

Assessing Australia's Progress Towards a National Broadband Strategy at December 2021

TelSoc Broadband Futures Group

Abstract: This paper is based on a report by the TelSoc Broadband Futures Group in which Australia's progress during 2021 towards a National Broadband Strategy is assessed against the criteria set out in *Towards a National Broadband Strategy for Australia: 2020-2030*, a report prepared by TelSoc in November 2020. The *Journal* publishes this assessment of progress as a Special Interest Paper. The Assessment shows that there has been some, albeit limited, progress towards a National Broadband Strategy, including in various Australian Government statements about the development of the digital economy and its expectations of NBN Co in the provision of fixed broadband access services nationally.

Keywords: broadband, strategy, TelSoc, digital economy, online society

Introduction and Background

TelSoc

The Telecommunications Association (TelSoc) is a not-for-profit society registered as an incorporated association. TelSoc's purpose is to support the development of the telecommunications and related sectors and harness the potential of the sector for Australia's economic and social development. TelSoc does this by promoting public discourse and assessment of the key telecommunications and digital economy issues of the day through public forums, member newsletters and publication of the *Journal of Telecommunications and the Digital Economy*.

TelSoc Broadband Futures Group

In February 2019, the TelSoc Broadband Futures Group (TelSoc BFG) was established by interested TelSoc members to examine in greater detail issues associated with the rollout of the National Broadband Network (NBN) and a range of related issues such as public policy settings in Australia for broadband, harnessing the potential to transform Australia to a digital economy and an online society, and equitable and fair access to broadband services.

In November 2020, the TelSoc BFG completed and launched its report, *Towards a National Broadband Strategy for Australia, 2020-2030* (TelSoc NBS Report) ([Holmes et al., 2020](#)). The themes and proposals in this report are discussed in more detail [below](#).

The purpose of this report is to provide an assessment of how Australia has progressed towards a National Broadband Strategy during 2021, using the themes and proposals in the TelSoc NBS Report as a framework.

TelSoc recognises a certain presumption in this assessment, and taking the framework of our NBS proposal as a basis for it. Broader examination of this proposed framework as the reference, and other contributions to the assessment, would be welcome. More particularly welcome would be the establishment of a National Broadband Strategy with a generally agreed framework and set of objectives and stages that could be assessed in a broad public policy context.

Executive Summary

A year has passed since the TelSoc NBS Report was published. That is sufficient time to make an assessment of the progress that has been made towards a National Broadband Strategy since then.

However, a number of initiatives, reviews and programs are continuing as at December 2021. Where these may have relevance as progress towards a National Broadband Strategy, they are mentioned, but full assessment will need to await further development of each initiative.

Overall, although some progress has been made towards a National Broadband Strategy, it has been implicit rather than explicit, fragmentary and limited, and significant gaps remain, as set out in detail in our summary of key gaps [below](#).

On the positive side of the ledger, the Government, in May 2021, published the **Digital Economy Strategy**, which seeks to set out a 10-year strategy for the development of an effective digital economy in Australia.

But this is not the strategy that TelSoc is proposing. It is concerned with capabilities in economic sectors and not in society or the economy at large. It has been based on consultation, but there is no evidence of the level of bipartisan support that will ensure its future impact and effectiveness across multiple electoral cycles. Lastly, it adopts broad terms for expressing a vision and objectives, but lacks the detail to ensure achievement of concrete targets for those objectives over the next decade and the clear accountabilities that are needed.

Nevertheless, the Digital Economy Strategy could provide the basis for a National Broadband Strategy, and become an important building block to support the expansion of scope and

strengthening of detail that is required. Clear strategic intent is required, and leadership from the Federal Government.

Another promising development, with strategic potential, is the **Statement of Expectations of NBN Co (SOE)**, which the Ministers for Finance and Communications published on 26 August 2021. The SOE is necessarily confined to the fixed broadband operations of NBN Co, and consequently does not reflect a broader vision covering mobile and other platforms that are part of Australia's broadband infrastructure. While a range of objectives for NBN Co, and by extension for the broadband system generally, can be extracted, the SOE is short on critical detail that would enable targets to be understood and their implementation better monitored. It is disappointing that an opportunity has been missed to set out a larger series of objectives, express stronger strategic intent, and then better contextualise the expectations of NBN Co within that broader canvas. This would have enabled NBN Co's role in contributing to critical social outcomes, such as broadband service availability to low income and remote Indigenous communities, to be more clearly defined and any limitations to be better understood.

Substantial gaps remain in terms of research, monitoring and assessing broadband usage and needs. Programs to address service shortfalls, whether in geographically or socially-defined categories, are typically sub-scale, disconnected and uncoordinated. Policy reviews are piecemeal and do not provide for the cohesive and continuous support that is needed to establish and to manage a longer-term, comprehensive National Broadband Strategy.

Towards a National Broadband Strategy for Australia: 2020–2030 (TelSoc NBS Report)

The TelSoc NBS Report provides a framework for an assessment of the progress made in 2021.

The TelSoc NBS Report was launched in November 2020. It argued for adopting a clear vision and objectives for broadband access and usage in Australia and for a long-term, coordinated, bipartisan national strategy to achieve the best social and economic outcomes as Australia further transforms to a digital economy within an online society. The TelSoc NBS Report recognised that the NBN would be a central part of such a strategy, especially in the earlier years, but that a comprehensive policy framework needed to recognise the contribution of mobile and other access technologies.

Recognising the initial central role of the NBN, the Report was also concerned to ensure that NBN Co was not privatised either in the shorter term (next five years) or without substantial consideration of all of the issues that need resolution beforehand. In the event, TelSoc members working on these issues have come to understand that none of the major political

parties has any interest in pursuing short-term sale of NBN Co and, consequently, the matter has not been part of our priority agenda for 2021.

Developing a bipartisan National Broadband Strategy

To be robust and meaningful, a long-term national broadband strategy will extend beyond the term of many Parliaments and other political cycles and needs genuine bi-partisan support. The NBN and the policies associated with provision of broadband services more generally are about investing in and maintaining fundamental infrastructure. Like other programs of that kind, broadband strategy needs to have the broadest base of support in the community for social and economic benefit to be maximised.

