Corporate Plan
2018-21

Legal notice

Introduction

The Corporate Plan 2018-21 has been prepared by nbn co limited (**nbn**) for its shareholder ministers, Senator the Hon Mitch Fifield and Senator the Hon Mathias Cormann (Shareholder Ministers) as required by the *Public Governance, Performance and Accountability Act 2013* (Cth) (PGPA Act) (in particular section 95(1)(b) of the PGPA Act), the *Public Governance, Performance and Accountability Rule 2014* (Cth) (PGPA Rule), the Commonwealth Government Business Enterprise Governance and Oversight Guidelines (August 2015) (GBE Guidelines) and Australian Government policy as communicated to **nbn** by the Commonwealth from time to time (together, Reporting Obligations).

The reporting periods covered by this plan are FY18 to FY21 inclusive. The first reporting period covered by this plan is FY18. The fourth, and last, reporting period covered by this plan is FY21.

Disclaimer

This plan contains various long-range plans, projections, high level estimates and other forward looking information (Estimates). Those Estimates are based on the best considered professional assessment of present economic and operating conditions, present Australian Government policy, and a number of assumptions regarding future events and actions which, at the date of this document, are expected to take place.

The Estimates involve known and unknown risks, uncertainties and other factors beyond control that may cause **nbn**'s actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the Estimates.

While the Estimates are based on the best considered professional assessment, the management team and officers (as defined in the Corporations Act) of **nbn** do not give any guarantee or assurance to any third party that the results, performance or achievements expressed or implied by the Estimates will actually occur, and the Estimates should not be relied on or considered to be a representation of what will happen by any third party.

Other than as required according to Reporting Obligations, **nbn** and its officers have no obligation to update the Estimates based on circumstances, developments or events occurring after the publication date of this document.

This plan also contains Estimates in respect of periods after 30 June 2021, including in section 5.6 (Long term financial outlook). Management and the Board do not give any guarantee or assurance that the results, performance or achievements expressed or implied by such Estimates will actually occur.

Contents

Overview

About **nbn**

nbn was established in 2009 to design, build and operate Australia's new high-speed, wholesale local access broadband network. Underpinned by a purpose to connect Australia and bridge the digital divide, **nbn**'s key objective is to ensure all Australians have access to fast broadband as soon as possible, at affordable prices, and at least cost.

To achieve this objective, **nbn** has been structured as a wholesale-only, open-access broadband network. **nbn** provides services on equivalent terms to all Retail Service Providers to provision for end-user needs. This is intended to level the playing field in Australian telecommunications, creating real and vibrant competition within the industry and providing choice for consumers.

Note: Since establishment, the Government has presented **nbn**'s mandate through a Statement of Expectations (SoE) which is supplemented from time to time by policy directives and correspondence. **nbn**'s current objectives are set out in the 24 August 2016 SoE.
nbn is a Government Business Enterprise (GBE) incorporated under the *Corporations Act 2001* and pursuant to the PGPA Act.

Our business

nbn's purpose

To connect Australia and bridge the digital divide

What is **nbn** delivering?
Our Goal

8 million homes and businesses connected by 2020

How is **nbn** achieving it?
Our five strategic imperatives

1. A high-performing and reliable network

2. Effective and efficient processes and systems

3. United partnership with vendors, Delivery Partners and Retail Service Providers

4. Affordable products and services

5. A great place to work

Supported by three strong values

We are
One Team

We are
Fearless

We
Deliver

nbn's purpose

Connect Australia...

nbn's purpose is to connect Australia and bridge the digital divide. **nbn** exists to provide local network access to fast broadband to every home and business in Australia. The **nbn**™ local access network connects with Retail Service Providers' (RSPs) domestic transmission networks and international networks to deliver fast broadband. **nbn** has a commitment to deliver access to peak wholesale download data rates of at least 25 megabits per second (Mbps) to all premises, and at least 50Mbps peak wholesale download data rates to 90 per cent of the fixed line network[1]. This ambition of universal connectivity is unique to Australia given its expansive geography and population.

nbn, together with RSPs, is bringing fast broadband to all Australians and will allow the nation to unleash its full digital potential. It will fundamentally enable Australia to become a more connected, more competitive and more innovative nation.

The **nbn**™ network is being designed to provide these peak speeds to **nbn**'s Retail Service Providers at **nbn**'s network boundary.

...and bridge the digital divide

nbn, in conjunction with RSPs, is helping bridge the divide between city and country; young and old; Australia and the rest of the world. The rollout of the **nbn**™ network is the largest and most complex infrastructure development in Australia's history, covering even the most remote and inaccessible areas of Australia.

In line with this purpose, Australia is well on its way to becoming a truly connected continent. At the end of FY17, more than 90 per cent of households and businesses are in design, construction or are already able to order a service over the **nbn**™ network. The rollout of the network has been concentrated where greater access to broadband is most needed – as at the end of FY17 66 per cent of the non-metro build is complete, compared to 33 per cent of the build in metro areas.

Performance and progress

nbn has consistently demonstrated its ability to deliver and scale.

Performance to date

Construction has almost doubled from FY16 to FY17

• More than 5.7 million premises are now ready for service – this landmark achievement means one in every two Australian premises can order a retail service over the **nbn**™ network.

Cumulative RFS
Premises (m)

■ Actual
▨ Corporate Plan 2017

1.2	2.9	5.7 / 5.4
FY15	FY16	FY17

Activations have more than doubled from FY16 to FY17

• Over the past 12 months, the number of services activated has more than doubled with 2.4 million retail services now accessing high-speed broadband on the **nbn**™ network.

Cumulative Activations
Premises (m)

■ Actual
▨ Corporate Plan 2017

0.5	1.1	2.4 / 2.3
FY15	FY16	FY17

Annual revenue has increased by $0.6 billion from FY16 to FY17

• In FY17, **nbn** reached a milestone of more than $1 billion in annual revenue, more than doubling FY16 annual revenue and exceeding Corporate Plan 2017 forecast by $101 million.

Annual Revenue
$m

■ Actual
▨ Corporate Plan 2017

164	421	1,001 / 900
FY15	FY16	FY17

In FY17, total ready for service, activation and revenue targets set by the Board were met or exceeded, and significant operational and deployment milestones were reached. This performance underpins **nbn**'s confidence in achieving the forecast plan.

Looking ahead, **nbn**'s first priority is to complete the initial build of the **nbn**™ network and connect eight million homes and businesses by 2020.

Outlook

Universal access to high-speed broadband by 2020

- Three quarters of Australian premises will be able to access a service over the **nbn**™ network by the end of FY18;

- By 2020, the initial build will be complete.

Cumulative RFS
Premises (m)

- Actual
- Forecast

FY17	FY18	FY19	FY20
5.7	8.7	11.2	11.6

Eight million homes and businesses activated by 2020

- More than half of the 2020 forecast eight million homes and businesses will be connected by the end of FY18;

- Cumulative activations will substantially scale over coming years by more than 3x from FY17 to FY20.

Cumulative Activations
Premises (m)

- Actual
- Forecast

FY17	FY18	FY19	FY20
2.4	4.4	6.9	8.1

Revenue forecast to substantially increase

- Forecast revenue is expected to increase by nearly 5x from FY17 to FY20.

Annual Revenue
$b

- Actual
- Forecast

FY17	FY18	FY19	FY20	FY21
1.0	1.9	3.5	4.9	5.4
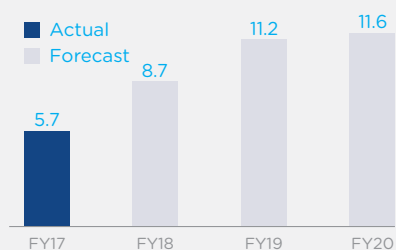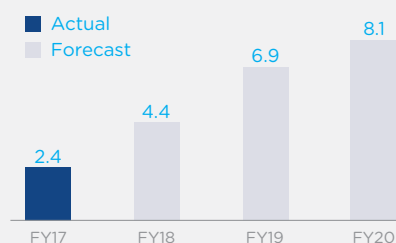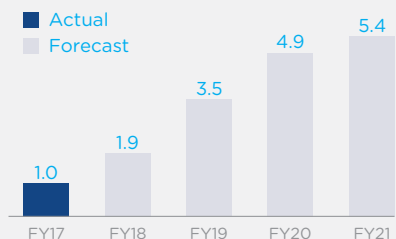
nbn, more than just a broadband connection

As the **nbn**™ network rollout gathers pace, increased connectivity helps drive a growing digital economy in Australia.

Education

- More than 8,000 schools and preschools can now connect

- 620 homes learning through School of the Air

eHealth

- In-home medical monitoring through remote consultations and connected devices

- Reduced cost and travel burden associated with medical conditions

Agriculture

- Remote soil monitoring, livestock tracking and video-monitoring

eCommerce

- 94 per cent of households participate in eCommerce, including online shopping[2]

Social inclusion

- More than 1 million premises previously underserved or without internet now have access to fast broadband

Flexible working

- 400,000 Australians work from home today, doubling by 2025[3]

- Nearly 70 per cent of regional premises use retail services on the **nbn**™ network to work from home[4]

[2] ACMA Telecommunications Report 2016
[3] **nbn** and Western Sydney University, 2017, 'gen **nbn**™: 2020 and beyond, The future of a connected Australia'
[4] Evolve Research, 2017, **nbn**™ Broadband Index

Connected Australia

NT
Where: Anula
Name: Maitec
Technology: Fixed line
Why nbn: Maitec receives data from NASA satellites, processes them to derive Australia-wide maps on fire distribution and vegetation conditions and distributes them to customers via the **nbn**™ network.

WA
Where: Applecross
Name: Jodi K
Technology: Fixed line
Why nbn: Jodi is a beauty vlogger who has cut through this exclusive predominantly east-coast industry using the **nbn**™ network to upload inspiring content to her youtube channel community 24/7.

SA
Where: Kangaroo Island
Name: Lifetime Private Retreats
Technology: Sky Muster™ satellite
Why nbn: Offering beach front rooms to secluded wilderness retreats, every stay and holiday experience can now be shared in real time with friends and family at home thanks to access to the **nbn**™ network.

TAS
Where: Launceston
Name: S. Group
Technology: Fixed line
Why nbn: Phil runs S. Group a multi-disciplinary studio integrating architecture and creative design, and with the help of the **nbn**™ network, has now taken their local offer global, sharing data and using video-conferencing to manage their growing client base.

QLD
Where: Gympie
Name: Stay at Home Mum (SAHM)
Technology: Fixed Wireless
Why nbn: Jody uses her Fixed Wireless internet connection over the **nbn**™ network to run her hugely popular growing business, Stay at Home Mum (SAHM), also for dads, that offers up advice through newsletters to 60,000 people daily, 10 pieces of online content daily, and hourly influential updates to connect and support some of the busiest parents around.

NSW
Where: Wagga Wagga
Name: Lauren G
Technology: Fixed line
Why nbn: Lauren not only uses the **nbn**™ network to connect socially, learn and develop her business, as a graphic designer and self-taught coder she has also created Balance Pets – an app to help people manage their pet's health and wellbeing.

ACT
Where: Canberra
Name: Jemma M
Technology: Fixed line
Why nbn: When Jemma leaves her office each day, she transforms into a successful fashion and lifestyle blogger, using the **nbn**™ network to explore and share her true passion far and wide.

VIC
Where: Willaura
Name: Kate K
Technology: Fixed Wireless
Why nbn: Kate uses the **nbn**™ network to bring people together for events and projects regardless of their physical location. Her company, Oregional Collective ensures small rural businesses have the same opportunities as their urban competitors, truly helping to bridge the digital divide in Australia.

Embracing the next digital horizon

There has been substantial growth in the digital economy since the inception of **nbn**, with continued growth forecast, driven by emerging technologies and new use cases that we can only imagine today. This growth reinforces the importance of **nbn**'s role of providing critical infrastructure to unleash Australia's digital potential. With the growth of big data, the Internet of Things, artificial intelligence, robotics, autonomous vehicles and more, increased broadband capabilities are at the core of Australia's participation in the digital revolution.

Demand has and will continue to grow exponentially

End-user demand for data has grown, and will continue to grow substantially. Connectivity is playing an ever-increasing role in everyday life with the average Australian household now accessing the internet over 14 fixed and mobile devices, and forecast to have 31 internet connected devices in the home by 2021[5].

nbn expects consumption to continue to grow substantially over the next 10 years, driven by an explosion of video-streaming, use of multiple connected devices simultaneously and new data-intensive applications both in Australia and globally. Average monthly data usage has increased nearly ten-fold over the past five years[6], and is forecast to grow by 20–30 per cent CAGR to 2025[7].

Key drivers of forecast demand growth

The next wave of technological advancement is expected to underpin demand for services over the **nbn**™ network

Video-on-demand, video-streaming and 4K–8K TV

Robotics and automation

Artificial Intelligence

[5] Telsyte Australian IoT@Home Market Study 2017
[6] ABS, 2016, Internet Activity Australia; **nbn** internal forecast
[7] Cisco Visual Networking Index 2016, **nbn** internal forecast

In 2016 Australians downloaded nearly 10 times the amount of data as five years ago

Volume of data downloaded
('000 MB)

3000	
2000	
1000	
0	2011 2012 2013 2014 2015 2016
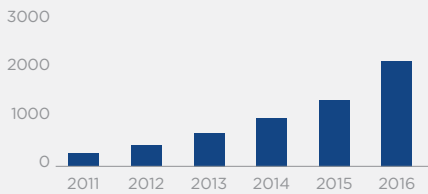
Source: Australian Bureau of Statistics 2016

Continuous improvements in network technology

As consumer demand and expectations rise, network carriers globally are keeping pace to provide a pipeline of innovation. Broadband access technologies continue an impressive evolution across both fixed line and wireless technologies. Continued technological innovation, along with fixed line and fixed wireless network convergence, could significantly transform data communication networks. These converged and evolved networks could enable more agile, assured, and orchestrated network services for the digital economy and an increasingly connected world.

The **nbn**™ network is being built to adapt to continuous technological progress and changing end-user demand, with a pipeline of innovation and upgrade paths to cater for the next revolution.

Augmented and virtual reality

Smart cities

Cloud computing and applications

Home monitoring and security

Delivered by world-class network technology

The **nbn**™ network is designed to deliver access to fast broadband to all Australians as fast as possible and at least cost, using existing infrastructure where appropriate. **nbn** achieves this through its Multi-Technology Mix (MTM) model. The **nbn**™ network is being built with the flexibility to implement potential upgrade paths when demand emerges.

Fibre-to-the-Premises

Deploys fibre optic cable directly to premises. Now used for most new developments and end users who can select FTTP through the Technology Choice Program

Fibre-to-the-Node/Basement/Curb

Deploys fibre into neighbourhoods and then makes use of the existing copper into the premises

Hybrid Fibre Coaxial

Leverages existing networks of fibre and coaxial cable to deliver broadband services into the home

Fixed Wireless

Largely targeted at regional communities and provides the means for fast broadband to extend to Australians outside the reach of the fixed line network

Sky Muster™ satellite

Among the world's largest and most advanced communication satellites. The satellite service allows the **nbn**™ network to reach remote areas

[8] These speeds were achieved in the context of a trial and are not necessarily reflective of the speeds that will be experienced by end users. End-user experience depends on the technology over which services are delivered to their premises and some factors outside **nbn**'s control like equipment quality, software, broadband plans, signal reception and how the end user's service provider designs its network.

