



Optus Submission

Comments on the Implementation Study for the National  
Broadband Network

To

Senate Select Committee on the National Broadband Network

27 May 2010

## Executive Summary

Optus is pleased to respond to the Senate Select Committee on the National Broadband Network's request for submissions on the Implementation Study for the National Broadband Network (NBN).

Optus continues to strongly support the need for a wholesale-only, open access NBN that will offering genuinely equivalent terms and deliver superfast broadband services to homes and businesses right across Australia.

We believe that the NBN has the potential to positively reshape the fixed line telecommunications sector in this country, delivering clear benefits to all Australian consumers and businesses. The NBN offers a truly transformational opportunity for our country, with the prospects of delivering tangible improvements in the delivery of health and education services, improving the productivity and competitiveness of Australian businesses and delivering new and innovative services and social applications to consumers at affordable prices.

However, to deliver on its promised benefits important policy decisions will need to be made about the NBN, including;

- technology choices;
- the appropriate access and governance arrangements that will apply to this bottleneck infrastructure;
- the services to be offered and the pricing for access to those services;
- ensuring the NBN is appropriately funded; and
- establishing a roll-out plan and addressing any operational impediments to delivering on that plan

The Implementation Study ("the Study") is a valuable contribution towards resolving the long running debate on these issues once and for all. Optus notes that it outlines key recommendations in terms of how the NBN can best be implemented to deliver the Government's key objectives for this critical new piece of national infrastructure. Optus commends the Government for publishing the Study in its entirety and providing an opportunity to comment on it.

Optus strongly supports the overall conclusion of the Study, that a wholesale-only, equivalent open access network, providing 21<sup>st</sup> superfast century broadband services to all Australians, is indeed viable. Importantly Optus commends the conclusion that the NBN can be economically viable whilst being available to all Australians at prices they can afford. As the Study recognises, affordability will be essential to the healthy take-up of services on the new network and delivering against the Government's overriding social policy objectives for the NBN.

Australia has for too long been starved of innovation and competition in the broadband market, held back by Telstra's self interest in preserving the status quo. Optus agrees with the conclusion of the Study that the NBN has the power to fundamentally reform this market for the good of all Australians, and, more importantly, that this can be done with or without the participation of Telstra.

Optus strongly recommends that the Government takes on board many of the conclusions and recommendations of the Study to end the debate on the NBN and get on with the job of building the network to hasten the critical reform this industry so desperately needs.

The remainder of this submission is set out in three sections.

- Section one provides high level comments on the Study and outlines those recommendations that Optus strongly endorses and considers should be adopted by Government.
- Section two provides commentary on a small number of issues where Optus either has a contrary view to the Study or considers that further consideration of an issue is required.
- Section three sets out Optus' response to each of the 84 recommendations made in the Study.

## **Section 1: Key recommendations to adopt**

Optus considers the Study to be a well constructed and a comprehensive piece of work. It contains a wealth of information that is relevant to the consideration of the issues it raises and seeks to address. The recommendations and policy advice are generally sensible and practical.

On the whole Optus considers that the majority of the recommendations in the Study are sound. Subject to the suggested refinements (where required) they should be adopted by Government.

This section provides an overview of the key areas in which Optus supports the findings or recommendations of the Study. As mentioned above, the subsequent section raises a small number of areas where we believe further debate or consideration is required to enable the Government to fully assess the merits of the recommendation. The final section of the submission contains specific commentary on each of the Study's 84 recommendations, including suggested refinements as required.

There are three main themes which are addressed in the Study and each of these is examined in more detail below:

- The regulatory and governance arrangements that should apply to the NBN;
- The technical architecture of the NBN and its proposed implementation; and
- The standalone financial viability of the NBN project, supported by Government.

### **1.1 Regulatory and governance arrangements**

Optus considers that the NBN has the potential to positively reshape the fixed line telecommunications sector in Australia whilst delivering clear benefits to all Australian consumers and businesses. However, to fully realise its potential Optus has always maintained that the project will need to be true to the Government's clear commitment that it will be operated as a structurally separated, wholesale-only operation with genuine equivalent open access arrangements. Such an approach will best avoid the well documented problems we have witnessed in the current fixed line market structure where competition has been held back because of the behaviour of the dominant vertically integrated incumbent. A regime built on these principles has the potential to set a platform for a highly competitive retail market to emerge which in turn will help to deliver the proposed benefits of the NBN by ensuring that Australian consumers and businesses have the widest possible access to affordably priced and innovative superfast broadband services. However, it is important that these well meaning principles are backed up by detailed legislative provisions that can stand the test of time.

The Study acknowledges that one of the key objectives of the NBN is to foster competitive telecommunications markets in Australia. However, the Study identifies that the NBN will be a bottleneck infrastructure which will open up the scope for the owner of the network to abuse its market position to the detriment of competition and ultimately consumers. Consistent with Optus' position above, the Study recognises the need to develop a clear and transparent regulatory framework and set of governance arrangements for the NBN that will provide adequate constraints on NBN Co to prevent an abuse of its market position thereby enabling competition to flourish.

The Study puts forward a number of detailed recommendations to ensure these policy commitments are delivered in practice. The most important of these recommendations relate to;

- The need for a tight definition of wholesale-only;
- The need to be clear about the scope of NBN Co's activities, both as an entity in its own right and through related parties;
- The need for clear rules on the ownership structure of NBN Co;

- Ensuring that the equivalence and open access arrangements are clearly and appropriately defined; and
- Ensuring that there is appropriate transparency in the operations of the NBN.

Optus examines each of these important issues in turn below.

#### *Defining “wholesale-only”*

The Government has given a clear commitment to operate the NBN as a wholesale-only supplier of services. However, the Study recognises that what constitutes a wholesale service can have a variety of interpretations each of which can have quite different consequences for the market. In recognition of this fact the Study specifically recommends the need for a very clear and narrow definition of “wholesale-only” around two important principles;

- That NBN Co should only provide services to carriers or carriage service providers as defined in the Telecommunications Act; and
- That NBN Co should be limited to providing services at specified layers in the Open System Interconnection (OSI) stack. With the exception of customers served through wireless or satellite services, the Study recommends that NBN Co should be limited to providing wholesale access at layer 2 and below.

Optus is strongly supportive of these recommendations, which are in line with comments we have made in our recent submission on the draft NBN Companies and Access Bills. We believe that adoption of these principles will provide a clear line of demarcation for the concept of wholesale-only that will be capable of being easily adopted in practice. Furthermore, this approach will help to ensure that NBN Co focuses its activities on areas of market failure and does not stray into areas that are prospectively competitive. A key consideration in this respect is that a number of companies presently provide wholesale Layer 3 offerings to service providers. This wholesale market would appear to have the potential to grow within the fibre footprint of the NBN as a number of current providers gain access to a broader footprint<sup>1</sup>. It is appropriate, therefore, that as the dominant access provider NBN Co does not seek to enter this Layer 3 services market.

#### *Clarifying the scope of NBN Co’s activities*

Whilst the above recommendations will go a long way to cementing the wholesale-only status of NBN Co the Study recognises that this status could be compromised if NBN Co is given free reign to broaden the scope of its activities.

In this respect the Study recommends that NBN Co;

- Should be prohibited from engaging in commercial or investment activities unrelated to the provisions of wholesale telecommunications services in Australia; and
- That NBN Co should be prohibited from investing in retail telecommunication and content service providers.

Optus strongly supports these recommendations, which again are consistent with comments Optus has made in its submissions on the draft NBN Companies Bill. In its submission, Optus noted that the terms of the NBN Companies Bill as currently drafted it would enable NBN Co to take a controlling stake in a retail telecommunications provider and operate a retail business. Such an outcome would clearly compromise the “wholesale-only” nature of NBN Co.

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<sup>1</sup> With the exception of Telstra, these current wholesale offerings (which are based on ULLS access) are limited to metropolitan areas.

### *Ownership structure of NBN Co*

An important issue that could have profound implications for the competitive nature of the NBN is the ownership structure of NBN Co.

Whilst the Government has indicated that it proposes to take an initial majority stake in NBN Co, it has always been its stated intention to attract private investment into the NBN, especially over the longer-term.

Telecommunications companies will very likely be amongst the private investors seeking to take a stake in the NBN, either through the direct investment of cash or by vending assets to the venture in return for equity. This immediately raises issues around the potential for those interests to be used in a manner which undermines both the principle of structural separation of the NBN and ensuring that all access seekers are treated equally. As entities supplying downstream retail services to end-users, those retailers with a stake in NBN Co are likely to have a different set of incentives and interests than those envisaged for the wholesale-only NBN. The higher the share of equity taken by an individual retail telecommunications service provider, the more control it may be able to exercise over NBN Co and the greater the risk that such an entity will use its position to unduly favour its own retail operations over other access seekers.