Vision and objectives

The TelSoc NBS Report recognised that it is crucial for there to be a clear understanding and general agreement on the vision and objectives for the digital society and economy. It noted that statements of vision and objectives are the key plank in the policy framework. These statements ensure there can be meaningful discussion, engagement and evaluation of the means employed to deliver broadband infrastructure and services efficiently, creatively and equitably.

The TelSoc NBS Report included a working characterisation of such a vision statement, as follows, but recognised that widespread adoption of a statement is necessary for a national strategy:

“... ubiquitous, high-quality, high-speed broadband that is affordable to all in Australia and which will provide an essential service needed for Australia to develop and remain an inclusive online society and a competitive online economy into the future” ([Holmes et al., 2020](#), p. 214).

The TelSoc NBS Report noted that the value and benefits of investment in the NBN, and in broadband generally, needs to be assessed in the broadest terms, but particularly taking account of social and economic objectives, which need to be clearly identified. These objectives need to be the basis of agreed means of assessing digital equality and inclusion, of ensuring that, regardless of economic or social status, all Australians have the opportunity to effectively participate in the online digital economy. A means of determining related goals in terms of digital capabilities across industry and society, affordability and availability of basic and standard services is required.

Social and economic benefits

In recognising an increasing emphasis being given to realising the social and economic benefits of broadband services, particularly from the experiences during the COVID pandemic, the TelSoc NBS Report observed a number of requirements to ensure these benefits be achieved. including: a continuing “demand side” policy focus; a broad consideration of benefits across a range of applications, supported by underpinning inclusion; the generation of continuing research and discourse; and taking a long-term, effectively scaled, approach.

Technology and technical pathways

The TelSoc NBS Report recognised that the multi-technology mix was a reality that provided different technical and quality-of-service outcomes for customers being served in different areas. The Report concluded that pathways were necessary towards improved service characteristics over time, and that NBN fixed-line services should be upgraded to at least 100/50 Mbps service capability as soon as possible in the first five years of the initial National Broadband Strategy and to 1000/500 Mbps service capability everywhere by the end of the 10-year period, prioritised as appropriate in terms of commercial benefit.

The Report also noted that broadband users being served by fixed wireless and satellite technologies need to have defined pathways to these improved service characteristics.

Finance, regulation and ownership

The TelSoc NBS Report made various recommendations in relation to financing, regulation and ownership of NBN Co, the most important relating to keeping the company in public ownership for at least the next five years, and not considering sale of the enterprise after that until a comprehensive regulatory framework was developed. Telsoc’s aim was to ensure that the problems of other privatisation exercises, and particularly sacrificing longer-term community benefits for improved sale price, were not repeated.

It became apparent in the early part of 2021 that sale of NBN Co was not being considered by any of the major political parties and that this was likely to be the position for the medium term or longer. For that reason, issues associated with ownership of NBN Co have not been further considered in this report.

Progress Towards a National Broadband Strategy During 2021

The programs, activities and initiatives set out below are by others, particularly NBN Co and the Federal Government, and have been included in this report because they represent progress, to some extent, to the development of a more comprehensive, longer term, strategic

approach to broadband issues and to broadband service delivery of the kind contemplated in the TelSoc NBS Report.

In this section the programs, activities and initiatives are described, together with an assessment of the contribution of each towards achieving the proposals in the TelSoc NBS Report.

NBN rollout

The Minister formally declared the completion of the initial NBN build and that it be treated as being fully operational in December 2020 ([Fletcher, 2020](#)).

In 2020, NBN Co announced a number of initiatives for:

- Providing wholesale broadband access within nominated industrial zones, particularly in regional areas, in partnership with state and local government. Implementation of this program continued throughout 2021; and
- Installing fibre deeper in access networks (closer to subscriber premises), providing up to 1 Gbps download speeds, in response to a willingness of subscribers to commit to a high-speed plan. Implementation of this \$4.5B program extended into 2021 and beyond ([NBN Co, 2021a](#)).¹

During 2021, NBN Co reported:

- 75% of households and businesses were connected on plans for 50 Mbps download speeds or higher ([NBN Co, 2021a](#), p. 39);
- the creation of a \$300 million regional co-investment fund;
- 8.2 million premises were connected to the NBN, an increase of 0.9 million over the previous 12 months;
- 12 million premises were ready to connect, an increase of 0.2 million over the previous 12 months; and
- Upgrades of speed across the NBN fixed-line network ([NBN Co, 2021b](#), p. 15).

Assessment

NBN Co continued in 2021 with network operations, including enhancements and extensions, as envisaged following the completion of the initial build in 2020. However, it has not addressed via public plans and strategies, yet, many of the fundamental problems experienced by customers in areas served by fixed wireless and satellite systems.

In some areas there have been initiatives to extend fibre systems into locations currently served by fixed wireless, but this will typically require commitment and financial contribution

by leading users. NBN Co has not yet made public any plans for implementation across the board to improve the performance of fixed wireless broadband delivery.

Some customers have reported on improvements provided by the NBN Co's upgraded satellite service, Sky Muster Plus. However, the latency issues associated with voice service via Sky Muster remain, because it is based on a geostationary satellite configuration.² There is no indication from NBN Co of any plans or intentions to examine other satellite technologies, and, in particular, low earth orbit (LEO) satellite services.

Statement of Expectations of NBN Co

The Ministers for Finance and Communications issued a revised statement of expectations of NBN Co on 26 August 2021, replacing the earlier statement from 2016, and recognising the formal determination of the completion of the initial build in December 2020.

In summary, the 2021 Statement of Expectations:

- Sets out objectives for the NBN and NBN Co and, in particular, for maximising the economic and social benefits of the NBN and operating NBN Co as a sustainable, commercial business, with Australia to be a leading digital economy and society by 2030;
- Sets out service expectations, including that NBN Co will upgrade technologies to expand access to peak download speeds of up to 1 Gigabit per second;
- Sets out an expectation that NBN Co will improve its wholesale services and assist in addressing access challenges in regional and remote areas, and that, where it cannot generate a commercial return in these areas, it will cross-subsidise from returns earned elsewhere in the business and contributions from the Regional Broadband Scheme;
- Seeks improved consumer experience;
- Seeks delivery of a reliable, resilient and secure network;
- Expects NBN Co to support initiatives to increase digital capability and inclusion;
- Requires NBN Co to facilitate regulatory certainty, by updating its Special Access Undertaking to incorporate all Multi-Technology Mix networks and by “working constructively with the ACCC”; and
- Expects NBN Co to utilise emerging and future technologies as appropriate to improve service.

