

## The NBN Futures Forum

### Realising the User Potential of the NBN

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**Abstract:** On 22 October 2019, TelSoc held its second NBN Futures Forum in Melbourne on the theme of realising the user potential of Australia’s National Broadband Network. Four speakers discussed various aspects of usage, including digital inclusion, access and affordability, broadband-enabled services, and service pricing. While the NBN has increased access to broadband, affordability remains an issue and the evidence suggests that gaps in digital inclusion are not being closed. The New Zealand experience suggests that demand for high-speed broadband will continue to grow if wholesale and retail prices are appropriately set. The cost of the NBN rollout remains a challenge for wholesale prices. Various improvements in affordability, including direct subsidies for low-income households, were canvassed.

**Keywords:** NBN, public policy

### Introduction

TelSoc (the Telecommunications Association Inc, publisher of this *Journal*) is organizing a series of public forums under the title NBN Futures to encourage debate, and potentially to build consensus, about the future of Australia’s National Broadband Network (NBN) now that the initial rollout is nearing completion. The first forum was held in July 2019 and is summarized in Campbell & Milner ([2019](#)).

The second forum, held on 22 October 2019 in Melbourne and online, had the theme of “Realising the User Potential of the NBN”. Four speakers addressed various aspects of this theme in short presentations of no longer than 10 minutes. Discussion from the audience and online followed, teasing out lessons to be learnt from the user experience to date. The speakers were then invited to make closing remarks.

## The NBN Futures Forum

The Forum was opened by Mr John Burke, who chaired the event. In his brief opening remarks, he noted that one aim had been “building the NBN for all Australians”. The NBN was to have social and economic benefits. He then invited the four speakers to address the theme of “realising the user potential of the NBN”.

### Teresa Corbin: Australian communications consumers

Ms Teresa Corbin is CEO of the Australian Communications Consumer Action Network (ACCAN). She remarked first that the issues of NBN availability and affordability had been brought to public attention once again in the last week through the chairman’s remarks at the Telstra AGM and the ACCC’s inquiry into wholesale access pricing.

Ms Corbin indicated that, for ACCAN, the issues related to the NBN were threefold: the future of NBN pricing; ensuring reliability of telecommunications service; and the evolution of the Universal Service Obligation (USO).

On NBN pricing, the Australian Digital Inclusion Index had identified a growing share of household income devoted to internet services, indicating the potential for increasing financial stress for some households. Ms Corbin claimed that NBN services are simply unaffordable for some people. About 2.5M Australian residents are not currently online. Without greater affordability, there will be a digital divide. Meanwhile, the Internet has become an essential service, with governments pursuing a digital-first strategy for access to government services and many businesses promoting online access.

As part of its strategy to address affordability, ACCAN had signed up for NBN Co’s product development forum. Ms Corbin regretted that its deliberations were confidential, with only one discussion paper on pricing having been made public. She called for greater transparency in the deliberations on NBN service pricing.

Of particular concern was the 12/1 (that is, 12 Mbps downstream; 1 Mbps upstream) entry-level service, which would replace telephone-only service. Ms Corbin feared that it might not be widely taken up by the NBN Retail Service Providers. She indicated that ACCAN believes an effective charge of \$22.50 per month for this service would make it more attractive.

For the popular 50 Mbps service, ACCAN has proposed a wholesale price with unlimited data of \$20 per month for low-income families receiving government income support. This would lead to a retail cost of approximately \$30 per month, about half the current price. In a whole-of-government approach, these discounts could be seen as revenue neutral, since the digital-first strategy is estimated to provide \$25M annual savings for the Federal Government.

Ms Corbin noted that reliability is also important. As the end of the initial rollout nears, it is important to improve the reliability of the NBN. She described an area near the ACT where ADSL had been delivered reliably and consistently, while the alternative NBN service, Sky Muster (the satellite access service), was less reliable and with higher prices. This would affect both families and small businesses.

