



National Broadband Network

A nation building project

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National Broadband Network

A Nation Building Project

There can be no greater goal today, for this nation, than to provide telecommunications universal access to underpin a drive to become a leader in the global digital economy and when this is achieved to maintain this position in the decades to come.

A National Broadband Network that utilises FTTP, Wireless and Satellite to connect Australians to the NBN is an instrumental requirement if this nation is to succeed.

Versions

NBN I 2007 FTTN

\$5 billion?

NBN II 2009 FTTP 93%,
wireless+satellite 7%

\$46 billion

NBN III 2014 FTTN/B 54%, FTTdp 1%, HFC 25%, FTTP 10%,
wireless+satellite 10%

\$49 billion + 2019

NBN III 2018 FTTN/B 39.5%, FTTdp 11.77%, HFC 21%, FTTP 17.65%,
wireless+satellite 8.4%

\$51 billion + 2022

NBN IV 2019?

What is the NBN really about?

Connecting every Australian to the digital network by providing future proof wholesale infrastructure

The NBN is about more than connection speed.

- Staying ahead of our competitors – global digital economy
- Capacity – national and international
- Traffic Class Management – service quality
- Capacity and congestion – customer experience
- Universal Access
- Universal Service Obligation

Current Status

2019-2022 NBN Co Corporate Plan

- \$2.1 billion cost blowout for the NBN;
- Rollout delays to 1.3 million homes over the next twelve months;
- \$700 million in lost revenue as a result of the HFC rollout halt;
- \$500 million increase in the cost to deploy HFC;
- Remediation of the HFC network reduced further;
- The copper footprint increased by 100,000 premises; and
- NBN built and fully operational in mid 2022 (hopefully?).

2019-2022 NBN Co Corporate Plan

NBN Co on track for 2020 completion? No. All legacy equipment unlikely to be connected to NBN, co-existence period for all areas not expected to end until early 2022, last area of legacy networks not expected to be turned off until mid 2022.

NBN Co on track for rollout completion with 11.7 million premises Ready to Connect (RTC) and 8.1 million homes and businesses with an active service over the nbn™ access network

More than \$1 billion investment in total capacity upgrades on the fixed wireless network up to FY22

\$3.9 billion total revenue in FY20 with improved customer experience initiatives

Internal rate of return (IRR) of 3.2 per cent with measurable additional economic and social benefits

Peak funding within range at \$51 billion – inclusive of \$1 billion contingency

A National Infrastructure Disaster

Future proof, No

Business model, failure

50 to 80 year infrastructure life time, No Digital divide, entrenched

Plan for next satellite launch, No

Technical simplicity, No

Universal national wholesale pricing, No Corporate Plan, Super ball quality

CAPEX counted as OPEX, Yes

OPEX counted as CAPEX, Yes

Trust deficit, Yes

FTTN, Obsolete

To learn or to debate in ignorance?

Department of Communications and Arts Research released a report titled “Future trends in bandwidth demand” on 27 February 2018

This report provides a unique opportunity to put key information into the public domain

A report that appears to have been written with the sole purpose of supporting the Coalition Government’s NBN plan – Is this an acceptable action by a Government Department?

To date the Joint Standing Committee on the National Broadband Network has not requested that the underlying models and data used in the report be provided for review nor made public – why?

<https://www.communications.gov.au/departmental-news/future-trends-bandwidth-demand>
<https://www.innovationaus.com/2018/04/Report-opens-up-NBN-data-models>

What happens next?

Built and Fully Operational

- Likely to be mid-2022
- 18-month co-existence period prior to legacy network infrastructure being turned off
- For the current government it is politically important for NBN Co to state that the NBN will be “completed” in 2020
- NBN Co to be sold off in 2024? Possible

Provision of super fast broadband

Carrier License Conditions - certain types of superfast telecommunications networks servicing residential customers to operate on a functionally separated basis and to offer wholesale services on a non-discriminatory basis.

Good start but ultimately flawed

ignores enterprise, business and mobile

NBN Sale Requirements

National Broadband Network Companies Act 2011

- the Minister for Communications declares that the nbn is built and fully operational;
- the Productivity Commission has an inquiry into regulatory, budgetary, consumer and competition matters relating to the nbn;
- a Parliamentary Joint Committee considers the findings of that report;
- the Minister for Finance makes a disallowable declaration that conditions are suitable to sell nbn; and
- Parliament doesn't disallow that declaration.