Assessment

It is certainly timely for the 2016 Statement of Expectations to be updated. The 2021 Statement ticks many appropriate boxes.

In particular, the 2021 Statement does reaffirm the overall goal for Australia to be a leading digital economy and society by 2030 as an important policy setting. How progress towards and achievement of this goal might be measured is not addressed explicitly, although many of the specific expectations might provide a basis for assessment.

However, the 2021 Statement suffers from the same vagueness that affected its predecessor. There are no hard targets on which NBN Co might be held accountable or on which the Government itself might be held accountable. The life of the Statement is indeterminate, so there is no timescale for any of the expectations to be realised. This leads to the conclusions that the expectations will be met at any stage if NBN Co can show some progress towards achievement of the desired outcomes. In practice, this might be a low bar.

Other Infrastructure Developments

5G Rollout

The market-driven rollout of 5G has continued with market leader Telstra now having coverage of 75% of the population at the end of June 2021, with over two million 5G devices on its network. Telstra projects approximately 95% population coverage by 2025. In remote areas this will be low-band 5G; most regional areas will have two bands, low- and mid-band; and suburban and urban environments will have three bands — low, mid and mmWave ([Telstra, 2021](#)).

According to WhistleOut, 5G speeds between 100 Mbps and 1 Gbps can be expected, with testing around Sydney providing average speeds of 500 Mbps on Telstra and Optus, and 250 Mbps on Vodafone ([Choros, 2021](#)).

LEO (Low Earth Orbit) Satellites

As noted above, there is no indication of any plans by NBN Co to examine the possible deployment of LEO satellite services in its network. However, a number of LEO network operators are planning to extend services to cover Australia in 2022 and 2023.

Assessment

A comprehensive strategy is needed that will include all technologies and platforms for the provision of broadband services.

Digital Economy Strategy

The Digital Economy Strategy (DES) was developed by the Digital Technology Taskforce, within the Department of Prime Minister and Cabinet (PM&C) and launched in May 2021 in association with the Federal Budget ([Australian Government, 2021c](#)).

The DES is heavily focussed on economic issues, the digital transformation of Australian industries and Government, and the skills acquisition to enable improved functioning in the workplace. This focus is reinforced by the three pillars on which the DES is built ([Australian Government, 2021c](#), p. 3):

1. Building the foundations to grow the digital economy;
2. Building capacity in emerging technologies; and
3. Setting digital growth priorities “to lift our ambition”.

The DES contains immediate actions and allocations associated with the 2021-22 Federal Budget but also sets out some of the characteristics of the digital economy it is seeking by 2030, including:³

- All businesses will be digital businesses, using e-commerce tools and new technologies to improve productivity;
- All transactions will be electronic;
- Australians will have the capabilities to confidently use⁴ and create digital technology, and all will have learning opportunities to gain key digital skills;
- Government services will be easily accessible online;
- Smart regulation, including the most cyber secure environment.

The DES is explicitly linked with other Government initiatives, including NBN Co’s \$4.5 billion infrastructure expansion, regional co-investment plans and 240 business fibre zones, and the Australian Broadband Advisory Council (ABAC) key sector focus on maximising the benefits of high-speed networks ([Australian Government, 2021c](#), p. 26).

The DES acknowledges the importance of skills and inclusion generally, but examines these issues in detail only in the context of building digital capabilities for the current and future workforce ([Australian Government, 2021c](#), p. 32).

Assessment

TelSoc included an assessment in its submission to the Digital Technology Task Force to extend and deepen the DES ([TelSoc, 2021](#)).

TelSoc considers the DES to be an important statement by the Government because it attempts to be strategic and to take a longer-term view (albeit for 10 years) of issues and programs to address them. However, it is not comprehensive enough to be a National Strategy of the kind envisaged in TelSoc’s NBS Report.⁵

While a vision “[f]or Australia to be a leading digital economy and society by 2030” suggests a broad intent, the DES as it stands is essentially directed to economic aspects. TelSoc considers

a broader strategy is needed to cover the desirable outcomes for the Digital Society which support, and to some extent overlap, economic benefits. A broader strategy would include:

- applications development: scaling up the utilisation of services and technologies in various areas of social and economic activity, and actively encouraging and developing new applications; and
- ensuring all citizens are included in the Digital Society, through having the necessary core capabilities and being able to upgrade these capabilities over time, and having access to affordable, quality services.

These additions would be quite consistent with the fundamental approach of the DES.

In the area of applications development, the DES particularly identifies export-oriented sectors and government services. Other sectors also need attention, including the need for further work in areas highlighted by COVID-19 experiences, such as online learning, working at home, and social communication and connectedness.

The DES concentrates on digital skills and capabilities being developed for the workplace. There is undoubtedly a significant cross-over in digital skills for work and more generally. However, the strategy needs to be broadened to explicitly address digital skills and digital inclusion in social contexts. In addition, the DES needs to include an analysis of:

- measures to determine the meeting of digital inclusion and digital capabilities objectives;
- the extent to which these objectives are currently met, and therefore the gaps to be addressed; and
- the strategic approach to be adopted in addressing the gaps and the challenges.

The other core component of the DES objective is that by 2030 “all Australians have access to high-speed internet services and the ability to use it [sic] effectively” ([Australian Government, 2021c](#), p. 19). This requires ubiquitous, reliable and affordable high-speed broadband infrastructure.

It is timely, now that the rollout of the NBN is essentially complete and the presence of high-speed mobile services is expanding, to provide a strategic view of how the range of services can develop to provide an understood 2030 goal, covering:

- The roles of fixed, mobile and satellite services in providing ubiquitous coverage;
- Performance levels required for anticipated high-volume data applications and also to ensure at least international parity – including at least speeds of 100/50 Mbps in the near term and 1000/500 Mbps within the next 5-10 years, along with other clear

specifications of Quality of Service requirements. The intention of the Vision to be “world leading” would imply higher targets on these dimensions; and

- Programs to support identified targets and compliance conformance.

