



Review of NBN Co Limited's Corporate Plan

January 2011

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Executive Summary

In April 2009, the Commonwealth announced a National Broadband Network initiative ("NBN") to fulfil its objective of connecting all Australians to broadband, including superfast broadband for the vast majority. The Commonwealth established NBN Co Limited ("NBN Co") to build, own and operate the NBN. The NBN will represent the largest single infrastructure investment in Australia to date.

NBN Co has prepared a long-term corporate plan and business model for the development and operation of the NBN (the "Corporate Plan"). In November 2010, NBN Co submitted its initial Corporate Plan to the Government. The initial version of the Corporate Plan included assumptions on a number of policy matters that had not been finally considered by the Government. Following submission of the initial Corporate Plan, the Government reached final positions on many of these matters, and these positions have been reflected in the revised version of the Corporate Plan dated 15 December 2010.

The Corporate Plan provides a detailed overview of the expected technological, operational and financial framework for the development of the NBN. NBN Co is in the process of developing five first release sites to test its proof of concept. Assuming a number of regulatory and other approvals are received, NBN Co expects to commence large-scale construction of the fibre network in mid 2011.

Greenhill Caliburn Role

The Commonwealth retained Greenhill Caliburn Pty Limited ("Greenhill Caliburn") to prepare a review of certain commercial aspects of the Corporate Plan (the "Report"). Our Report provides:

- an overview of NBN Co;
- a preliminary commercial assessment of the Corporate Plan, including an identification and analysis of key assumptions and potential risks; and
- a summary of a range of potential ongoing performance management strategies to assist the Commonwealth with its investment in NBN Co.

Our Report does not purport to evaluate the Government's NBN policy objectives, nor does it undertake a returns or cost-benefit analysis of the implementation of the NBN. The Report is not intended to be and does not constitute a recommendation to the Commonwealth with respect to the NBN or NBN Co in any form, including with respect to approval or adoption of the Corporate Plan. The Report is confidential, and may not be disclosed to any third party without the prior written consent of Greenhill Caliburn.

Summary

Greenhill Caliburn has reviewed the Corporate Plan and relevant supporting documentation provided to us. Based upon our review, we believe that the Corporate Plan has been completed to high professional standards, providing the level of detail and analytical framework that would be expected from a large listed public entity evaluating an investment opportunity of scale.

Based on our preliminary review, as more fully described in our Report, and subject to the assumptions contained in the Corporate Plan itself, Greenhill Caliburn believes that, taken as a whole, the Corporate Plan for the development of the NBN is reasonable. In general, key assumptions underlying revenue and cost projections appear to be in line with a range of available domestic and international benchmarks, and are consistent with the stated policy objectives of the Government with respect to the NBN. Accordingly, we believe that the Corporate Plan provides the Government with a reasonable basis upon which to make commercial decisions with respect to NBN Co.

The Corporate Plan is based on a number of underlying assumptions, including the network design, regulatory considerations and completion of agreements with third parties. The business strategies and expected return profile of NBN Co as set out in the Corporate Plan could vary – potentially materially – if those assumptions are modified.

As outlined in the Corporate Plan, successful implementation of the NBN and the achievement of NBN Co's financial forecast are subject to a number of risks, contingencies and external factors. In particular, long-term revenue forecasts for NBN Co contain inherent uncertainties and are subject to shifting technologies and consumer preferences. Changes to underlying revenue assumptions have the potential to materially affect the return profile for NBN Co. Although changes in capital or operating expense forecasts could also have a material impact, those forecasts mostly relate to nearer-term events and have a lower risk-profile given NBN Co's ability to manage the NBN roll-out.

Greenhill Caliburn has not conducted an in-depth analysis of NBN Co's future funding requirements. Our preliminary review suggests that, assuming performance in-line with or in excess of levels set forth in the Corporate Plan, the prevalence of normalised financial market conditions and some level of implicit government support (as signalled, for instance, by equity injections consistent with the Corporate Plan), NBN Co is likely to be able to obtain debt funding over time in a manner consistent with the Corporate Plan.

The Corporate Plan includes a number of processes NBN Co will use to manage risks in its control, and to ensure it can respond to external factors such as changes in technologies or shifts in consumer behaviour and preferences over time. In addition to such internal processes, Greenhill Caliburn recommends that the Commonwealth work with NBN Co to agree upon a series of performance indicators so they can jointly track the actual performance of NBN Co and adjust strategies or operations as circumstances require.

Overview of the Corporate Plan

The Corporate Plan provides a detailed overview of the expected development and operation of the NBN, including a 30-year business forecast. The Corporate Plan reflects the Government's principal objectives with respect to the NBN, including:

- providing fibre network coverage for 93% of Australian premises by the end of 2020, with the remaining 7% served by fixed wireless and satellite coverage;
- delivering a wholesale-only, open access platform offering Uniform National Wholesale Pricing over the network, from points of interconnect ("POIs") to premises, on a non-discriminatory basis; and
- providing an entry-level mass market product peak information rate of 12 Megabits per second ("Mbps") / 1Mbps, with the potential to deliver up to 1 Gigabit per second ("Gbps") in the future.

The latest Corporate Plan incorporates the impact of a number of recent Government decisions on policy matters affecting the NBN, including the implementation of a semi-distributed POI model (which results in around 120 POIs compared to 14 POIs in the more centralised model underlying the initial Corporate Plan) and requirements with respect to greenfield developments. The Corporate Plan continues to make assumptions on a range of regulatory and corporate matters, including but not limited to:

- passage by the Government of effective regulatory protection to prevent market participants from "cherry picking" the most commercially attractive areas ahead of the NBN build;
- passage of enabling legislation by the Government (e.g., grants of powers and immunities to facilitate the rollout of overhead cabling and other NBN equipment);
- passage of greenfield-related legislation to mandate that corporate developers install fibre-ready equipment and provide requisite access to NBN Co; and

- execution and performance of the agreements with Telstra Corporation Limited ("Telstra") pursuant to the terms outlined in the Heads of Agreement announced in June 2010.

Based on these assumptions, the Corporate Plan estimates the NBN's total build cost to be \$35.9 billion and its total funding requirements to be \$37.1 billion (excluding debt servicing costs). Given the high fixed-cost nature of the construction of the NBN, the financial returns for NBN Co will be determined largely by its ability to generate revenues over time to support the initial investment and ongoing capital and operating expenses, as well as its ability to manage that build cost.

As a result, key variables in the Corporate Plan include:

- the number of users that can be attracted to and retained on the NBN ("up take"), and the pace with which they join the network;
- the average revenue per user ("ARPU") that NBN Co can earn by providing not only entry-level products to the mass-market, but also by providing higher value products and services for residential and business customers consistent with expected growth in traffic volumes; and
- NBN Co's ability to manage the cost of building the NBN according to the Corporate Plan and its future operating expenses.

Assessment of Key Assumptions and Potential Risks

In reviewing the Corporate Plan, Greenhill Caliburn has analysed the key revenue drivers, cost elements and other risk factors of NBN Co's business model. We note that our Report is necessarily limited by the lack of directly comparable precedents globally for the NBN, and that the telecommunications services it provides will necessarily change as the industry continues its rapid development and new products and services that drive volumes by leveraging communications infrastructures come online.