The Study rightly identifies these risks and recommends the need to consider the competition implications of any sell-down of the Government's stake in NBN prior to such a sale. More importantly, it recognises upfront the unique competition concerns that arise from a retail telecommunications provider taking a stake in NBN Co. In this respect it recommends any investment by a Carrier, Carriage Service Provider and Content Service Provider is capped at a 15% equity stake. This recommendation is in line with comments Optus has made in its submission to DBCDE on the NBN Companies Bill and we strongly endorse it.

### *Establishing clear equivalence and open access arrangements*

An essential component to delivering fair wholesale access to the NBN is the Government's commitment to operate the NBN on an equivalent and open access basis. The Study recognises that whilst open access can be delivered simply, by requiring NBN Co to provide access to all access seekers, establishing appropriate equivalence arrangements can be a more complex matter.

The specific complexity arises where it is considered appropriate to allow some flexibility in the principle of equivalence so access terms are not required to be identical and differences can apply in the terms provided to different access seekers. Both the Government, in its draft NBN Co Access Bill, and the Study support the concept of enabling differential access terms to apply on the conditions that such differences can be considered to "*aid efficiency*" and that all access seekers "*in like circumstances*" have the opportunity to take advantage of any differential terms.

Optus also supports the concept that "equivalent" does not mean "identical", and that there should be scope for some differentiation in setting access terms. However, we have strongly argued that the circumstances in which this could apply should be very tightly prescribed. In this respect we have criticised the draft NBN Co Access Bill for adopting an interpretation of equivalence that provides too wide a scope for differentiation, such that a single access seeker could obtain a systemic advantage over others.

The Study recognises the importance of establishing clear equivalence rules that set limits on the scope for any differentiation that could be applied between access seekers. We are pleased to note that it also recommends a tighter definition of the concept of equivalence than is set out in the

current draft of the NBN Access Bill. The draft NBN Access Bill allows for differences in access terms between access seekers so long as any differences (for example, price discounts) can be deemed to “aid efficiency” and are provided to all access seekers in “like circumstances”. The Study recommends an important exception to the concept of “like circumstances” put forward in the draft NBN Access Bill. Specifically, it recommends that “like circumstances” should not include scale differences unless at least three access seekers are of sufficient scale to qualify. This is an important recommendation, since it implicitly recognises that Telstra’s vast scale advantage over all other fixed line players would otherwise enable it to negotiate superior access terms that would not be available to any other player. This recommendation is in line with Optus’ own comments on the equivalence provisions in its submission to DBCDE on the draft NBN Access Bill. Optus strongly endorses this recommendation.

### *Ensuring NBN Co’s activities are operated transparently*

In recognition of the important place NBN Co will occupy in the value chain for the delivery of telecommunication and content services, the Study recognises that NBN Co will need to ensure that its activities are closely aligned with needs of the industry. This will require NBN Co to take an open, transparent and consultative approach to its dealings with industry stakeholders. To assist NBN Co in this respect the Study makes a number of detailed recommendations that will impose a regime of transparency on NBN Co, including public reporting obligations and requirements to consult with industry on a range of key issues.

Optus is strongly supportive of these recommendations which will help to foster industry confidence in the NBN and the broader competition policy objectives that will apply to this network.

## **1.2 Technology and architecture**

A significant proportion of the Study is focused on the technology, design and roll-out issues associated with the NBN. Overall, Optus considers that the Study puts forward some measured and sensible recommendations on these issues. There are five areas in particular that are worth highlighting;

1. The proposed mix of technology;
2. The decision on where to place the Optical Network Termination device (ONT);
3. Issues associated with deployment in multi-dwelling units (MDUs);
4. Setting standards for the roll-out of the NBN; and
5. The requirements relating to provisions of transit backhaul.

### *Proposed mix of technology*

The Study has recommended that the FTTP footprint should be extended to 93% of the population, which is an extension to the Government’s initial target of 90%. It is proposed that the remaining population is served by a mix of wireless (covering the population in the 94<sup>th</sup> to -97<sup>th</sup> percentiles) and satellite technology (covering population in the 98<sup>th</sup> to 100<sup>th</sup> population percentiles). Optus supports the recommendation of the Study. We note that this architecture is consistent with the proposal Optus put forward in its bid for the Government’s initial tender on an FTTN based NBN. This design has the benefit of being practical and cost efficient whilst maximising the coverage of the fibre footprint and by implication the number of consumers that are able to access very fast broadband services.

### *Optical Network Termination device (ONT)*

A key decision in the design of the network that is likely to have a material impact on the take-up of services on the NBN is the location of the ONT. The ONT is the gateway at the customer premise

through which services on the NBN will be accessed. The Study has proposed that the ONT is placed within the customer premise. Optus strongly endorses this recommendation.

The alternative approach would be to locate the ONT outside the customer premise (on an outside wall, for example). This would require multiple truck rolls to a customer premise; firstly by an NBN technician to install the ONT on the outside of the customer premise; then followed by a technician of a retail service provider to use the NBN at that premise, to connect the ONT to the internal wiring within the customer's premise. Optus considers that such an approach would add costs to the deployment of services, and would also be inconvenient for customers. Moreover, it would also act as a significant barrier to retail competition, since it would inevitably favour Telstra which has by far the largest field workforce available to complete the connection of the ONT to the inside of a customer's premise. Locating the ONT internally will avoid many of these problems.

#### *Deployment in Multi-Dwelling Units (MDUs)*

The Study recognises that NBN is likely to face some specific challenges in deploying services into MDUs within Australia. Optus strongly concurs with this view based on its own experiences in servicing MDUs through its own HFC network and more recently by reference to some significant operational impediments to accessing Telstra's copper lines in MDUs through the use of ULLS services.

Optus agrees that it is necessary for government to legislate to overcome some of the impediments and ensure that this important section of the community is not disadvantaged.

#### *Setting standards for the roll-out of the NBN*

It is currently contemplated that fibre networks in Greenfield locations might be rolled out by alternate network providers to NBN Co. Accordingly, the Study recognises the need to ensure efficient integration of these networks with the NBN. It, therefore, recommends ACMA set industry wide standards for FTTP networks in line with the design requirements of NBN Co. Optus strongly endorses this recommendation which is in line with comments we have made in submissions on the Telecommunications Legislation Amendment (Fibre Development) Bill 2010.

#### *NBN Co to provide transit backhaul*

The study recommends that in areas where there is only a monopoly supplier of backhaul services (i.e. Telstra) that NBN Co should be required to provide a backhaul service. The study also recommends that to help deliver a level playing field in such location all service providers should be required to utilise the NBN Co's backhaul service.

These recommendations fundamentally recognise that the absence of competitively priced backhaul services have acted as a significant impediment to the emergence of fixed line competition in many parts of Australia. Optus strongly endorses these recommendations.

### **1.3 Financial viability of the NBN**

An important issue considered by the Study is the financial viability of the NBN. In developing a business case for the NBN the Study makes two crucial assumptions on which financial viability is modelled.

Firstly, it assumes that the social policy objectives of the NBN should take precedence over the commercial imperatives of the NBN, at least in the medium term. The business case, therefore, sets the pricing of access services at levels that are affordable and designed to drive take-up of services rather than at levels which would maximise the returns available on the NBN.



Secondly, and related to this first assumption, the Study assumes that in the early phase of the NBN the returns available to the NBN must necessarily be constrained to levels below those that would be required to attract private sector investors. Accordingly, the Study recommends that in the early phase of the project, the Government will need to guarantee funding for the NBN. However, the Study appropriately recognises that the NBN will be a very long term project and over the longer term it is likely to generate strong cashflows. In the longer-term it is likely to become attractive to private sector investment.

Optus considers that each of these assumptions is reasonable. The NBN will be a major piece of national infrastructure and a central plank of a nation building programme. Its primary objective should not be to maximise profits and returns for shareholders but to deliver important competition and social benefits. It is appropriate, therefore, that the Government takes a leading role in delivering these objectives by securing the initial funding requirements for the NBN. To achieve its policy objectives the NBN must be available to as many Australian consumers as possible, which means that services must be affordable. If the pricing of services on the NBN reflects this assumption then the conclusion drawn by the Study about the levels of take-up and returns available on the NBN appear to be reasonable.

There are two related observations Optus would highlight in respect of the Study's conclusions on the viability of the NBN.

Firstly, we note that whilst the Study does not explicitly propose pricing for services it makes some very clear assumptions on what would constitute an appropriate level of pricing to drive take-up of services. Specifically, the Study models setting wholesale prices for an entry level voice and broadband service of \$30-\$35 and a premium broadband of \$45-\$50. Optus agrees with the assumption that this level of access pricing is necessary to drive take-up, given that pricing at these levels should support average retail pricing in the market today.