Current wholesale products	Potential upgrade path	Potential mid-term upgrade path speed[8]

Up to 1Gbps/ 400Mbps

NGPON2

Up to 10Gbps

Telephony exchange

Up to 100/40Mbps on FTTN

G.fast, XG.FAST

Up to 10Gbps

Telephony exchange

Up to 100/40Mbps

DOCSIS 3.1 and Full Duplex DOCSIS

Up to 10Gbps

Launching 100/40Mbps

Aggregating multiple radio carriers

Up to 1Gbps

Up to 25/5Mbps

Next Gen VSAT

Future capability being explored

Delivered by world-class network technology (continued)

Introducing Fibre-to-the-Curb (FTTC)

nbn's flexible technology model allows **nbn** to efficiently introduce new technologies where there is a clear benefit to end users and where commercially viable.

In November 2016, **nbn** announced that it will deploy FTTC, previously reported during its trials as Fibre-to-the-distribution-point, as part of the FTTN/B/C suite. FTTC is a world-first technology that delivers fibre all the way to the telecom pit, or footpath, outside a home. The fibre then connects with a small distribution point unit (DPU) that uses the existing copper line to deliver access to fast broadband to the premises. Deploying this technology provides **nbn** with another tool to upgrade its network when future demand arises.

FTTC delivers peak wholesale download speeds of up to 100Mbps, and has the potential to be upgraded when required to higher wholesale download speeds. Trials indicate this could be between 500Mbps and 1Gbps using G.fast technology[9].

Launching Sky Muster™ II into orbit and service

In October 2016, **nbn** celebrated the launch of its second dedicated satellite, Sky Muster™ II, and on 28 February 2017 retired the Interim Satellite Service (ISS). **nbn**'s satellites are among the largest and most advanced communication satellites in the world[10].

Satellite plays a critical role in delivering access to fast broadband for a footprint of 400,000 Australian homes and businesses, helping to bridge the digital divide. This service is already helping improve access to healthcare services by connecting remote patients to city specialists, delivering access to a new world of educational opportunity for students in the bush, and helping to increase productivity for small businesses. **nbn** is committed to delivering better value broadband to Sky Muster™ satellite users. In June 2017, after significant testing and research, **nbn** announced that it will double monthly maximum wholesale data limits and increase peak download plans by up to 50 per cent on the Sky Muster™ satellite service, effective October 2017.

Bringing faster speeds to regional Australia through Fixed Wireless

nbn plans to boost the wholesale speeds available on its Fixed Wireless network from wholesale speed tier plans of up to 50/20Mbps to up to 100/40Mbps, due for launch in 2018. This speed boost should be achievable through implementation of new carrier aggregation technology following successful trials in Ballarat, Victoria in March 2017. The technology should increase the bandwidth and capacity of the **nbn**™ Fixed Wireless network and does not require substantial new infrastructure deployment. This is another example of **nbn**'s flexibility to introduce technology advancements to provide a network of the future.

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[9] See disclaimer on page 16.
[10] Ovum: 'Satellite Broadband: A global comparison', 2016.
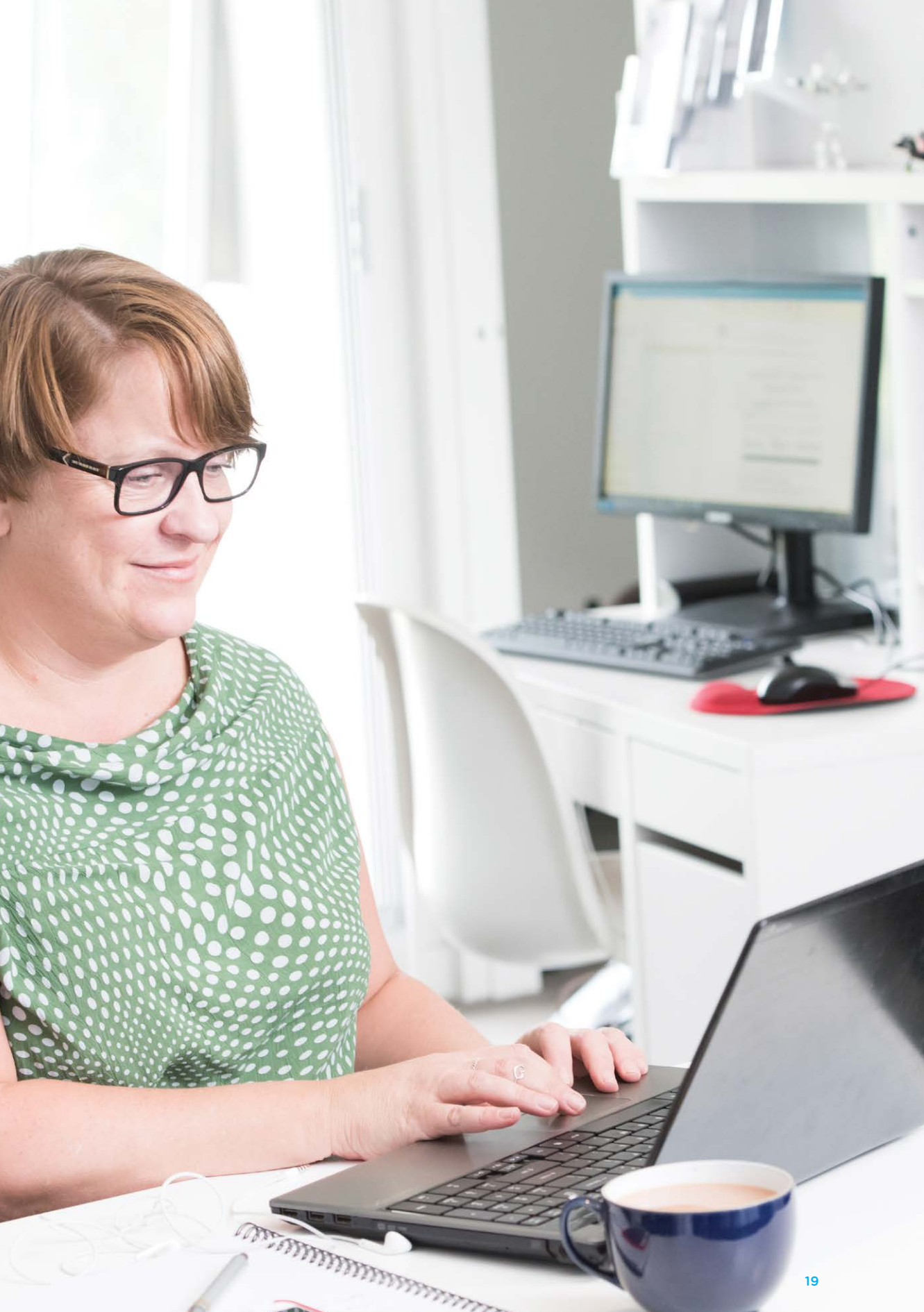
nbn is exploring new technologies

nbn is well-equipped to respond to accelerating technological progress, new service delivery models and changing end-user needs. **nbn** continues to monitor, trial and test new technologies.

G.fast and XG.FAST

G.fast is a new technology that is capable of delivering wholesale speeds in excess of 1Gbps[11] over existing copper lines, by extending the range of the spectrum that is used to deliver VDSL2 today. G.fast technology provides an evolution pathway for FTTN technologies, including FTTB and FTTC.

nbn plans to conduct further G.fast trials involving RSPs to gain a better understanding of how the technology will perform in a range of operational circumstances.

nbn has also held lab trials of the next generation of G.fast – called XG.FAST – and achieved trial speeds of 8Gbps over a pair of copper lines[11].

DOCSIS 3.1

DOCSIS 3.1 is the new HFC transmission technology that provides total throughput of 10Gbps downstream and 1Gbps upstream. This allows the launch of 1Gbps services on HFC at a fraction of the time and cost of building new Fibre-to-the-Premises networks.

nbn has already conducted initial DOCSIS 3.1 lab trials and expects to have the first field trials underway by late 2017.

Looking even further forward the next generation of cable technology, Full Duplex DOCSIS 3.1 is expected to deliver access to 10Gbps symmetrical wholesale speeds[11].

[11] See disclaimer on page 16.

NG-PON2

nbn has conducted initial trials of new fibre transmission technology Next Generation Passive Optical Networking (NG-PON2) achieving extraordinary trial symmetrical speeds of 10Gbps[11].

NG-PON2 is expected to deliver far higher speeds than current Gigabit Passive Optical Networking (GPON) technology. Using NG-PON2 should allow **nbn** to offer RSPs peak symmetrical speeds of 10Gbps on FTTP and should also help support faster speeds on HFC, FTTB and FTTC networks.

Fixed Wireless

nbn has announced plans to launch a new **nbn**™ 100 Fixed Wireless wholesale speed tier in 2018 and has the potential to deliver even higher speeds using newly emerging technology called carrier aggregation.

In a Fixed Wireless demonstration held in Ballarat **nbn** delivered trial speeds of up to 100/40Mbps, 250/50Mbps and 400/55Mbps using between 2-4 carriers and up to 1.1Gbps/165Mbps by combining 11 carriers[11].

Delivered in collaboration with **nbn**'s RSP partners

nbn provides wholesale-only, open-access broadband on equal terms to all retail providers across 121 Points of Interconnect (POIs). **nbn**, as a wholesaler, does not sell directly to the public but is one link in the value chain providing connectivity from the content provider to the end user. RSPs buy **nbn** wholesale services to supply broadband services directly to end users, using RSP-provided modems.

A key element in **nbn**'s strategy is to build united partnerships with RSPs, aligning its business to customer and end-user needs. **nbn** continues to invest in retailer and end-user experience of services over the **nbn**™ network to ensure that the benefits of access to fast broadband are realised across Australia.

How we work together to deliver services to end users
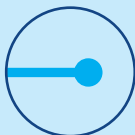
nbn

Constructs and operates the wholesale local access network

RSP

Purchases wholesale access and capacity from **nbn**, and connects to the RSP's network to build retail services

Markets and sells retail broadband plans to end users

End user

Purchases retail service from RSP and accesses broadband over in-home devices

* Refer to Section 3.4 for further information on **nbn**'s role as the wholesale broadband provider in the value chain.

Dedicated people making **nbn** a reality

nbn aspires to be one of the best places to work in Australia

nbn's ability to deliver on this ambitious plan is underpinned by its people. Behind **nbn** stands a talented, multi-disciplinary team from a wide range of backgrounds and experiences. Diverse teams are working in the field, in operations centres and in state and head offices.

Making **nbn** a great place to work and fostering the continued development and performance of its workforce is integral to **nbn**'s success. **nbn** is committed to embracing diversity and increasing inclusion as part of its focus on building a high-performing, collaborative organisation.

This dedication translates into an engaged workforce, with Best Employer indices continuing to improve year-on-year as **nbn** provides a rewarding and innovative workplace. **nbn** experienced its highest participation rate in the FY17 Best Employer survey of 91 per cent and an engagement score of 70 per cent, up from 68 per cent in FY16, 51 per cent in FY15 and 44 per cent in FY14. This ensures that **nbn** maintains its place in the top quartile of all companies in Australia and New Zealand.
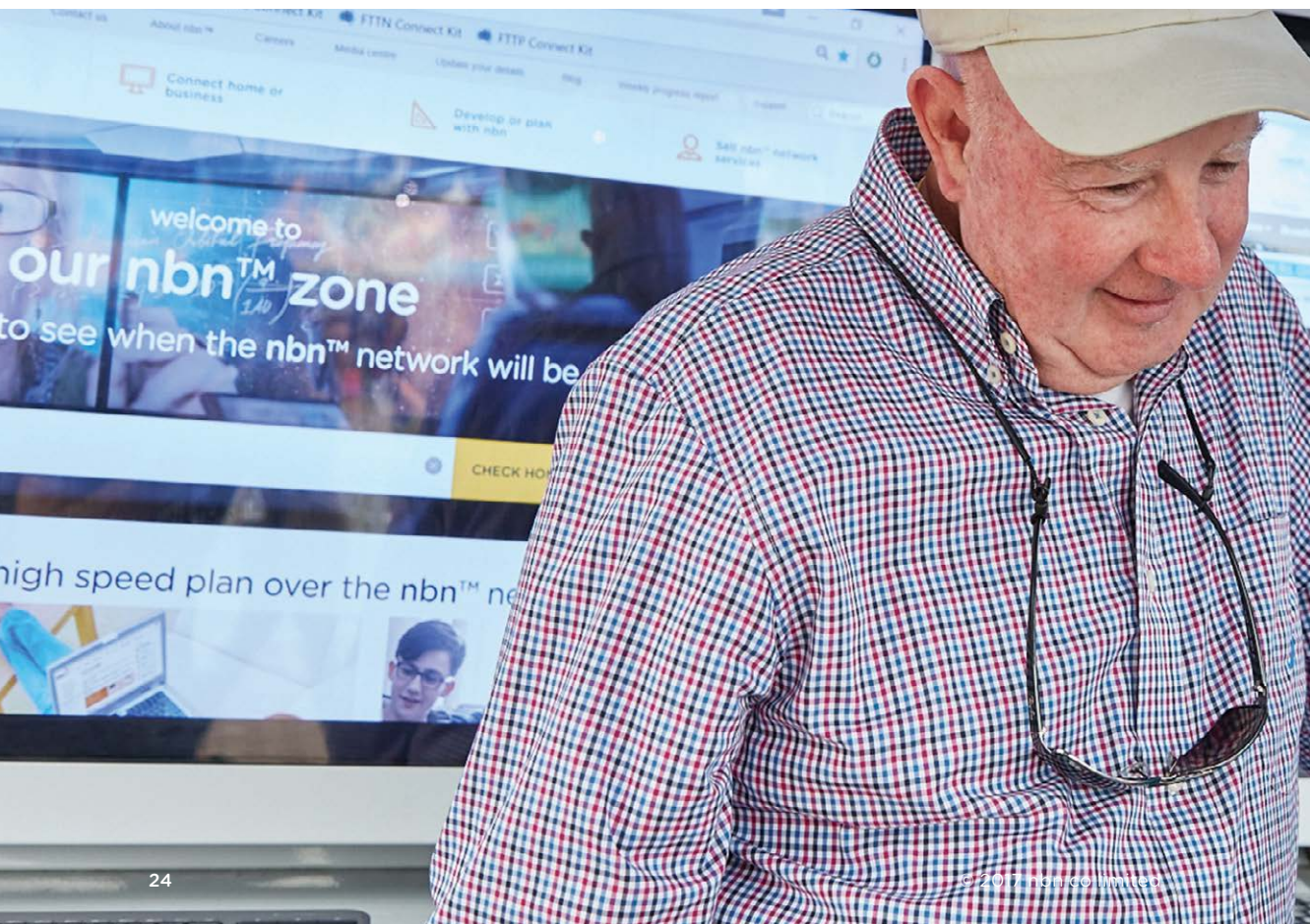
Our people working on the nbn™ network[12]

6,000
nbn employees

More than 24,000
external field workforce through **nbn**'s partners

Employee Engagement Score

FY17 → **70**%

FY16 → 68%

FY15 → 51%

FY14 → 44%

[12] '**nbn**'s workforce as at 30 June 2017. The number of **nbn** employees does not include Temporary Staff Augmentation (on-hire) personnel.
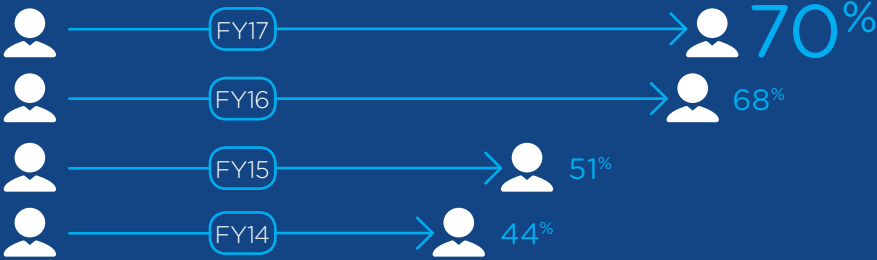
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Board and Management's message

The Corporate Plan 2018-21 is **nbn**'s most exciting yet. It sets out how the team at **nbn** will achieve the ambitious task of providing access to fast broadband to our vast nation as soon as possible and at least cost. **nbn** is building an underlying network that will connect with a multitude of already-existing phone and internet networks to deliver broadband capability to internet retailers across the country. They, in turn, will be able to offer every Australian access to superfast broadband. Together we will connect 8 million homes and businesses nationally by 2020.

