nbn™

Australia's
broadband
network

Corporate Plan

2017

Contents

Legal notice

Introduction

This 2017 Corporate Plan has been prepared by nbn co limited (**nbn** or the Company) 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 35(1)(b) and 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 FY17 to FY20 inclusive. The first reporting period covered by this plan is FY17. The fourth, and last, reporting period covered by this plan is FY20.

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 such 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 2020, including in section 5.7 (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.

Part A
Plan Outline

| Corporate Plan 2017

About
nbn

nbn was established in 2009 to design, build and operate Australia's new high-speed 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 available on equivalent terms to all access seekers. This is intended to level the playing field in Australian telecommunications, creating real and vibrant competition within the industry.

nbn is a Government Business Enterprise (GBE) incorporated under the Corporations Act 2001 and pursuant to the PGPA Act.

nbn is wholly-owned by the Commonwealth of Australia

Our goal is to activate 8 MILLION homes and businesses by 2020

Connecting Australia and bridging the digital divide

nbn exists to construct and operate Australia's high-speed broadband network. It is the most comprehensive and largest infrastructure development in Australia's history, using world-class technologies to provide access to fast broadband to every home and business in Australia. **nbn**'s goal is to activate eight million homes and businesses by 2020.

It will be the nation's first national wholesale-only, open-access broadband network with a commitment to deliver access to at least 25 megabits per second (Mbps) downstream to all premises and at least 50 Mbps downstream to 90 per cent of fixed line premises.[1] This ambition for universal connectivity is unique to Australia considering its expansive geography and population.

Enabling an exciting future for all Australians

The **nbn**™ network will allow Australia to unleash its full digital potential. It will transform the nation and fundamentally enable Australia to become a more connected, more competitive, and more innovative nation.

It will help bridge the digital divide between city and country; young and old; and Australia and the rest of the world. Of the rollout completed at the end of FY16, 70 per cent is in non-metro and regional Australia aligned with **nbn**'s purpose to connect Australia and bridge the digital divide. This is underpinned by the continued progression of the fixed line and Fixed Wireless programs and the launch of Sky Muster™ satellite services.

This vital infrastructure will help change the way businesses operate and how people live their lives, connecting people, promoting social inclusion and equal opportunity.

It enables the use of new technologies and applications, stimulating improvement and innovation across a wide range of industries such as education, health, entertainment, media, commerce and community services.

World-class network technology

The **nbn**™ network comprises world-class technologies that are designed to significantly lift broadband capability across Australia.

By 2020, the use of these technologies are projected to deliver beyond **nbn**'s minimum commitments. It is intended that nearly half of the fixed line footprint will have the potential to access Gigabit wholesale services and the majority able to access 50 Mbps or better.

The **nbn**™ network is being built to meet today's needs, while including capacity and upgrade paths to allow for future evolution in demand.

Building momentum to deliver high-speed broadband to all Australians

In FY16 the number of premises Ready for Service (RFS) more than doubled to 2.9 million – 138 per cent growth on the previous year. Activations also more than doubled with 1.1 million premises now activated – 126 per cent growth on the previous year.

This reflects strong growth in the company's capacity to scale and deliver. Challenges, however, remain with the continued scaling of RFS and activation capacity over the next two years.

At peak, a new home or business is forecast to be activated
every 3 seconds[2]

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

2 Based on an eight hour working day and five day working week.

Momentum has been established in FY16

Sky Muster™ satellite product launch in April 2016

Major HFC delivery agreement executed with Telstra

HFC product launch in June 2016

More than one in four can order an **nbn**™ service

One new activated household or business every 12 seconds in FY16[2]

Established three key operating agreements

Fibre to the Node launched in September 2015

Today, nearly two thirds of the nation are in design, construction or already eligible for an **nbn**™ service

2/3

2   Based on an eight hour working day and five day working week.
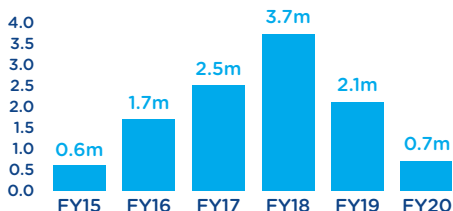
Pursuing unprecedented scale

1.7 million
premises made Ready for Service in FY16. 3.0x as many as in FY15

Construction rate to more than double from FY16 to reach peak in FY18

Incremental premises made RFS

FY15	FY16	FY17	FY18	FY19	FY20
0.6m	1.7m	2.5m	3.7m	2.1m	0.7m

More than 600,000
premises activated in FY16. 2.2x as many as in FY15

Premises activated to grow more than three times from FY16 to FY18 nearly doubling year-on-year

Incremental premises activated

FY15	FY16	FY17	FY18	FY19	FY20
0.3m	0.6m	1.2m	2.1m	2.5m	1.2m
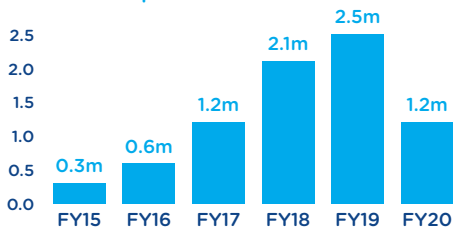
FY16 revenue up 157% to
$421m
compared to FY15

By FY20, revenue will have grown by 12 times on FY16

Annual Revenue

FY15	FY16	FY17	FY18	FY19	FY20
$0.2b	$0.4b	$0.9b	$1.9b	$3.7b	$5.0b
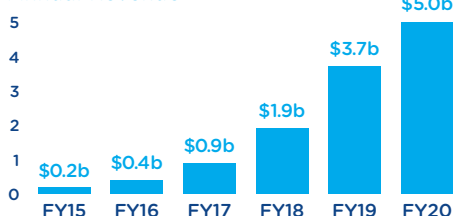
Deploying world-class network technology

FTTP – Fibre-to-the-Premises

FTTP deploys fibre optic cable to the household or business. As at 30 June 2016, 1.4 million FTTP premises are RFS. FTTP will continue to be deployed to new developments through the Greenfields program.

End users with a strong interest in fibre are offered the Technology Choice program which provides end users the option to switch access technology at their expense.

Current wholesale service offerings are up to 1 Gbps/400 Mbps.

FTTB – Fibre-to-the-Basement[3]

FTTB deploys fibre optic cable to the basement of a building, utilising existing wiring in the building for connections to apartments or offices eliminating the need for in-building design and construction works.

FTTB allows multi-dwelling units, such as apartment complexes and office blocks, to receive fast broadband with current wholesale services offering up to 100/40 Mbps. As at 30 June 2016, FTTB has been deployed to more than 900 buildings.

FTTN – Fibre-to-the-Node

FTTN deploys fibre into neighbourhoods and then leverages existing copper infrastructure to the premises. This reduces the time and cost associated with local network and lead-in construction.

Since the launch in September 2015, 663,000 premises are RFS on the FTTN network.

Current service offerings are up to 100/40 Mbps, although observed speeds reflect purchased speed tiers.

HFC – Hybrid Fibre Coaxial

HFC technology leverages existing fibre and cable networks to deliver fast broadband.

In June 2016, HFC commercial services were launched in Redcliffe, Queensland. End users experienced trial speeds of up to 100/40 Mbps.[4]

DOCSIS 3.1 will provide capability to increase wholesale download speeds of up to 1 Gbps.

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3   FTTB is included in FTTN statistics throughout the Corporate Plan.

4   Experience and Trial Speed Disclaimer: end-user experience, including speeds actually achieved, depends on the **nbn**™ technology used and factors outside **nbn**'s control like your broadband plan, provider, equipment and software. Trial speeds were achieved by end users in the context of a trial and may not reflect **nbn**'s wholesale speed tiers or the speeds that will be experienced by end users.

Bringing world-class fast broadband to rural, regional and remote Australians.[5,6]

Fixed Wireless

nbn's Fixed Wireless service enables high-speed broadband to be extended to Australians outside the reach of the fixed line network. This world-class technology provides access to wholesale speeds of up to 50/20 Mbps.

The Fixed Wireless network is recognised as a leader in terms of speed, data allowances and affordability when compared to similar networks in other countries.[5]

Network deployment is mature. Users of the technology are among the most satisfied **nbn**™ network users with 75 per cent Advocacy at June 2016, a measure of users who have already recommended the **nbn**™ network to family, friends or colleagues. This measure is reflective of end-user experience across both the Retail Service Provider (RSP) and **nbn**™ networks.

Satellite

nbn's satellites will be among the world's largest and most advanced communication satellites. Their combined capacity will be 135 Gbps, more than 30 times the capacity of the interim satellite service. Sky Muster™, the first of the two dedicated satellites, was ranked "world leader" in a report comparing 18 international broadband service providers based on its performance and affordability.[6]

In April 2016, **nbn** launched Sky Muster™ commercial services through RSPs. The satellite service is a game changer for rural and remote Australians, providing access to wholesale speeds of up to 25/5 Mbps for Sky Muster™ satellite end users.

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5 Ovum: "Fixed Wireless Broadband: A global comparison", 10 July 2015.
6 Ovum: "Satellite Broadband: A global comparison", 28 April 2016.

Adopting innovative technologies

A dynamic and rapidly changing environment

Technological progress, changing end-user behaviour and increasing demand are transforming Australia's society and connectivity needs.

Uncertainty in future demand stems from the changing ways in which consumers use data and the extent to which usage trends become mainstream. Possible drivers of future demand are increased proliferation of connected devices, growth in video streaming and new applications. The future is limitless, with virtual reality applications, self-driving vehicles, and internet-connected devices potentially growing in demand.

Many of these trends are emerging and currently in early stages of development, with the full extent and timing of impact remaining uncertain.

In order to balance continuous technological progress and changing end-user demand, the **nbn**™ network is being built to provide flexibility around upgrade pathways to cater for this evolution.

A pipeline of innovation is continuously being tested. New technology creates opportunity to deliver future network requirements when they become commercially viable.

Technological innovations to serve future demand

FTTP

- 'Next Generation Passive Optical Network' (NG-PON) standard provides the opportunity to increase maximum speeds from 1 Gbps to 10 Gbps.

FTTN

- G.fast standard, an evolution from VDSL2, provides potential speeds of up to 1 Gbps[7]

- Fibre to the Distribution Point (FTTdp) is a variant of FTTN, which deepens fibre into the network and leverages existing copper for the lead-in. FTTdp is currently being trialled, with download speeds observed around 100 Mbps, which could be up to 1 Gbps when combined with G.fast.*

HFC

- Full Duplex DOCSIS 3.1 (FDD) is the next evolution of DOCSIS 3.1, and will enable the full symmetric use of the HFC plant spectrum for both upstream and downstream transmission. This will allow the HFC network to match fibre services with multi-gigabit speed tiers (1 Gbps+ downstream, and 400 Mbps upstream).

Fixed Wireless

- Fixed Wireless network throughput can be increased to offer up to 250 Mbps by aggregating multiple radio carriers. Throughput can be increased beyond 250 Mbps in a number of ways, such as using more radio spectrum or increased efficiencies in spectrum management.

Satellite

- New Satellite technology with 10x capacity increases becoming available.

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7   Dependent on distance from the premises to the node.