This strategic component would be an extension of the Digital Infrastructure section of the DES as it stands, which shows an underlying, though not fully articulated, strategic perspective.

As already noted, the DES links with other Commonwealth initiatives and programs, and recognises the need for a whole-of-government approach at the Commonwealth level. A National Strategy requires an explicit recognition of the need for greater collaboration at all levels of government, recognising in particular the many initiatives being taken at State level, and with industry and community stakeholders.

The DES needs to be extended to ensure that there is capacity and commitment to maintaining the continuity of the strategy, including its review and revision in response to changes in the economic and social environment. The organisational arrangements for ensuring continuity need to be made more explicit. Whether the Digital Technology Task Force approach is appropriate and robust for the future needs to be addressed in this context.

Australian Broadband Advisory Council (ABAC)

ABAC was established in 2020 and adopted a sectoral approach to examining how broadband services and related programs might transform particular industries and improve productivity and employment, both in the shorter term, as the economy emerges from lockdown and other pandemic-induced constraints, and in the longer term.

The emphasis on transforming particular industries has resulted in ABAC progressing its work through the creation of expert advisory groups. At least two expert advisory groups have made substantial progress during 2021, working on agricultural technology and health. Reports from both groups have been delayed during 2021, but the report of the AgriTech Expert Working Group was eventually published on 10 September 2021 ([Australian Government, 2021a](#)).

It is understood that further reports on the health, construction and creative industry sectors are in the pipeline.

The only report available for discussion therefore is from the AgriTech Expert Working Group (AEWG). It is not a typical report or one that will go through the green paper/white paper processes typical of government. Instead, the report draws on case studies in diverse areas of agriculture, as well as themes associated with connectivity challenges. The studies tend to

show substantial individual and community initiative at a local level in developing solutions, extending services and highlighting opportunities for further development.

Out of the various case studies, it is clear that there is no single overarching solution to the challenges the agriculturists involved need to address. As a result, the recommendations are framed in broad terms. They are ([Australian Government, 2021a](#), pp. 8, 71–76):

1. NBN Co should prioritise moving people from satellite on the ‘outskirts’ of its fixed wireless network by exploring technical ways and connection policies to ‘soften’ the 14 km boundary for the fixed wireless coverage.
2. Continue to provide and expand services such as the Regional Tech Hub, to enable farmers to better understand the full range of connectivity options they already have, including new RSPs.
3. Develop spectrum policy that promotes opportunities for innovative wireless solutions in rural and regional areas.
4. Promote the availability of fibre backhaul to support alternative providers in rural areas – the combination of fibre and class licensed spectrum provides a very cost-effective solution to provide broadband in sparsely populated areas.
5. NBN Co, and carriers generally, should be encouraged to explore technical solutions which allow interworking with lower cost, third-party providers to extend the reach of the carrier networks.
6. Enable local communities to realise their own connectivity infrastructure by removing regulatory barriers and promoting locally driven connectivity initiatives.
7. Invest in ensuring that the ‘stack’ of knowledge and skills required to ‘power’ connectivity and digital agriculture is in place.
8. Shift the weight towards involving local communities in regional specific assessment and planning processes to help ensure that local farming and community organisations are aware of funding from states, territories, and the Australian Government is coordinated and effective in improving telecommunications infrastructure in rural areas.
9. Stronger coordination between Federal, State/Territory and Local governments to ensure investments in communications infrastructure are more aligned with the priorities in each regional and rural area, and possibly in co-funding the key infrastructure projects.

Assessment

Many of the recommendations are well aligned with the recommendations in the TelSoc NBS Report.

The recommendations are at a broad level, perhaps necessarily so given the range of challenges and range of possible solutions that might be adopted. It is not at all clear where responsibility lies to take these recommendations further and to turn them into actionable programs that can be specifically funded and/or managed. The members of the AEWG are not going to perform that role. They will likely return to their “day jobs”, as one stated at the TelSoc forum on the report.

ABAC and the AEWG have indicated that the purpose of the report was to start a conversation which would lead, hopefully, to more concrete action plans in many areas. But this approach runs substantial risks of fading away without result, potential losing the advantage of substantial work and valuable insights in the report.

NBN pricing and Special Access Undertaking (SAU)

NBN Co published a discussion paper in February 2021 inviting all interested stakeholders to comment on various constructs for wholesale broadband pricing, which might be included in a variation to the SAU. NBN Co based its constructs on options that enabled recovery of its costs incurred to date and in the future, as well as various permutations of access circumstances, usage levels and data rates.

The existing SAU was entered into between NBN Co and the ACCC in 2013, and has proved to be largely ineffective in providing overall price and revenue constraint, keeping wholesale (and, consequently, retail) broadband service prices down, and generating price packages aimed at affordability, particularly amongst lower income users.⁶

It was expected, in 2013, that accumulated losses, would be recovered by or within a few years of the completion of the network build. Generally, this was expected to occur within 10 years – by 2023. This has clearly not occurred and the size of the loss is now \$32 billion (according to NBN Co). The result is that the overall revenue cap, an important regulatory constraint in the 2013 framework, cannot be applied while recovery of accumulated losses is required.

The SAU and variations to the SAU are voluntary. In order for the system to work, the undertaking must be made by NBN Co and agreed by the ACCC. Either party can refuse to agree, leaving outdated arrangements to remain in place. Variations to the SAU have been proposed in the past 5 years, but have failed for want of agreement.

In the meantime, NBN Co has developed and expanded a range of discounts and extensions (capacity increases) that have had the effect of passing reduced wholesale prices to the industry.

A specific component of the discussion paper was consideration of options for a low-income product offering.

Assessment

NBN Co has attempted industry and ACCC dialogue to explore the possibility of a broad industry consensus. Agreement appears to be remote, and the ACCC's own review of NBN Co regulation (see below) has complicated the matter. It is not yet possible to undertake an assessment, given the state of discussions at this time.

ACCC review of NBN pricing and regulation

In June 2021, the ACCC published a discussion paper seeking industry and other stakeholder comments on principles that should govern its approach to the regulation of pricing and other terms and conditions for wholesale access services provided by NBN Co, including the possibility of a low-income product. The ACCC has subsequently conducted a roundtable on 18 June 2021 and set up working groups of invited select industry participants to progress the issues. This is an initiative that is intended to have long-term consequences for how NBN Co prices its wholesale broadband services and the opportunities that it will have to recover its accumulated losses and capital investments over the longer term.

