tpg-profits-up-70-per-cent-but-shares-down-as-it-faces-nbn-headwinds-20160920-grk4hg.html

fixed line wholesale products and also in reaction to legislation and carrier licence conditions imposed to limit the rollout and vertical integration of its FTTB network.

By exempting mobile and fixed wireless broadband services from the new tax, the Bills make the incentive for NBNCo's wholesale customers to substitute fixed line with alternative technologies even stronger. Though Telstra is prohibited from marketing its mobile network as a substitute for the NBN's fixed line services, Telstra's strategy to steer consumers towards mobile voice and broadband services is clear. It has been a long time since Telstra's TV advertisements have included anything that looks like a fixed line service, rather the clear focus in their advertisements is on mobile devices and mobile broadband access. This was made abundantly clear when Telstra announced its 4G LTE expansion plans this week.

The Bills impose onerous compliance arrangements, reporting obligations and risk on carriers that are required to pay the new tax. Of particular concern is that the tax can be increased, with no cap on the increase, and that the Government can require carriers to provide security or a bank guarantee for any anticipated tax liabilities.

Given NBNCo has repeatedly demonstrated it is unable to adhere to cost projections and budgets in the rollout of its network, it is reasonable to anticipate that its inefficient financial conduct will continue when completing its rollout and operating its non-commercial satellite and fixed wireless networks. Given this, it is unacceptable that the level of the new tax can in effect be dictated by NBNCo's financial requirements. We consider that there should be no ability for the tax to be increased, firstly as a means to force NBNCo to act efficiently in the operation of its networks, and secondly to remove some level of the business and investment risk that is faced by carriers required to pay the tax. At the very least and this should not in any way be regarded as OptiComm considering that a tax increase is acceptable, any proposed increase in the tax should be thoroughly assessed by the ACCC to evaluate the efficiency in NBNCo's operations and whether the increase is warranted. Any failure on NBNCo's part to be absolutely efficient in its cost management is NBNCo's responsibility and must not be passed on as a cost to other carriers by an increase in the tax.

We are not aware of companies operating in other industries being required to provide security or a bank guarantee for anticipated tax liabilities in the same manner as proposed in the Bills. This is simply another cost that the Government proposes the industry should bear. It appears that the reason for this requirement is that the Government believes that there is potential for the new tax to financially push carriers to the wall, such that they will be unable to meet their new and onerous tax liabilities. In essence, this demonstrates the unreasonableness of this enormous tax and that the Government is aware that it is imposing a very high hurdle and barrier to further market entry against the companies that it has decided represent a competitive threat to NBNCo. We ask that the clauses allowing the Government to require the provision of security are deleted from the Bills.

4. Distortion of competition in telecommunications markets

4.1 Frontier Economics report

In our submission to the BCR's consultation, we provided a report from Frontier Economics (**attached**) regarding the economic principles that should apply to the funding of non-commercial services. Frontier Economics noted that it was disappointing that the BCR was restricted in its findings by the narrow terms of reference given to it by the Government and stated:

> The funding arrangements proposed, which only levy suppliers of fixed line high-speed networks only (a 'narrow levy'), have a higher risk of market distortion but offer no specific

advantages over broader funding arrangements. The BCR and the Government should consider broader funding arrangements given these risks to efficiency and competition.[21]

Frontier Economics concluded its report by saying:

> The Government's policy approach of relying on 'industry contributions' for the funding of non-commercial services is unfortunate in two respects.
>
> The first issue is that it gives some pretence that consumers do not ultimately bear the impact of any taxes or levies imposed on industry, when clearly this is the case (at least in the long run).
>
> The second issue is that it removes better sources of funds which would be less distortionary than industry levies, including broader tax funding or spectrum fees. Alternatively, the government could instruct NBN Co to simply target a lower rate of return – calculated using the same figures prepared by the BCR – that is more consistent with running losses in non-commercial areas.
>
> The BCR's analysis is therefore necessarily a second best approach that makes compromises and creates risks of distortions in incentives. Standard economic theory suggests the way to minimise these distortions is to levy over as broad a base as possible. Further, there appears to be no strong case for any particular set of consumers of communications services to (not) bear the levy. In our opinion, this suggests there is a strong a priori case for levying all users of communications services, perhaps defined as per the existing USO (TIL) arrangements. This indeed was the finding of the Vertigan Review panel.
>
> The BCR's analysis of funding arrangements suggests that it has found enough evidence and principles to support an alternative narrow levy approach. It follows from our analysis in the previous sections that we are not convinced that the BCR has made the case for a narrow levy. In fact, we consider that its approach will deliver inferior outcomes compared to a model that has the following elements:
>
> - A broad-based levy on all users of communications services, funded via contributions from networks and service providers serving those users
> - A fixed forecast 5 year subsidy required to meet the efficient costs of delivering the non-commercial services, with NBN Co to bear the cost of overspending and benefit from underspending.
>
> Such a model will perform better on the grounds of allocative and productive efficiency, support competitive neutrality and be more consistent with the existing USO (TIL) funding approach which delivers funding from a broader range of communications users and does not distort between different networks, service providers or technologies.[22]

4.2 NBNCo has also argued that a narrowly targeted tax will distort competition

With regard to the need to avoid funding arrangements that gives mobile carriers a competitive advantage over fixed line carriers, NBNCo said in its submission to the BCR's consultation:

> nbn considers that the principle of competitive neutrality should also be adopted when considering the appropriateness of funding options. It is also critical to ensure that funding options facilitate a level playing field and that competition is not distorted so that no network operators are advantaged or disadvantaged. In this regard funding options should seek to minimise uneconomic effects on prices for fixed line services.[23]

[21] Frontier Economics, *Funding non-commercial NBN services, A report prepared for OptiComm*, October 2015, p 1.
[22] Ibid, p 14
[23] nbn co limited, nbn non-commercial services funding options, nbn submission in response to Bureau of Communications Research Consultation Paper, June 2015, public version, p 8

NBNCo also encouraged a broad funding base for the tax and recognised that mobile and wireless broadband services are close substitutes for services on the NBN, as follows:

> nbn considers that equity outcomes would be best served by broadening the base of services on which the levy is added as much as possible. As discussed in section 5.1 this should include services which are close substitutes to those provided over the nbn network including mobile data and broadband services.[24]

NBNCo went on to explain the economic reasons that a broad revenue based levy should be applied rather than a tax constrained to fixed line networks, as follows:

> The principles outlined by the BCR for the design of funding options (see section 4) strongly favour sourcing funding from as a broad a range of services as possible, including from those provided on fixed line networks (i.e., providing telephony and less than 25Mbps broadband services) and wireless network services. Those principles also support designing a levy that can be passed through to end-users in a manner that does not distort competition or entry decisions.
>
> There is a broad range of funding options that might be considered by the BCR. The possible arrangements will have very different consequence for those who ultimately contributes and on the size and effect of impacts on competition and consumption decisions.
>
> nbn considers that a revenue based levy that spreads the funding across the broadest range of services is most appropriate. This is for the following reasons:
>
> - First, a revenue based levy will, in contrast to alternatives mechanisms (such as a network based levy), ensure that the funding arrangements do not fall disproportionally on network owners and therefore do not unduly affect entry decisions. If the funding arrangements operate as a charge on participating in the market, they will affect the number of operators who enter a market and hence the competitive tension within the market.
>
> - Second, as the effect of sourcing funds from particular operators or end-users is to raise the price of the services that are consumed, broadening the basis will minimise the effect of those higher prices on consumption choices. In competitive markets, a levy reduces economic efficiency as prices deviate from the cost of production. The wedge between price and cost discourage consumption of the good even though end-users value the service at more than its cost. The value of this lost consumption is commonly referred to as a "deadweight loss". Basic tax theory tells us that this deadweight loss increases exponentially with the size of the levy. That is, for a particular service as the required levy increases the size of the deadweight loss grows at an increasing rate.[25]
>
>   This basic insight into tax theory is the basis of calls to broaden the basis of taxes that fall on economic activity. That is, a small amount of tax on a wider range of activities involves less distortion than larger amounts of tax on particular activities. The consequence for the BCR in the design of its funding arrangements is that it should seek to broaden the funding eligibility to reduce economic distortions.
>
> - Third, funding options that are restricted to services above 25Mbps are likely to create competitive distortions by creating a wedge between prices above and below this threshold. nbn does not consider that bright line market distinctions can be drawn that separate the provision of high speed services above a specified download rate using fixed line technologies from other high speed data services such as mobile data and broadband access services. This is because services at the boundaries of those market definitions will be economic substitutes in the minds of end-users.[26] In Australia, wireless broadband

[24] nbn co limited, nbn non-commercial services funding options, nbn submission in response to Bureau of Communications Research Consultation Paper, June 2015, public version, p 12
[25] nbn footnote number 7: For a simple linear demand curve, it can be shown that the deadweight loss triangle grows with the square of the rate of the tax
[26] nbn footnote number 8: For example, end-users will be sensitive to the relative price of a 20Mbps and a 30Mbps services.