Secondly, we note that the Study has modelled its business case on the assumption that no agreement is reached with Telstra in the current negotiations about the terms of Telstra's participation on the NBN. Whilst the Study assumes that Government and Telstra may reach an agreement at some future time on the terms of Telstra's participation in the project, it recommends that the Government should proceed to build the NBN unilaterally in the absence of such an agreement.

Optus is strongly supportive of this recommendation. Since the idea of a national highspeed broadband network was first raised in 2005, Telstra has sought to use this policy initiative to maximise its own self-interest. Having failed to convince the Government or the ACCC of the merits of its well publicised and highly anti-competitive proposals, Telstra has fallen back on the classic incumbent tactic of delay. The latest manifestation of this is Telstra's clear obfuscation in the present negotiations with Government about its proposed participation in the NBN. Optus considers that it is in everyone's best interest for Telstra to participate in the NBN, but only on terms that are reasonable, equivalent and represent fair value to taxpayers. Telstra's participation should not come at any price and the Study concludes that the Government should be prepared to proceed with the NBN unilaterally, a view Optus strongly endorses.

## **Section 2: Recommendations where issues remain to be addressed**

There are a few select areas of the Study that Optus considers requires further review to enable a more efficient roll out of the NBN and more effective future market structure for Australia.

The principal concerns that Optus seeks to flag relate to;

- 1) Ministerial discretion to allow the NBN to offer retail services (recommendation 68);
- 2) Pricing of services on the NBN (recommendations 4, 23-25, 42, 72 and 84);
- 3) Rollout phasing (recommendation 6);
- 4) Approach to providing wireless services (recommendations 5 and 45);
- 5) Future unbundling below Layer 2 (recommendations 36, 71, 75-77, 80 and 81);
- 6) On-request installation of ONT (recommendation 2);
- 7) Provision of an RF overlay on the NBN, subject to certain conditions (recommendation 34);  
and
- 8) Approach to determining contestable backhaul (recommendations 48 and 49).

More detail on each of the above points is provided in this Section. Specific responses to all of the Study recommendations are outlined in Section 3.

### **2.1 Ministerial Discretion to override the Wholesale only status of NBN Co.**

Optus is strongly opposed to the proposal, currently included in the draft NBN Co Company Bill, and partially supported by the Study (recommendation 68) for the Minister to be given discretionary power to grant NBN Co an exemption from its wholesale-only obligation. This discretion should be removed.

NBN Co will become the dominant and in most cases monopoly provider of wholesale fixed access across Australia. The overlay of a retail proposition on top of this monopoly access will simply recreate the same type of dominant vertically integrated position Telstra enjoys today with the copper network, which the Government's plans intend to finally deal with. If this discretion were implemented, it would almost certainly lead to less competition and innovation due to the commercial threat from a competing service provider with monopoly control of an essential component of the service.

The potential for NBN Co to become a retail service provider will also restrict its ability to openly deal with Retail Service Providers (RSPs) with a requirement to constantly ensure that confidential RSP data was not able to be used for future competitive services.

Finally, significant additional costs would be required up front for NBN Co to retain the flexibility to offer both wholesale and retail services; costs which would necessarily be passed on to RSPs and in turn end users, likely further limiting the uptake of NBN services.

To the extent that concerns arise from any market failure to meet Government policy objectives in the provision of retail services, Optus recommends that alternative mechanisms not involving the NBN Co should be adopted to rectify those concerns. These could include the use of incentives such as the Australian Broadband Guarantee through to the establishment of independent retail service providers.

### **2.2 Pricing of Services on the NBN**

#### *Non-access service pricing*

Optus agrees with the pricing advice provided to the NBN Co in section 4.5.2 of the Study namely:

That NBN Co Board offer a range of commercial terms and additional charges, as long as the offers are:

1. Equivalent and do not distort competitive outcomes; and
2. Transparently calculated and reflect reasonable recovery of costs for providing that service, for example the cost of connecting customers.

Importantly, contrary to the recommendation 4 of the study, Optus considers that this advice should apply to all services including services to non-premises such as mobile base stations.

Without this, for example, NBN Co would be at liberty to charge nominally \$1 less for mobile base backhaul than Telstra does today in monopoly supply situations, failing to rectify a key market failure.

#### *Access Service pricing*

Optus also strongly disagrees with the proposition given by the Study in exhibit 4-43, namely that:

*“A fixed access charge is levied to end users for connection to the network, and is passed through by the first service provider”.*

Optus believes this would grossly distort the market for services.

First, it is highly discriminatory against the first RSP to provide services to a premise, based only on timing of the service take up, not the service features or capability. As a consequence, it will hinder the take up of services with RSPs being reluctant to sell services in case they end up as the initial service provider to the home, giving them a significant cost disadvantage to any subsequent service providers.

For example, in a case where there are separate potential voice, broadband and video service providers, the fixed access charge will only accrue to the first of these service providers to sell a service, with the remaining providers only incurring marginal incremental costs of access. Which access provider suffers this significant competitive disadvantage will be solely determined by the timing of the provision of their service.

Second, it would also require the second service provider to pick up the full access charge in the case that the first withdrew their service, forcing a change in pricing which be impossible if an existing contract is in place. In theory, this could be gamed by RSPs through cancelling a service once a second service is implemented then offering a follow on service.

Third, it is unlikely to facilitate the take up of specialist services such as smart metering in the absence of the first service provider.

Given the above, Optus recommends that NBN Co adopt a pricing approach that is competitively neutral such that any access pricing component is passed on to all service providers equally.

More broadly, Optus considers that pricing of services on the NBN will be so critical to the delivering the Government’s objectives for the NBN, that the ACCC should be required to provide up front guidance on access pricing. Specifically, the legislation should require the ACCC develop and publish Pricing Principles for services offered on the NBN, to which NBN Co will have to comply in developing any pricing proposal.

In respect of the pricing principles, the legislation should also provide the following guidelines to the ACCC;

- a) That prices should be based on the prudent cost of supply that will generate a return for NBN Co over the life of the project commensurate with the risks involved;
- b) That the ACCC will have scope to set a Regulated Asset base for NBN Co;
- c) That the Regulated Asset Base can be rolled forward from period to period, but should take account of prudent additional capital expenditure, prudent operational expenditure and depreciation of the assets;
- d) That pricing principles should provide incentives for NBN Co to reduce costs or otherwise improve efficiency;
- e) That whilst NBN Co should have some flexibility to set prices for individual services , overall pricing must be subject to price cap mechanism to ensure that any future adjustments to access prices take into account both the need for pricing stability as well as to reflect the commercial reality of long term retail price trends;
- f) That pricing should be offered on an equivalent basis consistent with any equivalence criteria set down by the ACCC; and
- g) That any pricing proposed by NBN Co should be subject to ACCC approval to ensure there is compliance with these principles.

### **2.3 Roll out of the NBN**

Recommendation 6 in the Study proposes that NBN Co select a number of priority areas for the roll out of the NBN that together compromise a representative mix of the country.

Optus disagrees with this recommendation as it suggests that existing well served competitive broadband markets may be given a similar priority for network deployment as currently underserved areas.

As Optus has consistently argued, the initial roll out of the NBN should focus on so-called “underserved” areas, those with no access to broadband services or those areas with no or limited competitive fixed broadband services. This should include places where the current copper network does not allow competitive ULL based services, for example premises served from Telstra RIM or pair gain systems. It should also include regional and rural areas in the band 3 and band 4 exchange serving areas where existing ULL prices severely limit the opportunity for Telstra’s competitors to offer DSL based services.

Optus accepts that the nature of where underserved premises exist today, sometimes in close proximity to premises with access to high quality competitive broadband services, means it is not always practical to exclusively target underserved premises. Focusing on the underserved should therefore not be done to the entire exclusion of addressing other closely adjacent premises.

However, Optus also notes that the architecture of an FTTP network and the early design principles being adopted by NBN Co will enable the efficient roll out of an FTTP network in ‘islands’ serving targeted unserved areas initially followed by a roll out filling in those areas with existing competitive broadband services.

### **2.4 Approach to providing wireless services**

Recommendations 5 and 45 of the Study propose that the Government tender for a commercial third party to deliver the required wireless portion of the NBN.

Optus does not support this recommendation, as it is inconsistent with the NBN Co acting as the sole provider of fixed equivalent wholesale services.

Without this consistency a number of potential issues may arise.

Firstly, despite in some cases the close proximity of premises to be served by all proposed technologies (fibre, fixed wireless and satellite), such an approach will likely add cost to RSPs and ultimately end users by requiring RSPs to deal with multiple wholesale providers offering potentially different products via different systems, in order to serve all potential retail customers in a given geographic area.