*   Refer to disclaimer on page 12.

Enabling a vibrant retail market

Success is underpinned by successful retailers

nbn's products are constructed to allow RSPs flexibility to tailor residential and business solutions that best meet individual end-user needs.

A single broadband product construct has been developed across fixed line, fixed wireless and satellite technologies to make the product set technology-agnostic. The product construct offers peak wholesale downstream speeds ranging from 12 Mbps up to 1 Gbps and upload speeds ranging from 1 Mbps to 400 Mbps.

Currently more than 50 RSPs are able to provide broadband to their customers on the **nbn**™ network, with more RSPs engaged indirectly.

Focused on improving service to RSPs

nbn has been working on improving the service and engagement with RSPs through continuous industry consultation to refine processes.

New products and additional features will continue to be launched over time, developed in close consultation with RSPs.

The Customer Experience Metric is tracking favourably, meeting a metric of 7.2 out of 10 (FY16), up from 6.6 (FY15). Implementation of continuous improvement programs aim to reach 8 out of 10 by 2020.

Satisfying end users

Meeting the needs of Australian broadband users

The **nbn**™ network is unlocking previous capacity constraints and changing consumer behaviours. **nbn**™ network end users download 34 per cent more than the Australian Bureau of Statistics (ABS) national average, as at 31 December 2015.[8]

Customers have reliable access to the network with uptime at 99.9 per cent across the entire network.

Overall Satisfaction from users across all products is now 7.1 out of 10.

nbn's Advocacy, a measure of users who have already recommended the **nbn**™ network to family, friends or colleagues is at 65 per cent, the same as 12 months ago. This measure is reflective of end-user experience across both the RSP and **nbn**™ networks.

8   ABS 2015.

Dedicated people making **nbn** a reality

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

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.

The Management team aims to provide an environment that encourages people to perform at their best. Inspirational leadership, a collaborative culture and growth in talent is at the heart of **nbn**'s progress.

This is translating into an engaged workforce with the most recent employee Engagement Score at 68 per cent, up 17 percentage points from 51 per cent last year. This puts **nbn** in the top quartile of businesses in Australia and New Zealand for employee engagement scores.

Voluntary turnover is favourable at 7.7 per cent compared to the global industry average of 11.0 per cent as at June 2016.[9]

At **nbn** we want to continue to create a diverse and inclusive workplace that accepts, respects and leverages differences. **nbn** is committed to embracing diversity to help improve business results, create a high-performing culture and attract and retain talented people.
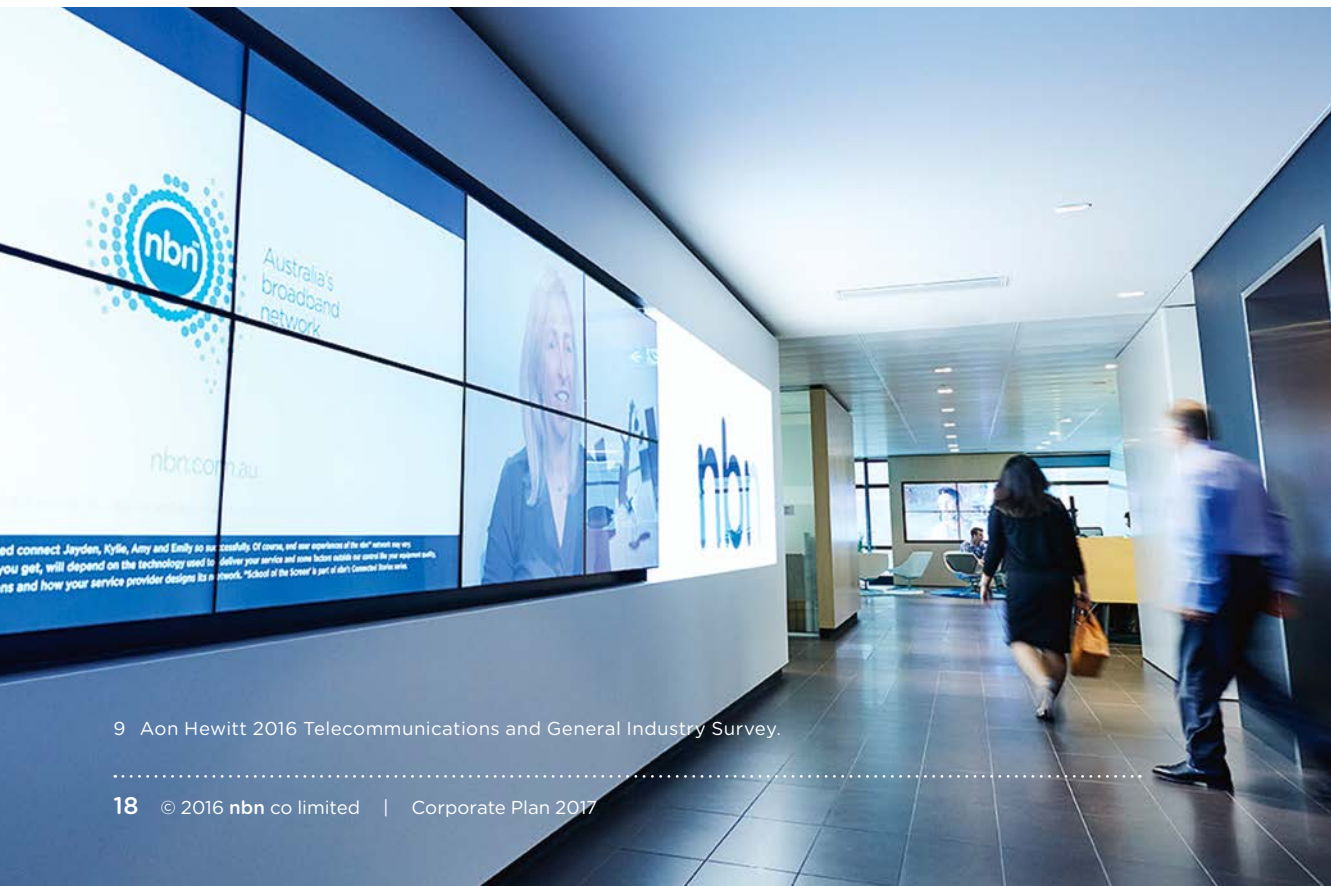
9 Aon Hewitt 2016 Telecommunications and General Industry Survey.

Board and Management's message

Over the past year, **nbn** has gained solid momentum in building a world-class broadband network for all Australians by 2020.

This comprehensive plan details how we will deliver on **nbn**'s 2020 commitment, and follows on last year's plan. As we expand into more areas of Australia, our knowledge increases along with the quality of planning. We are proud to say that we exceeded our FY16 targets, with the company recording nine consecutive quarters of meeting our goals.

nbn's purpose remains to connect Australia and bridge the digital divide.

Key achievements during FY16 include:

• more than doubling the Ready for Service footprint, enabling 2.9 million homes and businesses to access the network

• more than doubling the number of active premises; 1.1 million premises are now using the network

• doubling revenue to $0.4 billion in FY16 from $0.2 billion in FY15

• the successful launch of commercial FTTN products in September 2015

• the successful launch of the Sky Muster™ satellite in October 2015

• the successful launch of Sky Muster™ commercial services in April 2016

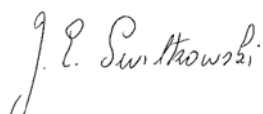• the successful launch of HFC commercial services in June 2016.

By the end of FY20, our goal is for all Australians to have access to the **nbn**™ network, with a forecast 11.9 million premises Ready for Service and 8 million homes and businesses actively using the network.

To achieve this, significant work is required to build upon the progress that has been made over the last two years. The unprecedented scale and complexity facing the business means that the next two years will be critical in delivering our plan.

Exponential growth is required to achieve the targets, and FY17 is forecast to see the biggest growth yet:

• by June 2017, nearly half of Australia will be able to order a service

• the construction and activation rates need to almost double

• the HFC program will scale exponentially

• the second satellite Sky Muster™ II is scheduled for launch in October 2016.

We look forward to growing the conversation in the community about how the **nbn**™ network can be leveraged to unlock Australia's digital potential.

Dr Ziggy Switkowski AO
Chairman

Bill Morrow
Chief Executive Officer

nbn's Management team

Experienced leadership team behind **nbn**.

Bill Morrow
Chief Executive Officer
Appointed in December
2013, effective April 2014

Mr Morrow is well known for his global experience in leading complex turnarounds and as one of the global telecommunications industry's most experienced executives.

Prior to **nbn**, he served as CEO of Vodafone Hutchison Australia in Sydney and CEO of Clearwire Corporation in Seattle.

Stephen Rue
Chief Financial Officer
Appointed in July 2014

Prior to joining **nbn**, Mr Rue spent 17 years in various leadership roles at News Corp Australia including a decade as Chief Financial Officer.

He also served as a Director on a number of associated boards including Foxtel, Fox Sports, REA Group and Australian Associated Press.

John Simon
Chief Customer Officer
Appointed in
January 2013

Mr Simon is an established executive in the converged ICT market, with over 30 years' experience.

Prior to **nbn**, Mr Simon spent the previous 11 years working for Singtel Optus in various roles across strategy, product and sales management and customer experience.

Brad Whitcomb

Chief Strategy and Transformation Officer
Appointed in May 2014

Mr Whitcomb has successfully architected a number of high-profile business transformations in the telecommunications and energy sectors.

Prior to **nbn**, Mr Whitcomb was the Chief Strategy and Business Transformation Officer at Vodafone Hutchinson Australia.

Peter Ryan

Chief Network Engineering Officer
Appointed in December 2015

Mr Ryan has solid experience in engineering and deployment of networks nationally and overseas, in addition to operational management experience and proven project discipline.

Prior to joining **nbn**, Mr Ryan worked at Vodafone for 15 years in Australia, Kenya and the UK, and at Maunsell Australia Pty Ltd. His career has spanned across network engineering, technology deployment and service operations.

Maree Taylor

Chief People and Culture Officer
Appointed in May 2014

Ms Taylor is an experienced Human Resources professional with more than 25 years of corporate and consulting/coaching experience.

Prior to **nbn**, Ms Taylor held senior executive roles including Head of Human Resources at Origin, CSC Australia, and Apple Asia Pacific.

JB Rousselot

*Chief Network
Operations Officer
Appointed in October 2013*

Mr Rousselot brings to
the business over 15 years'
experience in the
telecommunications sector.

He has previously held
senior roles at Telstra
including the Executive
Director of Voice,
BigPond and Media.

Justin Forsell

*Chief Legal Counsel
Appointed in
March 2010*

Mr Forsell is an
experienced legal
practitioner with over
18 years in-house
experience.

Prior to **nbn**, Mr Forsell
was General Counsel,
Company Secretary and
Head of Governance at
Vodafone Australia.

John McInerney

*Chief Information Officer
Appointed in
December 2012*

Mr McInerney is an
experienced technology
practitioner with over
20 years' experience.

Prior to **nbn**,
Mr McInerney was Vice
President at HP across
Asia Pacific and Japan
and Group CIO at Telstra
where he led one of the
largest technology
transformation projects
in Australia.