Revenue Drivers

NBN targets wide scale usage. A fundamental component for its success is the number of premises connected to it through fibre, fixed wireless or satellite. The Government's objective is to connect every home, school and workplace in Australia to the broadband network within 10 years. This is currently around 10.9 million potential connections, growing to a forecast potential number of 13 million by the end of 2020. This premises count can currently be made with considerable accuracy, and forecasts of future growth in premise numbers are also relatively uncontentious.

The principal drivers of NBN's revenue are up take and ARPU. Rapid up take is important to enable the high up-front fixed costs inherent in NBN Co's business model to be quickly spread over a wider subscriber base, while ARPU drives future top-line growth.

NBN Co is forecasting up take of 56.0% of homes passed by 2015 and 63.4% by the end of 2020, and ARPU increasing over time driven by increasing usage per customer.

Up Take

Wide-spread availability of superfast broadband products is a new phenomenon globally. Broadband networks have been created in a number of countries in recent periods, but comparisons of consumer responses in different overseas markets are made inexact by the unique demographic, cultural, pricing, timing and competitive aspects of each market.

Up take of services on the NBN will be largely driven by consumer assessment of the value proposition (price and performance) of products offered on the NBN, which will necessarily be measured relative to the value of similar products offered through other technologies such as copper, wireless broadband or HFC networks. NBN will be a national wholesaler, so its pricing must allow affordable products to be offered by its customers, the retail service

providers ("RSPs"). Attractive RSP pricing, robust RSP competition and the potential for development of innovative prices, services and applications will be key factors for driving up take. NBN Co's current pricing is designed to achieve comparable or better prices for users of services offered over the NBN than the prices currently offered for equivalent products on other delivery platforms.

The customer conversion potential of NBN Co's proposed agreement with Telstra, and the relative lack of cable competition in Australia compared to many other international markets, provide strong support for NBN Co's ability to achieve its targeted up take. Overseas experience also generally supports NBN Co's assumptions in this regard.

Key risks to NBN Co's up take assumptions relate to competition from alternative technologies, and the potential for adverse consumer reactions in one or more markets to service offerings from RSPs to be delivered over the NBN or RSP pricing options. Trends towards "mobile centric" broadband networks could also have significant long-term implications for NBN Co's fibre offerings, to the extent that some consumers may be willing to sacrifice higher speed fibre transmissions for the convenience of mobile platforms. Although NBN Co has received guidance from independent experts on expected levels of wireless-only households and reflected the same in the Corporate Plan, the prevalence of such homes should be carefully monitored in connection with ongoing performance management efforts.

ARPU

Average revenue per user consists of baseline connection fees as well as usage-based rates charged to customers. ARPU is important in driving return increases over time as volume growth (up take) plateaus, shifting revenue growth from new users to increasing returns from each connected customer. The Corporate Plan assumes ARPU will rise over time as usage per customer increases.

Consumers of telecommunications services generally have an expectation that prices for services will decline or that consumers will receive higher value services for same price over time. The Corporate Plan assumes that on a per unit basis, the real price of service will decrease over time. This loss is assumed to be more than offset by the increase in consumer spending on broadband services as they purchase higher quality services, measured in usage and potentially targeted or committed speed levels. These services will differ for individuals, businesses and government entities. They could include on-line health services (including telemonitoring and time-critical expert consultation), on-line educational services, "over-the-top" communications and video services, Internet Protocol television ("IPTV"), gaming and other vertical applications / services.

NBN Co's pricing philosophy maintains low price increments between the different access speed tiers in order to encourage an upward movement through pricing levels. The actual retail prices and services / products offered to consumers are largely outside NBN Co's control, but in our view NBN Co's proposed pricebook and approach to pricing are conducive to allowing RSPs to develop and market applications and services that will meet and encourage the expanding speed and usage requirements of a potentially growing number of internet users.

Key risks of ARPU assumptions include potential consumer pushback on the usage-based pricing model, the potential need for lower prices to overcome initial low up take, a faster than expected erosion of RSP margins on base-level products (which may affect consumer willingness to buy materially higher priced products) and potentially lower-than-expected growth in attractive internet-based content and "over-the-top" services requiring higher speeds and usage rates.

Key Cost Drivers

The NBN will be similar to many infrastructure investments in that the vast majority of costs will be fixed and front-ended. Operating costs, on the other hand, are expected to be relatively

low and spread out in relation to both the initial build cost as well as the ongoing technology refresh and maintenance capital expenditures required.

Capital Expenditures

The Corporate Plan's cost base is based on a bottom-up modelling approach using an extended range of assumptions relating to network design, construction, operations and maintenance and product constructs. Unlike the drivers of NBN Co revenue, where data availability to support estimates are limited given that broadband represents a relatively new market, the majority of the cost assumptions, including those relating to the impact of Australia specific elements (e.g., geology, population density), can be more accurately measured or estimated based on global precedents or other studies.

The primary network-related costs for NBN Co will be the installation of the fibre network, as well as additional expenses associated with the creation of fixed wireless systems and satellite coverage. These build costs are estimated to be \$35.9 billion, based on the Corporate Plan's specific assumptions.

Given the complexity and large number of variables, a number of environmental, regulatory and other operational factors could potentially result in unanticipated costs or delays. For example, the expected real gains in labour productivity are dependent on delivering consistent productivity improvements throughout the project's lifetime. However, the impact of such isolated factors is likely to be relatively insignificant on the overall plan.

Key risks of capital expenditure overruns include changes in government policies and / or local approvals, which could require more expensive underground installation costs, or lack of productivity improvements in materials or labour sourcing over time.

Operating Expenses

Operating expenses form a relatively smaller portion of overall costs. As a comparison, forecast aggregate operating expenses for the 10 year period to 2020 of c.\$8.1 billion (excluding decommissioning and infrastructure payments of c.\$13.7 billion, which will largely be fixed upon agreement with Telstra) are significantly lower than the total estimated capital expenditure commitments for the same period of \$35.9 billion.

The main components of operating expenses are a result of the expected Telstra Agreement for the decommissioning payments up to 2020 and leasing of assets which are subject to commercial agreement. Other major components of operating expenses comprise wireless / satellite leasing and Operations and Maintenance ("O&M") and Sales, General and Administration ("SG&A") costs. The former is expected to become a smaller portion of total operating expenses going forward (given the front-loaded nature of wireless / satellite roll-out) and the latter is expected to scale with up take, with moderate productivity improvements after 2020.

Key potential risks to the operating expenses budget contained in the Corporate Plan include increased labour costs and unanticipated legal or regulatory issues.

Other Risk Factors

A 10 year, \$35.9 billion infrastructure project has many inherent risks. The Corporate Plan sets out NBN Co's approach to risk management, and highlights the company's focus on safety (including occupational health and safety), revenues and execution. We also note that NBN Co is planning on managing a number of the cost and execution risks of the project by conducting a staged deployment process (using first release sites and second release sites) to refine costings, procurement methodologies, planning, construction processes, operating systems and other related matters. Best practices can be developed from this sequenced rollout.

NBN Co has also retained the flexibility to amend the Corporate Plan over time in response to changing circumstances. Given the rapidly changing nature of the Internet, new emerging technologies and disruptive "over-the-top" services / applications, the Commonwealth's regulatory regime may also need to evolve over time to ensure the success of NBN Co and its ability to meet policy objectives.

Recommended Performance Management Approach

Meeting Current Plan Assumptions

The Corporate Plan makes several important assumptions, including, but not limited to, regulatory protections against "cherry picking", passage of enabling legislation by the Government (e.g., grants of power and immunities) and execution and performance of the proposed agreements with Telstra. If any of these important assumptions are not realised, the Corporate Plan will need to be revised, and the resultant changes to total costs and the project's Internal Rate of Return ("IRR") may be material. We recommend that the Commonwealth monitor these issues closely.