Assessment

The working groups established by the ACCC are continuing their work and this is expected to continue at least to the end of 2021. Assessment is therefore not yet possible.

Regional Telecommunications Review

A Regional Telecommunications Independent Review Committee is established every three years under Part 9B of the *Telecommunications (Consumer Protection and Service Standards) Act 1999* to conduct a review into telecommunications services in regional, rural and remote parts of Australia. The Minister, Paul Fletcher, appointed the Committee for the 2021 review in June 2021. The Committee has held various hearings, and submissions on its terms of reference were sought by a deadline of 30 September 2021. The Committee has been charged with completing its review on or before the end of December 2021.

The terms of reference of the review include specific regional issues such as addressing mobile service back spots, but are broad enough to cover a much larger range of policy issues.

Assessment

The initiative is required by legislation, and does not necessarily reflect any current enthusiasm by Government for addressing regional telecommunications issues or general issues that have a regional aspect.

The report from the review is expected to be completed and submitted to the Minister by the end of 2021 but when it is tabled in the Parliament or made public are matters that rest with

the Minister. Assessment will not be possible about the quality of the report and its recommendations until then.

TelSoc and others have proposed that each three-yearly Regional Telecommunications Review should not be a standalone activity. Rather, they should be linked with strong reference to recommendations of previous Reviews and summaries of outcomes. Further, they could be conducted within the framework of a National Broadband Strategy.

Joint Standing Committee on NBN

The Joint Standing Committee (JSC) has continued its work during 2021 and earlier in the year conducted hearings online to enable those who have made submissions to present and to engage with the JSC. The JSC published a 2-page progress report on 31 March 2021 and was due to report by 30 June 2021, but this date has been extended.

Assessment

Based on the specific issues that have been raised in various submissions, and upon the interests and focus of the JSC when TelSoc attended and gave evidence, it seems unlikely that the JSC, in its fuller⁷ report, will be a major agent for progressing longer term issues and bipartisan approaches to national broadband strategy of the kind contemplated in the TelSoc NBS Report. However, assessment of that cannot be undertaken until the JSC's fuller report is published.

Inclusion and affordability

Various studies or assessments of inclusion and affordability of telecommunications services generally, or of broadband services (and Internet access), have been published during 2021. TelSoc has examined some of these including:⁸

- Australian Communications Consumer Action Network (ACCAN): *Addressing Telecommunications Affordability: Evaluating Support for Low Income Consumers* (September 2021) ([ACCAN, 2021](#)). Examines the experience of low-income consumers, and organisations assisting them, with a particular focus on financial supports provided by industry and other organisations, concluding that:
 - Affordability of phone and Internet is a key issue faced by all low-income households;
 - The financial programs examined can help to make life easier or more convenient, but they are not well known;

- Building awareness of the offers, proactively approaching consumers about deals, and providing simple to understand promotional material will help consumers.
- Australian Communications and Media Authority (ACMA): *Communications and media in Australia: How we use the internet* (May 2021) ([ACMA, 2021](#)). This annual survey is now presented in online interactive form, providing a range of information on the practices of users of the Internet, including channels and devices used and activities conducted.
 - An important primary conclusion is that 98.83% of the adult Australian population (18 and over) used the Internet in the last 6 months (anywhere); i.e., only 1.17% did not use the Internet, as compared to 9.61% in May 2019.
- ARC Centre of Excellence for Automated Decision-Making & Society at RMIT, the Centre for Social Impact at Swinburne University of Technology, and Telstra: *Australian Digital Inclusion Index (ADII)* (October 2021) ([Australian Digital Inclusion Index, 2021](#)). The Index has been significantly re-developed in a number of important features, including:
 - A revised survey, developed by the research team and conducted by the Social Research Centre;
 - Propositions of ranges of index values that constitute highly excluded, excluded, included and highly included – with a score of 61 said to indicate inclusion and 28% of the adult population said to be “excluded” (11% “highly excluded” with a score of 45 or less);
 - Online display of key data, with Excel access to databases;
 - A measure of affordability based on definition of desirable Internet bundles and proportion of household income required to meet these, resulting in the conclusion that 14% of all Australians would need to pay more than 10% of their household income to gain quality, reliable connectivity;
 - A new set of attributes to assess digital ability.
- NBN commissioned research, conducted by Accenture: *Consumer affordability of nbn™ services* (September 2021) ([Accenture, 2021](#)), which concludes:
 - NBN retail plan costs represent a small percentage of average household income and compare favourably to other household essentials;
 - The majority of Australians are not concerned about the relative affordability of their NBN service;
 - Australia has the 6th most affordable broadband across 13 OECD countries.

- The Good Things Foundation: *Digital Nation Australia 2021* ([Good Things Foundation Australia, 2021](#)) brings together a range of research sources to highlight aspects of the digital divide, including groups most affected, and to argue for the need for national digital inclusion strategies.

Assessment

Each of these organisations has undertaken important primary research or secondary research into inclusion and affordability. However, questions arise about the common understanding of these phenomena, including:

- The extent to which digital exclusion and problems of affordability are significant issues: the conclusions of the Accenture research for NBN and the significant reduction in ACMA's figure for non-use of the Internet contrast strongly with the grounded research of ACCAN and the conclusions of the ADII 2021.
- The establishment of potential national benchmarks through the ADII's determination of inclusion being assessed by a score of 61 on the index and ideal Internet bundles being used in the assessment of affordability.

No mechanism, government or otherwise, appears to exist to interrogate matters such as these and arrive at some generally accepted standards of definition and measurement that can be maintained over time.

Further, there is no evidence of the issues of inclusion and affordability being addressed or progressed by the Government in any direct way during 2021. The Ministers for Finance and Communication have indicated that they see a role for NBN Co to address inclusion and affordability in some sense in the Statement of Expectations referred to earlier. This direction does not address more fundamental issues of definition and measurement or the adequacy and effectiveness of current or future programs.