FY17 Achievements

Increased our ready for service footprint to 5.7 million premises, and at the same time, more than doubled the number of premises activated to 2.4 million

More than doubled revenue to $1 billion dollars in the year

Announced the launch of a new access technology, Fibre-to-the-Curb (FTTC)

A year of significant progress

This year, **nbn** reached new heights in the pace of the network rollout, achieving a major construction milestone with half of the network rollout complete. Put simply, one in every two premises can now access fast broadband through an internet retailer of their choosing.

This would not have been possible without the introduction of access technologies such as Fibre-to-the-Node and Hybrid Fibre Coaxial (HFC, or upgraded PayTV cable) which enabled expedited access to fast broadband for more than 3.3 million premises by the end of FY17.

nbn's second dedicated satellite, Sky Muster™ II, was also launched in FY17, enabling access to increased broadband capacity for more than 400,000 households across some of the remotest parts of our country.

Two thirds of regional and rural premises are now able to access fast broadband over the **nbn**™ network including many that previously had no access to broadband at all.

Growing momentum over the past few years has propelled the company to meet the scale challenge and it is expected that this momentum will continue in the year ahead.

Building for the future

Importantly, it is now time to look beyond 2020. While the team will continue to construct the network at pace, **nbn** must also prepare to evolve from a project-oriented construction company into a sustainable operating business. **nbn**'s future focus will be to optimise the underlying network including timely upgrading of our infrastructure. In this way the internet retail community can continue to meet the needs of their customers as Australia's demand for fast broadband grows.

nbn will balance network upgrades and economic returns against retail appetite to meet end-user demand. In addition the company will maintain its network infrastructure and keep a watchful eye on evolving market dynamics and competition.

nbn has a strategy that is technology agnostic and a team that is able to pivot quickly, built on a culture of process excellence. This is evident in the company's recent decision to introduce our newest access technology, Fibre-to-the-Curb, launching in 2018. **nbn** continues to assess opportunities to extend the capability of our existing networks including NG-PON2, DOCSIS 3.1, G.fast and XG.FAST, and more.

For many in regional and rural areas, **nbn** anticipates Fixed Wireless access will soon deliver peak wholesale download speeds of up to 100Mbps to internet retailers, with trials underway for potential upgrade paths to wholesale gigabit speeds.

A heightened focus on end-user experience

As an increasing number of Australians buy **nbn**™ services from more than 100 internet retailers around the country, these unprecedented volumes have and will continue to test the industry's systems and processes. **nbn** must ensure it keeps up with the pace and delivers on the experience that the RSPs, and their customers in turn, expect. Within **nbn** we know we can do better and we are working on improvements that will

consistently deliver the quality demanded of us by RSPs. **nbn** is also working collaboratively with its customers to improve inter-company processes that will aid them in delivering service levels that their end users expect of them.

nbn's people and partners enabling success

nbn understands that leaders establish the culture, and that culture drives performance, and is committed to remain in the top quartile for Best Employer indices of all companies in Australia and New Zealand. The company aims to continue being a great place to work – to building a rewarding career with the space to innovate and contribute to Australia's digital economy.

The rollout of the **nbn**™ network truly sets the scene for the biggest transformation ever experienced in Australia's telecommunications industry. **nbn** will continue to build the network in close consultation with the RSP community so that they can ensure their networks are compatible with the **nbn**™ network, and develop products and services with the flexibility they need to respond to changing consumer demands and willingness to pay.

nbn will continue to deliver on its targets, focus on what matters most to its customers, help meet the growing demands of all Australians and thus lead the digital revolution.

Dr Ziggy Switkowski AO
Chairman

Bill Morrow
Chief Executive Officer

Board of Directors

The experienced Board behind nbn

Ziggy Switkowski
Chairman/
Non-Executive Director
Appointed in October 2013

Bill Morrow
Chief Executive Officer/
Managing Director
Appointed in December 2013

Patrick Flannigan
Non-Executive Director
Appointed in November 2013

Shirley In't Veld
Non-Executive Director
Appointed in December 2015

Michael Malone
Non-Executive Director
Appointed in April 2016

Justin Milne
Non-Executive Director
Appointed in November 2013

Kerry Schott
Non-Executive Director
Appointed in September 2012

Management team

A dedicated management team

Bill Morrow
Chief Executive
Officer/Managing
Director
Joined **nbn** in
April 2014

Kathrine Dyer
Chief Network
Deployment Officer
Joined **nbn** in
November 2010

Justin Forsell
Chief Legal Counsel
Joined **nbn** in
March 2010

Karina Keisler
Chief Corporate
Affairs Officer
Joined **nbn** in
June 2014

John McInerney
Chief Systems
Engineering Officer
Joined **nbn** in
December 2012

JB Rousselot
Chief Strategy
Officer
Joined **nbn** in
October 2013

Stephen Rue
Chief Financial
Officer
Joined **nbn**
in July 2014

Peter Ryan
Chief Network
Engineering Officer
Joined **nbn** in
January 2013

John Simon
Chief Customer
Officer (Business)
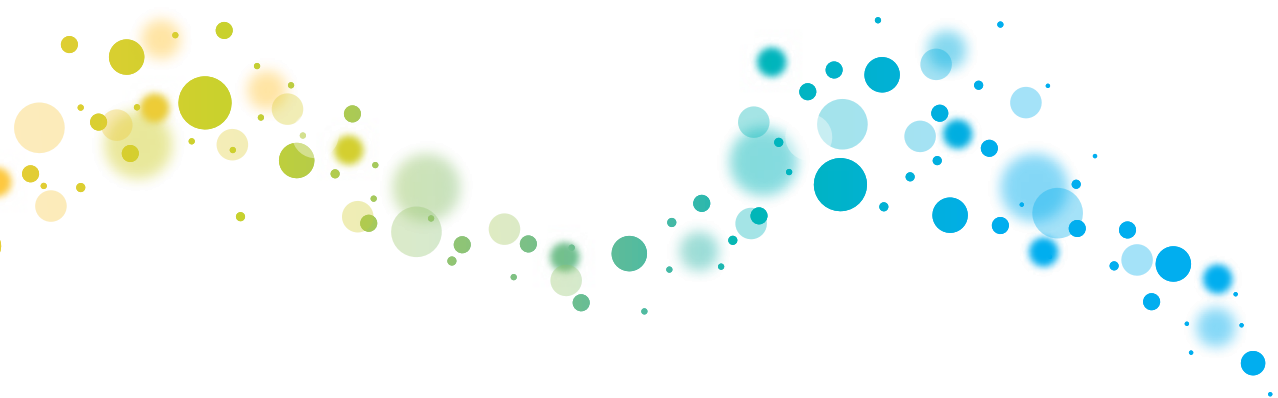Joined **nbn** in
January 2013

Maree Taylor
Chief People
and Culture Officer
Joined **nbn**
in May 2014

Brad Whitcomb
Chief Customer
Officer (Residential)
Joined **nbn** in
May 2014

Corporate Plan

1. Plan summary

The Corporate Plan 2018-21 sets out how **nbn** will achieve its 2020 goals while also providing visibility of a full operating plan to FY21. It has been prepared using a cross-functional integrated planning process and incorporates new operational experience, market analysis and updated financial planning.

nbn's confidence in delivering the Corporate Plan 2018-21 is underpinned by its strong performance, where it has exceeded its total ready for service, activations and revenue targets for the third year in a row. In FY17, **nbn** almost doubled the ready for service footprint from 2.9 million to 5.7 million premises – a 97 per cent increase on the previous year that exceeded Corporate Plan 2017 targets by 313,000 premises. In the same period, the number of premises connected to retail services over the **nbn**™ network more than doubled to 2.4 million premises – a 122 per cent increase on the previous year that exceeded the Corporate Plan 2017 forecast by 143,000 premises. This has allowed **nbn** to increase its annual revenue from $421 million to more than $1 billion, exceeding Corporate Plan 2017 targets by $101 million.

nbn's performance is underpinned by several key milestones achieved in the year:

• Scaling of HFC deployment following commercial launch, with 758,000 premises ready for service at 30 June 2017, up from 18,000 in FY16;

• Successful launch of the second dedicated **nbn** satellite, Sky Muster™ II, in October 2016;

• Continued strengthening of relationships with Retail Service Partners and Delivery Partners through:

 – Updated Multi-technology Integrated Master Agreement (MIMA) with multiple partners for the construction of the HFC network;

 – Design and Construction Master Agreements (DCMA) signed with multiple partners to support FTTC deployment and delivery of New Development works going forward;

 – Extension of Operations and Maintenance Master Agreements (OMMA) under renegotiated terms with three regional partners to activate premises and assure the network, ensuring a fast and reliable broadband network.

• Continuous improvement in Best Employer indices including engagement to 70 per cent in FY17. This reflects significant progress from 44 per cent in FY14, 51 per cent in FY15 and 68 per cent in FY16. This result sees **nbn** maintaining its place in the top quartile of Australian and New Zealand companies.

The Corporate Plan 2018-21 builds on the success of FY17. **nbn** continues to forecast the completion of the initial build by 2020, and activation of more than eight million homes and businesses by 2020. Annual revenue is forecast to be $5.4 billion by FY21, supported by continued product and pricing evolution. Throughout the plan, **nbn**'s focus is on transitioning the business as it further scales and completes the network build, efficiently delivering operational services and positive customer experience, as well as ensuring the flexibility to upgrade the network as and when demand requires in the future.

Corporate Plan (continued)

The plan continues to support a peak funding base case forecast of $49 billion, with a further tightened range of $47 billion to $51 billion. While FY17 performance has provided **nbn** with more data to improve forecast accuracy and therefore narrow its peak funding range, uncertainty still remains in the context of the scale and complexity of the final network build and activation, and the changing market environment.

Key operational and financial metrics are summarised in the following table:

Table 1: Key operational and financial metrics

$ billions (unless otherwise stated)	FY17(A)	FY18	FY19	FY20	FY21
Premises RFS (millions)	5.7	8.7	11.2	11.6	11.7
Premises activated (millions)	2.4	4.4	6.9	8.1	8.6
Revenue	1.0	1.9	3.5	4.9	5.4
EBITDA before subscriber payments	**(1.1)**	**(0.5)**	**1.0**	**2.2**	**2.5**
EBITDA	**(2.7)**	**(3.4)**	**(2.4)**	**0.7**	**2.2**
Capital Expenditure	(5.8)	(7.0)	(4.2)	(1.6)	(0.6)
Cash flow	**(7.2)**	**(11.0)**	**(7.9)**	**(2.4)**	**0.1**

Note: The numbers presented in this table correspond to the base case consistent with the ranges represented in Table 5 but may vary significantly over time. Operating expenses and EBITDA are non-GAAP measures. For corporate planning and internal reporting purposes, management treat certain payments for leasing assets as operating expenses. For statutory reporting purposes in quarterly and annual reporting, these payments are treated as finance leases and accordingly are capitalised and amortised over a 35 year period.

The plan is based on operational and financial forecasts that represent the best estimates and information available to date. While some risks in the plan have been lowered by reducing key uncertainties, significant risks and challenges remain. Critical assumptions on scope, cost and timing are continuously refined with further in-field experience as are forecast revenue assumptions.

In preparing this plan, management has analysed and assessed the most significant challenges and the potential impact they may have on the rollout schedule and peak funding requirements.

These risks are categorised into the following general themes:

- **Meeting the scale challenge: nbn**'s ability to manage the complexity and scale of network design, build, activation and assurance processes across multiple technologies;

- **Transitioning focus from build to operate: nbn**'s operating model is structured to successfully deliver the network rollout, but must concurrently evolve into a competitive network operating business;

- **Rapidly evolving competition:** as technologies evolve and converge, new business models and competition may create exposures that could impact **nbn**'s approach to technology choices, pricing decisions and cost base.

- Where feasible, these risks have been assessed and reflected in the delivery timing and peak funding range.

2. Operational and financial highlights

Table 2: Integrated financials FY17-21

	FY17(A)	FY18	FY19	FY20	FY21
$ billions					
Revenue	1.0	1.9	3.5	4.9	5.4
Operating Expenses	(2.1)	(2.4)	(2.5)	(2.7)	(2.9)
EBITDA before subscriber payments	**(1.1)**	**(0.5)**	**1.0**	**2.2**	**2.5**
Subscriber payments	(1.6)	(2.9)	(3.4)	(1.5)	(0.3)
EBITDA	**(2.7)**	**(3.4)**	**(2.4)**	**0.7**	**2.2**
Capital Expenditure	(5.8)	(7.0)	(4.2)	(1.6)	(0.6)
Contingency	0.0	(0.5)	(0.6)	(0.6)	(0.6)
Interest and Working Capital	1.3	(0.1)	(0.7)	(0.9)	(0.9)
Cash flow	**(7.2)**	**(11.0)**	**(7.9)**	**(2.4)**	**0.1**
Peak funding					
Equity funding	(27.5)	(29.5)	(29.5)	(29.5)	(29.5)
Debt funding	0.0	(9.0)	(16.9)	(19.3)	(19.2)
	(27.5)	**(38.5)**	**(46.4)**	**(48.8)**	**(48.7)**

The main operational and financial outcomes of the Corporate Plan 2018-21 are:

• Projected **nbn**™ network initial build complete by 2020 and 8.1 million premises activated by the end of FY20;

• Projected annual revenue of $5.4 billion with positive cash flow achieved in FY21;

• Achieved within peak funding of $49 billion.