> services are consistently recording speeds of between 12-15Mbps (on existing 4G networks that do not yet utilise the capability of 700MHz spectrum).[27]
>
> It is therefore important that proposed funding options ensure that these competitors (and providers of services which are close substitute services) to nbn for fixed line services contribute equally to the funding of losses arising from the provision of nbn™ fixed wireless and satellite services. This will not only aid economic efficiency and equity, it will also reduce uneconomic distortions to competition.[28]

It is worth noting that the data NBNCo relied on its June 2015 submission to the BCR about the broadband speeds achieved on Australia's mobile broadband network was published by OpenSignal in March 2015 and is now already out of date as the speed gap between Australia's 4G mobile networks and fixed line networks has been eliminated through improvements to the mobile networks, better use of spectrum, and more advanced mobile devices. OpenSignal's July 2016 report stated that download speeds on the three Australian 4G mobile networks were all over 18 Mbps with Telstra's 4G network averaging 23.6 Mbps, with even higher speeds achieved on the more advanced mobile phones used by Australian consumers.[29] This is an improvement of over 50% in mobile broadband speed in a year. Further, Australian mobile carriers are now utilising the 700MHZ spectrum made available by the close down of analogue TV for 4GX services. Telstra claims that its 4GX network provides speeds up to twice as fast as its 4G network.[30] These speeds are faster than most consumers are getting on the NBN.

In February 2016, Telstra announced that its 4G mobile network is capable of 1 Gbps speeds and that in conjunction with Netgear it would deliver a 1Gbps wireless modem, i.e. not a mobile device but a 1Gbps modem for home broadband use.[31] Though Telstra's agreements with NBNCo mean that it is contractually restrained from marketing its mobile service as a substitute for an NBN fixed line service, only the most naïve broadband consumer would fail to see that a wireless broadband service capable of such speeds clearly is a substitute for even the fastest service available via the NBN, especially given that Telstra's 4G network already reaches close to 99% of Australia's population.[32] It is also relevant to note that Telstra's use of a fixed wireless modem to provide high speed home broadband via its 4G mobile network is similar to the 5G fixed wireless service that AT&T is using to directly compete with Google's fibre network in Austin, Texas. Of course, as discussed above fixed wireless 4GX broadband is merely a precursor to the far superior mobile broadband that will soon be available on 5G mobile

4.3 The Vertigan report

In 2014, the Government engaged a panel of experts to conduct an independent cost-benefit analysis and review of regulation to analyse the economic and social costs and benefits (including both direct and indirect effects) arising from the availability of broadband of differing properties via various technologies, and to make recommendations on the role of Government support and a number of other longer-term industry matters. The panel released the Vertigan report, which carefully assessed how non-economic NBN services in regional and rural areas should be funded.

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[27] nbn footnote number 9: http://opensignal.com/assets/pdf/reports/2015_03_opensignal-state-of-lte-report_mar_2015.pdf
[28] nbn co limited, nbn non-commercial services funding options, nbn submission in response to Bureau of Communications Research Consultation Paper, June 2015, public version, pp 16-17
[29] https://opensignal.com/reports/2016/06/australia/state-of-the-mobile-network/
[30] https://www.telstra.com.au/coverage-networks/telstra-4gx
[31] http://www.zdnet.com/article/telstra-launching-worlds-first-1gbps-commercial-network-vowifi-vilte/ https://www.telstra.com.au/coverage-networks/our-network#tab-telstra-4g
[32] http://www.zdnet.com/article/telstra-4g-network-to-reach-99-percent-by-mid-2017/ https://www.telstra.com.au/coverage-networks/our-network#tab-telstra-4g

The Vertigan panel recommended writing down the value of NBN assets deployed in non-economic areas, stating that such an approach would "have the merit of recognising immediately the future losses the project will impose on the community and are therefore consistent with sound public sector practice".[33]

In regards to the appropriateness of an industry levy to fund non-economic services, the Vertigan report stated that if such a levy is applied instead of using consolidated revenue then the levy should be a broad-based industry levy, as follows:

> By far the best option for funding any ongoing subsidy would be through consolidated revenue. Among other advantages, that would allow Parliament and the public to assess in an ongoing way the benefits of using taxpayer funds for this purpose rather than others. However, should that option not be adopted, the panel recommends that, if an ongoing subsidy is required and its minimum amount can be reliably determined, a single, annual, broad-based industry levy, covering both voice and broadband services, be imposed to fund that subsidy. This would be similar to the current arrangements for the Universal Service Obligation (USO)…[34]

The Vertigan report also stated that a levy should only be applied if the loss making wireless and satellite services were separated from NBNCo and if they weren't then NBNCo, with its enormous size and economies of scale, should bear responsibility for cross-subsidisation as originally planned.

5. Conclusion

OptiComm believes in the economic and social importance of broadband. We agree with the Government's policy that the benefits of broadband should be available to all Australians wherever they live or work. We also agree that the provision of broadband to non-economic areas will only be achieved under a policy framework such as the NBN and that it is reasonable for this policy to be funded via contributions collected from the telecommunications industry rather than general tax revenue. However, we firmly believe that the contributions should come from the industry in general and must not be collected via a new tax that is placed solely on high speed fixed line services. Our view is firmly supported by the Productivity Commission, which has reached the same conclusions with regard to funding the USO. Funding of the USO and NBNCo's non-commercial services should not be split into separate taxes as the two policy objectives are fundamentally the same.

The Bills' proposed narrowly targeted tax ignores the rapid technological leaps in mobile and fixed wireless broadband that is enabling services on these networks to increasingly be a substitute rather than merely a complement to fixed line broadband. The narrowly targeted tax severely distorts competition in telecommunications markets and is contrary to advice given by experts to the Government. In order to be sustainable and competitively neutral, the regional broadband scheme charge must be collected from all participants in the telecommunications industry and the Bills should be changed to reflect this.

[33] Vertigan, p 104
[34] The Vertigan Review, *Independent Cost-Benefit Analysis of Broadband and Review of Regulation Report*, p 21

Bureau of Communications Research

NBN non-commercial services funding options
Final Consultation Paper

Response by OptiComm
November 2015

Public version

1. Introduction

The government has asked the Bureau of Communications Research (**BCR**) to report on options to fund NBN Co's (**NBN**) provision of non-commercial services. This submission is in response to the BCR's Final Consultation Paper. This is the confidential version of OptiComm's submission and OptiComm requests that it is not made public or published on the BCR's website. A public version of this submission with commercially sensitive material redacted is also provided and can be published by the BCR.

The BCR has assessed the loss that it expects NBN Co will incur from building and operating satellite and fixed wireless services in non-commercial areas of Australia and proposed that this loss is funded by the introduction of a levy on high-speed fixed line network operators servicing residential and small business customers (**NBN non-commercial services levy**). The BCR states that it prefers the funding to be limited to this narrowly targeted segment of the telecommunications industry rather than the broader telecommunications industry, which is in stark contrast to the long established manner currently utilised to subsidise loss making telecommunications services in regional areas by the Telecommunications Industry Levy (**TIL**) and previously by the Universal Service Obligation (**USO**) levy. As an operator of fibre networks in residential and business developments, OptiComm is amongst the small group of carriers that would be required to contribute to the NBN non-commercial services levy if BCR's proposal is implemented.

OptiComm recognises the economic and cultural importance of providing affordable telecommunications services to all Australians no matter where they live or work and that NBN Co is the most appropriate party to provide the necessary infrastructure to facilitate broadband services to the bulk of remote and regional parts of the country. OptiComm agrees that it is reasonable that services in non-commercial areas are subsidised to enable them to be retailed at rates that are comparable to commercial areas in order to provide universal service to the community. The Government's original intention was that NBN Co as an entity would fund non-commercial services through a cross subsidy collected from the NBN's commercial services. Unfortunately, factors that include a significant cost blow out in the NBN's construction costs have resulted in the Government seeking alternative funding for the infrastructure that is needed to provide services in non-commercial areas. Though it is a public policy objective rather than a commercial objective of the telecommunications industry, we accept that there are reasonable arguments in favour of this subsidy being predominantly sourced from the telecommunications industry rather than consolidated revenue, however, we strongly disagree with the BCR's view that the subsidy should be sourced only from NBN Co and carriers that provide high speed fixed-line services to residential and small business customers.