Part B
Corporate Plan

1. Corporate Plan summary statement

Last year, Management prepared **nbn**'s first cross-functional Corporate Plan using an integrated planning process. This plan was the basis of how **nbn** would achieve its goals. It was based on detailed strategic and financial analysis and integrated operational planning.

The Corporate Plan 2017 builds on the foundations established last year and is based on new operational experience gained throughout FY16 as well as further strategic decisions, updated financial and market analysis and operational planning.

Since Corporate Plan 2016, **nbn** has more than doubled the number of premises Ready for Service (RFS) to 2.9 million – 138 per cent growth from the previous year, and increased premises activated to 1.1 million – 126 per cent growth. At the same time, **nbn** hit a number of milestones and gained significant experience, reducing key uncertainties.

The performance of the company is underpinned by a number of key milestones achieved in FY16:

- successful launch of FTTN in September 2015 and scaling of FTTN deployment, with 663,000 premises now RFS

- the first of two dedicated satellites, Sky Muster,™ has been launched with the first Sky Muster™ services activated in April 2016

- commercial launch of HFC following successful end-user and construction trials in Redcliffe, QLD

- **nbn** has strengthened its relationships with the industry by improving the way it collaborates and structures its agreements:

  – delivery agreement signed with Telstra to leverage their experience in HFC design and construction to scale the program

  – Operations and Maintenance Master Agreements have been signed with three regional partners to activate premises and assure the network, ensuring a fast and reliable broadband network

  – second tranche of construction contracts have been awarded to deliver flexibility, incentives and competition for the rollout of the **nbn**™ network.

While FY16 represents strong growth in the company's capacity to scale and deliver, challenges remain ahead. Premises RFS need to almost double in FY17 and again in FY18. Activated premises need to nearly double year-on-year for the next two years. This is particularly challenging considering the extraordinary scope and complexity of the **nbn**™ network rollout.

Progress in FY16 has provided more data with which to forecast, but considering the scale and complexity of the network build, much uncertainty remains. The plan continues to support a peak funding base case forecast of $49 billion, and a range of $46 billion to $54 billion. This is a narrower range than last year, reflecting a reduction in uncertainty as the **nbn**™ network is rolled out. As in the Corporate Plan 2016, forecast completion of the **nbn**™ network rollout is by 2020.

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

Table 1: Key operational and financial metrics

	FY16(A)	FY17	FY18	FY19	FY20
$ billions (unless otherwise stated)					
Premises RFS (millions)	2.9	5.4	9.1	11.2	11.9
Premises activated (millions)	1.1	2.3	4.4	6.9	8.1
Revenue	0.4	0.9	1.9	3.7	5.0
EBITDA before subscriber payments	(1.3)	(1.2)	(0.4)	1.1	2.2
EBITDA	(1.9)	(2.6)	(3.2)	(2.0)	0.7
Capital Expenditure	(4.7)	(6.1)	(5.9)	(3.3)	(1.9)
Cash flow	(7.1)	(9.2)	(10.0)	(6.6)	(2.5)

Note: The numbers presented in this table correspond to the base case consistent with the ranges represented in Table 2 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 representing best estimates and information to date. While certain aspects of the plan have been de-risked through reducing key uncertainties, significant risks and challenges remain. Critical assumptions on scope, cost and timing are continuously refined with further in-field experience.

In preparing this plan, Management has analysed and assessed the most significant challenges and the potential impact they might have on the rollout schedule and peak funding requirements. These risks can be categorised in the following main themes:

- **meeting the scale challenge: nbn**'s ability to achieve the next level of organisational maturity required to manage the process complexity, resource contention and delivery of automation to achieve the overall plan raises a number of key challenges. This includes the ability to activate, operate and maintain the **nbn** footprint at scale across Australia in a safe and environmentally responsible manner, in line with publicly-communicated targets

- **management of partners:** operationalising contractual agreements and realising intended benefits while managing the risk associated with significant dependence on third parties

- **competition, revenue and regulatory:** the achievement of forecast revenue and activation rates while adapting to the evolving regulatory environment, competing against infrastructure providers and encouraging competitive dynamics among RSPs.

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

2. Background, performance and objectives

2.1 Background

In 2009, **nbn** was established to build and operate Australia's first ever national, wholesale-only, open-access broadband network. **nbn**'s objective is to ensure all Australians have access to fast broadband as soon as possible, at affordable prices, and at least cost to taxpayers.

To give greater clarity to the program, the Government has set out a Statement of Expectations dated 8 April 2014 (SoE), which provides, among other things, that:

- to minimise cost and increase speed of deployment, the rollout should allow for a combination of technologies

- the **nbn**™ network is intended to be a wholesale-only access network, available on equivalent terms to all access seekers

- the design of the **nbn**™ network will be guided by the Government's policy objectives of providing access to download data rates of at least 25 Mbps to all premises and at least 50 Mbps to 90 per cent of fixed line premises as soon as possible[10]

- **nbn** has flexibility and discretion in operational, technology and network design decisions, within the constraints of a public equity capital limit of $29.5 billion.

2.2 Strategic imperatives

nbn's ultimate objective is to connect Australia to broadband, bridging the current digital divide between Australians, and between Australia and other economies worldwide. Its goal is to activate eight million homes and businesses by 2020. In order to fulfill this goal, **nbn** has five strategic imperatives:

- build a united partnership with vendors, Delivery Partners (DPs) and RSPs

- build affordable products and services

- build a high-performing, reliable network

- build effective and efficient processes and systems

- make **nbn** a great place to work.

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

2. Background, performance and objectives (continued)

2.3   Performance to date

nbn has continued to build momentum through FY16. The achievement of key financial and operational objectives has been complemented with improved relationships with industry partners and RSPs, an increase in staff engagement and positive end-user experience.

Exhibit 1: Deploying the network

Cumulative RFS ('000)
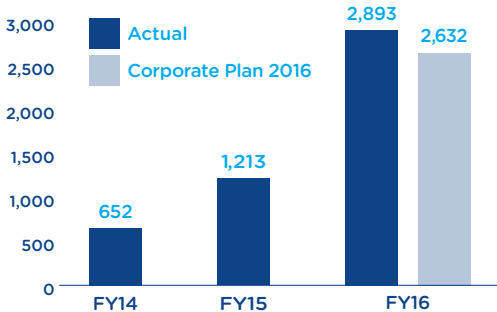
- 2.9 million premises now RFS, more than double the amount in June 2015 representing 25 per cent of the target footprint

- nearly two thirds of the footprint is either in the design and construction pipeline or RFS.

Exhibit 2: Connecting premises

Cumulative activations ('000)
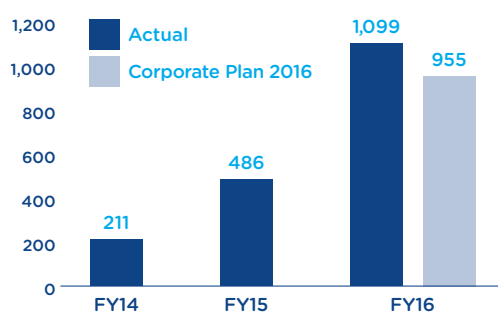
- 1.1 million premises now activated, more than double the amount in June 2015.

Exhibit 3: Generating revenue

Annual Revenue ($m)

- $0.4 billion in total revenue generated in FY16, with a monthly ARPU of $43 as at 30 June 2016

- actively engaging over 50 RSPs

- double the number of end users.

2.4 Objectives ahead

While **nbn** is gaining momentum, the organisation faces several challenges across multiple dimensions, including the scale and scope of build, activation and delivery, and public scrutiny. To put these challenges into perspective, in the years ahead the organisation will need to:
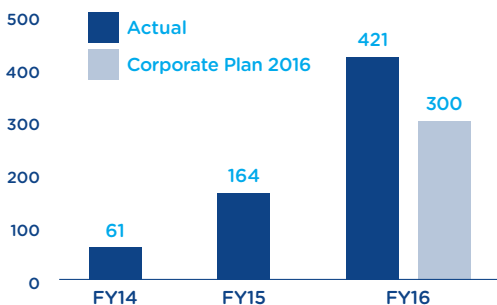
- grow the RFS footprint four times from 2.9 million to 11.9 million by FY20; nearly doubling the footprint in FY17 to achieve 5.4 million premises RFS, and growing significantly again in FY18 to achieve 9.1 million premises RFS

- increase the number of premises activated nearly eight-fold from 1.1 million to 8.1 million by FY20; doubling activations to reach 2.3 million in FY17, and then nearly double again to 4.4 million in FY18

- coordinate with multiple RSPs to deliver on revenue forecasts including increases in ARPU, usage and speed tier mixes, and a competitive business segment proposition

- increase industry workforce capacity, **nbn** IT capabilities, and end-to-end operations ability to deliver on these targets

- lead and grow the organisation to manage the critical construction period, while transitioning the company to a primarily network operations business.

There are many critical interdependencies between these and other activities that will need to be managed and delivered in parallel, particularly during the course of the next four years of this plan.

The mandate continues to present a unique challenge – an unprecedented project of scale, scope, speed and complexity.
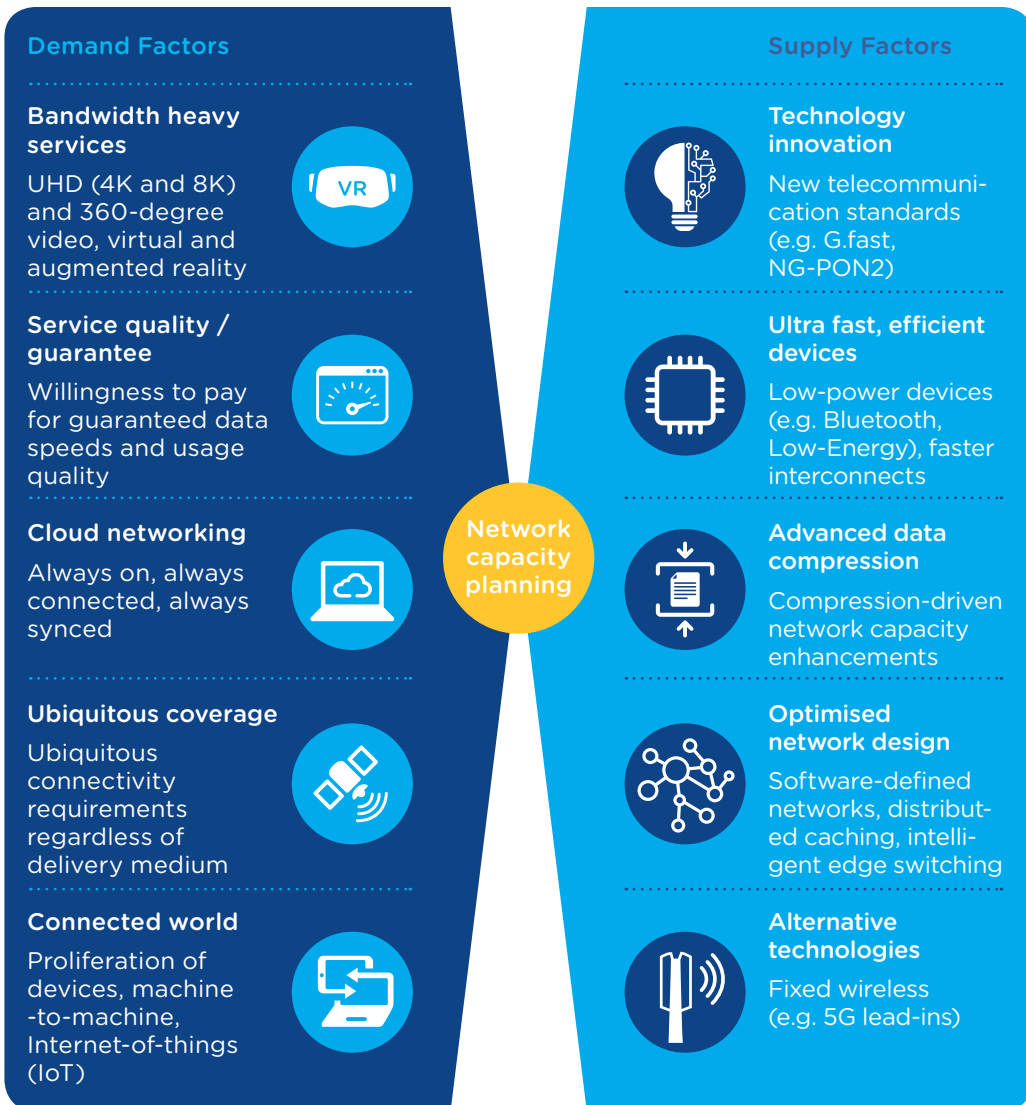
3. Market overview