In order to maximise flexibility during the large-scale NBN rollout, Greenhill Caliburn recommends a close monitoring of the Telstra customer migration and initial release phases relative to plan. The targeted rollout schedule provides the Minister for Broadband, Communications and the Digital Economy and the Minister for Finance and Deregulation (together "the Shareholder Ministers") and NBN Co with an opportunity to monitor costs and procurement processes, adjust product offerings or pricing levels, identify and adopt best practices and modify other variables prior to the NBN's introduction nationwide.

Managing Ongoing Performance

In order to manage its ongoing risks as an investor in NBN Co, we recommend that the Commonwealth establish appropriate ongoing monitoring arrangements with NBN Co, particularly during the early stages of the project when key decisions are made. An ongoing review policy would be in-line with the approach of many professional investors, who closely monitor and analyse companies in which they have material investments rather than relying solely on standard periodic reporting. The objective is to ensure the Commonwealth receives regular updates so that it is at all times aware of NBN Co's performance relative to the original and latest agreed Corporate Plan, as well as NBN Co's views on the immediacy and relative impact of the risks that NBN Co is managing as it develops and manages the NBN. By focusing on key risk areas and tracking actual financial and operational performance relative to agreed standards on a periodic basis, the Commonwealth will be able to identify adverse trends and agree modifications to the Corporate Plan accordingly. These matters are regarded as highly important given the role of NBN Co in delivering Commonwealth policy, achieving stated financial objectives and minimising the ongoing risk of reputational issues for the Commonwealth from underperformance relating to the NBN.

To the extent that the requirements generally imposed on government business enterprises fail to do so, Greenhill Caliburn recommends that the Commonwealth agree with NBN Co that it will make a number of detailed, periodic disclosures to the Shareholder Ministers to allow them to assess the implications of any variations on a more timely basis and evaluate and introduce mitigants as required. Opportunities for review include:

- **Annual Reporting** – Provide an update of the detailed Corporate Plan to the Shareholder Ministers confidentially for approval on an annual basis. The Corporate Plan would include historical and projected financial information, as well as an in-depth discussion of the business environment, results and trends;
- **Quarterly Reporting** – Provide key performance indicators for revenue and cost drivers relative to the assumptions underlying the Corporate Plan and any updates. Examples of such indicators include up take rates and usage levels relative to plan from a number and revenue perspective, cost per premise passed and per premise activated, underlying trends in procurement practices, actual and prospective performance by RSPs and trends in complementary and competing technologies; and

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- Event-Based Disclosure – Continuous, event-based reporting obligation to the Shareholder Ministers in accordance with agreed thresholds for materiality and as key milestones are reached.

Greenhill Caliburn would further recommend that review and oversight be lead by a nominated "investment committee" within the Commonwealth, staffed consistently with representatives with appropriate expertise levels in order to best preserve an ongoing relationship with, and institutional knowledge base of, NBN Co.

Review of NBN Co Limited's Corporate Plan

1. Introduction

1.1 Greenhill Caliburn Role and Scope of Work

Greenhill Caliburn Pty Limited ("Greenhill Caliburn") has been retained by the Commonwealth, to review and provide advice with respect to NBN Co Limited's Corporate Plan 2011-2013, dated 15 December 2010, [REDACTED]

On 7 April 2009, the Commonwealth announced a National Broadband Network ("NBN") initiative to connect all Australians to broadband including superfast broadband, for the vast majority of Australians. The Commonwealth established NBN Co Limited ("NBN Co") in order to build, own and operate the NBN. The Minister for Broadband, Communications and the Digital Economy ("Broadband") and the Minister for Finance and Deregulation ("Finance") serve as joint shareholders of NBN Co (together "the Shareholder Ministers").

NBN Co has developed a detailed Corporate Plan for the development and operation of the NBN, [REDACTED]. The initial Corporate Plan was submitted to the Shareholder Ministers on [REDACTED] November 2010. The initial version of the Corporate Plan included assumptions on a number of policy matters that had not been finalised by the Government. Following submission of the initial Corporate Plan, the Government reached final positions on many of these matters, and these positions have been reflected in the revised version of the Corporate Plan dated 15 December 2010.

Greenhill Caliburn has developed this summary Report evaluating the Corporate Plan (the "Report") [REDACTED]

The Report includes:

- (i) an overview of NBN Co;
- (ii) a preliminary commercial assessment of the NBN Co Corporate Plan, including:
 - [REDACTED]
 - b) an analysis of key assumptions and risks; and
- (iii) a summary of potential strategies relating to the Commonwealth's shareholding in NBN Co, [REDACTED]

[REDACTED] this Report does not:

- (i) evaluate the Government's policy objectives with respect to the NBN;
- (ii) [REDACTED]
- [REDACTED]
- (iv) undertake or constitute a cost-benefit analysis [REDACTED]

[REDACTED]

[REDACTED]

In preparing this Report, Greenhill Calburn:

- (i) reviewed certain publicly available information [REDACTED]
 - (ii) reviewed the Corporate Plan and related supporting documents;
 - (iii) [REDACTED]
- [REDACTED]
- [REDACTED]

We have assumed and relied upon, without independent verification, the accuracy and completeness of the information publicly available, supplied or otherwise made available to us by the Commonwealth and NBN Co and its advisers, and have further relied upon the assurances of the representatives of the Commonwealth and NBN Co and its advisers that they are not aware of any facts or circumstances that would make such information inaccurate or misleading. With respect to the business model, financial forecasts and projections of NBN Co and other data with respect to NBN Co that have been furnished or otherwise provided to us, we have assumed that such projections and data were prepared on a basis reflecting the best currently available estimates and good faith judgments of NBN Co as to those matters. We have not made any independent valuation or appraisal of the assets or liabilities of NBN Co, nor have we been furnished with any such appraisals.

This Report is necessarily based on financial, economic, market and other conditions as in effect on, and the information made available to us as of, the date hereof. Any opinions, estimates, projections or other forward looking statements regarding future events referred to in this document are subject to uncertainties and contingencies and are not guarantees or predictions of future performance. Actual results may vary significantly from these estimates, projections and other forward looking statements. It should be understood that subsequent developments may affect this Report, and we do not have any obligation to update, revise, or reaffirm the Report.

[REDACTED] This Report is confidential, and may not be disclosed to any third party without the prior written consent of Greenhill Calburn. We are not expressing an opinion as to any aspect of the NBN or NBN Co, other than the preliminary views with respect to aspects of the Corporate Plan expressed herein. This Report is not intended to be and does not constitute a recommendation to the Commonwealth with respect to the NBN or NBN Co in any form, including with respect to its approval or adoption of the Corporate Plan. This Report is not intended to, and does not constitute, a recommendation to any person to acquire or dispose of any securities of NBN Co or any other person.

2. Overview of NBN Co Limited

2.1 The NBN

The NBN is expected to be Australia's largest single infrastructure project to date. It aims to provide every home and business in Australia with access to a broadband network that can transmit data at significantly greater speeds than is currently available through standard means.

The construction of the NBN is expected to take nearly 10 years, with an estimated cost of approximately \$35.9 billion. NBN Co is responsible for building, owning and operating the NBN on behalf of the Commonwealth.