Initial build complete

by 2020

8 million
premises activated by 2020

Peak funding of

$49 billion

2. Operational and financial highlights (continued)

2.1 Premises ready for service (RFS)

Table 3: RFS profile

	FY17(A)	FY18	FY19	FY20	FY21
Premises RFS – cumulative (millions)					
FTTP Brownfields	1.1	1.2	1.2	1.2	1.2
FTTP Greenfields	0.4	0.5	0.6	0.7	0.8
FTTN/B	2.5	3.8	4.5	4.6	4.6
FTTC	0.0	0.3	0.9	1.0	1.0
HFC	0.8	1.9	3.0	3.1	3.1
Fixed Wireless	0.5	0.6	0.6	0.6	0.6
Satellite	0.4	0.4	0.4	0.4	0.4
	5.7	8.7	11.2	11.6	11.7
Total % of initial build[13]	50%	76%	97%	100%	100%

Note: The numbers presented in this table correspond to the base case consistent with the ranges represented in Table 5 but may vary significantly over time.

nbn continues to scale the deployment of the **nbn**™ network, almost doubling the footprint again in FY17. **nbn** has exceeded its FY17 targets with more than 5.7 million premises ready for service, 313,000 above target.

Looking forward, **nbn**'s ready for service forecast for FY18 has been adjusted to 8.7 million premises, representing a 0.4 million variance to Corporate Plan 2017. This variance is driven by 0.2 million fewer premises than previously estimated in the planned footprint by FY18 coupled with 0.2 million premises that are now planned for FY19 due to the introduction of FTTC, which takes longer to construct.

nbn forecasts that 97 per cent of the footprint will be ready for service at the end of June 2019 compared to last year's forecast of 96 per cent.

Ready to connect

When **nbn** declares an area ready for service, RSPs are able to start selling **nbn**™ services in that area. Some premises within the area may require further work to enable them to connect. These premises are, on average, made ready to connect within six months of the area being declared ready for service.

To make it clearer for the Australian public, **nbn** will also advise when premises are "ready to connect" (RTC). This term refers to the premises within an area declared ready for service that are able to connect after placing an order for an **nbn**™ service with the end user's preferred RSP. **nbn** is updating the address checker on its website to allow those in declared ready for service areas to identify if they can connect and, if not, when they will be ready to connect to an **nbn**™ service.

[13] Total premises RFS as a proportion of FY20 total RFS footprint, excluding incremental Greenfields growth. **nbn**'s premises forecasts are based on the best available geocoded address databases, which are subject to ongoing refinement and validation as further planning information becomes available. Due to limitations in underlying premises count accuracy, there may be movements in the number of premises.

To reduce the waiting time for end users once they have ordered a service, **nbn** will aim to complete all civil works before declaring a home ready to connect and accepting an order. This will reduce the number of visits to the end user's premises after an order has been placed and therefore shorten the length of time between placing an order and receiving a service. This does not impact the number of premises ready for service, however, in order to complete these works ahead of an order being placed, the number of premises ready to connect will be fewer. In doing so, the build continues at pace to allow those who can connect to do so, and enables **nbn** to complete most civil works prior to receiving a service order. **nbn** will provide more advice to individual end users where extra work is required.

The difference between ready for service and ready to connect was approximately 250,000 at the end of FY17. **nbn** forecasts this will peak at approximately 400,000 by the end of FY18 before substantially reducing to approximately 150,000 in FY19. **nbn** forecasts that all premises will be ready to connect in FY20.

Forecast premises in Australia

The estimated number of premises in Australia has been revised downward by 0.3 million. This means a reduction of 0.2 million ready for service in the planned footprint by FY18 and a further reduction of 0.1 million that is in the planned footprint for FY19-FY20. The newly estimated number of premises in the country does not impact the timing of the geographical rollout plan.

The number of premises estimated to exist in the country is based on the best available geocoded address data. The data is subject to ongoing refinement and validation as further detailed planning information becomes available.

Further detail on how **nbn** calculates total premises is provided in 4.2.1 'Network planning and technology mix'.

Exhibit 1: Incremental ready for service (million premises)

	Corporate Plan 2017	Corporate Plan 2018-21
FY17 (A)	2.5	2.8
FY18	3.7	3.0
FY19	2.1	2.5
FY20	0.7	0.4
FY21		0.1
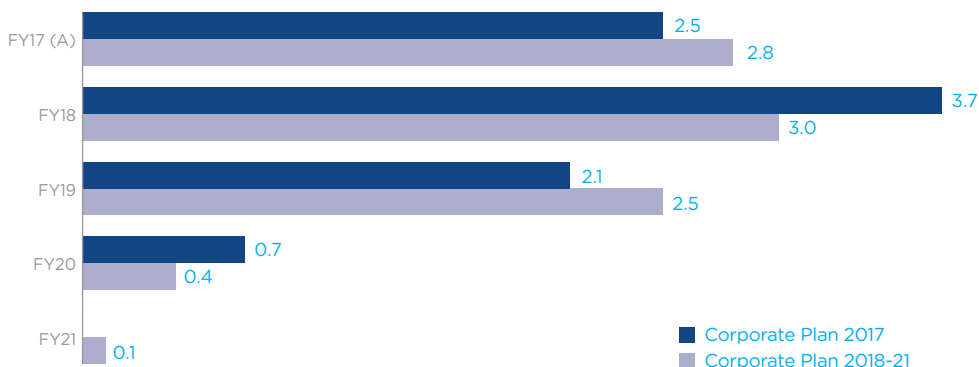
2. Operational and financial highlights (continued)

2.1.1   Progression of the rollout by state and territory

The following exhibit summarises the rollout by state and territory:

Exhibit 2: Progression of rollout by state and territory[14]
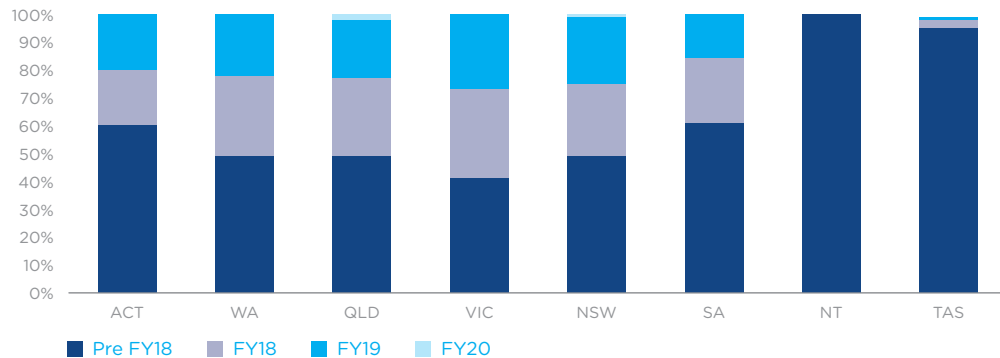
2.2   Underserved areas

Under the Statement of Expectations (SoE), **nbn** was requested to "prioritise locations that are poorly served, to the extent commercially and operationally feasible".

Underserved areas are defined as areas that do not have access to adequate broadband services. Underserved premises are primarily located in the regional and remote areas of Australia, or small pockets of poor service in metropolitan areas.

These areas do not necessarily correspond to economically disadvantaged areas.

The "Broadband Availability and Quality Report" published by the Department of Communications in February 2014 identified approximately 1.8 million underserved premises.

In accordance with the SoE, **nbn** has been prioritising underserved areas where commercially and operationally feasible.

Exhibit 3: Progression of the rollout of underserved vs. non-underserved areas

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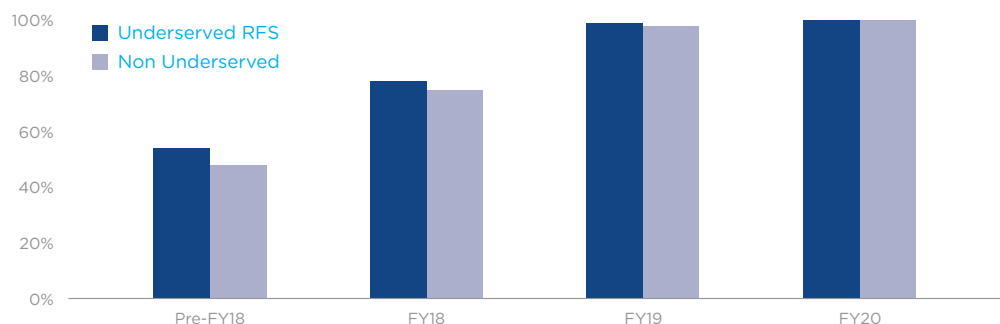
[14] Premises RFS as a proportion of FY20 total RFS footprint, excluding incremental Greenfields growth.

2.3 Premises activated

Table 4: Activations profile

	FY17(A)	FY18	FY19	FY20	FY21
Premises Activated – cumulative (millions)					
FTTP Brownfields	0.8	0.9	0.9	0.9	0.9
FTTP Greenfields	0.2	0.3	0.4	0.5	0.6
FTTN/B	0.9	2.1	3.0	3.2	3.4
FTTC	0.0	0.0	0.3	0.6	0.8
HFC	0.2	0.7	1.8	2.3	2.3
Fixed Wireless	0.2	0.3	0.3	0.4	0.4
Satellite	0.1	0.1	0.2	0.2	0.2
	2.4	**4.4**	**6.9**	**8.1**	**8.6**

Note: The numbers presented in this table correspond to the RFS base case consistent with the ranges represented in Table 5 but may vary significantly over time.

At 30 June 2017, **nbn**, together with RSPs, had activated more than 2.4 million retail services over the **nbn**™ network – 143,000 above the Corporate Plan 2017 activation forecast.

nbn is increasingly seeing more end users sign up to **nbn**™ services in the first six months of the 18-month migration period, demonstrating high demand for access to services over the **nbn**™ network. This trend has driven earlier than forecast take-up in FY17 and is expected to continue in FY18 with no change to the activations forecast of 4.4 million premises despite the adjustment of the FY18 ready for service forecast.

nbn continues to forecast 8.1 million premises connected to services over the **nbn**™ network by the end of FY20 in line with the Corporate Plan 2017, with a forecast 8.6 million premises by the end of FY21. This is consistent with the **nbn** forecast of 73–75 per cent take-up of premises covered by the **nbn**™ network.

Exhibit 4: Incremental activations (million premises)

FY17 (A): Corporate Plan 2017 1.2; Corporate Plan 2018-21 1.3
FY18: Corporate Plan 2017 2.1; Corporate Plan 2018-21 2.0
FY19: Corporate Plan 2017 2.5; Corporate Plan 2018-21 2.5
FY20: Corporate Plan 2017 1.2; Corporate Plan 2018-21 1.2
FY21: Corporate Plan 2018-21 0.5

Corporate Plan 2017
Corporate Plan 2018-21
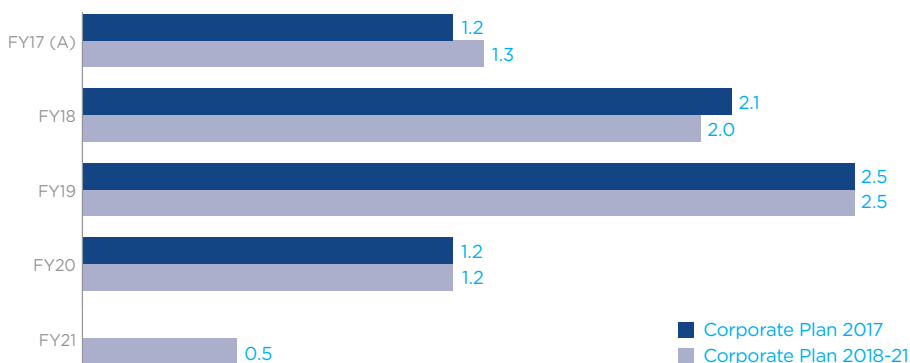
3. Market overview

3.1 Australian telecommunications market conditions

The telecommunications market continues to be highly dynamic as technology further evolves and consumer needs and expectations change. Demand continues to grow, however does not necessarily translate to a higher propensity to spend and therefore contribute to the monetisation of broadband networks.

Usage on the **nbn**™ network has steadily increased, with average usage at 157GB per user per month. The average is skewed by the top one per cent being heavy users, and the lower end of the scale being influenced by voice-only users. Data demand is forecast to grow at 20–30 per cent year-on-year to 2025 as the Internet of Things evolves and more data-heavy applications enter our lifestyles. This includes artificial intelligence and robotics, 4K and 8K TV, augmented reality and virtual reality technologies.

In addition, a growing appetite for fixed and mobile broadband convergence is emerging which may have greater influence on provider choice, regulation, and share of wallet.

3.2 International broadband trends

Globally, similar consumer usage trends are occurring, and operators are trialling technologies to boost user speeds. Consumers across the world continue to expect bandwidth increases without additional spend, creating a challenge to ARPU growth.

Deutsche Telekom continues to pursue Super Vectoring for maximising bandwidth through existing infrastructure. Telekom Austria's A1 is similarly using a combination of G.fast and Vplus to drive speeds given their country's historic architecture and building limitations. Conversely, the UK will be using G.fast through existing FTTN cabinets rather than DPUs to lower the upgrade investment to drive affordability for end users.

The dilemma of speed advertised versus speed achieved during peak periods remains a condition of interest with many countries including the UK looking at more transparent ways to accurately deliver this information to consumers.

3.3 Australia's retail broadband market

The rollout of the **nbn**™ network has passed the half-way mark and several new RSPs are now signing up to sell services powered by the **nbn**™ network. Some brands are targeting niche segments with tailored retail offers underpinned by faster **nbn**™ wholesale speed tiers. At the end of FY17, 46 RSPs have wholesale broadband agreements in place with **nbn** and others are on-selling services to consumers through aggregation.

Retailers have introduced a wide-ranging product offering to market with differing speeds, data allowances and bundling of content in some areas. The introduction of **nbn**'s CVC charge discounting model based on individual retailers' average bandwidth per user may see further opportunity for retailer differentiation and value creation. On the whole, the introduction of **nbn** as the wholesale broadband provider will continue to create a more level playing field and competitive retail market.