3.1 Market trends

Significant technological progress and ever-changing end-user demands continue to shape the broader telecommunications sector at a pace never seen before. The below key demand and supply factors are expected to influence the market over the short-to-medium term:

Exhibit 4: Key technological demand and supply factors

Demand Factors

Bandwidth heavy services

UHD (4K and 8K) and 360-degree video, virtual and augmented reality

Service quality / guarantee

Willingness to pay for guaranteed data speeds and usage quality

Cloud networking

Always on, always connected, always synced

Ubiquitous coverage

Ubiquitous connectivity requirements regardless of delivery medium

Connected world

Proliferation of devices, machine-to-machine, Internet-of-things (IoT)

Network capacity planning

Supply Factors

Technology innovation

New telecommunication standards (e.g. G.fast, NG-PON2)

Ultra fast, efficient devices

Low-power devices (e.g. Bluetooth, Low-Energy), faster interconnects

Advanced data compression

Compression-driven network capacity enhancements

Optimised network design

Software-defined networks, distributed caching, intelligent edge switching

Alternative technologies

Fixed wireless (e.g. 5G lead-ins)

Based on the above trends, data demand is forecast to continue to grow at 30 per cent or more year-on-year to 2020[11] and throughput requirements are forecast to increase (both download and upload), particularly in the home, as some end users look to use multiple sets of devices and applications simultaneously, and in some cases, continuously.

The Internet of Things is still in its infancy, but the diverse and expanding set of applications is expected to be the backbone of the fourth industrial revolution and lead to a further step-change in connectivity. The longer-term introduction of 5G mobile technology, which is expected to offer significant improvement in performance over today's 4G mobility products, will bring additional connectivity competition to the market along with opportunities for **nbn**.

3.2 Australian market overview

The Australian fixed connectivity sector is transforming as customers migrate to the **nbn**™ network and revenue shifts from fixed line voice services. Across Australia, total penetration of broadband has grown to 73 per cent[12] of households with an average speed of 8 Mbps,[13] of which the **nbn**™ network currently accounts for approximately 15 per cent of active connections.

The retail market is largely shared among four RSPs, with further consolidation through TPG's acquisition of iiNet, the merger of Vocus and M2, and the acquisition of Nextgen by Vocus.

RSPs have introduced a wide variety of **nbn**™ product offers to the market, with the trend of increasing data allowances across their broadband plans and bundled product offerings as the key strategy for customer acquisition. A number of RSPs have introduced 'unlimited' data plans to the market.

Subscription Video on Demand services have already had a significant impact on data consumption in Australia, most noticeably following the introduction of Netflix in March 2015. From March 2015 to June 2016, the average data consumption per household on the **nbn**™ network grew by ~59 per cent to 137 GB (download and upload) per month.

New challengers could leverage their core customer service strengths to offer viable alternatives, and tailor innovative offerings to grow their market share as the **nbn**™ network reaches scale. Direct fixed line infrastructure competition in the Brownfields residential sector continues, as incumbent telecommunications providers extend and leverage their existing fibre network assets to provide wholesale FTTB products. In the Greenfields residential sector, multiple infrastructure providers continue to operate alongside **nbn**.

11 **nbn** analysis based on research from industry organisations.
12 ABS 2015.
13 Akamai's state of the internet Q4 2015 report.

4. Operating plan

Management has prepared its second cross-functional plan, with awareness of known challenges, execution fronts and interdependencies facing the implementation of the **nbn**™ network. This version of the plan has been refined based on an additional year of experience and will continue to evolve over time.

4.1 Product and customer strategy

The purpose of the product and customer strategy is to provide high-speed ubiquitous products at affordable prices to all Australians. This is achieved through providing a wholesale network available on equal terms to all access seekers.

Wholesale product construct

nbn has built its core product offering around the **nbn**™ Ethernet product, a technology-agnostic solution. It separates the choice of network deployment technology from the RSP and end user. Regardless of the access technology, an RSP can offer products and services to its end users in a consistent manner, reducing the need to develop customised products and processes. This enables RSPs to build a diverse range of products for the residential and business segments across

a range of access technologies and product components, ordered under **nbn**'s Wholesale Broadband Agreement.

The end-to-end **nbn**™ product construct is made up of two key components:

1. **Access Virtual Circuit (AVC):** in the first part of the product construct, the end user connects to the **nbn**™ network via a suitable User Network Interface element. This connection constitutes an AVC – a virtual network element that represents the access connection to the end-user premises. An AVC is provisioned for

each premises based on a range of wholesale speeds from 12 Mbps to 1 Gbps downstream and 1 Mbps to 400 Mbps upstream.

2. **Connectivity Virtual Circuit (CVC):** in the second part, the AVCs are routed through the **nbn**™ network to the Point of Interconnect (POI) where the RSP connects to the 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 network contention strategy.

Exhibit 5: Product construct
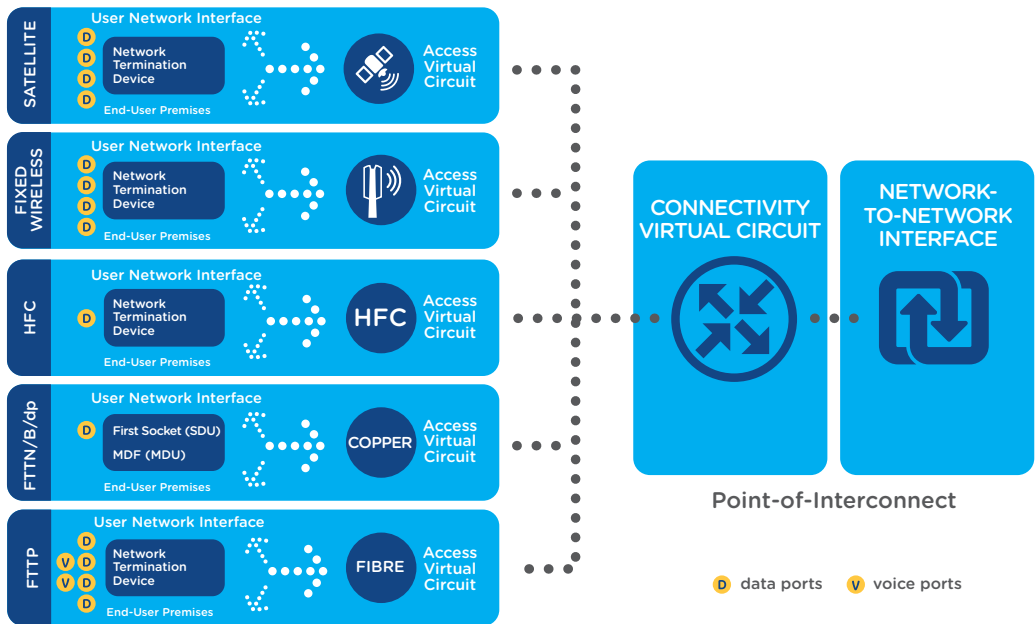
Product roadmap

nbn maintains an Integrated Product Roadmap which sets out the expected product development pipeline over the next three years, available on the **nbn**™ website. The aim is to provide RSPs and industry with a clear view of the expected upcoming releases in **nbn**'s product portfolio. This allows them to prepare their own product developments, marketing and workforce.

nbn also operates a Product Development Forum as a consultation mechanism with RSPs and relevant Consumer Advocacy Groups, providing a pathway to influence **nbn**'s product development pipeline.

nbn supports RSPs in the provision of services to business end users by providing optional product features which can be combined to build business offerings, including:

- **higher speed TC-1 & TC-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 similar business connectivity solutions

- **enhanced service levels:** a range of enhanced service level options for service assurance in the event of a fault.

nbn seeks to maximise the value of its network infrastructure by developing complementary product offerings such as:

- **Technology Choice:** a program which allows individuals and groups to co-fund the construction of an alternate access technology. The Technology Choice Area Switch program was launched in April 2015 and the Individual Premises Switch capability was released in September 2015, with RSPs now able to apply for technology amendments for end users

- **Cell Site Access Service:** providing support for mobile telephony operators to use **nbn**™ network capacity to route mobile voice and data back to a telecommunications operator's own network.

Where permissible within the constraints of the regulatory environment and Statement of Expectations, **nbn** continues to evaluate and prototype additional product and service offerings to explore opportunities to leverage its network and technology assets.

Customer and end-user strategy

The product and pricing strategy aims to balance the financial requirements of **nbn** with the overall health of the broadband ecosystem. To achieve that ambition, **nbn** has identified two key segments:

- Residential Services

- Business Services.

Exhibit 6: Product, Pricing, Network Deployment and Marketing Strategy

Goal	Sustainably optimise revenue			
Market segments	**Residential Segment** Optimise residential revenue by supporting early service migration and adoption of higher speed tiers	**Business Segment** Optimise business revenue by providing product and operational capability to support business needs	**Incremental Revenue** Leverage existing network and technology assets to create new products and service offerings	
Strategy Elements	**Product** • Consistent Product Construct: to simplify RSP processes and operations • Configurable Product Components: speeds, capacities, traffic classes • Configurable Service Levels: optional enhanced service levels to support business • Consistency across access technologies as far as possible	**Pricing** • Consistent Product Pricing: pricing independent of each access technology[14] • Two-part Pricing: provides RSP flexibility to manage content and end-user experience • Dimension-based CVC Pricing: stimulate network usage growth while improving end-user experience and supporting RSP economics	**Network Deployment** • Delivery of RFS footprint • Footprint provided in large, contiguous and marketable areas • Deployment across both residential and business premises, and in complex premises	**Marketing** • **nbn** marketing to drive awareness, interest and intention to migrate • Cooperative marketing programs with RSPs and channel partners to support migration • Marketing analytics and feedback to ensure marketing effectiveness and cost efficiency

14 There are some small variations in satellite pricing in order to implement fair usage policies unique to the satellite platform.