The BCR's proposed NBN non-commercial services levy would represent an extremely material cost to OptiComm, which we consider highly unreasonable and contrary to our legitimate expectations of how non-commercial telecommunications services in regional areas will be funded and how we will be able to operate our business and network within the context of regulation of high speed networks. We consider that the BCR's Final Consultation Paper contains errors in both facts and assumptions that place the BCR's position and economic analysis in question. We consider that limiting the NBN non-commercial services levy to such a narrowly targeted band of carriers risks under-recovery of necessary funds, understates the impact that fixed to mobile

substitution will have on NBN's business model, unfairly discriminates against a particular class of carriers, and will result in Australian consumers paying more for high-speed fixed line services than they would if the levy is collected across the telecommunications industry as a whole. OptiComm submits that the NBN non-commercial services levy should be collected in the same manner as the Telecommunications Industry Levy (**TIL**), i.e. as a broad based levy on all spheres of the telecommunications industry including mobile operators.

Attached to this submission is a report from Frontier Economics, which concludes that the currently proposed narrowly targeted levy risks market distortions and that the BCR and the Government should consider broader funding arrangements given the risks to efficiency and completion.

2. Principles for designing funding arrangements

The BCR considered funding arrangements against the principles of transparency, contestability, sustainability, economic efficiency, equity, and competitive neutrality[1]. OptiComm agrees that these are reasonable principles to base funding decisions upon but disagrees with the BCR's conclusions.

(a) **Transparency**. OptiComm agrees that the BCR's proposed funding methodology is transparent, however, we consider that it is relatively simple to achieve this principle and that sufficiently detailed levy contribution criteria would make another funding methodology just as transparent.

(b) **Contestability**. The BCR's proposed funding disadvantages fixed line operators over mobile operators, as being free from the contribution obligation mobile operators have an immediate cost advantage. It disadvantages high-speed fixed line operators over other fixed line operators, for example, as its ADSL network is not subject to the levy contribution Telstra enjoys a distortionary cost advantage for ADSL services that operate at high speeds up to 24Mbps. It also disadvantages a class of carriers over the carriers that are exempt from the funding contribution because they are selling their networks to NBN Co at a future date, allowing them the opportunity to maintain a lower retail price that will increase their ability to retain end-user customers on the relevant network after it passes to NBN Co.

(c) **Competitive neutrality**. Placing such a significant financial burden on the small group of carriers that the BCR considers to be NBN Co's most direct competitors puts them in a distinct competitive disadvantage against NBN Co. The reduction in income will result in competitive carriers having less ability to roll out networks and to compete with NBN Co. The narrowly targeted levy heightens the competitive advantages that NBN Co already has through economies of scale, Government backing, a delayed requirement to achieve profitability, and the ability to rely upon regulation that is not available to non-NBN carriers. A broad industry levy is more likely to achieve competitive neutrality by sharing the financial burden of the levy.

(d) **Sustainability.** The BCR's approach is unsustainable. By relying heavily on contributions from a small targeted group of carriers, undue financial burden is placed upon that group. NBN Co is already overbuilding existing high-speed fixed line networks that are captured by the network. Future SIO numbers are not known, creating uncertainty in regards to how much these carriers will be required to contribute during the course of the levy, raising the potential that the Government will be forced to implement a new contribution scheme.

[1] BCR Final Consultation Paper, chapter 6.

(e) **Economic efficiency**. The narrowly targeted levy will result in carriers avoiding capture by investing in networks that are outside the eligibility criteria.

(f) **Equity**. The narrowly targeted levy is inequitable as it targets a specific and small group of carriers, particularly as those carriers have invested heavily in infrastructure and in business models that are in compliance with and reliance on existing laws and USO funding mechanisms, and cannot reallocate those investments without incurring very significant costs or losses.

3. A broad based industry levy is fairer than a narrow targeted levy

OptiComm has operated as a FTTP developer for over 10 years, significantly predating the concept and commencement of the NBN. OptiComm operates solely as an open access wholesale only provider, in total compliance with the level playing field provisions set out in Parts 7 & 8 of the Telecommunications Act. Since the establishment of NBN Co, we have been placed in the difficult position of having to compete with a very large Government funded entity in order to win orders to install networks in greenfield estates. It is extremely unreasonable that we may now be subject to a very significant new tax on each service in operation (**SIO**) when we have been in total compliance with all relevant rules and that this tax will be considerably higher because the vast bulk of the existing telecommunications industry will not be required to contribute. This is a massive movement of the competitive goalposts and is neither fair nor representative of regulation that is trying to provide a level playing field for NBN Co and other industry players.

The BCR has proposed that the Telstra and Optus HFC networks should be exempted from the funding arrangement in the period before their transition to NBN Co to avoid creating a significant compliance burden to collect revenue over a short, interim period[2]. OptiComm considers that this is unfair and further, we believe the BCR's position is factually incorrect as apart from the actual levy cost burden, compliance is not difficult and it would not be a significant compliance burden to Telstra and Optus at all. All it requires is a person in the Optus and Telstra finance department with a calculator to work out the following calculation: Number of SIOs x $6 = $cost/month payable into the levy.

Broadening the eligibility criteria of the levy will spread and lessen its pain amongst a far larger spectrum of the industry. Though a broad levy will result in a small cost increase across all telecommunications services, it will have the beneficial result that high-speed services on the NBN and other fixed-line networks will be cheaper as they do not need to bear the total cost of the levy for non-commercial services. This approach is far more effective in meeting the government's objective of making the NBN available and affordable for all Australians.

4. A broad based industry levy is more sustainable that a narrow targeted levy

BCR's Final Consultation Paper lists networks that BCR considers are potentially eligible to pay a levy under an NBN equivalent funding arrangement[3]. The list includes:

[2] BCR Final Consultation Paper, p 9
[3] BCR Final Consultation Paper, Table 13, p 60

- NBN Co's network;
- Telstra's Velocity and South Brisbane networks;
- OptiComm's FTTP networks;
- iiNet's VDSL2+ and HFC networks;
- TPG's FTTB network; and
- FTTP networks of other greenfield operators.

A fair proportion of these networks predated the NBN and would have been accounted for when the Government calculated NBN Co's internal cross subsidy arrangements. The obvious newcomer in the list is TPG's FTTB network, which, based on the BCR's figures, at this stage is relatively small.

Using publicly available data sourced from internet searches the BCR estimated that there are currently about 463 200 eligible SIOs apart from NBN Co's SIOs and that this number will grow to about 550,000 SIOs by FY2022. OptiComm cannot comment on the accuracy of the SIOs credited to the other carriers, however OptiComm has considerably less than the 147,000 SIOs credited to it in the BCR's table.

[c-i-c begins - OptiComm SIO figures redacted - c-i-c ends]

If its media claims are to be believed, the 3200 TPG FTTN SIOs listed in the BCR's table will grow considerably as it rolls out its network, however at this stage that is not certain and we do not know if the combination of the December 2014 carrier licence conditions requiring structural separation and provision of a $27/month wholesale service on fixed-line high speed networks[4], and the BCR's proposed additional levy will alter TPG's plans. It is clear however that the carrier licence conditions and the levy must materially reduce the profitability of TPG's proposed FTTB network and that these factors would be closely considered in its reassessment of its business plans.

With regard to other networks on the BCR's list:

- We understand that NBN Co has already overbuilt iiNet's HFC network in Ballarat and it has recently been reported that NBN Co's rollout schedule includes overbuilding iiNet's HFC networks in Geelong and Mildura as well as the iiNet FTTN network in Canberra[5]. We consider it fair to say that competing at the infrastructure level with a Government backed juggernaut like NBN Co places the ongoing viability of iiNet's HFC and FTTN networks under pressure if not doubt.
- It is also reported that NBN Co is overbuilding fibre or FTTN networks operated by OPENetworks and TPG[6], which must surely be an impediment to the sustainability of those networks and their ability to fund the NBN non-commercial services levy.

[4] https://www.comlaw.gov.au/Details/F2014L01699
[5] https://delimiter.com.au/2015/10/17/nonsensical-farce-nbn-massively-overbuilding-canberras-fttn-with-more-fttn/
[6] http://www.itnews.com.au/blogentry/when-nbn-and-tpg-are-battling-for-your-broadband-budget-410089

- It has recently been reported that negotiations to sell Telstra's South Brisbane FTTP network to NBN Co have broken down and that NBN Co has already commenced overbuilding at least part of Telstra's network with more fibre[7].

BCR's proposed recovery model appears to be based on tenuous data that places the ongoing sustainability of non-NBN Co contributions at risk as the BCR quite clearly does not know how many eligible SIOs exist now and there is considerable uncertainty regarding how many non-NBN SIOs will exist at any future time. We are for instance surprised that the BCR has sourced and relied upon SIO data about iiNet's VDSL2+ network from a Whirlpool chat forum. Though a useful website for industry discussion, Whirlpool is not usually regarded as a credible news site as it contains a lot of unsubstantiated opinion, and is definitely not reliable enough to be used as a basis for decisions that are vital to an industry and our economy. Recovery of the very large sums needed to fund the NBN non-commercial services must be absolutely certain for decades and basing decisions on data that is simply not credible and is easily shown to be materially incorrect is a recipe for failure and under-recovery that will result in the Government enduring the embarrassment and expense of having to find alternate means to fund broadband services in regional areas.