2.2 Summary of NBN Policy Objectives

In April 2009, the Government stated its broad objectives for the NBN to be as follows:

"The new superfast network will:

- (i) connect homes, schools and workplaces with optical fibre (fibre to the premises or "FTTP"), providing broadband services to Australians in urban and regional towns with speeds of 100 megabits per second – 100 times faster than those currently used by most people extending to towns with a population of around 1,000 or more people*
- (ii) use next generation wireless and satellite technologies that will be able to deliver 12 megabits per second or more to people living in more remote parts of rural Australia*
- (iii) provide fibre optic transmission links connecting cities, major regional centres and rural towns*
- (iv) be Australia's first national wholesale-only, open access broadband network*
- (v) be built and operated on a commercial basis by a company established at arm's length from the Government and involve private sector investment*
- (vi) be expected to be rolled-out, simultaneously, in metropolitan, regional and rural areas."*⁽¹⁾

Since its original announcement in April 2009, the Commonwealth has disclosed further policy objectives relating to NBN, including:

- (i) instituting an open access, wholesale-only national network, covering all Australian premises (fibre to 93% of premises, with fixed wireless and satellite to the remainder);
- (ii) pricing principles to ensure uniform, national wholesale pricing accessible on non-discriminatory terms; and
- (iii) targeting rates of return in excess of current public debt rates.

On 6 August 2009, the Government announced that McKinsey & Company and KPMG had been appointed to jointly prepare a National Broadband Network Implementation Study (the "Implementation Study").

The Implementation Study accepts that the creation of the NBN could promote additional public policy objectives, including in the areas of healthcare and education. Examples of potential policy objectives served by the NBN listed in the Implementation Study include:⁽²⁾

1. Senator the Hon. Stephen Conroy, 7 April 2009, Joint Media Release – Prime Minister, Treasurer, Minister for Finance, Minister for Broadband, http://www.minister.dbcde.gov.au/media/media_releases/2009/022.

2. Implementation Study, page 167.

Category	Description	Examples
e-health	A means of delivering health information and services in a secure electronic form for the purpose of optimising the quality and efficiency of health care	<ul style="list-style-type: none"> ■ Remote consultations via video-conference ■ Remote and / or real time diagnoses of tests and scans ■ High-speed transfer of medical imaging ■ Remote health monitoring
e-education	Ability for educational institutions to publish materials online, students and teachers to collaborate online, students to participate in remote learning and researchers to instantly access information	<ul style="list-style-type: none"> ■ Remote learning ■ Collaboration networks for special-interest / research groups ■ High-speed transfer of large data files (e.g., space monitoring)
Smart Infrastructure	Networked infrastructure that uses sensors and communications technologies to better utilise or sustain resources	<ul style="list-style-type: none"> ■ Smart grids ■ Remote monitoring of dam levels ■ Remote traffic monitoring
Government Processes and Online Services	Use of information and communication technologies to enable improved Government processes and increased efficiency in the administration of Government services	<ul style="list-style-type: none"> ■ E-forms and filing (e.g., online tax submission / records) ■ Online procurement ■ Networking between Departmental sites

2.3 Summary of NBN Co's Structure / History

2.3.1 Formation / Mandate

On 7 April 2009, the Commonwealth announced the establishment of NBN Co to design, build and operate the NBN.

NBN Co is a government business enterprise ("GBE"), wholly-owned by the Commonwealth as represented by the Shareholder Ministers. NBN Co is subject to the Commonwealth Authorities and Companies Act 1997, the Corporations Act 2001 ("Corporations Act") and the Governance Arrangements for Commonwealth Government Business Enterprises (June 1997) (the "Governance Arrangements").

The Governance Arrangements Act sets forth the policy framework for GBEs. Key documents to be submitted by NBN Co over a yearly reporting period including annual reports and statement of corporate intent, which are tabled in Parliament, and the Corporate Plan and progress reports, which are commercially sensitive documents provided to the Shareholder Ministers.

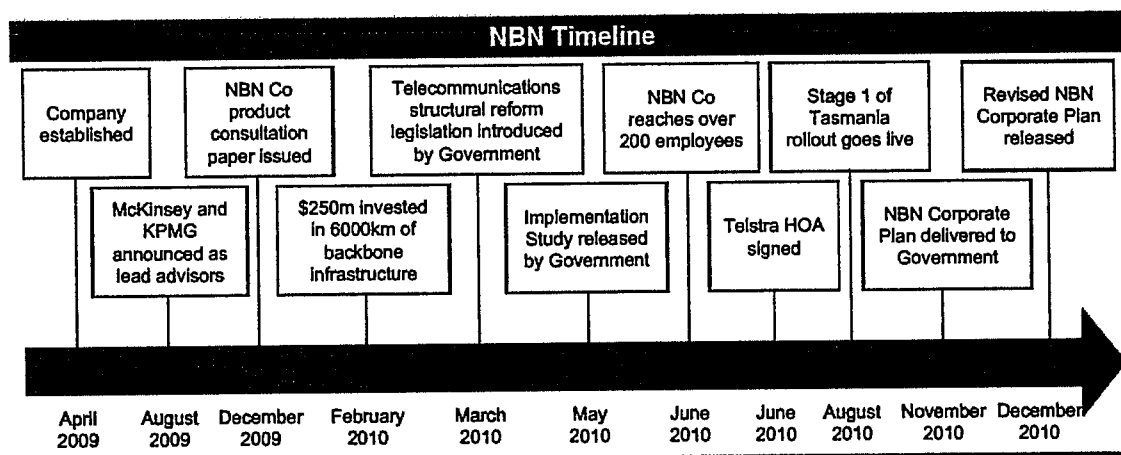
NBN Co maintains regular reporting to its Shareholder Ministers, and as a Government-owned company is publicly accountable and subject to Parliamentary scrutiny through Senate committees and audit by the Auditor General.

The appointment of Michael Quigley as executive chairman to the NBN Co Board of Directors was announced on 25 July 2009, with additional director appointments announced on 6 August 2009. A lead executive team was appointed in September 2009. Harrison Young was appointed as chairman in March 2010 and Michael Quigley is now Chief Executive Officer.

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On 24 November 2010, the Government stated that NBN Co will be subject to further parliamentary oversight via a parliamentary committee, to be led by an independent Member of Parliament.

2.3.2 Milestones Since Formation



2.3.3 Implementation Study

On 6 August 2009, the Government commissioned the Implementation Study to advise it on how best to implement its stated policy objectives through NBN Co, addressing the technology, financing, ownership, policy framework and market structure of the NBN.

The Implementation Study was publicly released on 6 May 2010. The Implementation Study concluded that the Government's objectives for the NBN "can be implemented within the original \$43 billion estimate of capital expenditure, by deploying a mix of fibre, wireless and satellite technologies," and that upon implementation "the NBN will deliver Australia a world-class broadband infrastructure."