For the future of the USO, Ms Corbin indicated that a key priority for ACCAN was the implementation of the proposed telecommunications reform package, which had lapsed in Parliament several times. This would see NBN Co as the infrastructure provider of last resort. Currently, there is no guarantee of broadband availability (defined as 25 Mbps and above). The Department of Communications had determined to continue the current USO for telephony and payphones to 2032. ACCAN believes that a better long-term Universal Service Guarantee including broadband access is required. Ms Corbin foreshadowed that there would be significant debate in the development of this Guarantee.

Ms Corbin has expanded on her speech in a more detailed article, published elsewhere in this issue ([Corbin, 2019](#)).

## Chris Wilson: Australian digital inclusion

Dr Chris Wilson described what could be learnt about the impact of fixed (NBN) and mobile broadband infrastructure development on digital inclusion from the Australian Digital Inclusion Index (ADII). The ADII can be used to track the nature and level of digital inclusion in Australia from 2014 to 2019.

The ADII looks at three aspects of digital inclusion: access, affordability and digital ability. Overall Index scores have been steadily rising, from 54.0 points in 2014 to 61.9 points in 2019. This rise has been primarily driven by improved access (underpinned by public uptake of broadband services and increased data allowances). Dr Wilson suggested that the effect of the NBN on digital inclusion has been threefold: firstly, notwithstanding specific cases of poor performance and consumer complaints, the NBN provides a higher quality broadband service than most pre-NBN alternatives; secondly, it has encouraged some people to take-up home broadband services; and, thirdly, in forcing the transition of households from legacy broadband plans, it has contributed to a rise in the average data allowances available to households.

The period 2017-2018 was a particularly interesting year in Tasmania, where there was a surge in NBN take-up, from about 30% of the population to nearly 60%. This corresponded with the completion of the Tasmanian NBN rollout and the closing of the 18-month legacy network switch-off window in many Tasmanian locations. As a result, the gap in overall ADII scores

between Tasmania and the rest of Australia was reduced, but the gap has not been closed. Between 2018 and 2019, ADII results in Tasmania were flat, suggesting the beneficial impact of the NBN may be mainly a one-off.

While broadband infrastructure investments have improved some aspects of digital inclusion in Australia, Dr Wilson noted that substantial digital inequalities persist. ADII scores clearly track with socio-economic factors: for instance, rising with income and level of education and declining for those aged over 50. In many cases, the level of inequality is not falling. The digital inclusion gap between those aged 65+ and those aged 25-34 has widened slightly since 2014, while the gap between those in the top 20% income bracket and those in the bottom 20% has not changed. The gap between those with tertiary qualifications and those not completing high school has narrowed only slightly.

Affordability remains a key concern. Dr Wilson noted that, while the cost of data has fallen, people are spending more on internet services. The increase in expenditure has been greater than income growth, indicating that households now dedicate a higher proportion of their income to internet services. This is a substantial issue for those on low incomes.

A more detailed description of the Australian Digital Inclusion Index was published in a previous issue of this *Journal* ([Wilson, Thomas & Barraket, 2019](#)).

## Murray Milner: New Zealand broadband market experience

Dr Murray Milner addressed the issue of what could be learnt from the New Zealand experience. He noted that the aim of the New Zealand Ultrafast Broadband (UFB) project was to provide 50 Mbps downstream or better to 99.8% of the population. Of this, 87% would be Fibre to the Premises (FTTP), with the remainder on wireless technologies. At June 2019, FTTP was at 78%. The target completion date is 2022.

Dr Milner noted that the take-up was market driven only, with no compulsion to change (unlike in Australia). Take-up, however, had been double expectations, with overall take-up being above 45% by 2018. UFB take-up in the top 10 towns and cities where the build was complete was all around 60%. Not even the experts predicted this level of take-up so quickly at the launch of the UFB initiative.

The product mix has also continued to evolve. A 50/20 (50 Mbps downstream; 20 Mbps upstream) offering has been available since 2015. The GPON-based 100/50 service, non-contended, has also been popular. Now, a 1000/500 service has been growing in popularity, from 3% of take-up in 2016 to 9% today. Chorus is currently testing a 10 Gbps service, prior to commercial release.