Though the subject of complaints about over-recovery by Telstra, TIL arrangements are an established and effective means to source industry funds to subsidise telecommunications services in high cost regional areas and the same methodology is as appropriate now for broadband as it has been for nearly two decades for the standard telephone service. The funding criteria should not be restricted to NBN-like fixed line services but should encompass the industry as a whole with an eligibility criteria based upon a threshold level of telecommunications revenue. Implementing a broad based funding structure will ensure that there is always sufficient funds from the levy to adequately subsidise NBN's non-commercial services because the actual eligibility is clear and it is far more certain that the relevant companies will be in a financial position to make the contribution.

5. A broad based industry levy complies with the government's Terms of Reference and policy paper

BCR's research responds to Terms of Reference issued to it by the Government, which followed a December 2014 Government policy paper called *Telecommunications Regulatory and Structural Reform*. Amongst other things, the Terms of Reference state:

- *The BCR will provide advice on options to replace the current arrangement, where NBN Co funds non-commercial services through an internal cross-subsidy, with direct funding arrangements based on industry contributions.*

- *Consider options for structuring the funding arrangements, including:*

  b. eligibility requirements of contributors (based on revenue, services in operation or other criteria)[8]

Quite clearly, BCR is tasked with reporting how the telecommunications industry can

[7] https://delimiter.com.au/2015/10/26/telstra-unable-to-sell-south-brisbane-fttp-to-nbn-co/
https://delimiter.com.au/2015/10/23/nbn-co-secretly-overbuilding-telstras-south-brisbane-fibre-with-more-fibre/
[8] BCR Final Consultation Paper, p.81

contribute to the funding of NBN non-commercial services and to consider what will make an industry participant eligible to contribute. The Terms of Reference do not state that eligibility should be limited to high-speed fixed line operators. This narrowly targeted view of eligibility appears to come from the December 2014 policy paper, which the BCR has referred to and which states:

> *The cross-subsidies which are currently embedded in NBN Co's wholesale prices will be replaced by transparent funding provided via contributions sourced from owners of high-speed broadband access networks that target residential and small business customers – i.e. the NBN and networks in commercially viable areas that are comparable to the NBN.*[9]

And

> *The Government will task the Bureau of Communications Research in the Department of Communications with providing advice on the amount of non-commercial service funding required to provide for NBN satellite and fixed wireless services. The intention is that new funding arrangements will be put in place that are competitively neutral across telecommunications carriers. The Government will implement an industry contribution and explicit funding mechanism for NBN satellite and fixed wireless services (expected implementation date 1 January 2017).*[10]

Given that the BCR's task is set out in the Terms of Reference, the BCR should have closest regard to those terms as they definitively state what is required of the BCR. The Terms of Reference do not state that eligibility should be limited to the owners of high-speed fixed line networks and we do not know if the Government's policy position shifted between making the December 2014 policy paper and tasking the BCR to investigate funding models. However, we do understand that the December 2014 policy paper is related to the Terms of Reference and even though the policy paper is extrinsic material that the BCR feels it should be considered. The December 2014 policy paper states that the levy should be sourced from NBN Co and the owners of high-speed broadband access networks that are comparable to the NBN. It does not provide a description of what attributes make a network comparable to the NBN and it does not state that a network must be a fixed line network to be comparable. OptiComm disagrees with the BCR's position that only fixed line networks are comparable to the NBN and firmly believes that mobile broadband networks are comparable to the NBN, provide services that are substitutes to services provided over the NBN, and accordingly fit within the December 2014 policy paper's proposed eligibility criteria.

Mobile broadband is a substitute for fixed line broadband and with advances in technology the potential for consumers to choose mobile over fixed is increasing. As a fixed line provider, this is a reality that OptiComm has to deal with and we consider that it needs to be recognised in deciding how to implement a levy to subsidise the cost of regional broadband. The fact is that there will be a significant percentage of consumers in areas serviced by the fixed line NBN that will buy a mobile broadband service and not an NBN service. This is a commercial reality in areas serviced by existing high-speed fixed-line networks and we expect that NBN Co is well aware of

[9] Australian Government, *Telecommunications Regulatory and Structural Reform,* December 2014, p.6
[10] Australian Government, *Telecommunications Regulatory and Structural Reform,* December 2014, p.12

the drain that it suffers to mobile and wireless competitors. In the greenfield estates serviced by OptiComm, we have a take-up rate of approximately [c-i-c OptiComm take up figures redacted c-i-c], i.e. about [c-i-c OptiComm take up figures redacted c-i-c] of premises passed by our fibre network choose not to connect to it despite the fact that there is no alternative fixed line network. We do not have access to detailed data about the consumers or their reasons for choosing not to acquire a service on our network, but anecdotally it is our understanding that these consumers are predominantly young people that have chosen to use mobile phone and mobile broadband instead of a fixed line service. This ties in with the BCR's position that lower income earners are more likely not to have a fixed line service[11] as households consisting of younger people are more likely to have a lower income, but in our experience it is more a factor of age than income. The point that can't be ignored is that as these young people age and earn more, it cannot be taken as a certainty that they will acquire a fixed line service. These are people that have grown up with mobile phones, smartphones, and tablets. They are very used to a mobile rather than a fixed service and may be willing to pay more or to forego potentially larger data allowances of fixed plans for the flexibility of mobility.

Accompanying this is the fact that mobile technology is constantly improving. 4G mobile broadband already purportedly offers speeds of 150Mbps[12]. Telstra claims that its network provides speeds of up to 50 Mbps on 4G devices and 75 Mbps on newer 4GX devices. These speeds are purportedly available around all capital cities and many other cities and towns, i.e. quite widely spread. A study by British firm OpenSignal in January 2015 found the average Sydney user of its app on Vodafone's 4G network could download at 33.9 Mbps, Telstra customers could download at 20.7 Mbps and Optus at 18.3 Mbps[13]. It is difficult to accept that with average speeds that are directly comparable to speeds on NBN fixed line plans that mobile broadband is not comparable to an NBN service and is so easily disregarded by the BCR in its assessment of eligibility to contribute to the NBN non-commercial services levy[14]. Quite clearly, the distinction that the BCR sees is of little significance to large numbers of consumers that acquire mobile broadband services on the basis that such services meet the same purpose for them as a fixed-line service. Of course, several manufacturers are already working on 5G mobile broadband technology, which will provide significantly higher speeds that 4G can now, with speeds of 1 Gbps being considered likely[15]. It is expected that 5G will be commercially available in 2020 though Verizon claims that it expects to be making 5G commercially available to some extent in the US in 2017[16]. In any event, 5G will be a reality very early in the life of the NBN non-commercial services levy and it is of course likely that further advances in mobile technology will follow with corresponding impacts on NBN Co's market share.

Following Telstra, Vodafone has announced that it will be offering voice and video over LTE by December this year. The industry expects that Optus will follow suit in the near future. Until recently, low data caps have been viewed as a limitation of mobile broadband as it restricts the use of the service for data intensive applications such as video on demand. However, new mobile broadband plans are removing this

[11] BCR Final Consultation Paper, p.55
[12] http://www.gizmodo.com.au/2015/01/this-is-the-year-of-super-fast-mobile-broadband-in-australia/
[13] http://www.smh.com.au/digital-life/mobiles/exceptionally-fast-vodafone-comfortably-trumps-telstra-optus-in-4g-mobile-speed-tests-20140123-31aym.html
[14] BCR Final Consultation Paper, p.8.
[15] https://en.wikipedia.org/wiki/5G
[16] http://www.cnet.com/news/verizon-to-hold-worlds-first-crazy-fast-5g-wireless-field-tests-next-year/

limitation. Vodafone's largest data cap is 50 GB/month for $140[17]. On 4 November 2015, Optus introduced a new mobile broadband plan, clearly "out-competing" Vodafone by offering 50 GB data for $70/month. Optus's mobile broadband plan actually offers more data than some comparable plans on the NBN. It is a realistic 100% substitute for some NBN plans offering similar speeds and download allowances at a similar price, but with the advantage of mobility. For example, iiNet offers a 25/5 NBN 50 GB data fibre plan for $64.90/month[18].