Key findings from the Implementation Study include:

- "Government's objectives for the National Broadband Network can be implemented within the \$43 billion estimate of capital expenditure by deploying fibre to 93 percent, fixed-wireless from the 94th to 97th percentiles and satellite to the final 3 percent of premises.
- The NBN should be deployed efficiently by setting practical coverage objectives, being willing to make use of existing infrastructure, providing appropriate legislative support and leveraging the capabilities of commercial wireless operators.
- Retail competition should be improved through mandating NBN Co's wholesale-only, open-access role and by ensuring NBN Co eliminates network bottlenecks and operates at the lowest appropriate layer in the OSI stack.
- The fibre access network should be expected to become the predominant fixed-line telecommunications infrastructure over time by pricing for affordability and take-up and providing continuity for existing services.
- Full Government ownership should be maintained until after the roll-out is complete requiring temporary peak funding in the vicinity of \$26 billion by year 6 – which can be paid down quickly from then with investment-grade debt prior to privatisation. Government should expect to cover its cost of funds under most plausible business case scenarios.
- Future competition and innovation potential should be safeguarded by preferring a network design that preserves options for active-layer competition and shifts in technology, and by

ensuring a healthy industry structure and appropriate regulatory regime are in place prior to privatisation.”⁽³⁾

The Implementation Study further concluded that while infrastructure sharing and other commercial arrangements with existing telecommunications companies could benefit the project, the NBN would be financially viable even without the participation of Telstra, Australia's largest telecommunications company.

2.3.4 Telstra Heads of Agreement

On 20 June 2010, NBN Co and Telstra announced that a non-binding Financial Heads of Agreement (the “Telstra Agreement”) had been entered into that would provide access to certain Telstra facilities (consisting of ducts, pits, lead-in conduits, exchange space, dark fibre and managed transition services) and the progressive migration of Telstra's copper and pay-TV cable networks to the new wholesale-only NBN. Following finalisation of the agreement, it is expected that Telstra will become NBN's largest customer as it migrates its voice and broadband traffic to NBN Co's wholesale-only, open-access network.

Telstra has attributed an after-tax net present value to the agreement of \$9 billion through payments made over time by NBN. In addition [REDACTED], the Government announced that it would progress public policy reforms to support the transition to the NBN, with an attributed value by Telstra of approximately \$2 billion [REDACTED]. NBN's Corporate Plan released to the public on 20 December 2010 indicated a total of \$13.7 billion in decommissioning and infrastructure payments by 2020 (in nominal dollars). The Commonwealth has committed to providing Telstra with a guarantee for the financial obligations of NBN Co until NBN Co is fully capitalised.

The Telstra Agreement provides the framework for definitive agreements to be negotiated over the coming months. Following finalisation, the definitive agreements would be subject to approval by Telstra shareholders. In addition to this approval, the Telstra Agreement includes a number of conditions, including the passage of enabling legislation and approval from the ACCC. NBN Co and Telstra are currently in the process of negotiating detailed definitive agreements.

2.3.5 Submission of the Corporate Plan to Shareholders

Pursuant to its requirements as a GBE, NBN Co prepared and submitted its initial Corporate Plan to the Shareholder Ministers [REDACTED]. The initial version of the Corporate Plan included assumptions on a number of policy matters that had not been finalised by the Government. Following submission of the initial Corporate Plan, the Government reached final positions on many of these matters, and these positions have been reflected in the revised version of the Corporate Plan dated 15 December 2010. On 20 December [REDACTED] the Corporate Plan was released to the public.

The Corporate Plan sets out the key objectives and priorities for NBN Co for the three year period from 1 July 2010 to 30 June 2013 [REDACTED]. NBN Co has stated its intention to update its Corporate Plan at least once per year.

Following approval by the Government of the Corporate Plan, NBN Co will commence the full-scale build and operation of the network.

2.4 Summary of NBN Co's Corporate Plan

The Corporate Plan reflects the Government's principal objectives with respect to the NBN, including:

- providing fibre network coverage for 93% of Australian premises by the end of 2020, with the remaining 7% served by fixed wireless and satellite coverage;

3. Implementation Study, page 8.

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- delivering a wholesale-only, open access platform offering Uniform National Wholesale Pricing ("UNWP") over the network, from points of interconnect ("POIs") to premises, on a non-discriminatory basis; and
- providing an entry-level mass market product peak information rate ("PIR") of 12 Megabits per second ("Mbps") / 1Mbps, with the potential to deliver up to 1 Gigabit per second ("Gbps") in the future.

[REDACTED] The Corporate Plan envisions total funding to the end of 2020 towards the NBN of (\$37.1 billion excluding debt servicing costs), [REDACTED]

Given the high fixed cost nature of the construction of the NBN, the financial returns for NBN Co will be determined largely by its ability to generate revenues over time to support the initial investment and ongoing capital and operating expenses. As a result, the key variables in the Corporate Plan include:

- the number of users that can be attracted to and retained on the NBN ("up take"), and the pace with which they join the network;
- the average revenue per user ("ARPU") that NBN Co can earn by providing not only entry-level products to the mass-market but also higher value products and products for the residential and business communities; and
- NBN Co's ability to manage build costs and future operating expenses.

[REDACTED]

[REDACTED]

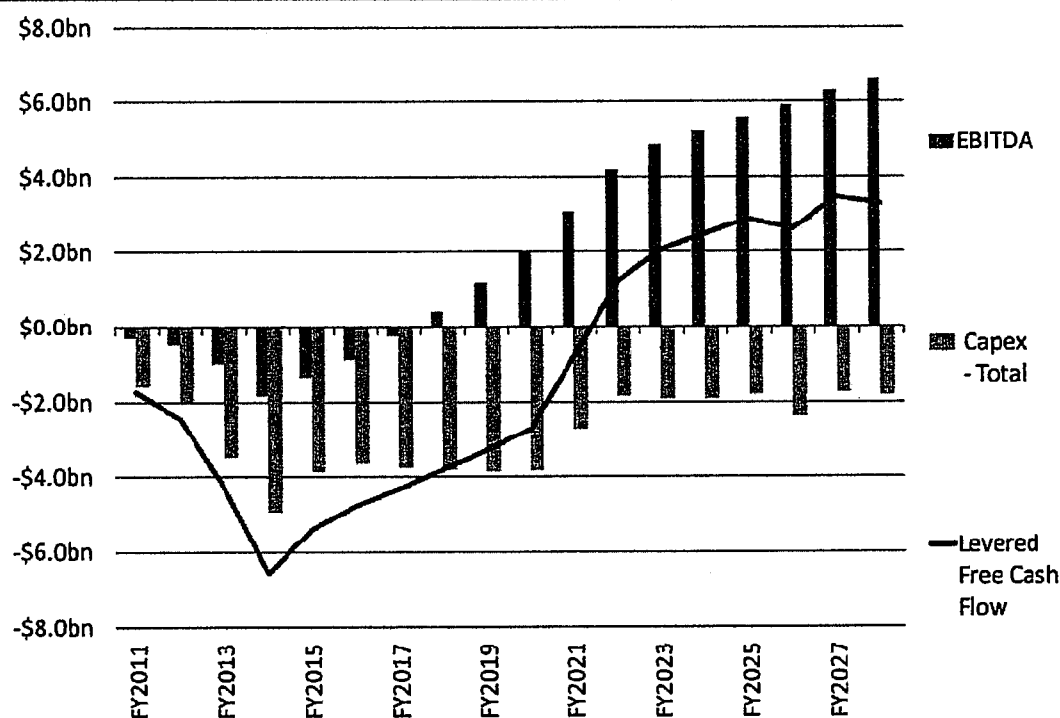
■ [REDACTED]

[REDACTED]

[REDACTED]

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Forecast Financial Results (Nominal Dollars)



\$m

	FY2013	FY2021	FY2023	FY2028
Revenue	160	5,760	6,788	8,769
EBITDA	(993)	3,098	4,874	6,647
EBIT	(1,430)	1,045	2,797	4,418
Cumulative Total Capex (Including Replacement Capex)	7,035	37,280	40,995	50,559

Source: NBN Co

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take, plateaus, similar revenue growth with less risk to the connected customer.