Retail offers have also continued to improve. A 1000 Mbps service now costs about NZD 100 per month, down from around NZD 150 at launch, with growth at 1% of connections each quarter.

Use cases also have continued to expand. There are now more than 2,000 schools with FTTP. For many small businesses, upload speed is a driver, with upload speeds of 50 Mbps or greater being required. Dr Milner highlighted one high-resolution design business that was able to be in a “lifestyle” location but whose designs, through high upload capability, could be sent to printers in the city where they were required.

Dr Milner suggested that a typical small business in New Zealand would now take a 200/200 symmetrical service; and a typical residential service would be 100/50. He reiterated, however, that 1 Gbps service was growing in popularity, now at almost 10% of take-up.

### Bob James: Improving Australia’s broadband ranking

Mr Robert James examined the actions that would be required in order to improve the outcomes of the NBN project and to provide a sustainable, competitive path for the future. The current result had seen Australia slip down the fixed broadband rankings: Australia’s average download speed of 42.1 Mbps, as measured by Speedtest ([2019](#)), put it at 61st in the world. He suggested affordability of fixed broadband was poor and take-up uncertain. After an expenditure of about \$50B, Australia would be worse off after completion of the NBN rollout than in 2009 when it began.

He noted that Australia was falling behind, with average speed growing at 30% per annum, while in the rest of the world the annual growth was 40%. Australia was far behind New Zealand (with an average download speed of 98 Mbps). He suggested that, to start to catch up, NBN Co should reduce the wholesale price of the 100 Mbps service to the 50 Mbps price and remove increases in wholesale usage charges. He agreed with the Telstra chairman’s reported remarks that, without the NBN, Australia would have had 100 Mbps service to much of the population by now through competition between telcos.

Mr James outlined the global broadband improvement model, which he characterized as: “Pay the same or less year by year; get more”. He gave the example of Telstra mobile broadband, in which the data component had increased by 10,000 times over 17 years at 12% lower cost (without accounting for inflation). He extrapolated that in 2023 \$60 per month would buy a minimum of 500 GB and 160 Mbps wireless broadband. This change is achieved by reducing costs to grow earnings while revenues remain flat. He noted that, in Europe and North America, revenues from fixed broadband were flat or declining.

It was unrealistic, he suggested, for NBN Co to plan to raise wholesale prices until 2040 and beyond. He noted that a flat ARPU of \$75 per month was needed to make a positive return. The chosen model of first matching existing prices and then increasing ARPU progressively to \$100 at 2040, as outlined in the 2012-2015 plan, would handicap Australian adoption relative to other countries for the next 20 years. The underlying problem, he maintained, was that NBN Co had spent too much – twice the cost per premises than New Zealand and much more than others. He suggested that a plausible scenario would be that revenue would stall at a rate that would not allow a return on the government equity of \$30B. If take-up in 2023 were lower by 10% and ARPU was held down at around 2019 figures by 4G and 5G competition, then revenues would not even cover the interest on NBN Co's loans of \$20B.

He noted that, in the rest of the world, there was a convergence between fibre and wireless access to create a converged broadband service. A structurally separated fixed network was an architectural dead end.

Mr James considered that the government had changed the aims of the NBN project to just getting the initial rollout completed and minimizing the losses, without considering the impact on consumers and network investors. He urged the government to recommit to the consumer goals of fast, affordable broadband with high take-up. It would be necessary, he said, to end the financial misery by accepting write-downs on the value of NBN Co. In addition, he believed that NBN Co should be sold off as quickly as possible to limit the damage from an unsuitable architectural choice.

## Questions and discussion

Questions and discussion from those attending in person and online followed the speeches.