50 GB provides over 70 hours of standard definition streaming per month, which is more video streaming than most people would actually watch. Quite clearly, consumers will be able to substitute a fixed line broadband service for mobile broadband and it represents a competitive threat to the NBN. Communications Day had this to say about Optus's $70/50 GB plan:

> Optus has launched a new wireless broadband service running on its 4G network, targeting homes in areas with poor broadband connections as well as households on the move such as renters, and those that need a service up and running quickly. With a competitive monthly charge of $70 and data allowance of 50GB, the new offering could further the trend towards wireless-only households, particularly among younger users. Research from the Australian Communications and Media Authority has shown that 25% of under 25s were "wireless only", compared to 95% of over 65s who still had a fixed-line internet connection. That reflects the trend in other markets: ownership of a fixed line is far lower amongst younger age groups. In the US the Center for Disease Control and Prevention,
> which depends on accurate telephone surveys, found that in 2013 41% of adult-only households had no landline. More recent US research now puts that figure at 44% for those aged between 25 and 40 years old.[19]

The Communications Day article went on to say that Optus's plan would only be suitable for light users of video streaming services like Netflix, which at High Definition can use up to 3 GB/hour. However, this comment fails to consider the fact that consumers can select their streaming definition preference on Netflix and other video streaming services, i.e. they can choose to watch in Standard Definition rather than High Definition in order to preserve their data allowance. Standard Definition provides very good viewing quality that is fine for most uses and is perfectly acceptable to most consumers.

Comms Wire said this about Optus's $70/50 GB plan:

[17] http://www.vodafone.com.au/personal/mobile-broadband/sim-only
[18] http://www.iinet.net.au/internet/broadband/nbn/plans/ accessed 5 November 2015
[19] Communications Day, Wednesday 4 November 2015

> The price and data allowance makes the new plan a viable alternative to fixed line solutions. The new Optus wireless plan offers a serious wireless alternative to fixed line plans - offering 50GB of data for just $70 a month. With an increasing number of new renters leaving the nest each year, the mobile operators are starting to make a serious dent into the fixed line broadband market.[20]

There has been a steady increase in mobile data caps coupled with a steady decrease in fees over the past few years and this now appears to be accelerating. We consider it is reasonable to expect that there will be an extrapolation of these improvements in mobile broadband plans in the near future and that consumer perceptions of the limitations of mobile broadband will quite quickly erode. Mobile broadband is already comparable to fixed-line broadband, even though in our view fixed-line still provides a superior service. With purported technological advances, mobile broadband will become an increasingly strong competitor and substitute for services on the NBN, it is somewhat naïve to ignore its obvious potential. Fixed wireless broadband should also not be ignored as a substitute for NBN fixed-line services. Big Air claims to provide high availability, symmetrical broadband services with speeds of up to 1Gbps on its fixed wireless network[21]. Big Air's potential to compete in the NBN world appears obvious to the market given that it has experienced a 50% increase in its share price since July 2015[22] and increased its revenue by 50% to $62.7 million in FY15[23], however it is ignored in the BCR's assessment.

We also believe that there is no cogent reason to exclude ADSL services from eligibility to contribute to the levy. For years consumers in cities and towns have enjoyed high quality ADSL broadband services that consumers in regional area have longed for but been unable to obtain. The speeds that are currently available on ADSL are comparable to and very frequently faster than the speeds that will be available on NBN fixed wireless and satellite services. For example, ADSL1 provides speeds of up to 8 Mbps, ADSL2 provides speeds of up to 12 Mbps and ADSL2+ provides speeds of up to 24 Mbps, which is faster than the speeds that NBN Co will offer in non-commercial regions. ADSL2+ is very widely available in Australian cities as demonstrated by iiNet's published speed maps[24]. We consider that there is no reasonable explanation that the people who have had the long term benefit of good quality services on ADSL networks and will soon have access to even better technology on the NBN should not have to contribute a small amount to the provision of services in Australia's vast non-commercial areas. At present that narrowly targeted levy will result in the Government collectively a relatively small amount, which will not increase until the NBN rollout ramps up considerably. The inclusion of ADSL services in the levy base will provide access to immediate funding for NBN's non-commercial services, which will be gradually replaced by NBN Co's contribution as the NBN is rolled out and ADSL is replaced. We expect that this is an attractive proposition to a Government that must be looking at how it can reduce the costs of the NBN.

[20] Comms Wire, Wednesday 4 November 2014
[21] http://www.bigair.com.au/fixed-wireless-network
[22] http://www.asx.com.au/asx/research/company.do#!/BGL - accessed 27 October 2015
[23] http://www.asx.com.au/asxpdf/20151023/pdf/4329mlrx1ptycp.pdf
[24] http://www.iinet.net.au/iinetwork/bb2-speeds.html

The narrowly targeted levy is not 'competitively neutral across telecommunications carriers', which was stated as an intention of any levy in the Government's December 2014 policy paper[25]. Firstly, the introduction of such a significant levy makes it far more difficult for the affected carriers to compete with the Government backed NBN Co, this is particularly relevant to small companies like OptiComm. Secondly, the narrowly targeted levy would make it more difficult for the affected carriers to compete with non-affected carriers including mobile and wireless broadband operators.

OptiComm is disappointed with the BCR's detachment from commercial reality, as demonstrated by its statements that a monthly $6 per SIO levy is a 'modest contribution from non-NBN fixed line network operators' and its seeming belief that an estimated 22% increase in costs can be absorbed by lower margins or reduced product offerings[26]. These costs represent a very significant impost on OptiComm and if imposed will be the subject of legal scrutiny as there is no doubt that it negatively impacts the value of our business and assets.

NBN Co has very tangible advantages over its direct competitors. Its Government backing provides it with the enviable ability to roll out an ubiquitous network without the requirement of making a profit for many years. It is able to roll out networks faster and cheaper than its rivals because of amendments to the *Telecommunications (Low-impact facilities) Determination 1997*, which apply only to NBN Co and allow it to install a greater range of network facilities without landowner permission or planning consent. Several laws have been amended and carrier licence conditions imposed that are directly aimed at impeding the ability of other carriers to compete with NBN Co[27]. The imposition of this additional levy exclusively on NBN Co's fixed-line competitors will further impede the ability of a small group of carriers to compete with NBN Co by diminishing their profitability. As it stands, the purpose of the BCR's proposed targeted levy appears to be as much an attack on carriers that the BCR considers to be cherry picking NBN Co's market share as to assist in funding the subsidy for NBN non-commercial services.

6. A broad based industry levy reflects entrenched industry policy for funding non-commercial services

In 2012, the previous Universal Service Obligation levy and the National Relay Service levy were replaced with the TIL, which since this year is administered by the Department of Communications. The TIL funds standard telephone services (**STS**) in non-commercial areas, a telephone service enabling people with speech or hearing impediments to make and receive calls, emergency call services, and other public policy telecommunications objectives. Contributions to the TIL are assessed on the eligible revenue of all carriers. Though the TIL enables the provision of fixed lines in regional areas, the levy is also imposed on mobile carriers who contribute a significant amount to the levy.

The USO or TIL is a well-established mechanism to fund non-commercial services in regional Australia. The essential difference between the TIL and the funding mechanism under discussion is that the TIL primarily funds telephony and the new levy will fund broadband. This distinction is becoming increasingly irrelevant to both

[25] Australian Government, *Telecommunications Regulatory and Structural Reform,* December 2014, p.12
[26] BCR Final Consultation Paper, p.10
[27] For example: Parts 7 & 8 of the Telecommunications Act.

consumers and service providers. On the NBN voice most calls will be via IP. Fixed-line communication is increasingly via email or the internet and social media. PSTN call levels have steadily dropped for years and many consumers use mobiles as their primary source of communication. Fixed line voice calls are still very important but they are no longer as singularly vital as they were when the USO was envisaged. This is a result of the technological advantages that mobile and fixed line broadband offer as a communications tool over the STS. This is recognised and addressed by the Government's commitment to ensuring that broadband is universally available and affordable in all parts of Australia. This Government commitment is based upon the same principles that led to establishment of the USO. The same reasons that the USO (or TIL) is funded by all carriers that earn above a revenue threshold also exist in regards to funding the NBN non-commercial services levy, making a broad contribution base rather than a narrowly targeted base the appropriate funding methodology.

The recently released Regional Telecommunications Review 2015 considered that the existing USO funding model is problematic, stating that the STS is rapidly becoming obsolete because:

- Consumers are increasingly switching from making voice calls via the PSTN to using mobiles, VoIP and social media apps as primary communications tools.
- As the NBN rolls out, it will replace Telstra's copper network as the universal fixed access network.
- The STS and USO funding fail to target the areas of greatest need in regional Australia.
- The USO agreement between the Government and Telstra locks onto an STS of declining relevance.
- Carriers are faced with an additional levy for NBN non-commercial services.
- Loss making services in regional Australia and losses associated with safety net services should be dealt with in one scheme.[28]

The Regional Telecommunications Review 2015 recommended development of a new Consumer Communication Standard for voice and data[29] and replacing the TIL with a levy to support loss-making regional infrastructure and services, with scope to include subsidies for the non-commercial NBN services[30]. We agree with the Regional Telecommunications Review 2015 views and recommendations in this regard and submit that it is a preferable option to the BCR's proposal. This would also mean that Retail Service Providers, amongst the largest potential benefactors of the Regional Telecommunications Infrastructure build, will also contribute.