All of the services **nbn** supplies are regulated and provided on a wholesale-only, open-access, non-discriminatory basis. **nbn** publishes standard terms and conditions (developed in consultation with customers) and then enters into bilateral supply agreements with its customers on the basis of these terms and conditions. **nbn** has also given the Australian Competition and Consumer Commission (ACCC) a Special Access Undertaking (SAU) in relation to key price and non-price obligations that works in conjunction with **nbn**'s supply agreements. The SAU covers FTTP, fixed wireless and satellite services and **nbn** is currently developing a variation to cover the balance of the MTM technologies.

Product pricing

nbn is conscious that pricing of its AVC and CVC product construct elements are a very important part of an RSP's overall economics and is seeking to ensure that its pricing mechanisms are fair and continue to facilitate uptake and migration of services to the **nbn**™ network, while also providing an incentive to RSPs to dimension their network to maximise end-user experience.

To achieve this goal, **nbn** has introduced a Dimension Based Discounting (DBD) scheme. This has resulted in a reduction of CVC pricing from $17.50/month per Mbps to $15.75/month per Mbps for the first applicable discount period, with further moves in the discount available as the industry average CVC capacity per end user changes. The calculation is currently based on an industry average and **nbn** is working closely with the industry to enable an RSP-specific DBD structure.

Further evaluation and evolution of CVC pricing and the overall **nbn** pricing mechanism is expected to continue to ensure that **nbn**'s pricing methodology supports network uptake and utilisation.

Revenue drivers

Annual revenue is expected to grow from $0.4 billion in FY16 to $5.0 billion in FY20, a 12-fold increase.

The forecast is based on a set of key assumptions:

- average ARPU for residential and business is expected to grow from $43 in FY16 to $52 by FY20 with a strong contribution from business revenue and consistent with the retail market opportunity

- take-up rate across residential and business areas by FY20 to be at approximately 70 per cent.

ARPU

The main drivers for the estimated growth in ARPU are:

- **increase in end-user wholesale speed tiers:** demand for higher speed bandwidths is expected to increase, pushing up AVC ARPU

- **increase in end-user download volume:** end users are enjoying a proliferation of video-streaming services and are using more devices per household with new data-intensive applications. This forecast is supported further through the introduction of DBD from 1 June 2016 that discounts the CVC price as greater bandwidth is provisioned per end user

- **business products:** driven in part by micro and small business segments, currently underserved by existing retailers.

Take-up rate

Beyond FY20, overall Australian market penetration of fast broadband speeds is forecast to grow to 73-75 per cent of **nbn**'s covered network depending on the geographical location. This is constrained by:

- take-up of mobile-only products (estimated ~15-16 per cent of premises, mainly for groups with low traffic needs and high mobility needs)

- vacant premises (estimated ~8.5-9.5 per cent of premises, assuming that ~40 per cent of holiday homes will have an **nbn**™ network connection)

4. Operating Plan (continued)

• fibre alternatives (estimated ~1.5 per cent of premises, based on existing fixed line alternative fibre RFS footprints).

4.2 Network technology planning

The **nbn** planning approach determines which technologies are utilised on an area-by-area basis so as to minimise peak funding, maximise speed of rollout, optimise economic returns and enhance the viability of **nbn**. The multi-technology approach provides the flexibility for **nbn** to select the most cost-effective and efficient technology for each area. This leads to a faster rollout, which brings forward revenue and minimises funding requirements.

The anticipated technology to be deployed in communities may change depending on a number of factors during the design and construction phase, and also as new technologies or processes emerge. Some areas may be serviced by multiple technologies.

This flexibility is at the heart of **nbn**'s strategy to provide access to fast broadband to all Australians as soon as possible. **nbn** has therefore provided indicative ranges for the number of premises covered by each technology. Technology allocation will continue to be optimised as further detailed planning information becomes available. The base case varies from last year's Corporate Plan as we continue to optimise for the fastest and least expensive technology. The reduction in HFC premises reflects a transition of higher cost HFC premises to FTTN/B/dp following further understanding of network planning and design and delivery arrangements.

Table 2: Proportion of premises covered by each technology

	Corporate Plan 2017		Base case	
	End of Rollout (FY20) (M)	End of Rollout (% of Total)	End of Rollout (FY20) (M)	End of Rollout (% of Total)
Technology				
FTTP	2.0-2.5	17-21	2.0	17
FTTN/B/dp	5.1-6.5	43-54	6.1	51
HFC	2.5-3.2	21-27	2.8	24
Fixed Wireless and Satellite	0.9-1.1	8	1.0	8
Total Australia	**11.9**	**100**	**11.9**	**100**

Note: The operational and financial metrics in section 5 (Table 4) represent the current base case within the above range.

The multi-technology approach allows **nbn** flexibility to adapt for technology advancements. For example, **nbn** is currently trialling FTTdp which extends fibre further into the network and leverages existing copper for the lead-in to premises from the curb. Initial trials indicate that FTTdp is a viable technology option, and **nbn** is investigating its introduction into the technology mix, subject to commercial arrangements. New technology introductions emphasise the need for ongoing flexibility in **nbn**'s technology selection planning.

nbn also looks to continually improve its underlying architecture. A trial deploying 'skinny fibre' was recently conducted and will be implemented through the network. Skinny fibre reduces the size of fibre optical cables used in deployment. The implementation of skinny fibre can drive cost reductions and efficiencies, particularly in the FTTP Greenfields build.

Upgrade path

In order to balance the tension of continuous technological progress and changing end-user demand, the **nbn**™ network is being built to deliver wholesale headline speeds and provide clear upgrade paths for each technology to cater for future forecast use as and when market dynamics are present.

4.3   Network deployment

FTTP

Overview

The Brownfield FTTP program is approaching maturity and has delivered 1.1 million premises RFS.

The Greenfield FTTP program aspires to be the infrastructure provider of 'first choice'. In FY16, 89,000 incremental Greenfield premises were made RFS.

FTTP will continue to be used where it is the most appropriate and viable technology option, or alternatively through the Technology Choice program.

Critical path and milestones

The Greenfields program will continue with the implementation of 'skinny fibre', and other access technologies will be introduced into the program during FY17.

FTTN

Overview

This was the first program to launch an alternative fixed broadband technology to FTTP. The program started scaling rapidly in FY16.

FTTN successfully completed its trial phase and commercially launched in September 2015 with wholesale speeds of up to 100 Mbps downstream and 40 Mbps upstream. FTTB commercially launched in March 2015 and continues to allow **nbn** to serve multi dwelling units competitively and effectively. As at 30 June 2016, 900 buildings have been delivered RFS with FTTB.

The FTTN program has delivered 663,000 premises RFS as at the end of FY16.

The program continues to explore the strategic, commercial and engineering benefits of FTTdp and how it could be introduced.

Critical path and milestones

Pivotal to success for **nbn** is building to, and maintaining, peak levels of throughput month-on-month throughout FY17 and FY18. At the same time, the program must continue to monitor the performance of the copper network in line with its copper rehabilitation strategy.

Copper rehabilitation strategy

Elements of Telstra's copper network (leading from the node to the premises) are key components in the FTTN architecture. Field studies undertaken on more than 13,000 joints, together with early stage operations of the network, indicate the condition of the copper network to be in line with expectations. The performance of the copper network will continue to be monitored as the rollout progresses.

HFC

Overview

The HFC program involves the augmentation and expansion of the Telstra and Optus HFC networks. Construction and augmentation has commenced on both of these networks.

A pilot in Redcliffe, QLD, was concluded in February 2016, with RSPs delivering trial end-user speeds of up to 103 Mbps download and up to 43 Mbps upload.*

*   Refer to Disclaimer on Page 12.

4. Operating Plan (continued)

The Telstra HFC network in a trial in Ocean Reef, WA, delivered similar results.

Following these successful trials, commercial services were launched in June 2016. A critical milestone was achieved in April 2016 with the signing of the Telstra HFC Delivery Agreement. The agreement complements and streamlines the existing arrangements **nbn** has with Telstra.

As at 30 June 2016, build had commenced on 61,000 premises and more than 18,000 premises have been delivered RFS.

Critical path and milestones

Key priorities for the program are:

- stand up all necessary operational elements of the HFC Delivery Agreement with Telstra

- finalise potential long-term arrangements with Optus.

Fixed Wireless

Overview

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 the 100,000th end user activated in April 2016.

At the end of FY16, 1,482 live sites have been built covering 421,000 premises.

Critical path and milestones

Key priorities for the program are:

- continue to optimise site capacity to serve more premises

- delivery of required capacity upgrades without network disruption.

Satellite

Overview

The satellite program is **nbn**'s solution to cost effectively provide high-speed broadband to rural and remote Australians.

On 1 October 2015, **nbn** launched its first broadband satellite, Sky Muster,™ into orbit. The handover to managed service providers Ericsson (Network Operations) and Optus (Flight Operations) is complete and mechanisms agreed with RSPs to ensure effective management of network capacity.

In April 2016 the satellite service came into commercial service. The second satellite will be launched and capacity brought into service in FY17.

Critical path and milestones

Key priorities for the program are:

- complete migration of ISS users

- launch the second satellite in October 2016

- continue to develop enhanced product offering.

Transit network

Overview

The transit program provides the core site, transport and network capability required to deliver the five access technology programs.

While the initial footprint is largely complete, the shift to the multi-technology mix presents new footprint, capability and capacity requirements and therefore the transit program continues to adapt its plan to support each technology.

Critical path and milestones

Key priorities for the program are:

- continual rollout of the transit network to support the scaled deployment of multiple access technologies

- completing the phase one migration of the Interim POIs to Permanent POIs

- continued improvement of how **nbn** monitors and manages the bandwidth of transit links.

4.4 Key enabler organisational functions

Network Engineering and Deployment (NEAD)

The NEAD function delivers multiple technology capability through Network Release programs, and manages the core processes necessary to plan, design and build the network at scale through a regional or managed network deployment model. Key enablement activities are organised to support:

- engineering the network architecture and standards

- enabling scale of the network deployment

- managing / operationalising commercial agreements

- governing and reporting performance

- embedding new operating models to drive operational efficiency.

A key challenge in FY17 is to maintain increased throughput momentum on FTTN while at the same time operationalise the Telstra HFC delivery agreement.

Network and Service Operations (NSO)

The NSO group has four roles at its core:

- activate newly built sections of the nbn™ network

- nbn™ network maintenance and restoration

- activate and modify services

- service restoration.

A new governance structure was established during 2015 to streamline core processes.

NSO is committed to providing the highest level of service to its RSP customers enabling them to provide a quality end-user experience, within the framework of

nbn's service levels under the Wholesale Broadband Agreement. This includes activation response time, service availability and network response time.

In FY16, NSO more than doubled the rate of activations while simultaneously delivering productivity and quality improvements through systematic business process engineering initiatives. NSO's near-term priorities include the continued scaling of FTTN, HFC and the Sky Muster™ satellite service.

People and Culture

The People and Culture function makes the ambitious rollout schedule possible by building industry capability, and attracting and engaging quality people. It does this by developing and delivering processes, systems and services in the areas of:

- culture and engagement

- leader and employee development

- resourcing and talent

- Health, Safety and Environment (HSE).