3.4 nbn's role as the wholesale broadband provider in the value chain

nbn provides wholesale-only, open-access broadband on equal terms to all retail providers across 121 Points of Interconnect (POIs). At this point, traffic is handed off to RSPs who complete the journey through their domestic and international networks. **nbn**, as a wholesaler, does not sell directly to the public but is one link in the value chain providing connectivity from the content provider to the end user.

nbn is committed to educating consumers as they prepare to switch to the **nbn**™ network. It is essential consumers understand that they need to take action to switch over from legacy networks, what speed is best for their household's use, take the opportunity to compare packages across retailers and know what their home's line speed is actually capable of receiving.
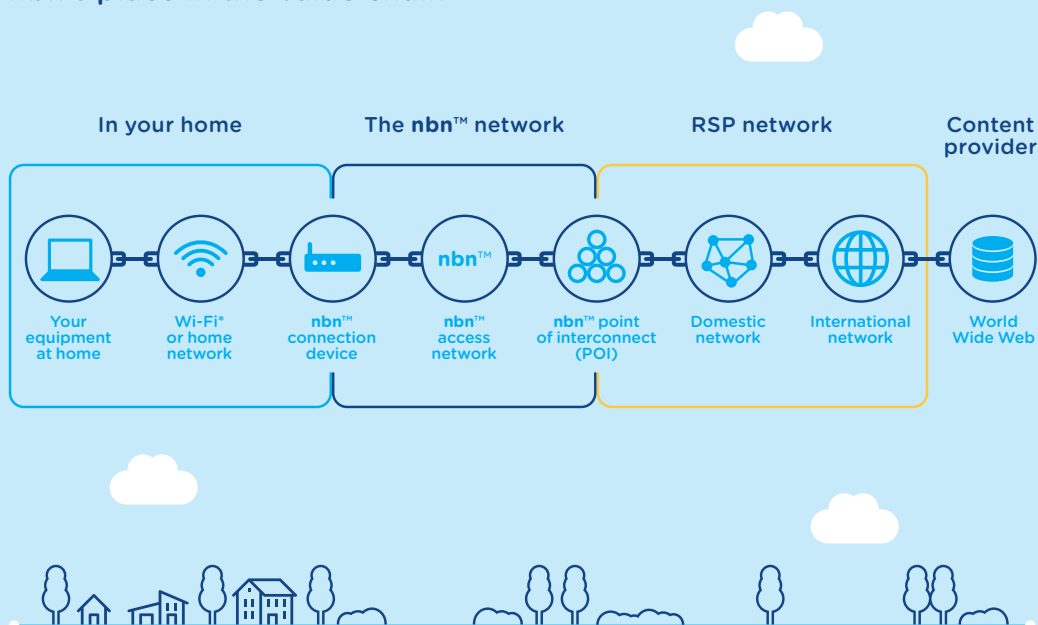
Similarly, as the industry works together to support consumers making the right choices when signing up for a service, it is equally important to show transparency on factors influencing a consumer's broadband experience in their home.

It is important for consumers to understand that the speeds they experience are determined by a range of factors. These include factors outside **nbn**'s control like equipment quality (e.g. modems), software, broadband plans, signal reception and how RSPs design and dimension their part of the network.

nbn monitors the bandwidth capacity bought by RSPs and signals to retailers when congestion may be impacting a consumer's network experience. **nbn** does not have visibility into the retailer network and how traffic is managed.

If an issue arises for a consumer, their first contact needs to be with the retail provider for issue identification and support.

nbn's place in the value chain

In your home — Your equipment at home · Wi-Fi* or home network

The nbn™ network — nbn™ connection device · nbn™ access network · nbn™ point of interconnect (POI)

RSP network — Domestic network · International network

Content provider — World Wide Web

● Managed by you   ● Managed by **nbn**   ● Managed by Retail Service Provider (RSP)

* Your wi-fi device may be provided by your RSP or you can choose to purchase your own. The quality or type of device may affect your experience.

4. Operating plan

4.1 Customer and commercial strategy

Providing all Australians access to high-speed broadband products at affordable prices as fast as possible is at the core of **nbn**'s strategy. This is achieved in partnership with **nbn**'s customers, internet retail providers, who sell broadband services directly to the public.

Underpinning the success of this strategy is working with the industry to deliver a positive end-user experience. As the construction of the network has reached halfway, an unprecedented volume of households and businesses have been migrating to services over the **nbn**™ network and in some cases the experience of the connection process and the performance of the service have not met end-user expectations. In order to deliver the continued scale of these volumes to the service levels expected by end users, **nbn**'s priority is to improve internal and inter-company systems and processes to deliver a positive experience when connecting to and using the **nbn**™ network.

Equally important is enabling a product and pricing mix across **nbn** and RSPs that meets end-user expectations. **nbn** will continue to invest in its customer experience through further developing its product, delivery and channel capabilities to better meet the needs of RSPs. In turn, education to end users on what speed is best for their household's use and comparison of packages available across retailers is critical to delivering the best possible outcome across the value chain.

This strategy is achieved by providing a wholesale network and corresponding broadband products and services available on equal terms to all RSPs. This, along with several critical priorities for **nbn**'s customer and commercial strategy, are outlined below.

4.1.1 Wholesale product construct and product development roadmap

nbn's core product offering is based on the **nbn**™ Ethernet product. **nbn**™ Ethernet is a technology-agnostic solution, which provides RSPs with a consistent product regardless of the underlying network deployment technology. This enables RSPs to build their own diverse range of products across residential and business segments, regardless of access technology.

nbn's wholesale product construct consists of two key components:

• **Access Virtual Circuit (AVC):** a virtual network element that provides RSPs with the access connection to an end-user premises via a suitable User Network Interface element. An AVC is provisioned for each premises based on a range of wholesale speeds from 12Mbps to 1Gbps downstream and 1Mbps to 400Mbps upstream.

• **Connectivity Virtual Circuit (CVC):** AVCs are routed through the **nbn**™ network to the POI where the RSP connects to the network. CVC provides the capacity for multiple AVCs to connect to the **nbn**™ network. CVC is provisioned on an aggregate basis across all premises per RSP for a specific POI and dimensioned by the RSP based on the RSP's own network contention strategy.

nbn continues to expand its capabilities in the business and government segments in order to bring the benefits of the **nbn**™ network to small, medium and large enterprises, including government entities, across Australia. **nbn** provides products that RSPs can combine with the core Ethernet product for the business segment, including:

- **Higher speed Traffic Class 1 and Traffic Class 2 for multi-line voice and symmetric data applications:** a range of symmetric Committed Information Rate (CIR) products to support business applications such as video conferencing, virtual private networks and other business connectivity solutions;

- **Enhanced service levels:** a range of enhanced service level options.

The Integrated Product Roadmap provides industry with a clear view of the expected upcoming releases in **nbn**'s product portfolio over three years. **nbn** operates a Product Development Forum as an avenue for consultation with RSPs and relevant consumer advocacy groups on **nbn**'s product development pipeline.

nbn continues to enhance products to keep pace with consumer-driven access technology upgrades. At the same time, **nbn** is bringing new product innovations to market, including the trial of in-flight Wi-Fi powered by Sky Muster™.

4.1.2 Pricing

nbn continuously reviews the pricing of its products to facilitate uptake of services on its network while protecting the economics of the **nbn** business. **nbn**'s pricing is subject to regulation by the Australian Competition and Consumer Commission (ACCC), including via the Special Access Undertaking (SAU) given to the ACCC by **nbn** (which is currently being updated to reflect **nbn**'s MTM).

The Dimension Based Discount (DBD) scheme has continued to evolve to provide RSPs with incentives to maximise end-user experience and provide long term cost certainty for RSPs.

From June 2017, **nbn** has implemented dimension based discounting of CVC specific to each RSP (DBD by RSP). **nbn** has worked closely with industry to develop this new discount model for CVC charging which moves from an

industry-based approach to a retailer-based approach which reduces the price paid per unit of CVC as the average amount of CVC per end user increases.

This model for CVC pricing provides RSPs with further opportunity to differentiate their offerings and deliver a range of competitive broadband services suitable for all Australians, providing benefits to consumers, RSPs and **nbn**. This evolution in **nbn**'s DBD scheme applies across all technologies except satellite.

nbn is working constructively with the industry to continue evolving the pricing construct beyond DBD by RSP, in order to drive up-take of plans based on higher wholesale speed tiers, deliver profitable growth for RSPs and secure a sustainable long term business model for **nbn**.

4.1.3 Scale migration to the nbn™ network

Once an area is declared ready for service, there is an 18-month migration window for most end users to migrate affected services to the **nbn**™ network before legacy phone and internet services are disconnected in the fixed line footprint. Business-grade special services are generally disconnected on a different timetable, usually beginning three years after the release of an **nbn** product white paper.

By FY21, **nbn** expects that 73–75 per cent of premises will order a service over the **nbn**™ network. This is consistent with actual take-up rates observed in areas that have already reached the end of the 18-month migration window.

Take-up of services over the **nbn**™ network may be constrained by several factors, including:

- Non-connected homes;

- Homes supplied by competitor infrastructure;

- Homes that only use wireless services.

Strong awareness of the **nbn** brand contributes toward migration and take-up performance. This is supplemented by external initiatives aimed at facilitating early and safe migration. Early migration to the **nbn**™ network reduces the volume of remaining premises at the end of the 18-month migration window, in turn reducing the risk of erroneous mandatory disconnection and alleviating scaling pressures.

In line with the Public Information on Migration (PIM) guidelines, **nbn** invests in communicating with homes and businesses in Australia to educate and raise awareness about the importance of **nbn** and the process involved for migrating services.

nbn currently offers direct mail, community engagement sessions, local government briefing sessions, social media campaigns, website, national advertising campaigns, and regular media engagement to name a few channels. **nbn** takes seriously its responsibility to update the public on the network rollout in line with the PIM guidelines.

Retailers also invest in their own marketing to educate and drive sales. Even so, market studies indicate that many consumers are unaware of what they need to do to migrate. **nbn**, in conjunction with the industry, is further increasing the breadth of its communication and information dissemination programs including enhancing content based on user feedback.

4.1.4 Customer experience improvement

The customer engagement metric (CEM) is a measure of **nbn**'s customers' (RSPs) experience with **nbn**. The overall CEM at June 2017 was 7.1.

nbn is committed to the continuous improvement of the customer experience, with dedicated programs in place to:

• Manage RSP experience across all products, services, processes and systems;

• Provide strategic direction across **nbn** including RSP and Delivery Partners which should positively impact end-user experience;

• Work in partnership with RSPs to ensure clarity in stakeholder roles and responsibilities, consistency of information and delivery of an aligned end-user journey.

4.1.5 Wholesale supply arrangements

nbn products are supplied to RSPs under **nbn**'s Wholesale Broadband Agreement (WBA).

nbn services are currently regulated and provided on a wholesale-only, open-access, non-discriminatory basis. **nbn** publishes standard terms and conditions. The WBA is developed in consultation with customers, and **nbn** enters into bilateral supply agreements with its customers on the basis of the terms and conditions outlined in the WBA.

4.2 Building the network

4.2.1 Network planning and technology mix

nbn's flexible approach determines which technologies are utilised on an area-by-area basis to minimise peak funding requirements, maximise speed of rollout and enhance the viability of **nbn**.

The rollout plan is continually optimised as new information arises, and the anticipated technology for a particular area may change during the design and construction phase as technologies and processes evolve. **nbn** has therefore provided the following indicative ranges for the number of premises covered by each technology.

Compared with last year's plan, one million premises will now be delivered by FTTC.

Table 5: Proportion of premises covered by each technology

	Corporate Plan 2018-21		Base case	
	End of initial build (FY20) (M)	End of initial build (% of Total)	End of initial build (FY20) (M)	End of initial build (% of Total)
Technology				
FTTP	1.8–2.2	16–19	1.9	17
FTTN/B/C	5.1–6.3	44–54	5.6	48
HFC	2.6–3.2	22–28	3.1	27
Fixed Wireless and Satellite	0.9–1.0	8	1.0	8
Total Australia	**11.6**	**100**	**11.6**	**100**

Note: The operational and financial metrics in Table 3 represent the current base case within the above range. This does not include premises adequately serviced by alternative fibre networks.

Determining the number of premises in a rollout area

Calculating the number of homes and businesses across all of Australia is surprisingly complex. There is no single data source in Australia that has a comprehensive, up-to-date and precisely accurate dataset of premises. **nbn** combines a number of external and internal sources to arrive at the premises data used in network planning and design. To ensure that **nbn**'s resourcing and planning is as accurate as possible, **nbn** applies a number of validation processes to the source datasets that are continually updated based on in-field experience.

In addition to inaccuracies in source data, the number of premises in Australia is also constantly changing due to factors such as new residential and commercial developments. **nbn** calibrates its data to reflect these changes over time by comparing projected premises with the number actually realised. **nbn** revises its premises estimates on a monthly basis to reflect the real differences observed between design and construction premises counts.

4. Operating plan (continued)

4.2.2 Network deployment

Throughout the deployment, **nbn** has had to build the internal capability to scale, as well as work closely with Delivery Partners to ensure they are able to do the same. This has been driven by investment in systems and process enhancements, as well as executing a series of design and construction agreements that incentivise delivery partners to meet time and cost targets.

The **nbn**™ network and Multi-Technology Mix consists of five technologies deployed through six programs of work:

FTTP

FTTP will continue to be used where it is the most appropriate and viable technology option. The FTTP program consists of two sub-programs for Greenfields and Brownfields developments.

While the Brownfields program has reached maturity, the Greenfields program continues to grow with the expansion of new developments. At 30 June 2017, the Brownfields program has delivered 1.1 million premises ready for service and the Greenfields program 396,000 premises ready for service.

FTTN/B/C

FTTN was the first technology to launch as an alternative fixed broadband technology to FTTP and began to scale rapidly in FY16. FTTB and now FTTC are included in the FTTN family and, as at 30 June 2017, 2.5 million FTTN/B/C premises were ready for service.

The key objectives for this program include maintaining peak levels of construction month-on-month throughout FY18, and preparing for the launch of FTTC.

HFC

The HFC program comprises the augmentation and expansion of the Telstra HFC network. The HFC product was commercially launched in June 2016. Following the signing of the HFC Delivery Agreement with Telstra in April 2016, **nbn** signed MIMAs with seven Delivery Partners during FY17. As at 30 June 2017, the HFC program has delivered 758,000 premises ready for service.

nbn plans to deploy FTTC in those areas where the use of the Optus HFC footprint was previously planned[15], with the exception of the already launched HFC network in Redcliffe, Queensland. This decision balanced the requirements to convert Optus' current network architecture and design to be **nbn**-ready against the opportunity to deploy FTTC in a largely contiguous footprint.

The priority for the HFC program is to continue to scale deployment activities in partnership with Delivery Partners and RSPs. This includes effectively managing premises that require additional works to connect following ready for service, and improving the activation experience of end users once they have ordered a service. The HFC program will also manage capacity to meet demand and investigate DOCSIS 3.1 integration.

Fixed Wireless

The Fixed Wireless program extends the **nbn**™ network beyond the reach of the fixed line footprint. Operating since 2011, the program is managed through a turn-key delivery contract with Ericsson as the primary vendor. Network deployment is mature with 518,000 premises ready for service at 30 June 2017. The priority for the program is the finalisation of the remaining build, as well as capacity augmentation to increase wholesale speeds available.

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[15] A revised agreement with Optus in December 2014 gave **nbn** the option to use and acquire parts of the Optus HFC network to deliver **nbn**™ services. This option was agreed at no additional overall cost to the taxpayer and the Optus HFC network remains the property of the SingTel Optus Group until **nbn** exercises its option for the transfer of relevant parts of that HFC network.