On 12 August 2021 TelSoc sent a proposal ([Herring, 2021](#)) for a serious review of inclusion and affordability issues and solutions to Minister Fletcher. The proposal set out the key issues and also the case for a review. In part, the proposal stated:

“... at the most basic level for formation of public policy there is no apparent clear understanding of what constitutes inclusion and affordability and the magnitude of the problem. A commonly used measure for inclusion is that of use of the Internet in a recent period of time – a frequently quoted figure is the ABS 2016-17 statistic that 13.8%, or 2.58 million, adult Australians did not access the Internet in the last three months; a dramatically contrasting figure arises, however, from the recently-reported ACMA study of June 2020 which concludes that 1.17%, which translates to approximately 0.23 million, adult Australians were not accessing the Internet in the last six months. Questions about appropriate definitions, timeliness, and measurement methods clearly arise.”

A reply has been received by email from the Minister's office, utilising the high-level Accenture conclusions about affordability as presented in the NBN Corporate Plan, that suggests that the Government considers that sufficient has been done over the past two decades. The reply invites further discussion with the Minister's advisers, but the specific issues raised by TelSoc are not canvassed in the reply.

Assessment of Progress in Terms of TelSoc NBS Report Proposals

Summary

There have been indications over the past two years of an implicit National Broadband Strategy, or at least components thereof. These indications lack cohesion and do not yet have clear bipartisan support. A comprehensive approach to a strategic framework still needs to encompass the provision of both fixed and mobile broadband services.

While elements of the kind of strategy envisaged by TelSoc are in place or emerging, there is not yet a thoroughgoing strategy based on broad consultation – such as the Green Paper-White Paper process TelSoc has proposed.

This section sets out an assessment of progress in 2021 towards a National Broadband Strategy in terms of the dimensions identified in the TelSoc NBS Report. There may be repetition of some points made in the previous section.

Bipartisan agreement on developing a National Broadband Strategy

While there has not been explicit commitment to an overarching strategy, there are strong indications of an implicit strategy by the Government through the development of the Digital Economy Strategy, the Statement of Expectations for NBN Co, the formation and work to date of the Australian Broadband Advisory Council (ABAC), and other developments that are expected to emerge from initiatives such as the Regional Telecommunications Review at the end of the year.

A question is the extent to which the Digital Economy Strategy fulfils this purpose. In a submission to the Digital Technology Taskforce, TelSoc has welcomed this strategy, with its 10-year focus, but indicated areas of desirable further development. These include a broader approach to digital inclusion and affordability; expansion of the foundation aspect of national broadband infrastructure; addressing the need for cohesion across government, industry and community; and ensuring continuity through emphases on development, monitoring and review.

In meetings with the Minister for the Digital Economy, Jane Hume, Shadow Minister Michelle Rowland, Joint Standing Committee members, Dr Katie Allen and independent Dr Helen Haines, and Minister Paul Fletcher's adviser, Grant Walsh, there has been no rejection of the idea of such a strategy.

Vision and objectives

Elements of Vision and Objectives have been stated or re-stated during 2021.

Vision

The Vision in the Digital Economy Statement is: "For Australia to be a leading digital economy and society by 2030".

While an initial statement of Vision is welcomed, this does not provide the sense of national intent around which efforts on a broad front can cohere. In contrast, TelSoc's suggestion was: "Ubiquitous, high-quality, high-speed broadband that is affordable to all in Australia and which will provide an essential service needed for Australia to develop and remain an inclusive online society and a competitive online economy into the future".

Objectives

NBN Co's Statement of Expectations includes the following:

"The Government's objective is to maximise the economic and social benefits of the NBN and for NBN Co to operate as a sustainable, commercial business. Within legal and policy parameters, NBN Co should generate sufficient revenue to support appropriate levels of investment in the network to meet the current and future needs of Australians, wherever they live. NBN Co will reliably and affordably meet the current and future broadband needs of households and businesses, including in regional and remote Australia, foster productivity and innovation, and support our goal for Australia to be a leading digital economy and society by 2030 ... The Company is expected to support initiatives to increase digital capability and inclusion."

The Statement of Expectations contains a number of constructs which will need clarification to be realistic components of objectives for NBN that can be monitored through appropriate measures and standards. These include clarification of the terms and phrases:

- *maximise the economic and social benefits of the NBN*
- *current and future needs of Australians, wherever they live*
- *reliably*
- *affordably*
- *digital capability*
- *inclusion.*

Objectives such as these should apply to the broadband system as a whole, including mobile service provision, with NBN's role delineated within that.

Determining appropriate measures and standards and then establishing an associated comprehensive national database and analytical framework is key to supporting policy and decision making for optimising infrastructure and achieving investment objectives.

Further statements of objectives are contained in the Digital Economy Statement, including that by 2030:

“All Australians have access to high-speed internet services and the ability to use it effectively ... All Australians have access to digital skills ... 90% of Australians are confident using digital technology, protecting their privacy and assessing whether information is credible”

Common objectives can clearly be developed from these points, with the challenge being to make them measurable and monitorable.

Extending Social and Economic Benefits

Overall, there has been substantially greater emphasis on extending the social and economic benefits of the broadband system, and accepting the importance of this approach, now that the initial build of the NBN has been completed. The circumstances resulting from responses to the COVID-19 pandemic may well have contributed to this greater emphasis. However, some of the initiatives are fragmented and lack scale and cohesion at this stage.

The Digital Economy Strategy has a major emphasis on economic benefits, as does the work of the ABAC. The social benefits have a less obvious specific focus.

Continuing demand-side policy focus

There is an emerging demand-side policy focus, though not yet comprehensive. The Bureau of Communications Arts and Regional Research (BCARR) has provided one example of a case study approach in its study of affordability issues for low-income people using prepaid mobile, and is open to a broader consideration of relevant groups in future. Academic and community groups have provided relevant research on the experiences of specific groups, but there is no thoroughgoing framework for ensuring a user focus to strategy and policy development.

Broad consideration of social and economic benefits

The November 2020 TelSoc report identified a number of dimensions of considering the extension of social and economic benefits:

(a) Assessment of macro-economic benefits

There are a number of studies (AlphaBeta Advisors for NBN Co, BCARR on AgTech, and others) purporting to show quantifiable economic benefits for broadband services either for the whole society or sectors of activity – though with no apparent commonality of methodology or expert critical analysis.