Review of NBN Co Limited's Corporate Plan

for usage and speed requirements of customers.

Up Take Rates

Premises % Connected					2015				2019	
Total					56.0%				63.0%	

Source: NBN Co

Number of Premises Passed / Covered and Connected in 2021

Total Premises in 2020 (million)	Fibre			Wireless	Satellite
	Brownfields	Greenfields	Total	Total	Total
Premises Passed / Covered	10.1	2.1	12.2	0.6	0.4
Premises Connected	6.7	1.6	8.3	0.1	0.1

Source: NBN Co

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

. In Australia, the 700 MHz spectrum auction in 2014

Further, in the U.S. and Europe, mobile operators have started offering other complementary wireless "off-loading" technologies (e.g., Wi-Fi, DAS, Femto cells)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

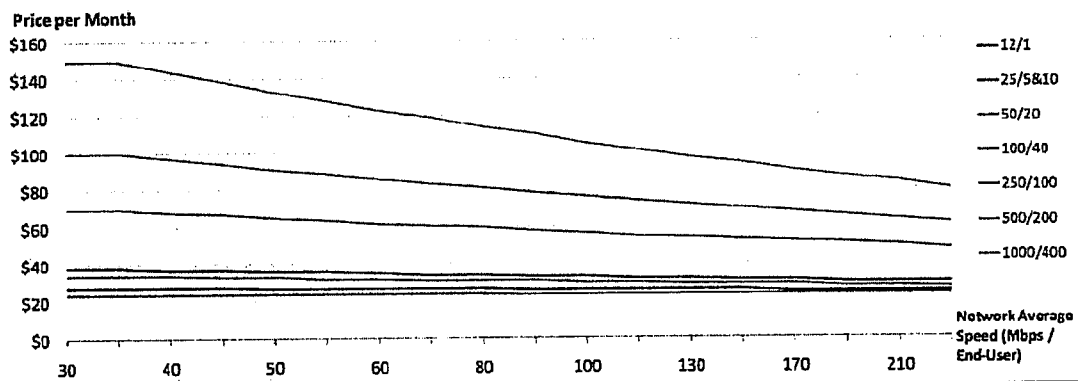
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Access Product PIR Rates Over Time (Nominal)



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

AVC PIR Charges (Including UNI) (\$ / Month per Service) (ex. GST)

Downstream / (PIR Mbps)	Upstream / (PIR Mbps)	Fibre	Wireless	Satellite
12	1	\$24	\$24	\$24
25	5	\$27	-	-
25	10	\$30	-	-
50	20	\$34	-	-
100	40	\$38	-	-
250	100	\$70	-	-
500	200	\$100	-	-
1000	400	\$150	-	-

Source: NBN Co

[REDACTED]

[REDACTED]

[REDACTED]

Speed and usage rates are expected to increase in the Corporate Plan over time,

[REDACTED]

[REDACTED]

[REDACTED]

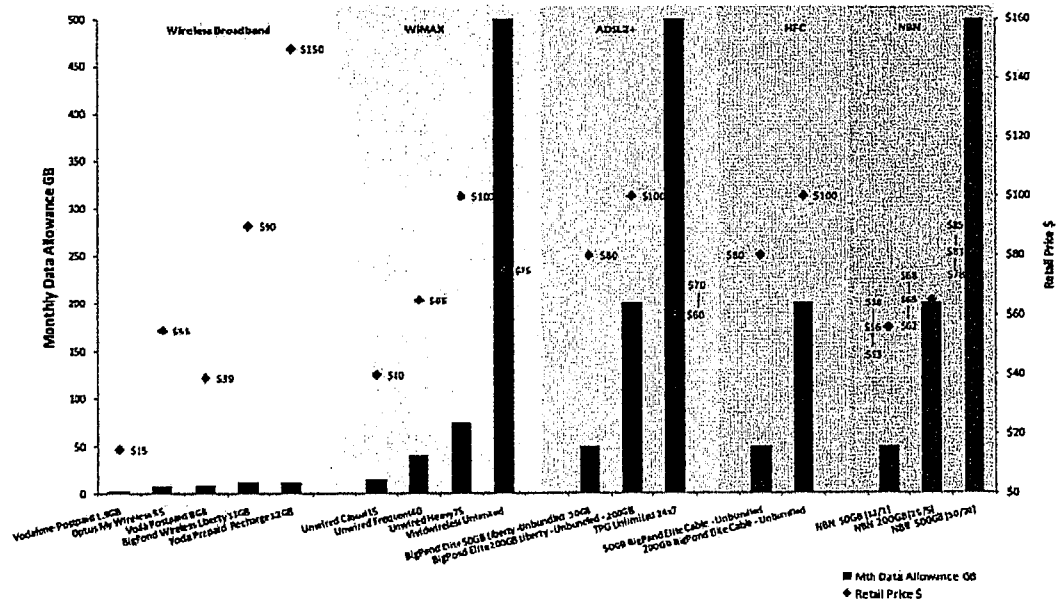
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[REDACTED]

[REDACTED]

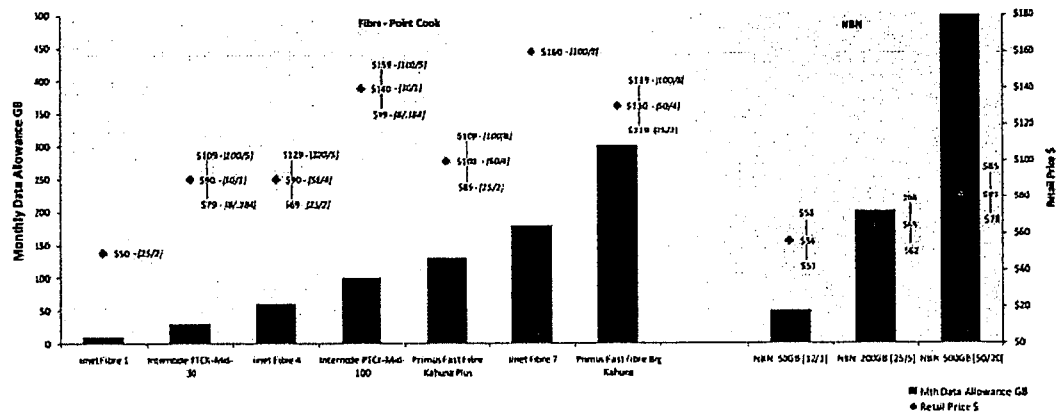
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Retail Pricing and Data Download Distribution by Technology



Source: NBN Co

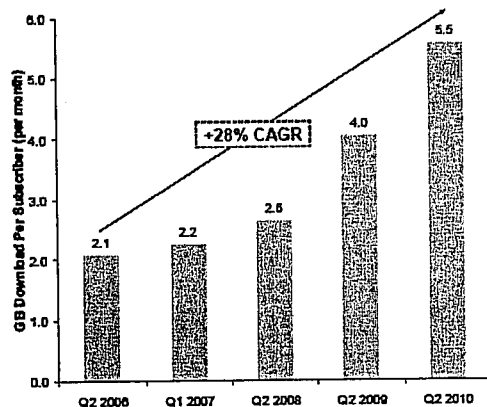
Point Cook Fibre Pricing Comparison with NBN Co



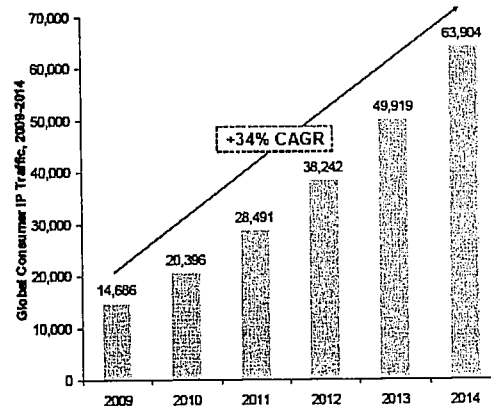
Source: NBN Co

both global and local Australian trends indicate rising consumer demand for high bandwidth applications and services.