Satellite

The satellite program is **nbn**'s solution to provide high-speed broadband to rural and remote Australians. The first broadband Sky Muster™ satellite launched into orbit in October 2015 and the second was launched successfully in October 2016 to increase capacity in **nbn**'s wholesale satellite product. The satellites are supported by ten ground stations across Australia.

nbn has launched a number of initiatives to provide eligible end users with better access to the capabilities of this world-first technology. These include, among others, a new traffic management system and the exploration of new products including education services for public interest premises and Enterprise Satellite Services providing Sky Muster™ capacity for remote businesses and enterprise customers.

nbn has a continuous focus on improving end-user experience on the Sky Muster™ satellite service. Since the launch of the Sky Muster™ service **nbn** technicians have been working to improve the satellite network's overall performance as well as extensively testing the total capacity it can provide. This has allowed **nbn** to monitor and research the delivery of the service in real-world conditions and identify efficiencies which have resulted in an increase to the total capacity available on the service. As a result **nbn** is increasing peak downloads by up to 50 per cent and doubling the monthly maximum wholesale data cap on the Sky Muster™ service, effective from October 2017.

The priority for the satellite program is delivering fast broadband to some of the most remote parts of Australia including people who have previously not had any service available. **nbn** is also focused on the deployment of Enterprise Satellite Services to meet demand for non-urban broadband bandwidth services typified by the oil, mining and gas business segments.

Transit network

The transit network is the full fibre backbone of the **nbn**™ network, and delivers core site, transport and network capability.

The initial footprint is complete for the requirements of the current 2.4 million activated users, but will need to add capacity to support additional users and observed data growth trends.

Priorities for the Transit network program include aligning availability of Telstra Exchanges and **nbn** Transit network designs to support the scaled deployment of multiple access technologies, while supporting RSP and end-user demand.

4.3   Operating the network

As the **nbn**™ network is built, services are activated and operated by the Network Engineering and Operations (NEO) unit. NEO manages key processes within **nbn** that include:

• Activate and modify services

• Assure **nbn**™ services

• Maintain and restore the **nbn**™ network

• Ongoing engineering capacity and optimisation of the **nbn**™ network

4.3.1 Activate and modify services

NEO ensures services become active on the **nbn**™ network. This activity includes new services as well as modifications to existing services. The activation rate has more than doubled year on year. By the end of FY17 NEO activated 2.4 million premises, up from 1.1 million in FY16. NEO will continue to scale activations with a forecast of 2.0 million incremental activations in FY18.

The increasing scale of activations will be supported by several key initiatives and Delivery Partners on targets around speed, quality of connection and end-user experience.

4. Operating plan (continued)

4.3.2 Assure services

NEO works to deliver robust and reliable performance on the **nbn**™ network. Through assurance, NEO aims to achieve high levels of customer satisfaction and to meet the obligations in the WBA. NEO provides a high level of service to RSPs as a means to enable them to deliver a quality end-user experience. Key focus areas include fault resolution response times and service availability.

4.3.3 Maintain and restore the network

NEO runs and restores the **nbn**™ network once built, supporting what will be a nation-wide, multi-technology, geographically dispersed network of choice. NEO aims to minimise service disruption and maintain optimal network performance. This is achieved through proactive monitoring to identify network performance issues and to initiate restoration activities when required.

The Network Operations Centre is accountable for managing and maintaining a secure and safe network, as well as providing emergency response services to ensure the restoration and uptime of critical infrastructure is in place in the event of a disaster. This capability continues to mature as NEO expands the network and technologies it supports.

To meet the challenges ahead, NEO has three critical focus areas:

• Strong service delivery partnerships;

• Scaling to meet customer experience expectations;

• Enabling new business capability.

4.3.4 Ongoing engineering capacity and optimisation

NEO delivers ongoing engineering capacity management, and manages end-to-end performance of the **nbn**™ network. NEO develops network architecture standards and guidelines, and is responsible for lifecycle management of the **nbn**™ network.

4.3.5 Strong service delivery partnerships

nbn's NEO unit is supported by a number of service delivery partners under key agreements in order to activate and operate the **nbn**™ network at scale. OMMA is the contract that has been established to develop a sustainable, scalable workforce for **nbn**. OMMA governs activities with multiple service delivery partners and aims to provide field services across all regions of Australia.

4.3.6 Scaling to meet customer experience expectations

NEO continues to deliver productivity and quality improvements through systematic business process engineering initiatives. These include:

• Launching and improving business processes to achieve scale objectives for FTTN and HFC;

• Improving and managing network performance;

• Working with industry partners to attract and train field workforces.

This focus on delivering productivity and quality improvements will continue in order to enable scale ahead of forecast peaks in activations.

NEO's near-term priorities include:

• Improving customer experience to meet expectations across activations and assurance for all technologies;

• Continued scaling of FTTN, HFC and the Sky Muster™ satellite service;

• Activating customers to services over the FTTC parts of the network when launched;

• Maturing field workforce resourcing and capability through industry partnerships;

• Continuing to monitor the performance of the copper network to ensure it performs in line with expectations;

- Utilising innovation and technology to scale operations;

- Supporting the business segment.

Over the next several years, **nbn**'s network operations will transition its focus from scaling the network and ensuring systems can operate at peak capacity, to a 'business as usual' operation which emphasises longer-term operational efficiency and customer experience excellence.

4.4 Enablers of the network

4.4.1 Systems Engineering and Operations (SEO)

nbn's SEO function provides end-to-end information technology (IT) and engineering solutions that support and enable **nbn**'s core processes and new functionalities. The SEO function was formed in July 2017 through the integration of **nbn**'s IT and Network Engineering functions to reflect an integrated approach to the increasing convergence of network and IT technologies.

Over the next year, SEO will be focused on building its high-performance technology delivery organisation by:

- Enabling faster technology deployment timeframes by adopting agile delivery principles;

- Embedding line of business personnel into technology delivery teams to ensure strong alignment between business demand and technology supply.

The delivery of technology enablement capabilities will also be a focus, supporting **nbn** to achieve its ready for service and activation targets and launch FTTC. These include:

- G.fast technology capabilities;

- Enterprise Satellite Service capabilities;

- The extension of RSP self-service capabilities for transactional support operations;

- Proactive network monitoring, problem management and resolution capabilities.

nbn is also developing initiatives which will simplify **nbn**'s technology architecture and deliver longer-term benefits including:

- Increased speed to market with new access technologies and products;

- Automated network monitoring and assurance capabilities that diagnose, predict and resolve network issues;

- Application Program Interface (API) services that enable RSPs and Delivery Partners to streamline end-user processes;

- Improved analytics capability, enabling performance measurement and predictive network and end-user service analytics.

4.4.2 People strategy

4.4.2.1 Internal workforce

nbn's People and Culture team enables the achievement of business goals through great people, delivering extraordinary results every day, to connect Australia.

nbn's aim is to be a 'Best Employer' by 2020. **nbn** has made continuous improvement year-on-year across all Best Employer indices of Employee Engagement, Effective Leadership, Aligned Employer Brand and a High Performance Culture.

The employee Engagement Score has increased from 44 per cent in FY14 to 70 per cent in FY17. This increase is reflected across all Best Employer indices with Effective Leadership increasing from 28 per cent in FY14 to holding steady at 65 per cent in FY16 and FY17. Aligned Employer Brand has increased from 37 per cent in FY14 to 67 per cent in FY16 and 68 per cent in FY17. The High Performance Culture metric has increased from 28 per cent in FY14 to 58 per cent in FY16 and 59 per cent in FY17. **nbn** is in the top quartile of businesses in Australia and New Zealand across all indices.

Voluntary turnover continues to be favourable at 7.5 per cent as at June 2017, relative to the telecommunications industry benchmark of 13.1 per cent[16].

4. Operating plan (continued)

Diversity and inclusion

nbn is committed to creating a diverse and inclusive workplace that accepts, respects and celebrates differences. **nbn** has diversity priorities along four pillars:

- **Gender:** To increase the participation of women in the workforce with a focus on female representation at senior management level and to build an external profile as an employer of choice for women. **nbn** has established a target of 33 per cent of leadership roles to be held by women by 2020;

- **Disability:** To create an inclusive workplace with the resources and support to enable employees with disabilities to contribute at their best;

- **Culture and identity:** To celebrate, engage and embrace the cultures and identities across **nbn**'s business;

- **Indigenous:** To incorporate the recognition and respect of Aboriginal and Torres Strait Islander people and culture into the way **nbn** does business and to ensure that the **nbn**™ network makes a positive contribution to their lives and communities.

Leadership

nbn's investment in leadership development is one of the factors contributing to the positive trajectory across all key employee Engagement Scores.

Leadership Excellence is also measured through attraction and retention of key talent segments, performance and achievement of organisational goals.

Capability

The **nbn** capability strategy is to deliver a streamlined approach to capability planning to ensure **nbn** has the right workforce capability in the right place as the organisation scales and transitions.

Managing our evolving workforce

As **nbn**'s business profile changes over time, the People and Culture team will ensure **nbn**'s leaders and employees are supported with appropriate strategies and services to effectively manage capabilities and workforce plan with minimal impact to organisational efficiency, performance, engagement and achievement of organisational goals.

4.4.2.2 External workforce

Beyond **nbn**'s own workforce, **nbn** is partnering with industry to develop its external workforce in order to meet deployment targets.

To address this need for a high-quality external workforce, **nbn** is ensuring that skill-based training programs for gap occupations across all technologies are available through a national network of approved training providers, improving engagement for workers via targeted campaigns, and ensuring external workforce retention by extending **nbn**-funded training into employment with Delivery Partners.

nbn has continued to run targeted campaigns to attract workers into the industry. **nbn**'s purpose-built enAble™ portal has ensured that **nbn** has an understanding of the available field workforce skills, in order to define targeted workforce capacity and capability improvement strategies.

New developments in **nbn**'s external workforce strategy include the NetLabs initiative, which develops training facilities in collaboration with TAFEs across Australia. The aim of NetLabs is to provide the field workforce with access to standardised **nbn** training environments, continuously improve training outcomes and increased quality of work.

4.4.3 Health, Safety and Environment (HSE)

nbn constantly reviews ways of working to ensure that it is proactively making the organisation safer, healthier and more sustainable. **nbn**'s HSE management system and key improvement initiatives have been designed to anticipate and respond to tomorrow's challenges. The HSE team ensures that **nbn**:

- Builds a culture of HSE risk awareness;

- Enhances the health and wellbeing of everyone in the organisation;

- Protects the planet and drives down energy consumption.

Monitoring against HSE targets allows the organisation to measure progress on key metrics, including incident and injury rates, wellbeing program participation and **nbn** energy use.

In the year ahead, HSE's focus will be to introduce a refreshed suite of Critical Risk Controls, ensuring that HSE expectations are clear and transparent, and providing standardised approaches to HSE risk management for business units.

Maintaining rigorous auditing and review of **nbn**'s external Delivery Partners remains a key pillar of **nbn**'s HSE plan. **nbn**'s risk-based assurance program assists the company to continually evaluate supplier performance and appropriately govern performance of Delivery Partners. While **nbn** and its partners work hard to prevent incidents, if incidents do occur **nbn** will continue to work closely with Delivery Partners to ensure appropriate investigations are conducted, all necessary actions are taken and learnings are shared.

nbn's company-wide health and wellbeing program focuses on improving the physical health, diet and nutrition, and mental health of **nbn**'s people. The program has progressed well and is now fully embedded in the company, with measurable results. Going forward, **nbn** will strengthen its offering in the area of mental health, and will continue to deliver core services to promote employee health and wellbeing.

nbn is focused on protecting the environment and improving its performance on sustainability metrics, which are targeted by a number of ongoing initiatives. The activities of **nbn**'s construction partners, the composition of **nbn**'s supply chain, and management of **nbn** data centres and offices are all important to deliver on these objectives. A new governance forum has been established within the organisation to better manage energy and carbon risks, and **nbn** has proactively established an energy savings target.

4.4.4 Security

As a provider of critical infrastructure, **nbn** must maintain a strong array of security controls and detection capabilities that deliver a high level of resilience to attack. The role of Security at **nbn** is to protect **nbn**'s people and assets from personnel, physical and cyber security threats, and to build trust and confidence in **nbn**'s ability to deliver a reliable and fast broadband network. The Security group in **nbn** has a clear objective to be **nbn**'s trusted security advisors, and to lower the risk of business exposure by creating and sustaining a fully engaged and robust security culture.

Development of **nbn**'s Cyber Security Operations Centre and intelligence-led investigations capabilities continue to meet targets to further enhance **nbn**'s security resilience.

nbn continues to build on its Cyber Security Operations Centre and cyber defence, investigations and assurance capabilities to help stay abreast of industry security trends and ahead of future security threats. **nbn** also continues to enhance its privacy and security awareness campaigns.

5. Financial forecasts

5.1 Revenue and ARPU

Revenue is expected to increase from more than $1.0 billion in FY17 to $5.4 billion in FY21. This revenue growth is driven by take-up of premises connected to services over the **nbn**™ network across this period, and also due to increased data usage, wholesale speed tier mix and business products across the **nbn**™ network.

By FY21, **nbn** forecasts overall Australian market take-up of 73–75 per cent of premises within the **nbn**™ network covered area, depending on the prevalence of vacant premises, mobile only households and any alternative fast broadband network providers. These take-up rates are consistent with penetration that has occurred in fixed line areas where the **nbn**™ network has been available for a period of 18 months, and which have progressed through the mandatory disconnection process.

Growth in ARPU from FY17 to FY21 will continue to be stimulated by an increase in end-user take up of plans based on higher wholesale speed tiers, exponential growth in end-user download volumes and increasing penetration of small to medium business segments.

Monthly Average Revenue Per User (ARPU) is expected to grow to $52 in FY21 in line with expected end-user willingness to pay, increased data consumption, speed tier mix and business market opportunities. **nbn** is working with retailers to stimulate demand for plans based on higher wholesale speed tiers through its Dimension Based Discounting scheme and is expected to achieve an annual revenue target of $5.4 billion by FY21.

Exhibit 5: Wholesale speed tier mix

Legend: 12/1, 25/5, 25/10, 50/20, 100/40
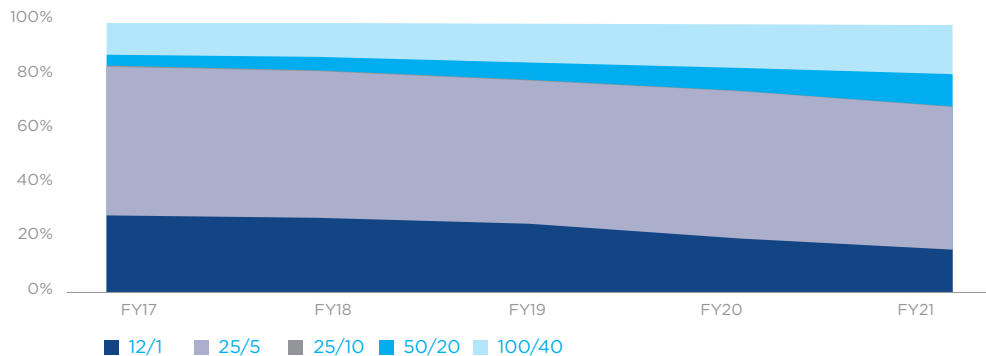
5. Financial forecasts (continued)

5.2 Operating expenses and subscriber payments

Table 6: Operating expenses and subscriber payments

	FY17(A)	FY18	FY19	FY20	FY21
Expense ($ billion)					
Infrastructure related costs	(0.3)	(0.4)	(0.5)	(0.8)	(1.0)
Other opex	(1.8)	(2.0)	(2.0)	(1.9)	(1.9)
Operating expenses	**(2.1)**	**(2.4)**	**(2.5)**	**(2.7)**	**(2.9)**
Subscriber payments	**(1.6)**	**(2.9)**	**(3.4)**	**(1.5)**	**(0.3)**

Subscriber-related costs primarily reflect contractual payments to Telstra regarding the disconnection of existing services and to Optus regarding the migration of subscribers to services over the **nbn**™ network.