Secondly, given that the location of premises that should receive a fixed wireless service will be highly interrelated as to which premises are able to receive a fibre or have to receive a satellite service, allowing a third party to provide these services may contribute to an inefficient network design from NBN Co, again likely adding cost to RSPs and ultimately end users.

Accordingly, Optus recommends that NBN Co builds and operates the fixed wireless component of the network to serve customers in the 94<sup>th</sup> to 97<sup>th</sup> population percentile.

To maximise service performance and comparability to the NBN Co FTTP network, Optus also proposes that the wireless network is offered as a fixed only network with all premises using the network to use a fixed antenna.

Optus notes that the Study outlines the improved performance available from fixed antennas enabling further reach to achieve the target 12 Mbps performance. The use of only fixed antennas on this network will provide for a consistent end user experience, reducing any service disruption and increased operating costs compared to the variable performance with a receiver with an in building performance. It will also improve the overall capacity of the wireless network by reducing the level of power and spectrum needed compared to a wireless network with a mix of fixed and non fixed antennas.

## **2.5 Future unbundling below Layer 2**

A number of recommendations in the Study propose that NBN Co take into account the likelihood of future unbundling of the Layer 2 network following the full roll out of the NBN.

As noted in Section 1 of this document, Optus strongly supports the recommendation for NBN Co to only provide Layer 2 wholesale services. Whilst recognising that options to stimulate ongoing competition and innovation in the telecommunications industry need to be addressed, Optus does not consider that the proposal to allow for the NBN to unbundle and provide Layer 1 services at some time in the future is either practical or desirable.

First and foremost, allowing unbundling creates the conditions for large parties to create bottleneck control over Layer 1 capacity (for example in exchange space, duct space, and available fibre strands), similar to that enjoyed by Telstra on the copper loop today. This in turn will allow the re-creation of one or more large, dominant, vertically integrated service providers. This would be a severely undermine the competitive benefits that the NBN is targeted to deliver.

Second, catering for the possibility of future unbundling will add unnecessary additional cost to the NBN deployment. For example, enabling future dark fibre unbundling would require massive over provisioning of fibre on each route and to each premises to provide effective future competition, even if other potential limitations in passive resources can be overcome.

Optus notes that unbundling has been a reasonably successful approach applied to the copper network in Australia and many other markets around the world. However, its application needs to be viewed in the context of enabling additional competition from vertically integrated incumbents. Specifically, the inability of access seekers to acquire wholesale voice and broadband services on genuinely equivalent terms created a strong policy case for unbundling of the copper loop. In the case of NBN Co, although it may hold a near monopoly position in respect of fixed access infrastructure, its market power is highly curbed given its restriction to operate as a wholesale-only

business. Optus believes this structural separation approach will be a more powerful agent for vibrant competition than any potential unbundling approach for the foreseeable future.

## **2.6 On request installation of ONT**

Recommendation 2 of the Study proposes that NBN Co should not perform the fibre drop from the street to an individual premise and install the ONT until services are ordered by a retail service provider (RSP).

Contrary to this, Optus would urge the Government to require NBN Co to install ONT on all premises as part of the initial network rollout.

Optus makes this suggestion given three specific issues with postponing final connections of premises until ordered by a retail service provider.

Firstly, and most importantly, the Study's suggested approach will impede initial retail competition, creating an inbuilt disincentive to migration. This will arise from the delay created for end users in obtaining an initial service from the NBN. Customers will have to pro-actively order a connection which will require a coordinated truck roll between NBN Co and the RSP at a date in the future compared to the alternative of an almost instantaneous provisioning with a preinstalled ONT. As a consequence, the overall take up of the NBN will be slowed.

Second, it will increase the overall cost of the installation to the premises given the random nature of installs in an area versus the efficiencies gained from a large scale coordinated installation program. This in turn will increase the cost to RSPs, and ultimately end users, in the migration from legacy networks to the NBN. It will not enable NBN Co to deploy a large scale migration program for each area that the network is being rolled out. Rather NBN Co will need a connection program requiring coordination of random installations across the entire footprint of the rollout on an ongoing basis.

Third, it will lead to less efficient use of the core network infrastructure through misalignment of the core and ONT technology during the roll out of the network. It is anticipated that the maturing of the technology during the rollout phase of the NBN will result in newer generations of core equipment and ONT being installed over time. The random roll out of ONT will require the holding of significant volumes of older generations of ONT during both the roll out of the NBN and during its lifetime.

Optus does appreciate there are potential issues associated with the installation of ONT for all premises during the course of the initial rollout. These include, for example, the need to obtain property owners consent to install equipment on premises, which may require legislative support similar to that provided to energy utilities to overcome.

## **2.7 Provision of an RF overlay on the NBN, subject to certain conditions**

Recommendation 34 of the Study proposes that NBN Co be permitted to offer an RF overlay service, subject to certain conditions.

Optus recommends that NBN Co does not implement an RF overlay over the FTTP network. An RF overlay would add additional costs (both initial capital and ongoing operational costs) to the network, and limit the performance/range of the FTTP. It would also establish an inherent monopoly infrastructure that would require an extensive and costly technical solution plus a strongly supportive regulatory framework to provide open and equivalent access to the RF channel. Whilst some of these issues are considered by the Study's recommendation, Optus does not see these as practicable.

## **2.8 Contestable backhaul**

Optus agrees with recommendations 48 and 49 of the Study requiring NBN Co to build its POIs in locations where there is backhaul available from multiple providers or from the Government.

Optus notes that the Study raises the concern that there may be cases where duopoly backhaul exists and does not translate into affordable pricing to RSPs and proposes that in such cases NBN Co be able to overbuild the contestable backhaul.

Optus supports this principle but recommends that in cases where there is a market failure a consultative process is undertaken involving NBN Co and the ACCC to seek to rectify the problem such as through setting backhaul prices prior to the overbuild decision by NBN Co.

## Section 3: Detailed comments on the Implementation Study Recommendations

Recommendation	Implementation considerations	Comments
<b>Chapter 2. Establishing a mandate for NBN Co</b>		
<p><b>Recommendation 1.</b> That NBN Co only enter markets where there is insufficient infrastructure to support superfast broadband or where retail service providers are unable to access bottleneck assets on reasonable terms.</p>	<p>NBN Co's mission should be set out in the statement of expectations, but where there are well-defined markets from which it should be excluded, a binding prohibition through legislation or licence conditions may be appropriate.</p>	<p>Optus agrees with the recommendation, but with one important exception. The decision for NBN Co to enter a market should not rest on whether "reasonable" access terms are available to existing superfast infrastructure – but whether access seekers are able to access gain access on <b>equivalent open access terms</b>.</p> <p>Optus agrees with the implementation considerations.</p>