*The government and consumer institutions, such as banks, now prefer online communications. How can this be addressed?*

Ms Corbin noted that the current focus was on fixed broadband but that low-income families were choosing mobile broadband. There was already much government support for broadband: Ms Corbin cited the mobile blackspots program, the annual cost of the NBN, and the USO costs. For some users, such as those in rural communities or people with disabilities, online access may be preferred to face-to-face interaction. However, it was preferable to have a choice of face-to-face or online, something that Service NSW has now recognized.

Dr Milner remarked that the alternative in New Zealand was that some institutions such as banks are paying for their customers to access online services; the end user pays nothing for usage and a low connection fee. There is essentially no charge for

access to essential services by the end user. This approach is in its infancy but is showing positive trends.

*Should a future USO mandate at least 50 Mbps downstream?*

Ms Corbin thought it would be good to have but noted that Sky Muster does not support 50 Mbps downstream, so the service could not be universal.

*The unpredictability of the growth of broadband has been mentioned. In Tasmania, there were high expectations of being able to be employed and stay in Tasmania to enjoy the lifestyle. Have expectations played an important role?*

Dr Milner replied that expectations changed over time in New Zealand. The market changed dramatically as the rollout continued for both end users and investors. The expectations of investors in the UFB public-private partnerships have also changed, with the investors buying out the government in some locations as they recognized the return on investment that can be realised.

Mr James suggested there was an expectation on price. In Japan and Australia, the market moved from dial-up to DSL when the prices were the same and, in Japan, the market moved from DSL to fibre again when the prices were the same. He characterized it as a crazy world where NBN was forcing customers to pay more.

Dr Wilson noted that the rapid take-up in Tasmania had been caused by the switch-off of alternative access networks. Growth after the transition had not been maintained.

*The price comparison should not be between DSL alone and broadband but DSL plus telephone, which cost about \$60 per month, the same as current NBN-based retail plans. Comment?*

Mr James considered that, at that price point, mobile broadband would take off in the market. Ms Corbin noted that customers on Sky Muster or Fixed Wireless were keeping their separate telephone connection if they could.

*What is the one thing we have done wrong in Australia?*

Ms Corbin suggested that it was moving first, ahead of the market. Dr Milner considered that a strength of the New Zealand case was the public-private partnership model of investment, which led to a learning environment, with tight control of incentives to perform. Then, the network provision can adapt as the market develops.

*Even if a premium is allowed for the sparse geography of Australia, it seems that the government has invested too much in the NBN yet is unwilling to write down the value of NBN Co. This could be seen as a “Mexican standoff”. Is this, at base, a political problem?*

Mr James agreed it was a political problem. The government has spent \$50B because of a lack of initial cooperation from Telstra. In other cases, governments have leant on operators to get what they want. New Zealand spent about the upper limit of what should be spent per premises. The solution is to sell NBN Co so that the government is out of the market. However, a write-down of the value would be required and is not possible because of budget issues.

Dr Milner suggested that, without political interference, the market could develop and evolve over time. In New Zealand, the original plans included FTTP only for urban areas. However, as the rollout developed, this was extended to 87% of the population (from 75%) based solely on the economics of building, given that the wholesale service providers had learnt how to deploy the network at a reasonable cost per premises.

Ms Corbin remarked that Telstra did not initially put its best foot forward and then the major policy goal became the structural separation of Telstra. With the advent of the hung parliament, this became *very* political.

*Was there an institutional model that was critical to success in New Zealand?*

Dr Milner believed there were two critical factors: structural separation and competition. Telecom New Zealand had been operationally separated from 2006 but, when the UFB project was started, structural separation was required of participants. Thus, Chorus and Spark were created, permitting Chorus to access government support through a public-private partnership. There were three other wholesale providers, providing competition to Chorus, thus holding down the cost of provision. Any cost over-run was attributed to the wholesale providers, as the government contribution was fixed, which, combined with competition, provided a strong incentive for efficient deployment.