Australia – Monthly GB of Data Downloaded per Subscriber



Global Consumer IP Traffic, 2009-14 (PB per month)



Source: Cisco

Source: ABS

the residential market in early years is likely to be dominated by basic service users, with 52% of residential customers expected to be on the entry-level 12Mbps / 1Mbps service

[REDACTED]

[REDACTED]

For example, in South Korea, the incumbent Korea Telecom ("KT") saw a steady increase in subscribers with its 100Mbps service from 12% in 2005 to 17% in 2008. However, monthly ARPU decreased steadily in that time period at mid single digit rates. Another example is Chunghwa Telecom in Taiwan, which has experienced monthly ARPU declines while pushing customers to higher-speed services. Similarly, in Japan fibre to the home ("FTTH") services at speeds of 1Gbps are only slightly more expensive than the slower ADSL service.

[REDACTED]

Comparison of Downstream Speeds vs. Time to Download Content

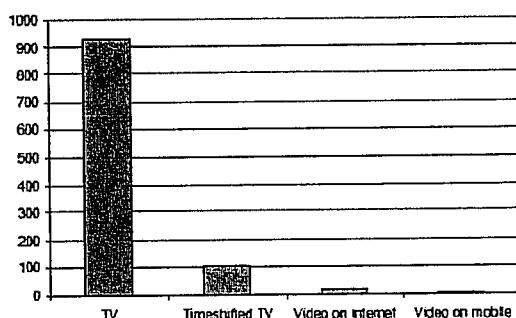
Content	Broadband Download Speed		
	50 Mbps	20 Mbps	1.5 Mbps
6GB High-Definition 2 Hour Movie	16 minutes	35 minutes	8.5 hours
2GB Standard-Definition Movie	5 minutes	10 minutes	3 hours
700MB Video	2 minutes	4 minutes	1 hour
300MB 30-Minute Video	<1 minute	2 minutes	20 minutes
20MB Game Content	3 seconds	10 seconds	2 minutes
5MB Size Music File	< 1 second	4 seconds	26 seconds
1MB Size Photo	<0.1 second	0.5 second	7 seconds

Source: Gartner 2009

[REDACTED]

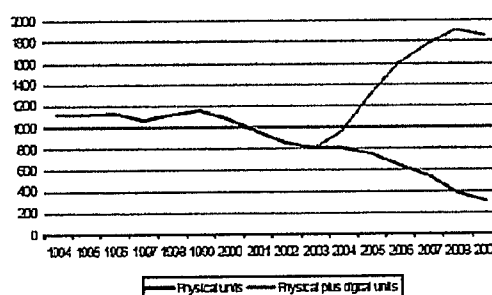
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Australian Average TV Viewing per Week (Minutes)



Source: Credit Suisse (September 2010)

U.S. Music Industry Unit Sales



Source: Credit Suisse (September 2010)

In South Korea, KT attempted such a pricing structure and consumers severely criticised it, resulting in the abandonment of usage based pricing. In the U.S., Time Warner Cable ran a pilot program for pricing by data in mid 2009 and met with opposition from subscribers, consumer advocacy groups and Government officials, resulting in discontinuation of the trial.

In Q1 2008, Rogers introduced a hybrid pricing system based on both speed and usage.

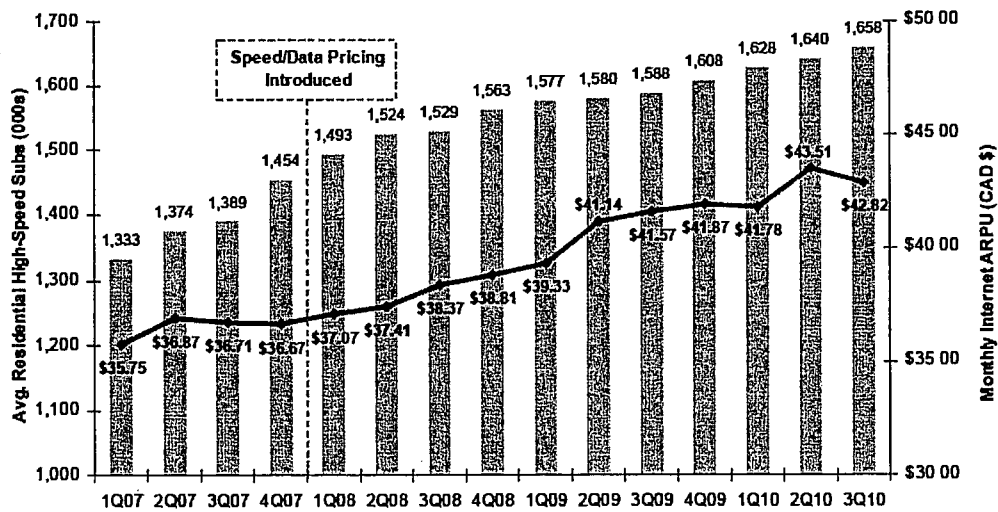
Rogers' Speed and Usage Based Hybrid Pricing Model

	Ultra-Lite	Lite	Express	Extreme	Extreme Plus	Ultimate
Download Speed	500 Kbps	3 Mbps	10 Mbps	15 Mbps	25 Mbps	50 Mbps
Upload Speed	256 Kbps	256 Kbps	512 Kbps	1 Mbps	1 Mbps	2 Mbps
Monthly Usage	2 GB	15 GB	60 GB	80 GB	125 GB	175 GB
Monthly Subscription Fee (CDN\$ / \$)	\$27.99 / \$27.85	\$35.99 / \$35.81	\$46.99 / \$46.76	\$59.99 / \$59.70	\$69.99 / \$69.65	\$99.99 / \$99.50
Additional Usage Charge per GB (CDN\$ / \$)	\$5.00 / \$4.98	\$4.00 / \$3.98	\$2.00 / \$1.99	\$1.50 / \$1.49	\$1.25 / \$1.24	\$0.50 / \$0.50

Source: Rogers' Website (November 2010)