Recommendation	Implementation considerations	Comments
<p><b>Recommendation 2.</b> That Government's objective of providing superfast broadband to premises be measured in terms of coverage, with premises considered covered by the NBN where:</p> <p>1. NBN Co is able to provide a wholesale service to those premises at the request of a retail service provider within a maximum number of days, specified by Government. For premises to be defined as 'covered', NBN Co should not be required to install CPE, or for fibre to perform the 'drop' and install the ONT. NBN Co should not perform the 'drop' and install the ONT until services are ordered via a retail service provider;</p> <p>2. The ACCC or appropriate agency has declared the premises to be 'adequately served' by other providers where premises already have access to last-mile services of the required speed, with infrastructure-based competition and/or open-access wholesale arrangements in place, and with pricing comparable with NBN services; that to the extent that premises are deemed to be 'adequately served' by FTTP infrastructure, these should be counted towards the FTTP coverage objective.</p>	<p>In relation to premises that NBN Co lists in its coverage register as 'covered', it is appropriate to compel NBN Co to meet minimum standards for service activation times. This should be legally binding and should be monitored, to ensure that NBN Co's roll-out does not distract it from ensuring adequate service levels in covered areas.</p> <p>The maximum time for activation of 'covered' premises could be included in NBN Co's licence conditions, together with an obligation to provide ACMA with data on activation time performance.</p> <p>Maximum activation times impact on the activation / maintenance resources NBN Co needs to provision for areas where roll-out has occurred. The maximum activation time permitted may need to be modified if experience shows it not to be feasible.</p>	<p>Optus proposes that NBN Co measure and provide details of both the number of premises passed by all technologies as well as the number of premises connected to the NBN.</p> <p>Optus does not agree that NBN Co should only install ONT at a premise once a request has been received by a retail service provider. Optus considers that the installation of the ONT (or NTU) by NBN Co at all premises it passes, as it passes them, will lead to more rapid take up of the NBN network and will result in a lower average cost of installation. Optus' experience through migrating customers to its HFC network is that customer inertia can act as a significant barrier to take-up. This inertia can be reinforced if the customer has to pro-actively request that their premise is connected to the NBN.</p> <p>Optus agrees with the definition for premises already served by alternate suppliers. These suppliers should have the same obligation to report both the number of premises passed and connected to the super fast broadband networks.</p> <p>Subject to the concerns raised above, Optus agrees with the implementation considerations.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 3.</b> For the purposes of NBN Co's coverage requirement, that premises be defined, to mean any building (or part of a building) that meets one of the following criteria:</p> <ol style="list-style-type: none"> <li>1. Currently has a standard telephone service activated as defined under the USO;</li> <li>2. Currently has a fixed-line residential or business broadband product activated;</li> <li>3. Is used on an ongoing basis for residential, business, health or educational purposes; or,</li> <li>4. Is defined as a school by the Department of Education, Employment and Workplace Relations.</li> </ol>	<p>Initially, it is sufficient for Government to inform NBN Co of the definition of premises it is using in the coverage objectives, so that NBN Co can plan and implement its roll-out accordingly. This could be achieved through a statement of expectations. Once roll-out is complete, Government should impose an ongoing coverage obligation through a binding instrument such as NBN Co's licence conditions.</p> <p>As well as defining the desired end-point, Government will need to monitor progress of the roll-out and communicate to NBN Co any desired changes of pace or focus. The proposed requirement for NBN Co to submit a Corporate Plan including both strategic and operational commitments for Ministerial approval on an annual basis, combined with informal communications between NBN Co and departmental officials, provides a mechanism for Government to do this.</p>	<p>Optus considers it necessary for the Government to immediately provide clear coverage criteria for all super fast broadband network providers and provide clear coverage criteria for all technologies that will be used to support the NBN including wireless and satellite.</p> <p>The recommended coverage criteria should also include premises used for Government purposes in criteria 3.</p> <p>Optus agrees with the implementation considerations.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 4.</b> That Government permit NBN Co to provide connections to non-premises on a commercial basis; that Government retain the option to require NBN Co to cover specified classes of non-premises on terms approved by Government.</p>	<p>No regulatory action is necessary to retain this flexibility; Government should merely ensure regulation does not preclude such activities. Should Government choose to specify non-premises for coverage, this could be achieved through the statement of expectations and reinforced with licence conditions prior to privatisation to give regulatory certainty to investors and ensure continued coverage.</p>	<p>Optus does not fully support this recommendation. Today many “non-premises” are only served by Telstra infrastructure and wholesale access is often not available. Optus proposes that the recommendation is changed to include a competition test – that NBN Co should be required to provide wholesale access in the absence of alternate infrastructure based competition and/or open-access wholesale arrangements to non-premises. This could be adopted as a Licence Condition which would require NBN Co to provide access that is designated non-competitive by the ACCC.</p> <p>Optus agrees with the pricing advice provided to the NBN Co in section 4.5.2 of the Study that relates to this Recommendation, namely:</p> <p style="padding-left: 40px;">That the NBN Co Board offer a range of commercial terms and additional charges, as long as the offers are:</p> <ol style="list-style-type: none"> <li>1. Equivalent and do not distort competitive outcomes;</li> <li>2. Transparently calculated and reflect reasonable recovery of costs for providing that service, e.g. cost of connecting customers.</li> </ol> <p>For clarity Optus considers that this advice should apply explicitly to this Recommendation 4, applying to all of NBN Co services including services to non-premises.</p> <p>Without this, for example, NBN Co would be at liberty to charge nominally \$1 less for backhaul than Telstra does today in monopoly supply situations, failing to rectify a key market failure.</p> <p>Provision of services to non premises should also be on a non discriminatory basis.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 5.</b> That Government set NBN Co the objective that, once NBN roll-out is complete, all premises in Australia have access to superfast broadband services, specifically that:</p> <ol style="list-style-type: none"> <li>1. 93 percent of premises be covered by a fibre-to-the-premises (FTTP) network that can deliver speeds of up to 100 Mbps;</li> <li>2. All other premises be covered by NBN Co via satellite technologies that deliver peak speeds of at least 12 Mbps;</li> <li>3. A fixed-wireless network be provided beyond where fibre is deployed to 4 percent of total premises, but that this not be the responsibility of NBN Co unless there are no acceptable tenders by commercial operators;</li> <li>4. These coverage objectives be reviewed over time based on actual costs of deployment and technology developments.</li> </ol>	<p>While the network is incomplete, it is not feasible to codify NBN Co's coverage objectives as a universally enforceable obligation. Instead they could be included in the statement of expectations, leaving NBN Co with flexibility around roll-out scheduling.</p> <p>Coverage objectives could also be included in the Funding Agreement between the Government and NBN Co, to provide directors with certainty around these obligations, but again it is important to maintain flexibility for NBN Co to determine the details of the roll-out schedule.</p> <p>Government expectations of premises to be covered should be clarified as soon as possible to facilitate network planning.</p> <p>Service standards such as download speed of the basic service offering should be made binding, for example through inclusion in licence conditions. The licence conditions might also specify that once premises are registered as 'covered' in the Coverage Register, an ongoing coverage obligation exists.</p>	<p>Optus agrees with the proposed technology mix. However, importantly, Optus believes that the fixed-wireless network should only be the responsibility of NBN Co, and should not be subject to tender by commercial operators.</p> <p>Optus agrees that NBN Co will need some flexibility in its roll-out schedule. Optus recommends that the coverage boundaries for each of the technologies provided should have a degree of flexibility. For example, the coverage should have a range of the order of +/- 0.5%.</p> <p>However, this should not affect NBN Co's obligation to roll-out the network. Therefore, Optus believe that the roll-out obligation should be set out in the relevant legislation, namely "NBN Co must roll-out superfast broadband services to all premises in Australia, specifically;</p> <ol style="list-style-type: none"> <li>1. 93 percent ... be covered by a fibre to the premise (FTTP) network that can deliver speeds of up to 100 Mbps;</li> <li>2. A fixed fixed-wireless network be provided beyond where fibre is deployed to 4 percent of total premises; and</li> <li>3. All other premises be covered by NBN Co via satellite technologies that deliver peak speeds of at least 12 Mbps".</li> </ol>

<b>Recommendation</b>	<b>Implementation considerations</b>	<b>Comments</b>
<p><b>Recommendation 6.</b> That NBN Co select a number of priority areas for roll-out that together comprise a representative mix of the country; that, once NBN Co has completed its roll-out to these priority areas Government review whether NBN Co is on track to achieving the objective of 93 percent FTTP coverage and use performance management mechanisms as required; that the Minister request NBN Co include details of its progress in achieving the 93 percent FTTP coverage objective in each corporate plan.</p>	<p>It is sufficient for this to be set out in the statement of expectations, as coverage will be complete well before the entry of private equity.</p> <p>These expectations regarding coverage should be set as soon as possible to enable NBN to plan its initial roll-out schedule.</p>	<p>Whilst Optus recognises a need to test the mix of technology it is important for the NBN roll-out to focus on priority locations where customers do not have access to competitive broadband services. This would include customers without access to broadband services, or those without access to competitive services.</p> <p>The requirement for NBN Co to focus on underserved areas in its roll-out could be included as a Licence Condition on NBN Co.</p>
<p><b>Recommendation 7.</b> That NBN Co be permitted to establish a mechanism by which a community can fully or partially fund the extension of the FTTP network to cover its location, provided that these premises will not be counted towards the FTTP coverage objective. This could include financial contributions towards the network extension from businesses, not-for-profit organisations, state and local governments or from Government, independent of its equity investment in NBN Co.</p>	<p>While NBN Co is in the early stages of deployment, such a scheme would be an unnecessary distraction and would be based upon inadequate roll-out cost data.</p> <p>Any formal appeal process would be impractical, and NBN Co's commercial incentive is likely to cause it to establish a pragmatic approach. Transparency of its decision-making and its treatment of applications will exert sufficient pressure to compel NBN Co to comply with the substance of this recommendation.</p>	<p>NBN Co should not be distracted in the initial roll out with such issues. If such a need arises, then the third party could arrange for the roll-out fibre to standards set by ACMA or the NBN Co and under open access wholesale access arrangements. The fibre could later be vended into the NBN.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 8.</b> That until the FTTP roll-out is complete in a given area, only premises that cannot access a metro-equivalent service as defined under the Australian Broadband Guarantee program be eligible for an NBN satellite service.</p>	<p>While the network is incomplete, it is not feasible to codify NBN Co's coverage objectives as a universally enforceable obligation. Instead they should be included in the statement of expectations, leaving NBN Co with flexibility around roll-out scheduling.</p> <p>Coverage objectives could also be included in the Funding Agreement between the Government and NBN Co, to provide directors with certainty around these obligations, but again it is important to maintain flexibility for NBN Co to determine the details of the roll-out schedule.</p> <p>Government expectations of premises to be covered should be clarified as soon as possible to facilitate network planning.</p>	<p>Optus agrees with the recommendation, but proposes that this should also apply to the wireless network roll out.</p> <p>Optus agrees with the implementation considerations.</p>
<p><b>Recommendation 9.</b> That NBN Co be granted a right of access to shared property in multi-dwelling units to undertake the inspection, installation and maintenance of FTTP infrastructure and that an obligation be imposed on building managers and bodies corporate to facilitate NBN Co exercising that right of access.</p>	<p>This requires legislative action, such as insertion of a new provision into the Telecommunications Act.</p> <p>This should be implemented as soon as the legislative process allows avoiding unnecessary cost and delaying in the NBN roll-out.</p>	<p>Optus agrees with the recommendation and implementation considerations.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 10.</b> That NBN Co follow a defined process in the event that it cannot install FTTP infrastructure in a multi-dwelling unit (MDU) because it has been denied access to the building; that this process include:</p> <ol style="list-style-type: none"> <li>1. NBN Co conducting a notice process to ensure the building entity understands the implications of its decision;</li> <li>2. If the building entity does not grant NBN Co access to the building after the notice process, then NBN Co can list the MDU on the NBN Coverage Register as 'frustrated';</li> <li>3. If the building entity later invites NBN Co to enter the building and install FTTP infrastructure, NBN Co is to undertake the installation but to have flexibility over when it will do so.</li> </ol>	<p>As it relates to the integrity of the key performance metrics of NBN Co's roll-out and service levels, the process NBN Co must undertake before it may enter premises as 'frustrated' in the Coverage Register should be made binding, for example by stipulation in licence conditions.</p>	<p>Optus agrees with the recommendation and the implementation considerations.</p>
<p><b>Recommendation 11.</b> That NBN Co be required to install FTTP in MDUs as opposed to alternative technologies such as VDSL; that Government review this policy if widespread building access problems or cost overruns emerge as NBN Co seeks to cover MDUs in the early phase of the roll-out.</p>	<p>This could be specified in the statement of expectations and potentially in the Funding Agreement.</p>	<p>Optus agrees with the recommendation and the implementation considerations.</p>