The results can be seen in nbn's dedicated and talented workforce. Employee Engagement Scores have increased from 51 per cent to 68 per cent in the last year, which puts nbn in the top quartile of businesses in Australia and New Zealand.[15]

In addition to building an internal workforce, nbn works with industry to scale its external workforce to meet deployment targets. nbn estimates the skilled workforce available to DPs needs to nearly double – peaking at over 10,000 workers in 2018.

To address these challenges nbn is ensuring skill-based programs for gap occupations are defined and available through a national network of approved training providers, improving engagement for workers via targeted campaigns, and ensuring external workforce retainment through extending nbn funded training to employment with DPs.

15 Aon Hewitt 2016 Telecommunications and General Industry Survey.

Recent developments include the launch of enAble™, an accreditation portal for **nbn** workers, and the 'Experienced Workers' program, focused on individuals returning to the telecommunications workforce.

Key imperatives for FY17 include continued improvement in the employee Engagement Score, continued engagement with **nbn** DPs to set agreed workforce targets, and continued job market stimulus campaigns.

Health, Safety and Environment (HSE)

Caring for the health and safety of **nbn**'s people and the environment is at the heart of the way **nbn** operates. The anticipated ramp up reflected in this plan will be matched with a focus on the following HSE principles:

- our people, and those we work with go home safely every day

- our employees' health and wellbeing is valued and enhanced

- our leadership position for protecting the planet is visible and evident by our actions.

In FY16 progress has been made through favourable injury and incident trends, and delivery of a range of targeted initiatives. Building HSE leadership capability will remain a focus in the coming year, as will progressing and embedding existing initiatives already underway. Other focus areas include improved reporting, governance and assurance frameworks; implementation of a business-wide health and wellness program; and updated internal and external training requirements.

Information Technology (IT)

IT enables the flow of information through **nbn**, providing end-to-end technology solutions for fulfilment, billing, workforce management, and maintenance and assurance.

Over the past year, IT successfully supported business scale through delivering required support platforms. The alignment of IT to critical business needs has been improved through implementing a disciplined road mapping and prioritisation process.

In the near term, the focus is on scalability without compromising stability, in addition to supporting the product and technology launches. To this effect, IT has launched a number of improvement initiatives targeted at systems stability, process and capability maturity, as well as a high performance culture in support of scale requirements.

In the longer term, IT aims to become an efficient digital utility shifting from build and scale to an efficient operating mode.

Security

nbn's role as a provider of "critical infrastructure" requires it to maintain a strong suite of security controls and detection capabilities to deliver high levels of resilience to attack. The Security Group has a clear objective to be **nbn**'s trusted security advisors and to lower the risk of business exposure through creating and sustaining a fully engaged and robust security culture.

nbn's security activities cover information (cyber), physical and personnel security, security investigations, privacy and security knowledge management. The Security Group also has accountability for lawful intercept and data retention response. The data retention laws passed last year imposed new mandatory data retention obligations on Australian communications service providers.

nbn has an approved confidential Data Retention Implementation Plan (DRIP) lodged with the Attorney-General's Department.

nbn continues to develop its security resilience focusing on its capabilities to plan and prepare, adapt to changing circumstances and emerging threats, and withstand and recover rapidly from disruptions. Key initiatives include the uplift of the Cyber Security Operations Centre to 24/7 capability, improving investigations capabilities, and enhancing the privacy and security education and awareness programs.

5. Operational and financial multi-year forecasts

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

- significant progress to **nbn**™ network completion by 2020 in line with SoE obligation of rolling out the network as soon as possible

- 10.9 million premises RFS in the fixed line footprint (FTTN, HFC and FTTP) by FY20

- Fixed Wireless network build substantially completed in FY18

- following the launch of Sky Muster™ in FY16, the launch of a second satellite in FY17

- 8.1 million premises activated by FY20

- annual revenues to reach $5.0 billion in FY20

- operating costs of $2.8 billion and subscriber payments of $1.5 billion in FY20. Operating costs include infrastructure leases and other operating costs such as staff related costs, network operations, assurance and corrective maintenance, IT costs, leasing and other overheads

- capital investment includes the build of multiple technologies, **nbn**™ network rollout and ongoing capex related to network capacity augmentation, IT build and greenfield developments

- a contingency has been included to reflect the ongoing uncertainties of an infrastructure build of this scale and timeframe, including uncertainties of revenue timing.

Table 3: Integrated financials FY16-20

	FY16(A)	FY17	FY18	FY19	FY20
$ billions					
Revenue	0.4	0.9	1.9	3.7	5.0
Operating Expenses	(1.7)	(2.1)	(2.3)	(2.6)	(2.8)
EBITDA before subscriber payments	**(1.3)**	**(1.2)**	**(0.4)**	**1.1**	**2.2**
Subscriber payments	(0.6)	(1.4)	(2.8)	(3.1)	(1.5)
EBITDA	**(1.9)**	**(2.6)**	**(3.2)**	**(2.0)**	**0.7**
Capital Expenditure	(4.7)	(6.1)	(5.9)	(3.3)	(1.9)
Contingency	0.0	(0.5)	(0.6)	(0.7)	(0.7)
Interest and Working Capital	(0.6)	0.0	(0.3)	(0.6)	(0.6)
Cash flow	**(7.1)**	**(9.2)**	**(10.0)**	**(6.6)**	**(2.5)**
Peak funding[16]					
Equity funding	20.3	29.5	29.5	29.5	29.5
Debt funding	0.0	0.0	10.0	16.6	19.1
	20.3	**29.5**	**39.5**	**46.1**	**48.6**

5.1 Premises Ready for Service (RFS)

Table 4: RFS profile

|	FY16(A)	FY17	FY18	FY19	FY20
Premises RFS – cumulative (millions)					
FTTP Brownfields	1.1	1.1	1.2	1.2	1.2
FTTP Greenfields	0.3	0.4	0.5	0.6	0.8
FTTN	0.7	2.1	4.4	5.8	6.1
HFC	0.0	0.9	2.0	2.6	2.8
Fixed Wireless	0.4	0.5	0.6	0.6	0.6
Satellite	0.4	0.4	0.4	0.4	0.4
	2.9	**5.4**	**9.1**	**11.2**	**11.9**
Total (%)[17]	**25%**	**47%**	**78%**	**96%**	**100%**

Note: The numbers presented in this table correspond to the base case consistent with the ranges represented in Table 2 but may vary significantly over time.

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16 Peak Funding is expected to occur in early FY22.

17 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.

5. Operational and financial multi-year forecasts (continued)

Exhibit 7: Incremental RFS profile (m premises)

Legend:
- FTTP Brownfields
- FTTP Greenfields
- FTTN
- HFC
- Fixed Wireless
- Satellite
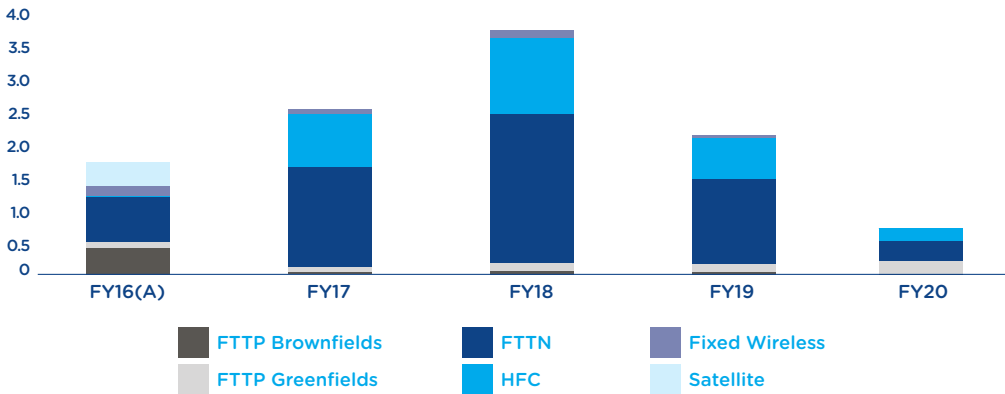
nbn has exceeded its FY16 targets with 2.9 million premises RFS, 260,000 above target. Peak network rollout volumes occur in FY18 with an incremental 3.7 million premises RFS.

Rollout progress continues to be contingent on the condition of the copper and HFC networks, as well as being dependent upon the delivery partner model to operate effectively to deliver design, construction, operations and maintenance in required time frames and to expected service levels.

The following exhibit summarises the rollout by state.

Exhibit 8: Progression of rollout by state

Legend:
- Pre FY17
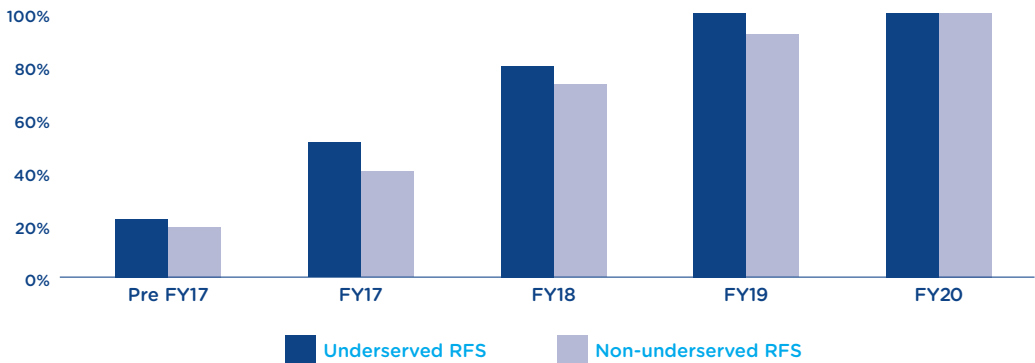- FY17
- FY18
- FY19
- FY20

5.2 Underserved areas

Underserved areas are defined as areas that do not have access to adequate broadband services. These areas do not necessarily correspond to economically disadvantaged areas. Under the SoE, **nbn** was requested to "prioritise areas identified as poorly served by the *"Broadband Availability and Quality Report"* published by the Department of Communications in February 2014... to the extent commercially, and operationally feasible."

nbn estimates there are approximately 1.8 million premises that are underserved, primarily located in the regional and remote areas of Australia, or small pockets of poor service in metropolitan areas. In accordance with the SoE, **nbn** has been prioritising underserved areas where commercially and operationally feasible.

Exhibit 9: Progression of the rollout of underserved vs. non-underserved areas

Legend: ■ Underserved RFS   ■ Non-underserved RFS

5. Operational and financial
multi-year forecasts (continued)

5.3 Premises Activated

Table 5: Activations profile

	FY16(A)	FY17	FY18	FY19	FY20
Premises Activated – cumulative (millions)					
FTTP Brownfields	0.7	0.8	0.8	0.9	0.9
FTTP Greenfields	0.2	0.2	0.3	0.4	0.5
FTTN	0.1	0.9	2.1	3.6	4.2
HFC	0.0	0.1	0.9	1.5	2.0
Fixed Wireless	0.1	0.2	0.2	0.3	0.3
Satellite	0.0	0.1	0.1	0.2	0.2
	1.1	2.3	4.4	6.9	8.1

Note: The numbers presented in this table correspond to the base case consistent with the ranges represented in Table 2 but may vary significantly over time.