7. Conclusion

OptiComm urges the BCR to reconsider its proposed funding methodology and in line with the Regional Telecommunications Review 2015, to propose that a broad based industry levy be utilised to assist with subsidising NBN non-commercial services. For the reasons outlined in this submission and the attached report from Frontier Economics, we believe that a broad based levy better reflects the principles for designing funding arrangements than the currently proposed narrowly targeted levy.

[28] Australian Government, *Regional Telecommunications Review 2015*, chapter 4.
[29] Australian Government, *Regional Telecommunications Review 2015*, Recommendation 8
[30] Australian Government, *Regional Telecommunications Review 2015*, Recommendation 9

Funding non-commercial NBN services

A REPORT PREPARED FOR OPTICOMM

October 2015

Funding non-commercial NBN services

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Boxes

Figures

1 Introduction

1.1 The BCR's costing and funding consultation

The Australian Government has asked the Bureau of Communications Research (BCR) to consider economically sound ways to fund the rollout of the National Broadband Network (NBN) to regional Australia.

In addressing these requirements, the BCR has assessed the non-commercial losses expected from building and operating satellite and fixed wireless services and considered options for funding these losses via industry contributions. The BCR's Consultation Paper sets out the BCR's preliminary findings ahead of providing a final report to Government later this year.[1]

The BCR has proposed that the levy should take the form of a charge applying to suppliers of fixed line, high speed broadband networks. The definition of high speed is those networks that can deliver download speeds of greater than 25 mbps.

1.2 The task

Opticomm has asked Frontier Economics for its opinion of the proposed levy, focusing on the economic principles that should apply to the funding of non-commercial services.

1.3 Overview of findings

Our finding in this report are that:

- The BCR has been restricted in its Terms of Reference from considering broader options that industry levies. This is disappointing, because superior alternatives to industry levies are available. There is no particular reason to link the provision of non-commercial services with funding sources, and to tax users of fixed line services to support the provision of these services.
- The funding arrangements proposed, which only levy suppliers of fixed line high-speed networks only (a 'narrow levy'), have a higher risk of market distortion but offer no specific advantages over broader funding arrangements. The BCR and the Government should consider broader funding arrangements given these risks to efficiency and competition.

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1 Bureau of Communications Research, *NBN non-commercial services funding options*, Final Consultation Paper, October 2015. ('BCR')

2 The objectives of subsidy funding

2.1 Funding options

It is axiomatic that funding for non-commercial services is not tied to the provision of these services. Under cross-subsidy arrangements like those applying initially to NBN Co, the provision-funding link exists because consumers in profitable areas are charged more to recover the losses in the non-commercial areas. However, as recognised in the Vertigan review of the NBN arrangements, this is not an efficient, pro-competitive or sustainable way to fund the non-commercial services.[2]

If the Government wishes to provide non-commercial services, it is apparent that the two most direct ways to do this would be:

1. To fund the losses from the budget, so that NBN Co could make a normal commercial return on those services
2. Accept a lower rate of return on its investment in NBN Co, reflecting the subsidy being provided to customers in loss-making areas.

The first of these is strongly favoured by the Vertigan Review:

> By far the best option for funding any ongoing subsidy would be through consolidated revenue.[3]

However, neither of these options are considered by the BCR, as they are considered outside of the Terms of Reference, which cover: 'direct funding arrangements based on industry contributions'.[4]

These terms of reference also seem to rule out two other options:

1. A consumer levy
2. Other telecommunications revenue sources, such as spectrum fees

Ultimately, and while we respectfully note the limitations of the BCR's terms of reference, it is disappointing that the Government is not also seeking advice on the costs and benefits of these alternative forms of funding. As far as we are aware, there has been so specific cost-benefit analysis of these alternatives.

The BCR's analysis focuses on two options: a funding arrangement applying only to the operators of high-speed broadband fixed line access networks, and funding arrangements applying more broadly across the telecommunications industry. While the BCR notes that a broader base could be defined in a number of ways,

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2 Vertigan Review, *NBN Market and Regulatory Report*, 2014, p. 21

3 ibid.

4 BCR, op.cit., p. 50.

for the purpose of its analysis the BCR has focused on the funding base captured by the TIL (as per the current USO arrangements).

We note that the Vertigan Review panel specifically recommends a broad-based levy:

> …the panel recommends that, if an ongoing subsidy is required and its minimum amount can be reliably determined, a single, annual, broad-based industry levy, covering both voice and broadband services, be imposed to fund that subsidy. This would be similar to the current arrangements for the Universal Service Obligation (USO)…[5]

Further, the Vertigan Review specifically warns against the use of narrow levies on NBN Co's competitors:

> A premature decision [to tax competitors] would create a real risk of the tax being set incorrectly, distorting both NBN Co's network decisions and those of actual and potential entrants.[6]

In our view, this should be the presumed 'default' for the BCR's funding analysis.

2.2 Objectives or principles

The BCR develops a number of principles to assist with the design of funding arrangements. The principles that the BCR settles on include:

- Transparency
- Contestability
- Competitive neutrality
- Sustainability
- Economic efficiency
- Equity

The BCR then assesses the two different funding options against how well they promote these principles. Because the principles proposed are broad – and largely unobjectionable – the key to applying them is understanding how the particular trade offs are made between different approaches.

In general, the BCR's discussion of the different principles is useful and appropriate. However, the BCR notes that it has added the competitive neutrality principle to its initial list in the Consultation paper. This addition to the principles considered by the BCR is deserving of some comment.

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5 Vertigan Review, *op.cit*, p. 21.

6 Ibid., p. 105.

2.2.1 Competitive neutrality

The first point to make is that our understanding of the government's policy is that it is not designed to (and should not) stop or hinder competitive entry in commercial areas. Rather, the primary objective of the government policy is to provide NBN services at a subsidised cost to end users in non-commercial areas. A secondary objective is funding in a way that does not distort competition:

> The intention of this reform is to ensure that the funding required to support non-commercial services is transparent and contributions are made to these costs in a competitively neutral manner.[7]

Competitive neutrality arises as a result of funding approaches that potentially seem to favour or disfavour certain kinds of networks or service providers. In particular, if we want to fund the losses by allowing NBN Co to make profits sufficient to recover those losses in lower cost fixed line areas, there is a concern that competitive entry which occurs only in those areas might eliminate these profits. While NBN Co is not hindered from competing in low cost areas, having to deliver a commercial return to Government will be more difficult if it has to bear a loss in non-commercial areas and compete in lower cost (commercial) areas. This is said to not be "competitively neutral".

However, other dimensions of competitive neutrality are also relevant. For example, the Government has previously argued that the *broader* levies for USO funding are competitively neutral. That is, "eligible revenue" was chosen by the Government as the method for apportioning the universal service levy on the basis that it:

> Broadly spreads the burden of USO contributions across the telecommunications industry, is transparent, makes use of readily accessible data, is administratively simple and competitively neutral, both between carriers and between carriers and non carriers with whom they compete.[8]

The Government here was concerned to not distort decision making in favour of access or network-based competition – a concern that still appears relevant today. In that light, it is difficult to argue that the narrow levy base ultimately favoured by the BCR in the draft report is superior on competitive neutrality grounds.

Two further points arise under the rubric of competitive neutrality, which do not appear to be considered by the BCR. The first of these points is whether NBN Co is likely to be able to make a commercial return even if it receives funding for non-commercial fixed wireless and satellite services. Competitors to NBN Co in low cost areas are facing a well-financed firm with a mandate for essentially universal

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7 Australian Government, *Telecommunications Regulatory and Structural Reform*, December 2014

8 Department for Communications, Information Technology and the Arts, *Explanatory Statement to the Telecommunications Universal Service Obligation (Eligible Revenues) Regulations 1998*, 1998

service delivery, with objectives to make a commercial return but it is far from certain that such a return will ever be earned. NBN Co's latest corporate plan indicates that:

> Using the same long range assumptions as applied in the Strategic Review, the long term financial outlook, based on the Operating Plan extrapolated to FY40, provides an IRR of 2.7% – 3.5%.[9]

On our rough calculations, an IRR consistent with NBN Co's WACC would take at least another 10 years to earn (i.e. until FY2050) and must be considered aspirational at this time.

In these circumstances, we consider that the BCR should be particularly cautious in seeking a narrow levy that is targeted at commercial firms that are already facing a reasonable probability of competing with a non-commercial entity.

A final point on competitive neutrality is that there seems to be no account taken of the *net* costs of the obligation to provide non-commercial services. The BCR does not appear to account for any benefits from the provision on non-commercial services. These benefits can take the form of economies of scope or spillovers which come from the funded provision of non-commercial services.

9 NBN Co 2016 Corporate Plan, August 2015, p. 70.

3 Should the levy be narrow or broad?

In this section, we analyse the BCR's report with respect to its preference for a narrow levy on high-speed fixed line networks against a broader levy.