<b>Recommendation</b>	<b>Implementation considerations</b>	<b>Comments</b>
<p><b>Recommendation 12.</b> That NBN Co's coverage objective include new premises that are constructed during the period of the roll-out; however, that NBN Co not be expected to cover these new premises prior to the NBN access network being deployed to that geographic area.</p>	<p>As per Recommendation 8</p>	<p>Optus agrees with the recommendation and the implementation considerations. Also any party providing access to such premises should be obliged to do so to the same standards and wholesale terms, prices and obligations as NBN Co.</p>
<p><b>Recommendation 13.</b> That NBN Co be required to act as the network provider of last resort for premises constructed within, or adjacent to, NBN Co's fibre access network; that developers be required to cover the costs of trenching and providing the duct, pit and pipe network; that NBN Co cover the costs of installing all other FTTP network infrastructure up to the premises.</p>	<p>The obligation to act as a provider of last resort may best be imposed by legislation, although Government should initially communicate this as part of the coverage objectives as per Recommendation 8, so that NBN Co can account for this obligation in its planning. Government must also ensure that proposed greenfields legislation is consistent with this recommendation.</p>	<p>Optus agrees with the recommendation and the implementation considerations.</p>



Recommendation	Implementation considerations	Comments
<p><b>Recommendation 14.</b> That ACMA be tasked with issuing national FTTP design standards that all parties should adhere to when deploying an FTTP network for the purposes of providing telecommunications services to the public; that these standards should align with the network architecture deployed by NBN Co in its roll-out; that Government and NBN Co work with state governments to reference the design standards in state planning and building controls.</p>	<p>This would require legislative action.</p> <p>ACMA should be the regulator setting the standards, but it should be required to do so in the context of the Government's broadband policy objectives. In practice this would mean adopting the NBN standards.</p> <p>The effective commencement should be determined by the speed with which NBN Co can advise on appropriate standards.</p> <p>Advice should be sought on any implications under Australia's international trade obligations of setting these standards.</p>	<p>Optus agrees with the recommendation and the implementation considerations. ACMA should adopt the standards as set by NBNCo and/or the Communications Alliance.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 15.</b> That the national FTTP standards require that the topology deployed in new developments be home-run and not shared; that this requirement be reviewed in conjunction with the broader review of topologies to be completed by the earlier of:</p> <ol style="list-style-type: none"> <li>1. Coverage of 15 percent of premises within the proposed fibre footprint;</li> <li>2. 31 December 2013.</li> </ol>	<p>As per Recommendation 14</p>	<p>Optus disagrees with this recommendation. The deployment of home run (or non shared fibre) topology is likely to dramatically increase the cost of the FTTP without effective benefit. It is not the baseline design being adopted by NBN Co for its initial FTTP design and as per the public position of the CEO of NBN Co it is a major cost to provide point to point fibre for all premises. Additionally the energy and network cost requirements for point to point solutions are far greater than shared networks.</p> <p>Optus does not believe that it is appropriate to compare FTTP to a copper network with point to point copper pairs, since;</p> <ol style="list-style-type: none"> <li>i) the distance from the fibre exchange to the premises is far greater (up to 20km) than in a copper network;</li> <li>ii) The capacity of existing and on the horizon GPON networks is considered sufficient to meet the projected needs of the residential consumers; and</li> <li>iii) More efficient topologies are considered viable to achieve a layer 1 sharing including providing sufficient access fibres to the premises for upgraded sharing methodologies (e.g. wavelength PON).</li> </ol>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 16.</b> That NBN Co overbuild third party FTTP networks that do not comply with the FTTP design standards; that, where a deployment does comply with the FTTP design standards established by Government, NBN Co may:</p> <ol style="list-style-type: none"> <li>1. Apply to ACMA to have the premises declared 'adequately served';</li> <li>2. Attempt to secure access from the network owner that would allow NBN Co to offer wholesale services over the network;</li> <li>3. Overbuild the network where NBN Co is unable to secure necessary access and the premises are not declared 'adequately served'.</li> </ol>	<p>This policy should be communicated to NBN Co through the statement of expectations, potentially reinforced through the Funding Agreement between the Government and NBN Co.</p> <p>As it relates to the integrity of the key performance metrics of NBN Co's roll-out and service levels, the process NBN Co must undertake before it may enter premises as 'adequately served' in the Coverage Register should be made binding, for example by stipulation in licence conditions.</p>	<p>Optus agrees with the recommendation where it applies to premises that today have monopoly fibre access.</p> <p>Where a premise has more than one fibre supply, and that additional supply provides for competitive wholesale access, then whether those third party networks strictly comply with FTTP standards should be a secondary consideration.</p> <p>Optus believes this is more consistent with Recommendation 1.</p>