Exhibit 10: Incremental activations profile (m premises)
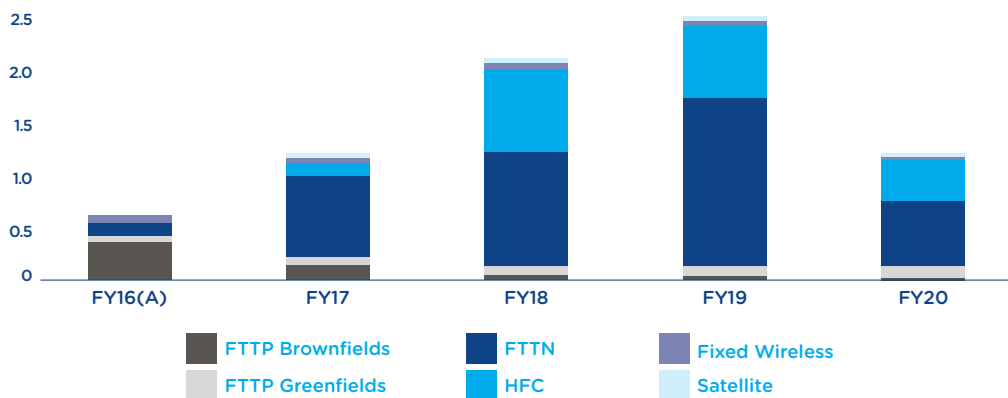
nbn has exceeded its FY16 targets with 1.1 million premises activated, 144,000 above target. Peak activation volumes occur in FY19 with 2.5 million activations at an average rate of ~210,000 activations per month. The plan anticipates 8.1 million premises activated by FY20.

Through the year, **nbn** brought on three additional OMMA partners that enable connections and activations to be ramped up.

5.4 ARPU and speed tier mix

Monthly ARPU is forecast to increase from $43 in FY16 to $52 in FY20. This increase is driven by increased usage, growth in speed tier mix, and a strong contribution from business revenue, consistent with the retail market opportunity.

Exhibit 11: Wholesale speed tier mix

Legend: 12/1 · 25/5 · 25/10 · 50/20 · 100/40
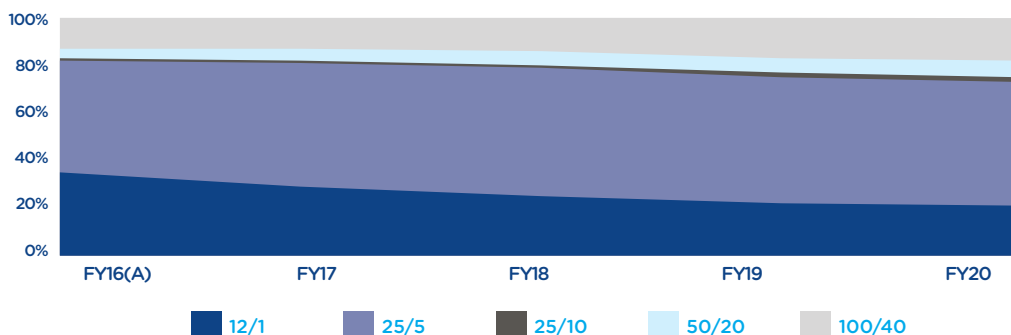
5.5 Subscriber payments and operating costs

Table 6: Subscriber payments and operating costs

	FY16(A)	FY17	FY18	FY19	FY20
Expense ($ billions)					
Subscriber payments	0.6	1.4	2.8	3.1	1.5
Infrastructure related costs	0.3	0.4	0.4	0.6	0.7
Other opex	1.4	1.7	1.9	2.0	2.1
Operating expenses	1.7	2.1	2.3	2.6	2.8

Note: The numbers presented in this table correspond to the base case consistent with the ranges represented in Table 2 but may vary significantly over time.

Subscriber-related costs principally reflect contractual payments to Telstra in relation to the disconnection of existing services and to Optus in relation to the migration of subscribers to the **nbn**™ network.

Infrastructure leases from third parties primarily represent contractual payments for the right to use licences covering third party infrastructure such as ducts, dark fibre and facilities access. The treatment of these costs for management and corporate planning reporting purposes as operating costs is a non-GAAP treatment. This differs from quarterly and annual statutory reporting where the costs are treated as finance leases and capitalised and amortised over a 35 year period.

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

5. Operational and financial
## multi-year forecasts (continued)

5.6 Capital expenditure

Table 7: Capital expenditure

	FY16(A)	FY17	FY18	FY19	FY20
Capex ($ billions)					
FTTP Brownfields	0.9	0.3	0.2	0.1	0.0
FTTP Greenfields	0.2	0.2	0.2	0.2	0.2
FTTN	1.7	2.3	2.7	1.3	0.6
HFC	0.4	1.7	1.5	0.6	0.5
Fixed Wireless	0.4	0.4	0.4	0.4	0.1
Satellite	0.1	0.2	0.2	0.1	0.1
Common	1.0	1.0	0.7	0.6	0.4
	4.7	**6.1**	**5.9**	**3.3**	**1.9**

Note: The numbers presented in this table correspond to the base case consistent with the ranges represented in Table 2 but may vary significantly over time.

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

Exhibit 12: Weighted average CPP by technology at the end of rollout (rounded to the nearest $100)
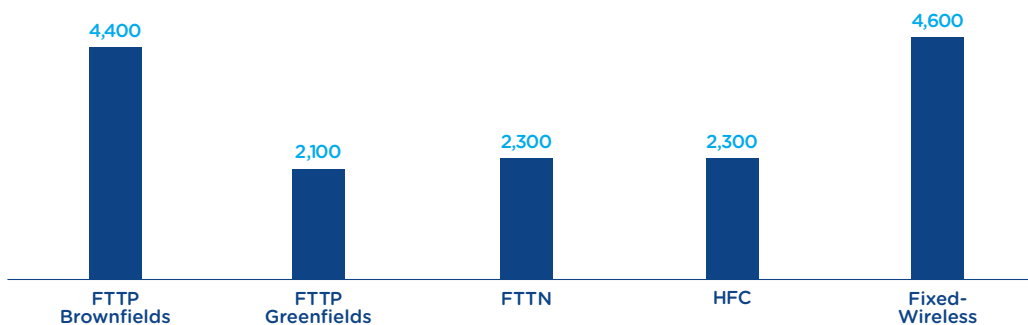
How Cost per Premises is calculated

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

▶ The CPP reported is a weighted average over the full period of build and depends on a number of factors such as geographic build conditions, wholesale speed performance required by technology, population density of the area considered, the number of premises per multi dwelling unit buildings 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 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.

Performance

FTTP Brownfields and Greenfields

As at June 2016, the CPP for FTTP Brownfields and Greenfields was $4,411 and $2,608 respectively. The weighted average CPP for Greenfields is forecast to decrease to ~$2,100 due to efficiencies generated over the build period and implementation of 'skinny fibre' driving cost reductions.

Fixed Wireless

As at June 2016, the CPP was $3,559. While a slight improvement on last year, the weighted average CPP is forecast to increase to ~$4,600 as the future rollout areas are expected to have a lower premises density than the built Fixed Wireless footprint, together with a more expensive build.

FTTN

As at June 2016, the CPP was $2,257. Although in early stage rollout of the program, current costs provide good evidence of the expected cost over the completed rollout.

HFC

The forecast CPP and capex costs for HFC has increased from last year's Corporate Plan due to further understanding of network planning and design; delivery arrangements; the move from a demand drop to build drop model for lead-ins; and the move to DOCSIS 3.1 technology.

5.7 Long-term financial outlook

In a market as dynamic as telecommunications, the ability for Management or Board to accurately forecast the long-term financial prospects is inherently uncertain. **nbn** has a limited factual and operational base for financial projections, with uncertainty in the long-term market and competitive landscape, end-user usage, Australian Government policy, technology innovation and potential for other disruptive events giving rise to a wide range of possible financial outcomes.

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 together with an initial forecast of years beyond FY20 estimates a peak funding in the range of $46 billion to $54 billion.

Management are forecasting a base case peak funding of $49 billion, which includes a contingency of $2.9 billion for unforeseen risks. The expected internal rate of return (IRR) is between 3.2 per cent and 3.7 per cent, compared to last year's range of between 2.7 per cent and 3.5 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 is 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.

The peak funding range has narrowed, due to a reduced number of uncertainties, with the top of the range reducing from $56 billion to $54 billion.

Scenario analyses

As outlined above, while the Operating Plan and the Corporate Plan represents Management's view of the most likely outcome, low and high cases across these challenges are also plausible outcomes and their impact on peak funding should be acknowledged.

A critical subset of the challenges has 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.

Based on these assessments, the most critical sensitivities are:

- ARPU increase
- take-up rate
- operating expenses
- activations: changes in activations profile for HFC and FTTN
- capex changes, e.g. HFC lead-ins and network cost and/or FTTN node cost
- interest rates.

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, and no better estimates exist than the assumptions applied in the Strategic Review dated December 2013.

Exhibit 13: Scenario analysis of key sensitivities

Area	Change required to increase/decrease funding requirement by $1 billion
Residential ARPU	$4 decrease/increase
Business Revenue	12 months delay/advancement
Fixed Line Penetration Rate	8% decrease/increase
Operating expenses	$200m per annum increase/decrease
HFC Activations	20% decrease/increase in HFC activation capacity
FTTN Activations	8% decrease/increase in FTTN activation capacity
HFC Cost per Premises	$350 increase/decrease
FTTN Cost Per Premises	$160 increase/decrease
Interest rates	2% increase/decrease

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

• low peak funding case: indicates a decrease of $3 billion in funding requirements to the base case (to a total of $46 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 requirement of $5 billion in funding requirement on top of the base case (to a total of $54 billion in peak funding), if ARPU growth and/or take-up is lower, the HFC and FTTN activations are delayed and both capex and opex are higher than expected.

5.8 Sources of funding

Management has flexibility and discretion in operational, technology and network design decisions, within the constraints of a public equity capital limit of $29.5 billion.

It is expected that **nbn** will continue to be funded with Commonwealth equity up to $29.5 billion or until **nbn** has sufficient cash flows and track record to support private sector debt without explicit Commonwealth support, whichever occurs earlier. During the rollout period **nbn** will seek to raise debt to complement Commonwealth equity. Following completion of the rollout, **nbn**'s Board, in conjunction with the Commonwealth, will consider the optimal capital structure.

Critical to **nbn**'s ability to raise external funding without explicit support by the Commonwealth will be the opinions of debt providers on **nbn**'s performance in achieving major targets such as rollout timelines, connections take-up and cost discipline, which will form the key metrics of credit quality.

Management, in consultation with the Shareholder Ministers, continue to review **nbn**'s debt funding options in anticipation of debt funding requirements by the end of FY17.

Market capacity, and the risk appetite of debt investors from time to time, may limit or increase the amount of debt that **nbn** can actually raise. Any such variation would require revising the funding plan at the time.