(b) Expansion of Internet use in a broad range of information, communication, transaction and entertainment applications

This embraces market-led applications, underpinned by the broad concepts of digital inclusion and digital capability/literacy. There is not yet a comprehensive program in existence or clearly in the making – although there have been specific relevant initiatives such as the Regional Tech Hub, established in December 2020, and the Be Connected program evaluation (though subject to critical appraisal).

In the absence of a coordinated approach, TelSoc has made a proposal for a Review of Inclusion and Affordability of Broadband Services to the Minister for Communications.

(c) Specific socially valued application areas, such as government services, education, health, banking

ABAC has adopted a selected sectoral focus with initial emphasis on those with greater economic benefit, though also addressing health and, later, education.

(d) Specific economic development areas, such as business (corporate and SMEs), agriculture, tourism

The Digital Economy Strategy has a strong focus on supporting applications development in business and other specific areas. ABAC's first report has been on AgriTech.

(e) Broader social impacts, such as decentralisation

The NBN Co Statement of Expectations recognises the importance of meeting service expectations in regional and rural areas, particularly because of the COVID pandemic.

(f) Possible benefits of future application areas, such as Internet of Things and augmented reality

The Digital Economy Statement pays some attention to emerging technologies and their applications, particularly noting Artificial Intelligence, Internet of Things, Data Analytics, Blockchain and Quantum Computing, and proposes to address these areas largely through existing initiatives and plans.

Generating discourse — transparency/consultation

The Digital Economy Strategy was developed with an advisory panel and a consultation phase, although this may not have been broadly known. ABAC's work has been done with expert groups which have consulted with identified groups. ABAC has shown a willingness for discussion post completion of the AgriTech report, in the first instance.

There has been a shift in the level of discourse being generated. It has been focussed on specific issues and on immediate problems and issues. It is therefore an open question about how strategic it has been, and it lacks any sense or driver of continuity.

Recognising scale requirements

There are questions with all recent initiatives about the recognition of necessary scale, particularly in the digital inclusion/capability area where current programs seem limited compared to likely actual need, and where likely actual need has not been fully analysed.

Future concept of “universal service”

The Universal Service Guarantee implemented from 2020 is the most recent initiative relevant to universal service. It embraces the loss-making aspects of NBN Co's rural and remote service provision under its existing Statement of Expectations. The Regional Connectivity Initiative is also part of a broader regional and rural broadband initiative. Attention has yet to be given to a construct of universal service based on an integrated technologies system, including fixed and mobile services delivered by fixed, mobile, wireless and satellite systems.

Long-term coordinated activity — with ongoing drivers such as a Broadband Institute

The TelSoc NBS report raised the possibility of a purpose-built organisation to drive the understanding and development of social and economic benefits of broadband networks, and provide ongoing policy and project support and research. This concept of a body collaborating between governments, industry, academic and community organisations was outlined in the form of a Broadband Institute in an early Discussion Paper ([NBN Futures Group, 2020](#)). The advent of the Digital Technology Task Force and ABAC reduced emphasis on such a body, pending information on how these bodies might serve such a purpose.

The Digital Technology Taskforce remains in existence to see the Digital Economy Strategy implemented, though with what resources and remit is unclear. ABAC is responsible for a set of task-oriented activities for a finite period; it remains to be seen what recommendations they may make for ongoing activity, underpinned by appropriate research facilities.

There is no clear evidence in 2021 that the notion of a Broadband Institute or similar agency to undertake longer-term comprehensive research and overall coordination has gained any

traction at all. In fact, in the discussions with politicians that TelSoc representatives have had during the year, there appears to be little appetite to create new bodies of this kind. From these conversations the view emerged that there were sufficient public and private agencies in the field, albeit uncoordinated. Despite this, the need for such a body is becoming more apparent to TelSoc.

Technology Pathways

Establishment of future targets for moving to data speeds of 100/50 and 1000/500

Longer term targets of this order seem to be accepted by NBN Co and the Minister, and are further reinforced by the capabilities of 5G. NBN Co's stated intention is that up to 75 per cent of households and businesses served by its fixed network will have available download speeds of up to 1 Gbps by 2023. This indicates NBN Co's acceptance of this as a desirable and achievable target. This apparent acceptance, and its ubiquitous nature in the longer term, needs to be made explicit in the context of a coordinated strategy.

The continuing development of 5G services brings into play standards that might apply to both fixed and mobile broadband services.

Establishment of pathways towards targets

(a) Specific focus on rural, regional and remote users

Explicit pathways towards longer term targets have not been set out by NBN Co or the Government. There has been no reported consideration of the use of emerging technologies, such as Low Earth Orbit (LEO) satellites, to meet targets.

(b) Consideration of options for NBN and 5G

There does not appear to be a cohesive examination of the relationship between NBN and 5G. So far, NBN Co has not been able to acquire 5G spectrum.

Financial considerations

Clarify cost of alternative technology pathways

Pathways have not been clearly defined with associated costs. This is especially important for fixed wireless and satellite service provision.

Determine if debt financing with long-term debt facilities is adequate for 5-year and 10-year periods

NBN Co has shown an ability to raise debt, and recently has been rated by Fitch for a Bond raising, described as "USD 50 billion medium-term note (MTN) programme" ([FitchRatings, 2021](#)).

Importantly, NBN Co has been able to establish suitable private debt facilities and is planning more private borrowings.⁹

Establish what other Commonwealth, State and Local funding, as well as private sector co-funding, might be available, and for what specific purposes

NBN Co has established co-funding arrangements of this kind over the past year, but further detail on how they are working needs to be reported on, over time.

TelSoc notes that State Government initiatives have been announced in this field as well – such as a \$400 million program by the NSW Government. How State, Federal and private initiatives are being coordinated, especially in the absence of a clear and agreed national strategy, is a matter to be pursued.

NBN Co Ownership Considerations

Clarify Government current thinking on ownership changes and timing

In discussion with TelSoc, Government politicians have suggested that the sale of NBN is not on the immediate horizon, as has Minister Fletcher in public statements.

Government MPs contacted by TelSoc are aligned in saying that sale of NBN Co is not on the current issues slate. For that reason, TelSoc has not raised the issue afresh, and does not intend to.