<b>Recommendation</b>	<b>Implementation considerations</b>	<b>Comments</b>
<p><b>Recommendation 17.</b> That all new developments where fixed telecommunications infrastructure is deployed be required to provide a duct, pit and pipe network with sufficient additional capacity to allow for an FTTP deployment by NBN Co; that this infrastructure be provided at the developer's expense—an exemption being made for new premises where no fixed-line telecommunications infrastructure is installed.</p>	<p>This could be required by regulation under Government's proposed greenfields legislation. The standards imposed should be developed in consultation with NBN Co to ensure suitability. The current Bill does not require that the developer fund such infrastructure, but the mandatory nature of the requirement makes this the probable outcome.</p> <p>Government should ensure that developments where infrastructure roll-out is already planned by the time the standards are issued are not affected, and that sufficient additional notice period is granted so as not to delay developments.</p>	<p>Optus agrees with the recommendation and the implementation considerations.</p>
<p><b>Recommendation 18.</b> That the national FTTP design standards include a requirement, to come into effect after a sufficient notice period, that internal wiring installed in all new premises be of a standard that allows high-speed data transfer, e.g. CAT 5 or CAT 6.</p>	<p>This is likely to require legislative action.</p> <p>A notice period of at least six months would be appropriate.</p>	<p>Optus does not see a need to mandate internal wiring standards. Market forces can be relied upon to provide sufficient performance of internal distribution methods noting that alternatives to specialised wiring such wireless and broadband over power line will also provide viable distribution options.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 19.</b> That a register (the NBN Coverage Register) be maintained of all premises in Australia; that the register meet the following requirements:</p> <ol style="list-style-type: none"> <li>1. Be publicly available through mechanisms approved by Government;</li> <li>2. List premises in specific categories that detail the coverage status of each premises;</li> <li>3. Be updated at regular intervals;</li> <li>4. Identify premises with specific geographical location data.</li> </ol>	<p>As it relates to the integrity of the key performance metrics of NBN Co's roll-out and service levels, the requirement to keep a Coverage Register should be made binding, for example by stipulation in licence conditions.</p> <p>The requirement to maintain a Coverage Register should come into effect by 1 July 2011, to give NBN Co time to identify relevant premises and establish necessary systems.</p>	<p>Optus agrees with the recommendation and the implementation considerations. Optus recommends that it is a requirement for NBNC Co and other service providers to update the register within an agreed period after providing coverage.</p>
<p><b>Recommendation 20.</b> That a register be maintained of all monopoly transit backhaul routes between NBN Co's proposed fibre exchanges and POIs, on which NBN Co intends to build or purchase capacity; that NBN Co be required to update this register as it secures access to and offers services over each backhaul route; that the backhaul register be made accessible to wholesale customers of NBN Co.</p>	<p>As it relates to the integrity of the key performance metrics of NBN Co's backhaul roll-out, the requirement to keep a backhaul register should be made binding, for example by stipulation in licence conditions. The ACCC should be tasked with determining which routes are uncompetitive.</p> <p>The requirement to maintain a backhaul register should come into effect by 1 October 2010, to give NBN Co time to identify relevant backhaul and establish necessary systems.</p>	<p>Optus agrees with the recommendation and the implementation considerations. The register should also include details on the capacity of the transit routes.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 21.</b> That NBN Co be required to deliver in its annual report detail of its progress towards meeting its coverage objective, expenditure incurred in doing so and provide such interim progress reports as Government requires and are reasonable.</p>	<p>Reporting requirements will be included in the establishing legislation; informal requests may be made for interim updates</p>	<p>Optus agrees with the recommendation and the implementation considerations.</p>
<p><b>Recommendation 22.</b> That NBN Co be permitted to use HFC networks as an interim technology, provided that these networks are capable of providing wholesale open-access services; that NBN Co be required to plan and establish a construction schedule to achieve its FTTP coverage objective by the end of its roll-out, regardless of coverage of HFC networks.</p>	<p>As per Recommendation 8</p>	<p>Optus agrees with the recommendation and the implementation considerations. It would be feasible for NBN Co to examine the feasibility of using existing infrastructure as a means of reducing its build costs.</p>
<p><b>Recommendation 23.</b> That NBN Co be directed to set wholesale prices and offer migration incentives with the objective of achieving broadband take-up targets that Government sets at regular intervals and in accordance with the applicable regulatory pricing regime.</p>	<p>The pursuit of a take-up objective can be included in the statement of expectations. However, pricing and migration incentives remain subject to the regulatory regime.</p>	<p>Optus agrees with this recommendation and implementation considerations.</p> <p>It is also important that all RSPs have time to include the service price and other offerings in their commercial investment decisions. Due to this, it is necessary for NBN Co to provide the pricing and all other relevant details well in advance prior of the commencement of services.</p> <p>Further, prices should be subject to a price cap mechanism to prevent large year on year fluctuations. Absolute price increases should be limited to reflect the likely commercial reality of falling retail prices.</p> <p>All prices and migration incentives should be set out in NBN Co's Special Access Undertaking and be subject to approval by the ACCC.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 24.</b> That NBN Co be permitted to apply differentiated wholesale pricing for each technology platform used in its customer access network; that, within each technology platform, uniform wholesale pricing be required for all access products.</p>	<p>As initial pricing of at least some services will be set in a Special Access Undertaking, the Government should clarify its pricing requirements as soon as possible through the statement of expectations, which could then be reflected in the special access undertaking that would bind NBN Co before and after privatisation. A Ministerial Pricing Determination is another potential mechanism, which would bind the ACCC in decisions relating to the period subsequent to the expiry of the special access undertaking</p>	<p>It will be important to ensure that there is a reasonable level of pricing parity across the different platforms to promote take-up outside the FTTP footprint. Mechanisms should be considered, therefore, by the Government to ensure that support mechanisms (such as ABG) are established to ensure that wireless and satellite served premises are not at a disadvantage compared to FTTP.</p> <p>Optus also recommends that legislation requires the ACCC to issue pricing principles for services offered over the NBN. The legislation could usefully lay down key principles to be adopted or considered in those Pricing Principles (including uniform pricing parity).</p>
<p><b>Recommendation 25.</b> That the entry-level services offered over each technology platform in NBN Co's customer access network be available to end users at a comparable but not necessarily identical price; that the same performance specifications of entry level services on different technology platforms not be required.</p>	<p>As per Recommendation 24</p>	<p>As noted in 24 above, it will be important to ensure that there is a reasonable level of pricing parity across the different platforms to promote take-up outside the FTTP footprint.</p>
<p><b>Recommendation 26.</b> That NBN Co be required to provide industry standard PSTN emulation at the ONT on all connections to its FTTP access network and bear the associated network costs.</p>	<p>This should be set out in the statement of expectations. As it relates to service standards, it should also be stipulated in licence conditions.</p>	<p>The need for PSTN emulation should be reviewed with the roll out of the FTTP to ensure its ongoing need based on its take up and effectiveness in the initial stages of the roll out. In all cases NBN Co should aim to ensure that any PSTN emulation solution does not adversely add to the cost of the NBN.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 27.</b> That NBN Co be required to provide an ONT power supply unit to all FTTP customers with the potential for a back-up battery to be installed; that Government establish a program for subsidising the provision of back-up batteries for end users that Government identifies as requiring lifeline services at the time that those customers migrate from the copper network to the NBN—with the distribution and maintenance of batteries to be undertaken by retail service providers; that beyond these identified end users, provision of a battery be the choice of the end user and supply and maintenance be the responsibility of the end user.</p>	<p>As per Recommendation 24. Government will also need to establish a mechanism to require retail service providers to distribute and maintain batteries. This could be done by creating an appropriate regulation that allows ACMA to make a service provider determination containing a new service provider rule under s.99 of the <i>Telecommunications Act 1997</i>.</p>	<p>Optus agrees with the recommendation and the implementation considerations.</p>
<p><b>Recommendation 28.</b> That NBN Co be required to support retail service providers' ability to provide end-user location information including the enablement of emergency call operators to automatically locate a caller.</p>	<p>This should be set out in the statement of expectations. As it relates to service standards, it should also be stipulated in licence conditions. It may also necessitate changes to the <i>Telecommunications (Emergency Call Services) Determination 2002</i></p>	<p>Optus agrees with the recommendation and the implementation considerations.</p>
<p><b>Recommendation 29.</b> That a minimum public notice period be required for deactivating any copper exchange; in this context 'deactivating' would mean the withdrawal of a significant proportion of copper services.</p>	<p>As this requirement will in practice only affect Telstra's network, it could be included in licence conditions of the network owner.</p>	<p>Optus agrees with the recommendation and the implementation considerations.</p>



<b>Recommendation</b>	<b>Implementation considerations</b>	<b>Comments</b>
<p><b>Recommendation 30.</b> That a review be undertaken to determine how the universal service regime and other carrier and service provider obligations may apply to NBN Co and other carriers and service providers; that this review be completed by the end of 2011.</p>	<p>A review of the USO has previously been foreshadowed by Government and should be conducted once implementation details of the NBN are more settled. The review should be carried out only when greater clarity around the implementation challenges of the NBN have emerged from initial roll-outs.</p>	<p>Optus agrees with the recommendation. However, we believe that a review of the future of the USO should be undertaken this year and should not be delayed to take into account the experience of early roll-out of the NBN.</p>
<p><b>Recommendation 31.</b> That NBN Co be directed to develop a Charter that outlines how it will conduct its affairs to best meet the needs of stakeholder groups—for example, the Charter should state a commitment to consultation with the industry and end-user groups</p>	<p>It is sufficient to set out this requirement in the statement of expectations. This should be implemented immediately as NBN Co is already involved in stakeholder consultations.</p>	<p>Optus agrees with the recommendation and the implementation considerations.</p>
<p><b>Chapter 3. Enabling a new generation of services for end users</b></p>		