3.1 The levy is a tax on end users in fixed line areas

The BCR's analysis in relation to the cost and revenue impacts presumes that the levy applies to firms, and that this may not be passed through to end users because NBN Co's charges already account for a levy, and other firms will not be able to pass the levy through to consumers:

> The BCR expects that under an NBN equivalent funding arrangement, NBN Co pricing will either remain unchanged or fall slightly.
>
> …Uniform national pricing by retailers, and the fact that other networks only serve six to 10 per cent of the market, make it more likely that higher costs for non-NBN networks will be reflected in lower network or retail margins or reduced product offerings in certain locations, rather than flowing through to retail prices commensurately.[10]

In our view, this part of the BCR's analysis focuses on the wrong question. Rather than addressing price impacts from a narrow levy, the BCR should have analysed the consequences and costs of a narrow levy against a broader levy.

As it stands, the BCR approach gives the impression that the current policy is costless for end users, when this is manifestly not the case.

Put another way, the BCR seems to assume that NBN Co would not respond to a *lower* levy by lowering its charges. At face value, this would not be not consistent with economic theory relating to profit maximising behaviour. The simple economics suggests that a levy will be passed through to end users because (a) the levy increases marginal costs, and (b) all profit maximising firms set marginal cost equal to marginal revenue.

This pass through is clearly true for other (non-NBN) network operators, for whom the $6 levy will be a major direct increase relative to current costs. But it is true even for NBN Co – for every additional customer it takes on in a commercial area, it takes on a $6 per month obligation to fund non-commercial areas.

To think of this another way, imagine that the Government decided to fund the non-commercial services from the budget. It should then be clear that NBN Co would have a decision to make about what to do with the additional $6 per customer per month profit it would earn relative to *existing* prices. Some of this

10 BCR, at 7.4.

may be passed through to end users, and so the narrow levy would impose a burden on end users.

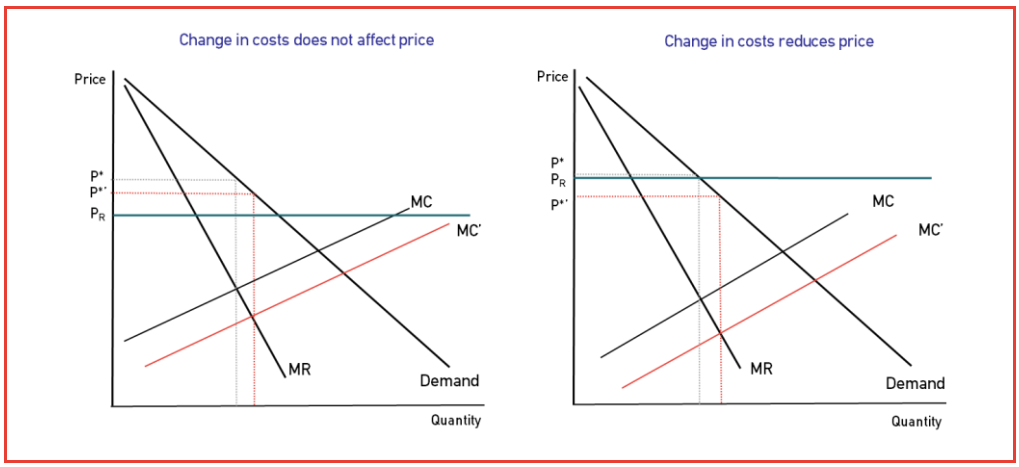
In the short run, the extent of 'pass through' of a lower levy in prices is conditional on two main things:

- whether existing prices are held below profit maximising prices by regulation
- the slopes of demand and supply curves (which measure the effectiveness of substitutes for fixed line high speed services).

To explain the first effect, if regulation does keep prices below profit maximising levels, as shown in Figure 1 below, it is possible that a fall in marginal costs implied by a broader levy (relative to a narrow levy) may not cause a reduction in prices. In that case, a monopoly facing a downward sloping demand curve would like to set prices at P* initially, but is forced by regulation to charge P_R. The fall in levy would push the profit maximising price down to P*' – however this is still above P_R.

If regulation does not constrain profit maximising prices then the fall in levy *would* cause prices to fall. In the case on the right, P*' is below P_R and so prices would be expected to fall from P* to P*'.

Figure 1: Impact of the (removal) of a levy or tax



Source: Frontier Economics

Although this analysis is relevant to the short run, a further point to consider is what happens in the long run where NBN Co faces a long run revenue constraint under its Special Access Undertaking. This constraint may mean that even if NBN Co did not pass any reductions on (from a lower levy) immediately, this would imply its future prices would need to be lower to meet its long run constraint. The narrow levy therefore appears to create a future burden, even if it not immediately apparent.

We therefore find that prices for fixed line broadband services with a narrow levy are highly likely to be higher than they would be with a broader levy. This comes with an associated efficiency cost, as we discuss in section 3.3.

The significance of this issue is that it raises the question of why the levy should just be on users of high speed fixed line networks. Why shouldn't it be all users of communications services? In our view, while the BCR has a discussion of the broader TIL arrangements as an alternative, it has not directly addressed the question of who should pay for the obligation imposed on NBN Co to deliver subsidised (wholesale) services. When put in this way, the choice is between taxpayers, users of communications services, users of fixed line services, or users of high speed fixed line services in low cost areas. Rather than consider this question, the BCR has tried to differentiate the narrow levy approach by suggesting that it would be more efficient for NBN Co to bear most of the subsidy on the grounds of cost containment. However, there appear to be clear alternatives to deliver the same objectives. We discuss this argument further in Section 3.4.

3.2 The narrow targeted levy could reduce affordability in low cost areas

An immediate follow on from the previous point is that a narrow levy decreases the affordability of the NBN in commercial areas. There seems to be a real prospect that prices will be higher than they otherwise would be compared to a broader levy.

In contrast, a broader levy would relatively increase NBN affordability in commercial areas (fixed line), and make no difference to prices in non-commercial areas. Of course, it would also reduce the affordability of *other* communications services that *were* subject to the broader levy, but with a broad levy it would only have a relatively small effect on the price of any one service.

3.3 The narrow levy will create distortions in low cost areas

Allocative efficiency refers to how well society allocates its resources between uses. Efficiency requires resources to be allocated to maximise the economic value created. Economic value is defined as the willingness to pay of the user less the opportunity costs of serving that user. For example, if service A and service B both use the same resources in production ($5), but service A is worth $9 to consumers while service B is worth $10, then allocative efficiency demands that service B is produced as it creates $5 rather than $4 of value.

Distortions in relative prices of services caused by applying taxes to one service but not the other can reduce allocative efficiency if the two services are substitutes. That is because some users will react to the relative prices and choose a service that creates less economic value to society. For example, a tax of $2 on service B would cause users to switch to service A even though this only creates $4 of value.

The BCR notes in this context that broad-based funding arrangements are superior to narrow bases:

> …a broader industry-based funding arrangement would spread costs more broadly, including to mobiles, and thereby lead to a smaller loss of allocative efficiency from funding non-commercial services. Economic theory shows that collecting a given amount of tax revenue from a broad base is less distortionary than collecting the same amount of revenue from a narrow base.[11]

Distortions fundamentally come from taxing services which have close substitutes. Close substitutes have more elastic demand and so create larger 'deadweight' losses when prices are raised. In this context, the BCR notes:

> …a funding arrangement limited to NBN equivalent services treats close substitutes equally. High-speed fixed line networks would face the same funding contribution as NBN Co.
>
> Extending the funding base to include mobiles would improve the funding aspect of allocative efficiency simply because the costs are spread more broadly, but the BCR considers these would be moderate as mobile services are only partial substitutes for fixed line services at this time.[12]

A key issue for the BCR and the Government is therefore is how narrow the levy can be without creating material economic distortions.

The BCR points to data on mobile services which suggests that substitution is not viable even though 21 per cent (3.9 million) adult Australians used mobile-only services for internet usage. The BCR attempts to shore up this argument by suggesting that 92 percent of data was downloaded over fixed networks, although how this is distributed among users (and how this relates to the 21 per cent) is unclear.

The problem with the BCR's analysis here is that substitution effects occur at the margin, and not for the 'average customer'. It is almost certainly true that there will be a significant number of customers for whom mobile services are not a reasonable substitute, and so the levy will have no impact on their consumption decision. However, what should be the focus of attention is the effect of a price rise at the margin for users of fixed-line high-speed networks. If there are customers that use relatively little data, then the price rise on fixed networks may be sufficient to induce substitution to mobile networks with their ever increasing data allowances and speeds. The fact that 21 per cent appear to have already done so should be cause for concern rather than a point of support.

Indeed, the BCR's paper omits to note that even in the last 12 months there has been growth of 11 per cent in the number of Australians who have no fixed internet connection:

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11 Ibid.