Foreign Ownership Provisions

Should Telstra's foreign ownership restrictions be removed when the NBN is built and fully operational?

Should there be foreign ownership provisions introduced for telecommunications companies?

What about for the service provider of last resort?

Wholesale reform

If the NBN is sold off should a company owning broadband infrastructure be required to wholesale the infrastructure without discrimination?

How to protect virtual network operators?

How to facilitate infrastructure competition?

Uniform national wholesale pricing

Regulation

There is a fundamental requirement to regulate access,
pricing and service quality

Fair and open infrastructure competition

Wholesale access to infrastructure

Telecommunications Market Reform

A shift from reliance on bitstream income to revenue from over the top services and applications

Vital to prevent telecommunications companies reverting to a reliance on bit stream revenues

The cost of national wholesale bitstream products should decrease significantly over the coming decades

Options

- A – Not sold off;
- B – Sold off as a single entity;
- C - Disaggregated technology footprints sold off separately; and
- D - Disaggregated technology footprints (excluding satellite and fixed wireless) sold off separately.

<https://telsoc.org/ajtde/2018-06-v6-n2/a155>

Option A

- Maintaining the disruption momentum
- Uniform national wholesale pricing
- Reducing the digital divide through a focus on regional and remote telecommunications
- Revenue growth over time
- A single entity that can upgrade FTTN, FTTC and HFC to FTTP over the next five years
- Implementing telecommunications infrastructure security

Option B

- Viability
 - ARPU \$44 to \$51 in FY22, 5G taking customers away, broken business model with high prices encouraging consumers to cheaper plans with slow connection speeds and limited data
- Wholesale competition
 - cherry picking by competitors in inner urban areas, failure to reduce the digital divide, lack of incentive to invest in satellites or regional areas
- Foreign ownership restrictions
- Price control
 - Utility privatisation has resulted in price gouging and monopoly practices – why would a privatized wholesale telecommunications infrastructure provider be any different?

Option B

Even with a \$30 billion write-off, it would be difficult for a local company to find \$25 billion to invest.

The ongoing leasing arrangement payment to Telstra of about \$15 per connection per month for fixed access connections is prohibitive and bidders for NBN Co would require the government to remove this long term cost burden before the sale commences.

Option C

- The goal would be to cherry pick the technologies purchased
- Uniform national wholesale pricing? No.
- Anticipate prices to increase
- Technology area monopolies? Launching pad for infrastructure competition? Unlikely.

Option C

- Proponents are yet to provide a reasoned argument for this approach
- ACCC stated “this form of infrastructure-based competition would encourage ongoing investment in network upgrades and deliver price benefits and improved services to consumers over time.”
- How would infrastructure-based competition be fostered?

Option D

- Digital divide – entrenched by recent decisions
 - Slow speeds, high costs, low data allocations, lack of telephony / broadband convergence
- Maintain uniform national wholesale pricing?
- Next satellite order should occur soon
- Universal access
- Universal service obligation
- Need to prevent a blow-out in the industry levy

Essential Service

Telecommunications is an essential service and, in the next phase of the deregulation process (possibly the last phase?), the government should put in place legislation and regulations that ensure that the nation gains an open, fair and competitive telecommunications market whilst providing outcomes that are in the long-term interests of the nation and end users

FTTP by 2025

Why FTTP

Gigabit connection speeds with high throughput, low latency, high reliability and low OPEX are needed to support the demands of current and future applications and services.

Rather than demanding improved infrastructure, companies are now “squeezing” products and services to make them work over FTTN and the end result is poor quality, reduced availability, congestion and poor consumer experience

Upgrade program

5.5 year program commencing in June 2019

Anticipated cost is dependent on approach.

Who should pay?

How? Flexible (1) unshielded cable in conduit (2) shielded cable in conduit (3) shielded cable without conduit in ground or around fence (4) shielded aerial cable – any other options?

Option 1 – NBN Co

NBN Co implements an upgrade program to replace FTTN/B/C and HFC with FTTP.

- FTTN/B/C 6.1 million x \$1500 = \$9.15 billion
- HFC 2.5 million x \$2500 = \$6.25 billion (this is difficult to cost accurately due to a lack of information on fibre in the HFC network)

\$10 to \$16 billion program

Option 2 – NBN Co + RSP

NBN Co implements an upgrade program to replace FTTN/B and HFC with FTTC.