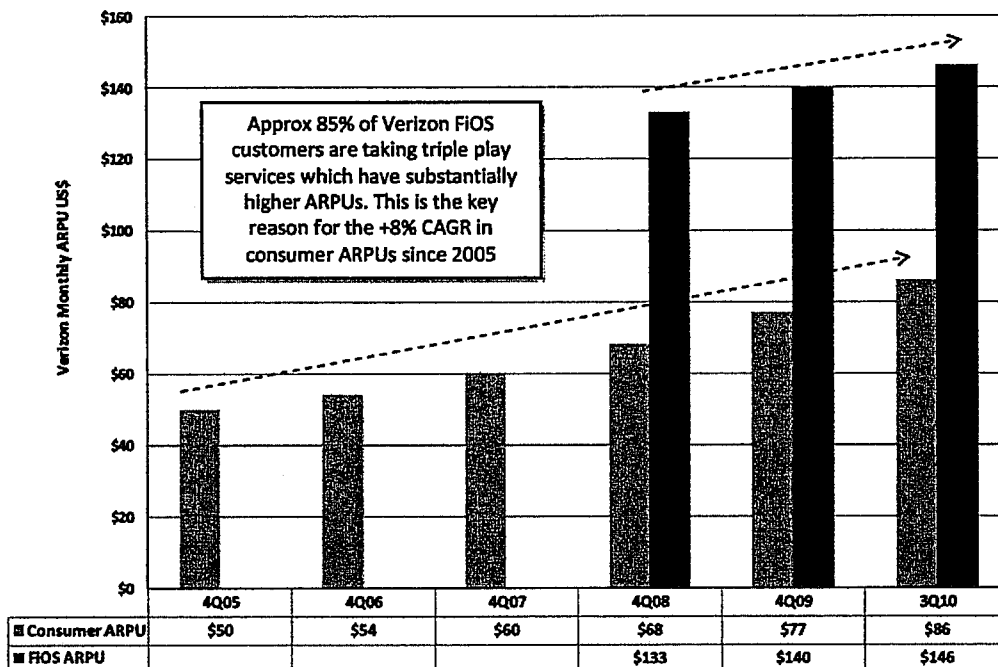
In response, Rogers' competitor, Bell Canada recently launched a hybrid pricing structure for its wholesale and retail customers.

Rogers' Monthly High-Speed Internet ARPU (CAD)



Note: Calculated for 1Q09 onward (High-Speed Internet Revenue / Average High-Speed Internet Subs)
Source: Gartner, Rogers' Company Filings

Verizon Monthly ARPU



Source: Verizon

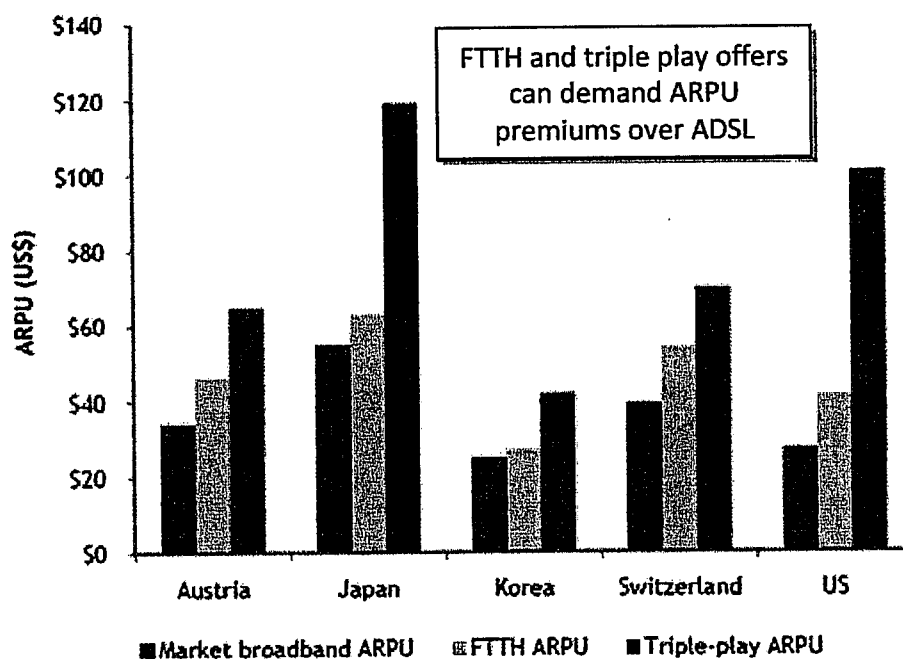
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KPN Product Mix

Copper / VDSL				Fibre			
Package Price	Broadband	TV	VoIP	Package Price	Broadband	TV	VoIP
Basis / €40	8 / 1 Mbps Mobile BB	IPTV Incl. TV-Receiver	Access	Bronze / €55	30 / 30 Mbps	IPTV Incl. TV-Receiver	Access
Extra / €50	16 / 2 Mbps Mobile BB	IPTV Incl. TV-Receiver	Access	Silver / €70	50 / 50 Mbps	IPTV Incl. 2 TV- Receiver w/ HD Recorder	Access
Premium / €65	40 / 3 Mbps Mobile BB	IPTV Incl. TV - Receiver	Access	Gold / €100	100 / 100 Mbps	IPTV Incl. 2 TV- Receiver w/ HD Recorder, HD	Access

Source: KPN July 2010

Premium Service Relative ARPU



Source: Pyramid

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Australian and US Video Markets

	Australia	United States
Pay-TV Up Take	31%	85%
Broadband Up Take	62%	70%
Internet Connected TV	1%	14%
Digital Video Revenues % Total	3%	7%
TV Viewing per Week (minutes)	930	1534
Online Video Viewing per Week (minutes)	19	20
Online Video Advertising / BB Household	\$4.44	\$12.58
Per Capita Content Expenditure		
Film	\$164.12	\$116.55
Pay-TV	\$151.12	\$318.00
FTA TV	\$158.83	\$102.60
Content Revenues per Capita	\$474.07	\$537.15

Source: Credit Suisse (September 2010)

[REDACTED] Slower than expected development of digital video / content and other new value added services, particularly cheaper "over-the-top" applications and services, could adversely impact up take and, [REDACTED] ARPU growth levels.

[REDACTED]

[REDACTED]

[REDACTED]

■

NBN Co's pricing is predicated on network architecture of around 120 semi-distributed POIs
■ This model was updated in December 2010 following from
a previous centralised POI model.

■ ■ ■

■ ■ ■

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The Corporate Plan's cost base is based on a bottom-up modelling approach using an extended range of assumptions relating to network design, construction, operations and maintenance and product constructs. [REDACTED]

[REDACTED]

Unlike the drivers of NBN Co revenue, where data availability to support estimates is low given that broadband represents a relatively new market, the majority of the cost assumptions, including those relating to the impact of Australia specific elements (e.g., geology, population density) can be more accurately measured or estimated based on global precedents.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Although a number of assumptions could change, the impact of these are likely to be relatively insignificant

The primary network related costs for NBN Co will be the installation of the fibre network,

- ▶ 181,000 km of GPON network

- Transit backhaul: 57,000 km of transit backhaul

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Given the substantially higher costs of underground drop [REDACTED]
[REDACTED] change in Government policy
and / or local approvals [REDACTED]
[REDACTED] could substantially impact build costs [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

4.3 Operating Expenses

Overview

Operating expenses form a relatively small portion of overall costs. As a comparison, forecast aggregate operating expenses for 2011-20 of c.\$8.1 billion (excluding decommissioning and infrastructure payments of c.\$13.7 billion which will largely be fixed upon agreement with Telstra) are significantly lower than the estimated capital expenditure commitments for the same period of \$35.9 billion.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The following table sets forth a potential NBN Co reporting framework:

Potential NBN Co Reporting Framework	
Detailed Annual Reporting	[REDACTED]
	[REDACTED]
	[REDACTED]
	[REDACTED]
	[REDACTED]
	[REDACTED]
	[REDACTED]
	[REDACTED]
	[REDACTED]
	[REDACTED]
Periodic Financial Reporting (Quarterly)	[REDACTED]
	[REDACTED]
	[REDACTED]
	[REDACTED]
[REDACTED]	[REDACTED]
	[REDACTED]
Continuous Disclosure	[REDACTED]
	[REDACTED]