Infrastructure related costs primarily represent contractual payments for the right to use third party infrastructure such as ducts, dark fibre and facilities. The presentation of these costs for management and corporate planning reporting purposes as operating costs is not in accordance with Australian GAAP. This differs from quarterly and annual statutory reporting where these costs are accounted for as finance leases, which are accordingly capitalised and amortised over a 35 year period.

Other operating costs include staff related costs, network operations, assurance, restoration and maintenance, IT costs, marketing and communications, leasing and other overheads.

5.3 Capital expenditure

Table 7: Capital expenditure

	FY17(A)	FY18	FY19	FY20	FY21
Capex ($ billion)					
FTTP Brownfields	(0.2)	(0.1)	0.0	0.0	0.0
FTTP Greenfields	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
FTTN/B	(2.2)	(1.9)	(0.8)	(0.2)	0.0
FTTC	(0.1)	(1.0)	(0.7)	(0.2)	0.0
HFC	(1.2)	(1.8)	(1.1)	(0.1)	0.0
Fixed Wireless	(0.3)	(0.4)	(0.3)	0.0	0.0
Satellite	(0.2)	(0.1)	(0.1)	(0.1)	0.0
Total network build and activate	**(4.4)**	**(5.5)**	**(3.2)**	**(0.8)**	**(0.2)**
Transit	(0.6)	(0.5)	(0.2)	(0.1)	0.0
Network Capacity and Augmentation	0.0	(0.3)	(0.3)	(0.3)	(0.2)
Common	(0.8)	(0.7)	(0.5)	(0.4)	(0.2)
Total capex	**(5.8)**	**(7.0)**	**(4.2)**	**(1.6)**	**(0.6)**

Note: The numbers presented in this table correspond to the RFS base case consistent with the ranges represented in Table 5 but may vary significantly over time.

nbn has revised how it presents capital spend compared to the Corporate Plan 2017, to reflect the specific capex for network build and activations to FY20, compared to the ongoing capex as nbn transitions to an operational business.

Capital expenditure will progressively relate to the ongoing investment in providing increases in network capacity, and in developing new network and operational capabilities to support revenue growth and operating cost optimisation.

The anticipated Cost per Premises (CPP) is detailed in the following exhibit.

Exhibit 6: Weighted average CPP by technology when the initial build is complete (rounded to the nearest $100)
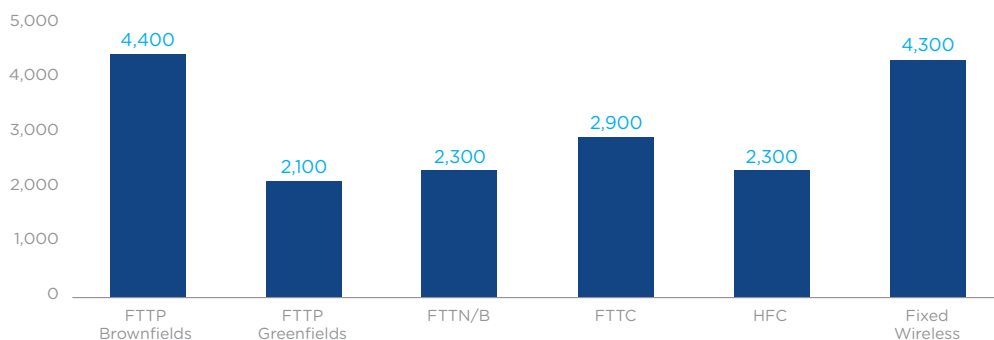
5.3.1.1 How Cost per Premises is calculated

- The Cost per Premises (CPP) is an internal **nbn** management calculation used to assess the comparative incremental costs of initial construction of each access technology.

- The CPP reported is a weighted average over the full period of the initial build and depends on a number of factors such as geographic build conditions, distances from exchanges, population density of the area considered, the number of premises per multi dwelling unit and the extent of re-use of the existing infrastructure.

- The results reflect the capital and lease costs associated with the construction of the access network, and exclude common capex (such as IT and transit network), and capital investment incurred post construction (e.g. capacity growth). It also excludes net operating losses.

- The reported cost reflects the sum of underlying rates for individual elements of construction, which relate to the volume of technology build, premises connected or activated as relevant.

- The CPP excludes certain costs such as the impact of initial trial arrangements, where costs are not in line with long term expectations (due to low volume, and bespoke commercial and delivery arrangements), and excludes contingency.

- Infrastructure leases are included in the CPP calculation based on an NPV of minimum future payments, and consist of certain infrastructure assets utilised in the fixed line network such as ducts, wireless towers and ground leases. While not reported as capital costs in the Corporate Plan, these outlays represent a necessary and incremental cost of construction of each access network technology.

Performance

FTTP Brownfields and Greenfields

As at June 2017, the CPP for FTTP Brownfields and Greenfields was $4,403 and $2,393 respectively, and at the end of the build period will be $4,400 and $2,100. These targets at the end of the build period remain in line with prior year. The weighted average CPP for Greenfields is forecast to decrease to $2,100 due to efficiencies generated over the build period, including lower investment in temporary transit links which were required in the early years of the build.

FTTN

As at June 2017, the CPP was $2,174, and at the end of the build is forecast to be $2,300, which remains in line with the prior year target. Consistent with the reporting of premises ready for service and capital expenditure the CPP for FTTN includes a blend of the cost for premises delivered using both FTTN and FTTB technologies.

FTTC

The weighted average CPP for FTTC is forecast to be $2,900 at the end of the build period. Compared to alternate technologies, this reflects the additional cost of fibre deployment to end-user premises beyond FTTN deployment, but eliminates the need for costly lead-in costs which are incurred for each premises in FTTP.

HFC

As at June 2017, the CPP was $2,258. The weighted average CPP is forecast to increase to $2,300 by the end of the build, with the increase due to an increased ratio of new and complex premises in the future build mix.

Fixed Wireless

As at June 2017, the CPP was $3,569. The weighted average CPP is forecast to increase to $4,300 due to challenging build requirements as **nbn** progresses further into the construction phase of the rollout. This has reduced from the Corporate Plan 2017 CPP due to initiatives that have increased, on average, the number of premises covered by each tower.

5.4 Sources of funding

Management has flexibility and discretion in operational, technology and network design decisions within the constraints of a public equity funding commitment of $29.5 billion and a Commonwealth loan facility of up to $19.5 billion. The loan was secured on commercial terms in December 2016, informed by credit ratings received by **nbn**. The loan agreement sets out the terms of the commercial facility that will be available to nbn co limited for up to $19.5 billion for the period from 1 July 2017 to 30 June 2021. The loan agreement has a fixed interest rate of 3.96 per cent, with interest payable monthly over the life of the facility. The full principal amount of the loan is to be repaid by 30 June 2021.

5.5 Estimated peak funding

Management continues to forecast a range of possible outcomes due to the long term uncertainty inherent in a complex infrastructure build over multiple years. The Corporate Plan 2018-21 estimates peak funding in the range of $47 billion to $51 billion.

As outlined above, while the Corporate Plan represents Management's view of the most likely outcome, ongoing challenges and opportunities may have an impact on peak funding which should be acknowledged. A critical subset of the challenges and opportunities have been assessed in detail and sensitivities have been tested to identify their impact on delivery timing and peak funding, and to inform Management's view of the peak funding range.

The below sensitivities inform a range of the most likely outcomes of this plan. The high and low case boundaries are dependent on the following outcomes:

• Low peak funding case: indicates a decrease of $2 billion in funding requirements to the base case (to a total of $47 billion in peak funding), if the revenue drivers evolve more beneficially, the activations profile for FTTN and HFC can be accelerated and capex and opex are lower than expected.

- High peak funding case: indicates an increase in funding requirements of $2 billion on top of the base case (to a total of $51 billion in peak funding), in line with the following sensitivities.

Exhibit 7: Scenario analysis of key sensitivities

Area	Change required to increase / decrease peak funding requirement by $1 billion
Residential ARPU	$4 decrease / increase
Business revenue	14 months delay / advancement
Fixed Line penetration rate	10 per cent decrease / increase
Operating expenses	$250 million per annum increase / decrease
HFC activations	32 per cent decrease / increase in future activation capacity
FTTN activations	29 per cent decrease / increase in future activation capacity
Remaining build cost	$160 per premises increase / decrease in future build capex for unforeseen requirements

5.6   Long term financial outlook

In a dynamic market, Management and the Board face inherent uncertainty in accurately forecasting long term financial prospects. **nbn** has a limited factual and operational base for financial projections, due to uncertainty in the long term market structure and competitive landscape, network usage, regulatory policy, innovation and other potentially disruptive events. This gives rise to a range of possible financial outcomes.

Management forecast a base case peak funding of $49 billion, which includes a contingency of $2.3 billion for unforeseen risks with respect to both revenue and cost outcomes during the forecast period. The expected internal rate of return (IRR) is between 3.2 per cent and 3.7 per cent, the same as last year's range of 3.2 per cent and 3.7 per cent.

While the base case peak funding remains consistent with last year, a proportion of contingency has been allocated into the forecast expenditure for previously unknown expenses. This a natural evolution, reflecting the ongoing refinement of the plan as **nbn** increases its level of maturity and understanding of the complexities and uncertainties of the technology rollout.[17]

[17] **Additional disclaimer:** Management and the Board do not give any guarantee or assurance that the results, performance or achievements expressed or implied by the outlook will actually occur. Management and the Board have not taken a view on assumptions beyond FY22.

5.7 Subsidiaries

The subsidiaries of **nbn** are listed in the table below.

Table 8: Subsidiaries of nbn

Name of entity	Country of incorporation	Class of shares	Equity holding
NBN Tasmania Limited	Australia	Ordinary	100 per cent
NBN Co Spectrum Pty Ltd	Australia	Ordinary	100 per cent

nbn co limited and NBN Tasmania Limited are parties to a deed of cross guarantee under which each company guarantees the debts for the others. NBN Tasmania Limited is a non-operating company and its business is exclusively operated by nbn co limited. NBN Co Spectrum Pty Ltd is a non-operating company which holds spectrum licences for nbn co limited and its business is exclusively operated by nbn co limited.

6. Risk management

6.1 Risk management framework

Risk management is central to **nbn**'s ability to successfully manage the challenges of deploying and operating the **nbn**™ network. **nbn**'s Board of Directors and Management are committed to implementing a robust risk management framework that will enable proactive identification, assessment and management of all risks.

6.1.1 **nbn**'s approach to risk management

Both the Risk Management Policy and the Audit and Risk Committee Charter provide the mandate from the Board and Management for **nbn**'s risk management. The Risk Management Policy outlines **nbn**'s commitment to operating a robust system of risk oversight and management, responsibilities for risk across the company and the essential behaviours for a strong risk culture.

nbn's Group Risk function is responsible for designing and overseeing the implementation of **nbn**'s risk management framework, which includes providing advice to the Board and Management on approaches to identifying, assessing and managing risks. The effectiveness of **nbn**'s risk management framework and an assessment of material risks are reviewed bi-annually by **nbn** Management, Audit and Risk Committee and the Board.

To enable the identification, assessment and management of risks, **nbn** adopts a risk management approach that is aligned with the international standard for risk management: 'AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines on Implementation'.

6.1.2 Maturing **nbn**'s risk management approach

As **nbn** matures, there is an emphasis on enhancing the company's risk management framework. During FY17, **nbn** extensively refreshed its risk management processes and practices to ensure they aligned with the company's evolving business priorities and operating environment. Key enhancements include:

- Embedding risk management experts in the annual planning cycle to improve consistency and insight;

- Maturing **nbn**'s risk and assurance model (Three Lines of Defence);

- Refining risk assurance practices to improve oversight of material risks and key mitigations;

- Streamlining the bi-annual risk reporting cycle to reduce complexity and improve insight.

6.2 Risk profile in 2018

In the Corporate Plan 2017, significant risks were identified in relation to the challenges of scaling both internal and key partner processes and systems to support the design, build and operation of a multi-technology network. Since this time, the risk profile has shifted positively, as the capacity and effectiveness of these processes, systems and partner arrangements have matured. Ongoing investment and focus on scaling remains key to **nbn**'s risk profile as the company enters the peak deployment and activation years in the rollout program.

6.2.1 Key risk themes in 2018 areas of focus

nbn's key risk themes in 2018 are:

- **The ongoing scale challenge:** consistent with the Corporate Plan 2017, the **nbn**™ network rollout remains an inherently medium to high risk challenge to manage the complexity and scale of network design, build, activation and assurance processes across multiple technologies.

  In 2018, **nbn** will continue to manage its exposure to this risk by further maturing processes, systems and partner relationships, leveraging the increasing knowledge and experience of its people and building additional sustainable capabilities as the operating environment is refined.

- **Transitioning from a build to operate organisation:** while the network build phase remains the central focus for **nbn**, managing the challenges of transitioning to a network operate company is emerging in **nbn**'s risk profile. The deployment of proactive programs to transition the workforce, optimise **nbn**'s cost base and build sustainable processes and systems all form part of **nbn**'s approach to managing this transition risk. Even with this focus, the challenges associated with transitioning the operating model will remain prominent in **nbn**'s risk profile over the short to medium term.

- **Rapidly evolving competition:** as a company deploying and operating world-class technology, **nbn** will also be increasingly exposed to rapidly evolving competition, and competitors who will seek to leverage emerging technology for new business models and products. Although this industry disruption represents significant opportunities for **nbn**, there are also a number of emerging challenges. In the short term, these include responding to increasing competition, and longer term, management of the impact of technology convergence, which will require **nbn** to adapt its network to a wide range of future use cases, business models and product innovations.

6.3 Key corporate risks and mitigation strategies

Many of the risks in **nbn**'s Corporate Plan 2017 are present in FY18. This is a reflection of the ongoing challenges of rolling out the **nbn**™ network and those inherent to operating a nationwide broadband network.

nbn's approach to mitigating risks is focused on deploying mitigation activities that will not only scale for the network build, but will be sustainable as it transitions to a predominantly operate environment. Where risks exist that are specific to the network rollout, mitigation strategies have been designed and embedded into core operating plans for execution in FY18.