- FTTN/B 4.7 million x \$600 = \$2.82 billion
- HFC 2.5 million x \$1400 = \$3.5 billion

\$6 to \$8 billion program

RSPs provide on demand FTTP upgrade with \$900 connection cost absorbed in 12, 24 or 36 month plan

Option 2 – NBN Co + RSP + Consumer

NBN Co implements an upgrade program to replace FTTN/B and HFC with FTTC.

- FTTN/B 4.7 million x \$600 = \$2.82 billion
- HFC 2.5 million x \$1400 = \$3.5 billion

\$6 to \$8 billion program

A. RSPs provide on demand FTTP upgrade with \$900 connection cost absorbed in 12, 24 or 36 month plan

or

B. Consumer(s) self-install FTTP from pit to premises

FTTP street parties

The technical expertise required to install fibre from the pit to premises has decreased significantly

Electrical permit is not required

Most communities have adequate skilled people that would volunteer to help or supervise others

Community FTTP street parties are viable

Gigaclear UK

One example of many available today - Gigaclear UK

FTTP self install kits with up to 100m fibre cable lengths
or longer on request

<https://www.gigaclear.com/>

Gigaclear UK

One home owners self install blog from September 2016

<https://www.fastinternetblog.uk/?p=348>

The Gigaclear self install kit says it all...

And the self install guide is straight forward

<https://gigaclear.com/wp-content/uploads/InstallationGuideHR-1.pdf>

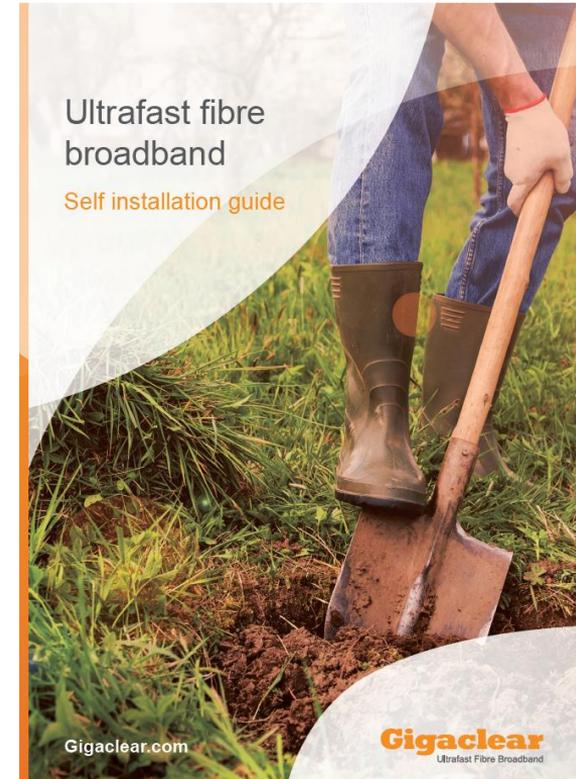


Gigaclear UK

Many of our Gigaclear customers connect their homes to the ultrafast fibre network themselves – it's that easy and of course there is no additional cost to do so. This guide will help you do it in three simple stages. We'll also show you how to:

- safely handle fibre optic cable
- bury the fibre cable correctly
- install the router
- connect the router and the fibre connection point pot
- test and activate your connection

Source: Gigaclear self-install guide



Summary

Status and way forward

The project failure was predicted in 2013 and we're now seeing the train wreck in real time

There are options for what happens next, beware ideology and false predictions that utility infrastructure privatisation is a panacea

What happens next will require careful planning – something the current Government has proved can be “carefully crafted” to provide an ideological outcome

Who is at fault?

The Coalition Government stated that “our aim is that everyone in the nation should have access to broadband with download data rates of between 25 and 100 megabits per second by 2016, and between 50 and 100 megabits per second by the end of 2019 in 90 per cent of the fixed line footprint” and “The statement of expectations will specify a limit on the public capital available to NBN Co. This limit will be \$29.5 billion”

Is the Coalition Government responsible for this national infrastructure disaster? Yes.

Does the Coalition Government’s failure absolve NBN Co senior management? No.

A Royal Commission is a logical next step.

The nation cannot afford to have this happen again.

A better outcome can be achieved

Second rate obsolete technology is not good enough

We need to learn from the project failure and to move ahead with clear purpose – to build FTTP

Telecommunications is an essential service and we need future proof infrastructure that will provide the means for Australia to compete in the global digital economy

The digital divide is unacceptable

Questions?