5. Operational and financial multi-year forecasts (continued)

5.9 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

While the forecasts in this plan represent the current best estimations of **nbn** Management, these projections include multiple significant risks and challenges that need to be understood.

6.1 Risk management framework

The effective management of risk is central to the continued growth and success of the company. During FY16, Management refreshed the risk management policy, with the intention of driving risk improvement programs to secure delivery of the plan, improve the business model, protect assets and enhance the **nbn**™ brand.

nbn's Board of Directors and Management are committed to implementing robust risk management to enable proactive identification, assessment and management of all risks. This is critical to build and maintain shareholder and stakeholder confidence and trust, while delivering Australia's first national wholesale-only, open-access broadband network efficiently and effectively.

To achieve this, **nbn** has a formal Risk Management Policy that is consistent with Standards Australia AS/NZS ISO 31000: 2009 Risk Management and best practice.

nbn has adopted a "three lines of defence" principles-based approach to risk management. Material risks are assessed on a regular basis and **nbn**'s Audit and Risk Committee and the Board review **nbn**'s strategic risks profile biannually.

6.2 Overview of risks

While all business plans have associated challenges and risks, the risk profile of this particular plan is heightened by the fact that this is a world-first deployment of a broadband network on a national scale using five network technologies in parallel. Although **nbn**'s risk management capability continues to mature, it remains a high-risk challenge to manage the complexity and scale of the network design and build.

The Corporate Plan 2016 included significant risks due to the fact that, at the time of developing the plan, **nbn** had limited information and experience in building and activating under the new multi-technology mix. As **nbn** continues to mature and uncertainties are removed, the risk profile has changed, reflecting the progress made on the design and build of the network and supporting processes and systems. This is evident in the current risk profile in which 'deal implementation' risks have diminished and 'management of partners' and 'operational' risks have increased in priority.

nbn's risk profile has improved since Corporate Plan 2016, largely due to internal investment in process improvement activities and resource capability. **nbn** has also successfully supplemented this by de-risking key activities through the execution of strategic agreements with key partners who possess proven capabilities.

Even though risk prevention and mitigation strategies are being implemented, significant residual risk remains, particularly related to costs and, to a lesser extent, timeline. It is for this reason that **nbn** has published a peak funding range (rather than just a single-figure budget) that includes an appropriate level of contingency.

The challenges and risks embedded in the plan can be grouped into three main themes:

- **Meeting the scale challenge: nbn**'s ability to achieve the next level of organisational maturity required to manage the process complexity, resource contention and delivery of automation to achieve the overall plan raises a number of key challenges. This includes the ability to activate, operate and maintain the **nbn** footprint at scale across Australia in a safe and environmentally responsible manner, in line with publicly-communicated targets

- **Management of partners:** operationalising contractual agreements and realising intended benefits while managing the risk associated with significant reliance on third parties – for example the new Telstra HFC Delivery Agreement where **nbn** now has a closer relationship with Telstra in relation to the deployment the HFC network footprint including management of **nbn**'s other contractors

- **Competition, revenue and regulatory:** the achievement of forecast revenue and activation rates while adapting to the evolving regulatory environment, competing against infrastructure providers and encouraging competitive dynamics among RSPs.

Despite the comprehensive planning exercise undertaken by **nbn** and due to the magnitude of the program and time scale for delivery, a number of potential scenarios and variables exist over the life of the project and remain unknown. Materialisation of an unknown scenario will introduce further risk, which can only be understood and quantified over the course of the plan implementation.

6. Risk management (continued)

6.3 Risk details and mitigation

A summary of key risks and mitigation are provided below:

Meeting the overall scale challenge

nbn requires further scaling, adding challenges in process complexity, resource contention, delivery of IT systems, and the ability to activate, operate and maintain the **nbn**™ network in a safe and environmentally-responsible manner to meet customer and end-user service expectations in line with publicly-communicated targets.

Risk Description	Mitigation Strategy
Health, Safety and Environment (HSE): the ability of **nbn** and its contractors to construct, activate, operate and maintain the network in a manner that prioritises the prevention of material HSE failures.	» Risk-based HSE governance and assurance frameworks. » Execution and continual improvement of the HSE Management System. » HSE consultation, communication, culture, capability frameworks, platforms and initiatives.
Critical process capacity: ensuring the readiness of critical processes and IT systems to successfully scale and deliver against expected volumes and timeframes.	» Scaling up **nbn** workforce and investment in IT systems to meet the workload, as well as augmenting resources by procuring external service providers and contractors. » Change management programs to reshape the business and meet the evolving operational challenges. » Establishment of **nbn**'s scaling disciplines and targeted capability uplift program.
Security: providing the required level of security for critical infrastructure assets and limiting the potential for compromise of the confidentiality, integrity and availability of information and assets.	» Security Operations Centre. » Preventative and detective access and monitoring controls across both physical and digital environments. » Mandatory security awareness training for all **nbn** employees.
Secure funding: completing the network and realising the intended benefits for the Australian community will require the sourcing of additional finance, in excess of the current funding allocation from the Government.	» Early engagement with Shareholder Ministers regarding funding options, including securing debt finance from capital markets.
Material adverse events: safeguarding assets and processes against events such as natural hazards (fire, flood, etc.) and other business interruptions, including network outages.	» Business Continuity Management program and Crisis Management Team. » Insurance coverage for industrial and special risks. » Supply-led programs to improve security of supply of key services, equipment and materials.

Management of partners

nbn have engaged a number of partners to assist with the design, construction, activation and assurance of the network. **nbn**'s success is in part dependent on the successful operationalisation of contractual agreements and ongoing management of partners.

Risk Description	Mitigation Strategy
Significant reliance on key Delivery Partners: **nbn**'s focus on utilising Delivery Partners with proven capabilities has resulted in significant reliance being placed on a number of Delivery Partners.	» Monitoring and management of commercial risk exposures and dependence upon key Delivery Partners. » Intensive key supplier due diligence prior to engagement. » Industry workforce management and field resource recruitment strategy.
Partner management: operationalising contractual agreements efficiently and realising intended benefits, ensuring that partners deliver **nbn**'s requirements.	» Regular and ongoing performance monitoring of partners. » Close management of relationships with partners. » Incentive-based allocation of work, driven by partner performance.

6. Risk management (continued)

Competition, revenue and regulatory

The above risks associated with construction and activations need to be addressed for a premises before revenue generation from that connection can commence. Thereafter, revenue realisation is dependent upon end-user demand, sales mix and pricing, along with potential regulatory and competitive constraints.

Risk Description	Mitigation Strategy
Competitive dynamics: evaluating and responding to emerging technologies, other infrastructure providers and potential new entrants whilst encouraging a competitive environment for the Retail Service Providers.	» Ongoing engagement with customers and strengthening relationships through consistently meeting commitments and considering customers' perspectives on **nbn**'s improvement priorities. » Engagement with ACCC and other stakeholders on encouraging RSP competitive dynamics. » Dedicated networking and engagement with technology vendors to ensure access and awareness of latest technologies. » Investment in pilot trials of new technologies.
Residential and Business ARPU: managing activation rates and ARPU to adapt to evolving sales mixes, product offerings, consumer behaviours and connectivity needs.	» Close monitoring of market data and research. » Entry-level product value proposition to ensure competitiveness with mobile-only options for households and business premises. » Targeted Business segment product development and value proposition delivery. » Ongoing review of pricing architecture.
Regulatory environment: unfavourable regulatory change.	» Active engagement with the Government and regulatory stakeholders. » Ongoing monitoring of the regulatory environment.

Glossary

Abbreviation or term	Definition
ABS	Australian Bureau of Statistics.
ACCC	Australian Competition and Consumer Commission.
Advocacy	Advocacy is a measure of behaviour, capturing end users who have recommended the nbn™ network to a colleague, friend or family member based on their experience. It is calculated as percentage of total users surveyed. Advocacy is measured over time at one, three and six months after installation.
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 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.
Complex premises	Premises categorised as requiring bespoke engagement, cabling or project management. These include premises such as offices and apartment blocks.
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 Experience Metric (CEM)	The Customer Experience Metric (CEM) is 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.
Customer	A customer to **nbn** is also defined as an Access Seeker or a Service Provider.
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.
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.

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.
Fibre to the Distribution Point (FTTdp)	Network design in which the Fibre Network is deployed to a distribution point near 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.
FY16(A)	Actuals for the financial year ending 30 June 2016.
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 DSL for carrying broadband signals over copper pairs. It uses 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 if 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 an investment 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.
Multiple-Dwelling Unit (MDU)	Premises that contains more than one dwelling unit, which can range from duplexes to 200+ unit apartment blocks. MDUs come in a variety of formats and may include vertical buildings, horizontal buildings, gated communities, business parks, etc.
nbn	nbn co limited.
Network-to-Network Interface (NNI)	The port at **nbn**'s Point of Interconnection (POI) where Access Seekers connect their internet transmission backhaul.
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 includes 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. For the role of **nbn** with regards to Greenfields developments, refer to the appropriate policy as befitting the circumstance.

Glossary (continued)

Abbreviation or term	Definition
Next Generation Passive Optical Network (NG-PON)	A telecommunications network standard capable of increasing speeds over the fibre cables.
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.
Overall Satisfaction	Overall Satisfaction measures how satisfied users are overall with their experiences with the **nbn**™ network on a scale from 0 to 10, where 10 is extremely satisfied and 0 extremely dissatisfied. It considers all the experiences including the installation, any support experiences and the performance of the product when online. Overall Satisfaction is measured over time at one, three and six months after installation.
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) switch located at **nbn**™ network's POI, where an Access Seeker connects to establish exchange of traffic with **nbn**™'s network.
Premises	Premises are defined as addressable locations which **nbn** is required to connect and are included at Attachment A – premises Definition, of the December 2010 Statement of Expectations. The Statement of Expectations refers to this definition as the basis for measuring **nbn**'s achievement of the Government's coverage objectives.
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.
Premises Covered	Premises Covered refers to Fixed Wireless and Satellite areas where premises have Fixed Wireless or Satellite coverage and can access a service via **nbn**'s Service Providers, but where no physical infrastructure passes 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 **nbn** is ready to begin connecting premises in that Rollout Region to the **nbn**™ network, which is when the **nbn**™ network has passed at least 90 per cent of the premises in the **nbn**™ network fibre footprint in that Rollout Region.

Abbreviation or term	Definition
Retail Service Provider (RSP)	A third party provider of retail broadband services to end users.
Rollout Region	A region served by the **nbn**™ network.
Service Delivery Providers (SDPs)	A third party that provides services and supports **nbn** in the planning, design, construction, activation and assurance associated with the deployment and operation of the network as well as other enabling functions including IT.
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 provides broadband services to Australians in predominantly rural locations.
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).
Statement of Expectations (SoE)	Letter to **nbn** from its Shareholder Ministers dated 08 April 2014. See: http://www.nbnco.com.au/content/dam/nbnco2/documents/soe-shareholder-minister-letter.pdf
Telstra Definitive Agreements or Telstra DAs	The suite of agreements entered into between **nbn** and Telstra on 23 June 2011 and which are described in the release issued by Telstra to the ASX on that day.
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 Service Provider (WSP)	A provider of wholesale services to Service Providers.