Despite the comprehensive planning undertaken by **nbn**, materialisation of unforseen risk scenarios remain a possibility.

Table 9: Key risks and mitigations

Key risk	How the risk is managed
Health, safety and environment The ability of **nbn** and its Delivery Partners to construct, activate, operate and maintain the network in a manner that prioritises the prevention of material HSE failures impacting **nbn** employees, contractors and members of the public.	**nbn** takes a risk based approach to its HSE program, which is underpinned by dedicated processes, systems and HSE experts. These individuals work collaboratively with line management and Delivery Partners to ensure appropriate HSE controls are in place and operating effectively. **nbn** also has a mature disconnection management program and extensive industry consultation process in place to manage disruption of specific communication services, such as medical alarms.
Critical process and system capacity Ensuring **nbn** and key delivery partner processes, people capabilities and IT systems are able to scale appropriately and deliver deployment and activation targets in FY18 and FY19 while limiting fixed costs and providing sufficient quality data.	**nbn** has deployed and is maturing its company-wide business process excellence model, which includes executive governed initiatives that target specific scale challenges in the business. In particular, internal and delivery partner workforces, back office operations, automation and IT system stability and data quality.
Security of critical assets and information Managing **nbn**'s exposure to cyber and physical threats that could compromise the security of critical network infrastructure, the welfare and safety of staff and the confidentiality, integrity and availability of sensitive information.	**nbn** takes a risk based approach to managing its security, with defined structures, processes and systems that oversee the security of critical infrastructure assets and the protection of sensitive information. The external and internal environment is continuously monitored, and new security measures deployed in response to emerging threats.
Business resilience to adverse events Designing resilience in the network and business operations, and developing business continuity strategies to safe guard people, assets, systems and processes against adverse events to business operations, supply chain and delivery partner capability.	**nbn**'s Business Continuity Management program and Crisis Management Team direct resilience efforts across the company. This approach emphasises pre-planning and testing of continuity strategies for critical processes, while defined incident and emergency management structures coordinate responses to major network and IT outages, third party disruptions and incidents impacting the welfare and safety of staff and contractors.

Key risk	How the risk is managed
Management of Delivery Partners Ensuring contractual agreements are commercially sound and effectively operationalised, with targets achieved through robust forecasting, strong governance and joint improvement initiatives to support delivery partner performance.	**nbn** takes a collaborative approach to delivery partner management, recognising the unique challenges of building the **nbn**™ network. Governance arrangements are clearly defined, with **nbn** and delivery partner executives and teams working proactively and jointly on emerging risks, known issues and improvement opportunities. **nbn** also takes proactive steps to develop specific industry capabilities where unique scaling challenges exist.
Regulatory environment Limiting adverse consequences from changes in the regulatory environment that could impose substantial compliance burdens or limit **nbn**'s ability to pursue business objectives.	**nbn** has an active engagement model with Government and regulatory stakeholders. There is also ongoing monitoring of the regulatory environment to identify emerging issues and opportunities to engage with regulators.
Market and technology disruption As technologies evolve and converge, new business models and competition, including RSP activities, may create exposures that could impact **nbn**'s approach to technology choices, product offerings, operating model and pricing decisions.	**nbn** undertakes extensive and regular assessments of current and future material competitive threats, and adjusts its response strategies to emerging challenges and opportunities. This includes developing innovative products, reviewing technology choices, upgrade opportunities and potential pricing responses.
Operating model transition and optimisation **nbn**'s operating model is structured to successfully deliver to the network rollout, but must concurrently evolve into a competitive network operate business, with an optimised cost base, agile processes, simple go to market channels and a workforce aligned to competitive business objectives.	**nbn** continues to drive a range of formally governed executive sponsored initiatives to address key transition and optimisation challenges, including cost management, back office efficiency, right sizing the workforce, talent and culture, scaling the business segment, RSP and end-user experience.

7. Glossary

Abbreviation or term	Definition
ABS	Australian Bureau of Statistics.
ACCC	Australian Competition and Consumer Commission.
Access Seeker	A customer acquiring **nbn** wholesale services with the intention to supply broadband services to Service Providers or end users.
Access Technology	The technology used by **nbn** to deliver the **nbn**™ network from the exchange location to the network distribution point.
Access Virtual Circuit (AVC)	The bandwidth acquired by RSPs which can be allocated to end-user premises. The AVC is a virtual point to point connection from **nbn**'s network boundary point associated with end-user premises back to the POI.
Australia's broadband network	The nation-wide wholesale-only access network, available on equivalent terms to all access seekers, that will be deployed by **nbn** and third parties engaged on behalf of **nbn**.
Average Revenue Per User (ARPU)	Calculations include all telecommunications revenue generated including AVC, CVC and other products.
Brownfields	Pre-existing premises.
Business Process Excellence (BPE)	Optimisation of business processes through adoption of best practices and frameworks to standardise work processes to improve business performance and efficiency.
Capital Expenditure (Capex)	The cost of purchasing tangible and intangible assets.
Committed Information Rate (CIR) products	Products with a prioritised traffic feature. These products include defined rate, latency, jitter and loss characteristics.
Complex premises	Premises categorised as requiring bespoke engagement, cabling or project management. These include premises such as offices and apartment blocks.
Compound Annual Growth Rate (CAGR)	The average annual growth rate in a metric over a period of greater than one year.
Connectivity Serving Area (CSA)	A logical collection of end-user premises defined by **nbn**. Each CSA has approximately the same number of end-user premises.
Connectivity Virtual Circuit (CVC)	Determines the capacity of an RSP to be able to serve each CSA. The CVC is virtual Ethernet broadband capacity acquired by an RSP that can be allocated by them to their aggregated AVCs at a CSA.

Abbreviation or term	Definition
Copper Network	Telstra's copper-based customer access network, which is used to deliver standard voice telephony and broadband services.
Cost per Premises (CPP)	An internal **nbn** management calculation used to assess the comparative incremental costs of construction of each access technology.
Customer	A customer is a customer acquiring **nbn** wholesale services with the intention to supply broadband services to end users. It is also defined as an Access Seeker or a Service Provider.
Customer Engagement Metric (CEM)	The Customer Engagement Metric (CEM) is measured as part of **nbn**'s Customer Experience Index (CEI), a measure of **nbn**'s Customer (RSP) sentiment of working with **nbn** and is conducted by an external independent agency on behalf of **nbn**. The CEM is measured annually on a rating scale from 0 to 10.
Dark Fibre	Optical fibre with no active electronics attached.
Data Over Cable Service Interface Specification (DOCSIS)	A telecommunications standard that permits the addition of high-speed data transfer and internet access through HFC infrastructure.
Delivery Partner	A third party involved in the build of the **nbn**™ network. A Delivery Partner is a contractor, which has a contract with **nbn** for the delivery of a certain amount of work/activities in relation to the build and operation of the **nbn**™ network.
Dimension Based Discounting (DBD)	A discount is provided on the CVC unit price to RSPs based on purchased CVC capacity per AVC. The greater the CVC capacity allocated per end user, the greater the discount.
Distribution Point Unit (DPU)	The DPU is one of the main components used in FTTC architecture. A DPU is typically connected to a GPON network and uses either VDSL2 or G.fast technology for the last run of copper into the premises.
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortisation.
End user	Final downstream customer to **nbn**'s Service Providers.
Engagement Score	Measure of the total number of engaged employees as a percentage of the total number of respondents to a bi-annual engagement survey. **nbn**'s engagement surveys are undertaken through Aon Hewitt, allowing **nbn** to track progress year on year and benchmark itself against Best Employers in the Australia and New Zealand region.
Fibre Network	**nbn**'s optical fibre telecommunications network that is owned or controlled by **nbn** and which has been accepted into service, ready for the provision of commercial (non-trial) **nbn**™ network services.

7. Glossary (continued)

Abbreviation or term	Definition
Fibre-to-the-Premises (FTTP)	Network design in which the Fibre Network is deployed to each premises. It involves connecting homes and businesses with an optical fibre cable which can be used to provide a range of high-speed broadband services and phone services.
Fibre-to-the-Basement (FTTB)	Network design in which the Fibre Network is deployed to the basement of a building and copper lines are used for the connection to the end-user premises.
Fibre-to-the-Curb (FTTC)	Network design in which the Fibre Network is deployed to a distribution point near the premises and copper lines are used for the connection between the distribution point and the premises.
Fibre-to-the-Node (FTTN)	Network design in which the Fibre Network is deployed to the node (i.e. a VDSL cabinet), while copper lines are used for the connection between the node and the premises.
Fixed Line (FL)	Delivery of voice, data and broadband services over a physical line from the exchange location to the end-user premises (with termination at that premises).
Fixed Wireless (FW)	Network design in which network connections are provided through radio signals.
FYXX	The financial year ending 30 June 20XX.
FY17(A)	Actuals for the financial year ending 30 June 2017.
GAAP	Generally Accepted Accounting Principles.
Gigabits Per Second (Gbps)	A unit of measurement of transmission speeds equal to one billion bits per second. X/Y Gbps means a maximum downstream speed of X Gbps and a maximum upstream speed of Y Gbps.
G.fast	A technology similar to digital subscriber line (DSL) for carrying broadband signals over copper pairs. It uses a different signalling method and much higher frequency spectrum to deliver potential speeds higher than traditional DSL.
Government	Reference to the Commonwealth or Cth is used interchangeably with Government.
Government Business Enterprise (GBE)	Commonwealth entity or wholly-owned Commonwealth company as defined by the PGPA Act and as prescribed as a GBE under the PGPA Rule.
Greenfields	A new development that can be either New Developments or Infills. Greenfields developments represent the growth of the premises market.
Health, Safety & Environment (HSE)	The activities responsible for establishing and maintaining policies regarding employee health, safety and environment issues.
Hybrid Fibre Coaxial (HFC) Cable Networks	Networks utilising both optical fibre and coaxial cable for the delivery of Pay TV, internet and voice services.

Abbreviation or term	Definition
Infills	A type of Greenfields development where new premises or a redevelopment (i.e. demolition and rebuild) are planned to be built on currently developed land that is surrounded by established areas, where Telstra copper services are currently available.
Information Technology (IT)	Underlying operating and business systems and processes providing the platform and flow of information through **nbn** to enable the deployment, activation and operation of Australia's broadband network.
Interim Satellite Service (ISS)	**nbn**'s Interim Satellite Service was launched on 1 July 2011 to provide access to broadband services to people in homes, small businesses and indigenous communities in some of the most remote areas of Australia. The Interim Satellite Service was a temporary measure until **nbn** launched its own Sky Muster™ satellite service in 2016.
Internal Rate of Return (IRR)	The average annual total return from cash investments over a specified time period, used to measure and compare the profitability of the investment.
Lead-in	The part of the network from the pit in the street to the end-user premises.
Local Network	The part of the network from the Fibre Distribution Hub down each street.
Megabits Per Second (Mbps)	A unit of measurement of transmission speeds equal to one million bits per second. X/Y Mbps means a maximum downstream speed of X Mbps and a maximum upstream speed of Y Mbps.
Multi-Technology Integrated Master Agreement (MIMA)	Agreements with delivery partners for the construction of multiple networks.
nbn	nbn co limited.
New Developments (Greenfields Estates)	A New Development is defined as an estate that complies with the New Development Policy statements released by the Government. New Developments include commercial, industrial and residential estates comprising of more than 100 lots with development approval to be released within a 3 year period located in **nbn**'s long term fibre footprint.
Next Generation Passive Optical Network (NG-PON)	A telecommunications network standard capable of increasing speeds over the fibre cables.
Operations and Maintenance Master Agreement (OMMA)	OMMA governs activities with service delivery partners and aims to provide field services across all regions of Australia. OMMA includes field services across service activations, service assurance, network restoration, preventative maintenance, and moves, adds and changes (MACs).

7. Glossary (continued)

Abbreviation or term	Definition
Operating Expenditure (Opex)	The ongoing cost of running a business, system or product, including payments under lease agreements. For the purpose of the Corporate Plan, Operating Expenditure includes all nominal payments, such as nominal payments under finance lease agreements. This nominal view of costs incurred may differ from the accounting treatment under statutory accounting rules.
Point of Interconnect (POI)	The connection point that allows RSPs and WSPs to connect to the **nbn**™ network access capability. In the field, this is the physical port on the Ethernet Fanout Switch (EFS) located at the **nbn**™ network's POI, where an Access Seeker connects to establish exchange of traffic with the **nbn**™ network.
Premises	A premises which **nbn** is required to connect is:
	1. an addressable location currently used on an ongoing basis for residential, business (whether for profit or not), government, health or educational purposes;
	2. a school as defined by the Department of Education, Employment and Workplace Relations;
	3. within a new development at an addressable location for which **nbn** is the wholesale provider of last resort; or
	4. a standard telephone service activated in compliance with the USO.
Premises Activated	Refers to premises which have an active service installed. Premises are activated after receiving and provisioning a service order from a Retail Service Provider (Service Provider) to install a new service at the premises.
Product Development Forum	See http://www.nbnco.com.au/industry/service-providers/industry-consultation/product-development-forum.html
Ready for service (RFS)	A Rollout Region is ready for service when the majority of premises are passed by the **nbn**™ network and RSPs are able to begin selling **nbn**™ services in that Rollout Region.
Ready to connect (RTC)	A premises is ready to connect when an **nbn**™ service order can be placed, and the service can be connected within an area that has been declared ready for service.
Retail Service Provider (RSP)	A third party provider of retail broadband services to end users.
Rollout Region	A region served by the **nbn**™ network.
Special Access Undertaking (SAU)	A document that sets out the 30-year regulatory framework via which **nbn** plans to set price and non-price terms to recover rollout costs, subject to the oversight of the Australian Competition and Consumer Commission (ACCC).

Abbreviation or term	Definition
Service providers	A third party provider of broadband services whether to end users and/or Retail Service Providers.
Sky Muster™ satellite service	**nbn** satellite service which will provide broadband services to Australians in predominantly rural locations.
Statement of Expectations (SoE)	Letter to **nbn** from its Shareholder Ministers dated 24 August 2016. See: http://www.nbnco.com.au/content/dam/nbnco2/documents/soe-shareholder-minister-letter.pdf.
Technology Choice Program	A program which provides individual or groups of premises with the option to pay for a switch to a different **nbn**™ network technology.
Temporary Staff Augmentation (TSA)	On-hire personnel.
User Network Interface (UNI)	The physical port on the **nbn** Network Termination Device (NTD) at the end-user premises which connects the end user's residential gateway or Ethernet enabled device to the **nbn**™ network which could be either a UNI-D (User Network Interface – Data) or UNI-V (User Network Interface – Voice).
VDSL	Very-High-Bit-Rate Digital Subscriber Line.
Voluntary Turnover	Measure of the employees who left the organisation voluntarily as a percentage of average headcount over the reporting period.
Wholesale Broadband Agreement (WBA)	A document which sets out **nbn**'s supply terms for the **nbn** Ethernet Bitstream Service and other related products and services.
Wholesale Service Provider (WSP)	A provider of wholesale services to Service Providers.

Tables

Exhibits

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