Specify changed policy and regulatory settings needed for (a) continued public ownership; and (b) changes in ownership whether to partial or wholly private ownership

There is no apparent public work on this issue.

Clarify Government approach to restructuring NBN Co, including changes to charter, that might be associated with ownership considerations

There is no apparent public work on this issue. As noted above, privatisation seems to be off the agenda for the medium term at least, and therefore changes that might be proposed to NBN Co's charter will arise from other considerations. TelSoc has sought to raise 5G and backhaul transmission opportunities for NBN Co where appropriate.

Key Gaps in Progress Towards an NBS

Based on the assessments of progress towards a National Broadband Strategy on the various dimensions in the previous section, the table below summarises the key gaps, as TelSoc sees them, and provides indications of what needs to be done in 2022 and beyond to address those gaps.

Table 1. Assessment of Key Gaps and Proposed Actions

Strategic Component	Key Gaps	Proposed Action
Bipartisan agreement on developing a National Broadband Strategy	<p>Elements of a national strategy can be observed, but there is no explicit strategy or bipartisan support for one.</p> <p>No apparent continuity/cohesion of policy development, implementation, monitoring and review.</p>	<p>Ultimately the leadership in developing a National Broadband Strategy and achieving bipartisan agreement must come from the Federal Government. The task it includes the important role of coordinating the various activities and initiatives of State, territory and local governments.</p> <p>The Federal Government should establish the coordinated institutional structure, with clear accountabilities, to ensure continuity and cohesion of policy development, research, monitoring and review.</p>
Vision and Objectives		
<i>Vision</i>	<p>Statement proposed, but lacks a sense of national intent.</p>	<p>Further work should be undertaken by the Federal Government to expand and strengthen existing statements of vision in the proposed National Broadband Strategy.</p>

Strategic Component	Key Gaps	Proposed Action
<i>Objectives</i>	<p>Statement of Expectations for the NBN contain key constructs which need clarification for monitoring through appropriate measures and standards, including:</p> <ul style="list-style-type: none"> • <i>maximise the economic and social benefits of the NBN</i> • <i>current and future needs of Australians, wherever they live</i> • <i>reliability</i> • <i>affordability</i> • <i>digital capability</i> • <i>inclusion.</i> <p>These and objectives such as in Digital Economy Strategy need application to the broadband system as a whole, including mobile service provision, with NBN's role delineated within that.</p> <p>Establish accurate, regularly updated national databases of broadband availability, usage and affordability</p> <p>Establish regularly updated 'gap analysis' of activities and timing required to advance current status of Australian broadband to the level of its aspirations.</p>	<p>These key constructs need to be given meaningful targets and measures, to be effective and to define accountabilities. Note however that it cannot be a matter only for NBN Co to achieve, since they are operating at the wholesale level in the broadband market. Achieving these objectives will involve the whole system of industry, Federal Government and other policy-making bodies at State level.</p> <p>The Federal Government should establish institutional arrangements to ensure that research, monitoring and data collection are implemented in a coordinated and comprehensive manner, together with regular assessments.</p>
Extending Social and Economic Benefits		
<p><i>Demand-side policy focus</i></p> <p><i>Broad consideration of social and economic benefits</i></p> <p><i>Long-term coordinated activity</i></p>	<p>User-centred approaches need to be built into policy and research (use construct of "effective use" as core).</p> <p>Strong focus on digital inclusion and affordability.</p> <p>Comprehensive approach to applications deployment, development and support</p> <p>Ensure long-term research and policy development</p>	<p>Methods for ensuring user-centred approaches need to be established.</p> <p>Review of Inclusion and Affordability of Broadband Services should be conducted by the Federal Government.</p> <p>Devise and establish a Broadband Institute or similar agency. This links with the institutional focus referred to above.</p>

Strategic Component	Key Gaps	Proposed Action
Technology Pathways		
<i>Establishment of future targets for moving to data speeds of 100/50 and 1000/500</i>	Apparent acceptance, but ubiquitous nature in the longer-term needs to be made explicit target .	These targets, together with clearer descriptions of the service characteristics that need to be better and more comprehensively specified, need to be built into the National Broadband Strategy.
<i>Establishment of pathways towards targets</i>	Technology pathways to long-term objectives for a fixed-mobile-wireless-satellite system	

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End Notes

¹ NBN Co Annual Report 2021 (NBN Co, 2021a), p. 8. The program aims at enhancing fixed network NBN services to provide capacity for 75% of households to be at the highest download speeds by 2023.

² AgriTech Expert Working Group Report, ABAC (Australian Government, 2021a) (June 2021, p 18). Also various of the 650 or so submissions to the Rural Telecommunications Independent Review, 2021 (Australian Government, 2021b).

³ Australian Government ([2021c](#)), p. 11. The measures of success are in some cases presented in more detail at p. 83: for example, that digitally-intensive industries are by 2030 employing more than 10% of the Australian workforce, and that 95% of SMEs are by then using e-commerce tools.

⁴ Australian Government ([2021c](#)), p. 19 – target set at 90%.

⁵ The DES does however seek to deal with new technologies affecting digital economy futures, such as artificial intelligence. The assessment relates only to its coverage of longer term social and economic dimensions of broadband.

⁶ NBN Co has used a series of discounts and service extensions, outside the SAU, to deliver improved price and service terms to retail service providers. The problem with these, unlike an accepted SAU, is that they are discretionary and capable of being withdrawn by NBN Co at short notice.

⁷ Because the Committee is a standing committee, it is not appropriate to refer to a final report. However, the publication of progress reports suggests that something more complete will be published in future.

⁸ Various other sectoral and cohort studies (such as older aged Australians) have been undertaken and published during the year. Resource constraints have prevented TelSoc from examining all work, and the result has been to focus on those considered to be more important or influential.

⁹ NBN Corporate Plan 2022 notes: “In order to finance the repayment of the Commonwealth loan by 30 June 2024 and to execute the investments outlined in this Corporate Plan, NBN Co is planning to raise a total of approximately \$27.5 billion of external debt by June 2024 plus additional working capital facilities. ... To date, the Company has raised in excess of \$14.5 billion in bank and capital markets debt” ([NBN Co, 2021b](#), p. 37).