12 Ibid.

> A significant group of Australians does not have a fixed internet connection—instead using mobile devices or a mobile broadband connection to access the internet. At December 2014, there were 3.9 million adult Australians (21 per cent) who were mobile-only internet users. This is an increase of two percentage points from December 2013, when 19 per cent (3.5 million) adult Australians were mobile-only internet users.[13]

It is somewhat difficult to quantify the potential risks of the BCR approach. In Box 1, we examine the potential size of 'deadweight losses' created by a narrow levy and find these could be material.

Given the thin evidence, and with a five year forward-looking timeframe, it seems an extremely brave decision to conclude that substitution to mobile networks is not likely as a result of the levy.

Similarly, the BCR's analysis of the exclusion of other fixed line networks seems to focus on the wrong trade-offs. The question should be whether it is distortionary or equitable to levy users of networks serving residential and small business and not levy users of networks serving medium, large and government businesses. It is not relevant whether NBN Co competes in the different market segments, remembering that provision is separated from funding. Further, arguments about difficulties in using SIOs as a determinant of contribution could readily be addressed by using eligible revenues rather than eligible SIOs.

The BCR also seeks to rely on competitive neutrality to support its position:

> …the BCR notes that the purpose of the funding arrangement is to provide a competitively neutral way of funding fixed wireless and satellite services, given the Government's December 2014 decision to liberalise infrastructure-based competition. A funding arrangement limited to NBN equivalent services achieves this objective, while minimising broader impacts on cost disciplines, NBN regulatory settings, and the telecommunications industry.

In our view, competitive neutrality cannot be used to support a narrow levy. As the BCR earlier notes, any approach which allows for NBN Co to recover its costs in non-commercial areas can be considered competitively neutral. The real question is which is the most efficient and equitable way to raise the necessary funds, and whether this should be *all* users of telecommunications services (however that is defined) or *just* users of high-speed networks in commercial (low cost) areas.

We now turn to the question of cost disciplines with a narrow levy.

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13 http://www.acma.gov.au/theACMA/engage-blogs/engage-blogs/Research-snapshots/Australians-get-mobile

Box 1: Quantifying efficiency losses from a narrow levy

Taxes levied on narrow revenue bases are liable to cause losses in economic efficiency, called deadweight losses or excess burdens. We have estimated the size of such losses from using a narrow levy compared to no levy (budget funding) and to a broader levy. While this exercise is largely illustrative given the lack of key input data, it demonstrates that the risks of the narrow levy approach are material.

As discussed in Section 3.1, for there to be an efficiency difference between the two levies (at least in the short term), it must affect prices. While we consider this is likely, it is not certain, because:

- regulation may already be holding the profit maximising price below current levels of $40 per SIO per month and
- the fall in marginal costs may not reduce profit maximising prices below that level.

This scenario would form the lower end of potential efficiency losses.

At the upper end of loss estimates, large efficiency losses might be expected if:

- The lower broader levy would be passed through as lower fixed line prices (as prices are currently at profit maximising levels and so the fall in costs is passed through, and because of longer run revenue constraints due to regulation)
- The demand for services in the lower cost fixed line areas is very elastic

In that case, the effect of the narrow levy would be to cause substitution to other kinds of broadband and telephony services not subject to the levy.

To compare the potential costs at the upper end, we use the $6 per SIO per month for the narrow levy, based on the BCR real levy figure.

The loss of welfare is then measured by the deadweight loss triangle caused by higher price (which will be the pass through rate multiplied by the $6 levy). For simplicity of calculation we use a flat long run supply curve and linear demand.

The following table shows the potential deadweight loss depending on the pass through rate and the elasticity of demand. This is estimated using eight million SIOs in fixed line areas, as for FY22.

		Pass through rate			
	Excess burden or DWL ($ millions)	25%	50%	75%	100%
Elasticity	-0.2	-0.5	-2.2	-4.9	-8.6
	-0.4	-1.1	-4.3	-9.7	-17.3
	-0.6	-1.6	-6.5	-14.6	-25.9
	-0.8	-2.2	-8.6	-19.4	-34.6
	-1	-2.7	-10.8	-24.3	-43.2

This illustrates that while the deadweight losses may be small in a scenario with little pass through and inelastic demand (weak substitutes), if the pass through rate is higher and substitution is more feasible, the deadweight loss could be as high as $43 million per year.

This may be compared against the loss from the broader levy, which might in the range of $1 per SIO for high speed broadband services.[14] Because of the well known rule that deadweight loss is a function of the square of the tax rate, the deadweight loss is on 1/36th

14 On the basis that high speed fixed line broadband networks would recover around 1/7th of the current revenue funding amount, as per table 15 in the BCR's consultation draft.

of the narrow levy (six squared). Even with full pass through and unit elastic demand the efficiency loss would only be around $1 million per year.

Source: Frontier Economics

3.4 A targeted narrow levy is unnecessary to encourage efficient service delivery

In relation to economic efficiency, the BCR states that:

> The BCR considers that an NBN equivalent funding arrangement performs better on the criteria of economic efficiency because it maintains incentives for cost control and market responsiveness for NBN Co.[15]

In contrast, under a broad levy:

> …the BCR estimates that NBN Co bears about 13 per cent of fixed wireless and satellite losses by FY2022 (see Table 15 below), with the broader telecommunications industry bearing the balance. In the BCR's view, this materially reduces NBN Co's accountability and incentives to control costs.[16]

Our understanding of the BCR's approach is that NBN should largely bear the costs of the subsidy (given its high market share in fixed line high speed broadband), and that this will give it a strong incentive to minimise costs. At the same time, the BCR proposes that at each review point (every five years), adjustments should be made to reflect any cost over- or under-recovery from previous periods.

The BCR is right to focus on incentives for efficient service delivery. The BCR's approach to the levy is one way to achieve this – by making NBN Co bear most of the costs of overruns itself, NBN Co should have incentives to minimise these costs.

That being said, the BCR's support for the narrow levy as encouraging cost containment are undermined by:

- The proposal to allow cost over- or under-recovery from previous periods to be rolled into future periods.
- The fact that NBN Co is subject to regulation which requires it to invest prudently, otherwise cost claims may be disallowed.

Suppose, however, that we accept regulation is imperfect and may not prevent all cases of imprudent spending. But even if we accept that proposition, it does not necessarily establish that the narrow levy is the only or the best way to achieve cost containment. There is an alternative approach to incentives for cost containment

15 BCR, p. 53.

16 Ibid.

that would seem to be superior in its incentive properties and more consistent with existing regulatory practice.

A widely used tool in economic regulation is to fix the allowable revenue (or prices) based on forecasts of efficiently-incurred costs over the (regulatory) period. During the period, firms incur actual costs which may be different from those forecast costs. This provides very strong incentives for cost containment. For example, if the forecast costs and associated levy were $5 per subscriber per month, then that is what NBN Co would receive, regardless of whether actual costs were $6 or $4.

We find that the BCR's approach to incentivising NBN Co is not necessarily the only or best way to achieve the objective of cost control, and that the BCR consequently overstates the benefits of a narrow targeted levy. A broader levy could achieve these goals equally well.

4 Conclusion – a broader levy would better achieve the objectives

The Government's policy approach of relying on 'industry contributions' for the funding of non-commercial services is unfortunate in two respects.

The first issue is that it gives some pretence that consumers do not ultimately bear the impact of any taxes or levies imposed on industry, when clearly this is the case (at least in the long run).

The second issue is that it removes better sources of funds which would be less distortionary than industry levies, including broader tax funding or spectrum fees. Alternatively, the government could instruct NBN Co to simply target a lower rate of return – calculated using the same figures prepared by the BCR – that is more consistent with running losses in non-commercial areas.

The BCR's analysis is therefore necessarily a second best approach that makes compromises and creates risks of distortions in incentives. Standard economic theory suggests the way to minimise these distortions is to levy over as broad a base as possible. Further, there appears to be no strong case for any particular set of consumers of communications services to (not) bear the levy. In our opinion, this suggests there is a strong *a priori* case for levying all users of communications services, perhaps defined as per the existing USO (TIL) arrangements. This indeed was the finding of the Vertigan Review panel.

The BCR's analysis of funding arrangements suggests that it has found enough evidence and principles to support an alternative narrow levy approach. It follows from our analysis in the previous sections that we are not convinced that the BCR has made the case for a narrow levy. In fact, we consider that its approach will deliver inferior outcomes compared to a model that has the following elements:

- A broad-based levy on all users of communications services, funded via contributions from networks and service providers serving those users
- A fixed forecast 5 year subsidy required to meet the efficient costs of delivering the non-commercial services, with NBN Co to bear the cost of overspending and benefit from underspending.

Such a model will perform better on the grounds of allocative and productive efficiency, support competitive neutrality and be more consistent with the existing USO (TIL) funding approach which delivers funding from a broader range of communications users and does not distort between different networks, service providers or technologies.