*Gavin Williams, Executive General Manager, Products, at NBN Co, gave a speech at the recent ACCAN conference in which he addressed digital inclusion and, for example, connecting those with more transient lifestyles, such as renters. Can NBN Co be the company to do this?*

Ms Corbin noted that NBN Co has created NBN Local to consult with communities. This is a recognition that NBN Co must understand the needs of end users. NBN Co has a role in understanding need, but it will require government to subsidize some users.

Dr Wilson remarked that switching off alternative access networks causes some people to miss out. If this caused exclusion of some identifiable groups, then it would not look good from a political point of view.



Dr Milner described how the New Zealand government was finding innovative ways to pay for online access, for example by promoting clusters to grow around schools in low-income areas. This permitted customers to connect to schools and other institutions at low cost to the end users.

*Could it be that two steps to improving the situation would be to stop turning off alternative access networks and to encourage others, such as hospitals and education institutions, to pay for broadband access for their clients?*

Ms Corbin considered that it was too late to change the turn-off provisions. Instead, competition with mobile broadband, as, for example, by what Optus is doing with 5G fixed wireless service, will be beneficial. She noted that in several States the Education Departments were helping to pay for Sky Muster in order to provide broadband connections for schools.

## Closing remarks

Mr Burke invited the panellists to make some closing remarks.

Dr Milner noted that digital inclusion was a key theme in New Zealand. For example, to address the challenge of broadband access in regional and rural areas, the three retail mobile service providers had banded together to deploy shared cellular infrastructure. This was a way of reducing costs in low usage areas with challenging economics, while ensuring that coverage is still provided for all customers. This is an example of rational market behaviour given the right incentives.

Dr Wilson considered that the isolation of digital inclusion from digital transformation in the Australian government was a problem. In New Zealand, both aspects were the responsibility of one department. In Australia, health policy, for example, was not connected to telecommunications policy. A holistic approach was required.

Mr James suggested that satellite and fixed wireless were not good choices for fringe urban areas where they have their greatest application. They will not be competitive with mobile broadband in such areas. For uneconomic areas, one wireless network delivering both fixed and mobile services would have much better economics (as New Zealand chose with its Rural Broadband Initiative).

Ms Corbin noted that, with 50% of the rollout achieved already and completion of the NBN rollout in the next year (together with a further 18-month transition period), there would be a large changeover of customers in the near term. It is necessary to address the issue of affordability now. ACCAN modelling suggests that adding low-income customers at subsidised rates actually improves NBN Co's income.

## Conclusion

This was the second of a planned series of forums on the topic of the future of the NBN. There was general agreement that the current situation was not desirable nor sustainable. While the NBN has increased access to fixed broadband, affordability remains an issue, especially for low-income households, and the evident gaps in digital inclusion are not being closed.

The \$50B cost of the NBN rollout has become a barrier to market development, with high wholesale prices discouraging both end-user take-up and commercial opportunities for retail service providers. Projected increases in ARPU to support returns to NBN Co would suppress demand and drive an increase in mobile-only households. Low-income households are already opting for mobile broadband, leading potentially to differences in digital inclusion.

A write-down of NBN Co value is politically unattractive but affordability can be addressed, at least in part, by other means. ACCAN has proposed a direct subsidy for broadband access for families receiving government income support. This could stimulate demand for fixed broadband, improving NBN Co's finances, while being revenue-neutral if a whole-of-government accounting approach were adopted. A significant reduction in wholesale prices would stimulate greater take-up but the actual price elasticity in the Australian market is uncertain.

The New Zealand experience suggests that, with appropriate wholesale and retail pricing, there would be developing demand for fixed broadband services with increasing speeds over time, including services at or above 1 Gbps. Upload speeds are also important for many small businesses. The market experience in New Zealand was not easily predicted but, rather, has evolved through natural end-user innovation, combined with market-based encouragement.

The initial aim of "building the NBN for all Australians" has not yet been achieved. As the transition to the NBN for fixed broadband reaches its final stages, change will be required but the final shape of this change has not yet been determined. TelSoc will organize future NBN Futures Forums to assist public discussion of issues related to the NBN and to help build consensus on the future changes that are required.

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