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 32.</b> That NBN Co only be permitted to operate at the lowest layer of the network stack that enables sufficient retail competition and diversity of services for end users. Initially, this will translate into Layer 2 bitstream services in the FTTP network, and Layer 3 IP services in the satellite access footprint; that Government request that the ACCC periodically monitor competition, and recommend necessary modifications of the service portfolio to best serve the long term interests of end users; that this include considering the offering of passive services.</p>	<p>The principle expressed in this recommendation could be included in the statement of expectations. It is also appropriate that NBN Co be restrained through its licence conditions from offering services above the stipulated layers; these conditions could be altered upon ACCC recommendation.</p>	<p>Optus agrees that the NBN Co should be limited to offering services at the lowest layers in the OSI stack.</p> <p>Specifically, we recommend that NBN Co should be prohibited from providing layer 3 services over the FTTP. Layer 3 services should only be provided over any satellite and or wireless provided NBN service to the extent that they are required to efficiently operate the technology. In all cases NBN Co should be excluded from providing retail services to non carriers.</p> <p>The requirements on NBN Co should be set out as Licence Conditions that can only be changed on advice from the ACCC.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 33.</b> That NBN Co be required to offer services with comparable levels of performance in all geographies within a technology footprint, specifically:</p> <ol style="list-style-type: none"> <li>1. While it is the sole provider of active layer NBN services, NBN Co should upgrade services over time and demonstrate that the functionality and performance of its services are in line with international benchmarks; NBN Co's upgrade plans should be submitted for ACMA's approval that they are sufficient to maintain Australia's broadband position internationally;</li> <li>2. As network elements are upgraded over time, NBN Co should ensure all equipment within an access technology platform is on a similar upgrade path. If active-layer competition is in place, NBN Co's offers in competitive areas should be consistent with NBN services in all areas;</li> <li>3. In the satellite footprint, NBN Co should ensure that CPE upgrades continue to be offered via service providers.</li> </ol>	<p>Government's requirements should initially be communicated to NBN Co through the statement of expectations. As roll-out continues, and prior to privatisation, they should be rendered enforceable, for example by inclusion in licence conditions. Administration of the detailed requirement for technological upgrades could be conducted by ACMA.</p>	<p>Optus agrees with the recommendation and the implementation considerations.</p>

<b>Recommendation</b>	<b>Implementation considerations</b>	<b>Comments</b>
<p><b>Recommendation 34.</b> That Government permit NBN Co to offer an RF overlay service on its FTTP network provided it meets these conditions:</p> <ol style="list-style-type: none"> <li>1. Except where necessary to compete for greenfield FTTP contracts, RF overlay supports multiple providers and the RF port on the household ONT is not exclusive to a single provider;</li> <li>2. The deployment of RF overlay capability is commercially viable for the Company as a standalone service.</li> </ol>	<p>This should be set out in the statement of expectations. As it relates to service standards, it should also be stipulated in licence conditions.</p>	<p>Optus recommends that NBN Co does not implement an RF overlay over the FTTP network. An RF overlay would add additional costs (both initial capital and ongoing operational) to the network, limit the performance/range of the FTTP and would establish an inherent monopoly infrastructure that would require an extensive and costly technical solution plus a strongly supportive regulatory framework to provide open and equivalent access to the RF channel.</p>
<p><b>Recommendation 35.</b> That NBN Co be required to provide a wholesale Layer 2 bitstream service which enables multi-operator delivery of next-generation video services (e.g. high definition, video-on-demand) that meets industry standards.</p>	<p>This should be set out in the statement of expectations. As it relates to service standards, it should also be stipulated in licence conditions, although inclusion in NBN Co's special access undertaking would delay the need for a binding licence condition to be added.</p>	<p>Optus agrees with the recommendation. The solution should be sufficient to enable non discriminatory delivery of retail multicast services. This requirement should be set out in a Licence Condition.</p>
<p><b>Chapter 4. Building a fibre access network to 90 percent of premises</b></p>		

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 36.</b> That NBN Co be required to deploy fibre topologies that support the ongoing needs of multiple stakeholders, including:</p> <ol style="list-style-type: none"> <li>1. Service providers who may seek access to Layer 1 services, anticipating the likelihood of future unbundling requirements;</li> <li>2. High bandwidth, dedicated class-of-service requirements for enterprise and government users, and for mobile base-stations and other users.</li> </ol>	<p>Government's policy principles should be communicated through the statement of expectations. Recommendation 75 deals with the issue of determining the network topology, which will then need to be made binding in a licence condition.</p>	<p>Optus does not agree with the potential need for future unbundling of Layer 1 services by NBN Co, as detailed in Section 2 of this document, and hence does not agree that the network deployment should be required to take into account such future unbundling requirements.</p> <p>Optus agrees that the fibre topology should support point to point applications for business grade services where required by RSPs (including for backhaul purposes).</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 37.</b> That NBN Co be required to ensure that the assets used to physically deploy the network support an enduring open-access network; specifically for:</p> <ol style="list-style-type: none"> <li>1. New trenches and ducts: to be over-provisioned to ensure sufficient space for future expansion or alternative use; detailed records of the location of ducts to be maintained;</li> <li>2. Existing ducts: perpetual or long-term (with firm options to renew) indefeasible rights of use to be sought to ensure renegotiation of leases cannot put the future network, or commerciality of NBN Co, at risk; short-term leases to be avoided;</li> <li>3. Existing overhead poles: long-term rights of use, ease of access and longevity of assets to be ensured; rights and obligations for future repairs and maintenance to be set out; political and community risks to network security and longevity to be considered.</li> </ol>	<p>These requirements will remain a matter of subjective judgement and are best implemented as guiding principles through the statement of expectations. The obligations to comply with duct over provisioning standards and to maintain detailed records of duct locations are less subjective and should be made binding, for example through licence conditions. Actual duct standards could be set to match those which apply to greenfields developers.</p>	<p>Optus agrees that NBN Co needs to take to be mindful of the future needs of the network. However, this needs to be balanced against the costs of deployment.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 38.</b> That the network access point at end-user premises (i.e. the ONT) be required to provide a sufficient number of physical ports to enable multiple providers to offer services to each premises; that NBN Co ensure physical access to this point within the premises, at a location reasonably requested by the user (e.g. within close proximity to existing copper lead-in); this requirement includes:</p> <ol style="list-style-type: none"> <li>1. If the ONT is installed externally, an internal patch panel providing open access to service providers on an equivalent basis; or</li> <li>2. If the ONT is installed internally, that NBN Co be permitted to contract with retail service providers to implement these network access point requirements.</li> </ol>	<p>This should be set out in the statement of expectations. As it relates to service standards, it should also be stipulated in licence conditions. Three ports on the ONT would be an appropriate minimum</p>	<p>Optus agrees with the recommendation to provide multiple physical ports from the ONT.</p> <p>Optus also agrees with the recommendation to terminate the ports inside the premises at a point reasonably requested by the end user. Optus preference is for an internal ONT to reduce the costs of deployment.</p> <p>Optus agrees with the implementation considerations.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 39.</b> That an entry-level wholesale bitstream service for NBN Co's fibre network be defined that would be the minimum acceptable service for residential broadband use, specifically:</p> <ol style="list-style-type: none"> <li>1. That this bitstream service enable a significant improvement over typical experiences on other fixed networks, and offer at least a 20 Mbps peak download speed within the fibre access network;</li> <li>2. That this entry-level speed be reviewed over time to ensure it continues to deliver sufficient performance relative to other fixed broadband networks;</li> <li>3. That exceptions for a lower-speed entry-level service be considered for commercial reasons where most end-users will take retail services using at least a 20 Mbps wholesale bitstream service.</li> </ol>	<p>This should be set out in the statement of expectations and communicated to NBN Co as quickly as possible to assist in development of its service offering. As it relates to service standards, it should also be stipulated in licence conditions, although inclusion in NBN Co's special access undertaking would delay the need for a binding licence condition to be added.</p>	<p>This is considered appropriate for replacement of existing broadband services. However for other potential users including utilities for smart metering and remote monitoring services, lower rate entry level services should be considered.</p>



Recommendation	Implementation considerations	Comments
<p><b>Recommendation 40.</b> That NBN Co be required to offer wholesale services that support the implementation of carrier-grade QoS functionality, allowing retail service providers to deliver premium services from within their network to end users:</p> <ol style="list-style-type: none"> <li>1. Initially, this means ensuring that the appropriate specifications are adopted through consultation with industry and potential customers;</li> <li>2. Over time, this may require offering services that are higher in the network stack, as has already been considered for IPTV, where IGMP functionality is being considered, and/or extending the geographic extent of the Layer 2 network (i.e. further upstream); such decisions to expand the scope of NBN Co operations should not be taken lightly, and should be based on demonstrated inability of NBN wholesale services to enable services that are feasible within other networks internationally and for which there is demand.</li> </ol>	<p>This should be set out in the statement of expectations. As it relates to service standards, it should also be stipulated in licence conditions.</p>	<p>Optus agrees with the recommendation and the implementation considerations, with the caution that NBN Co should not be permitted to expand its scope over FTTP beyond Layer 2.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 41.</b> That NBN Co be permitted to provide one-off incentives to service providers to encourage migration of their customers onto the network; that these incentives be transparent and offered on a broadly equivalent basis within geographic areas at a point in time; that uniformity of incentives across geographic areas or time not be required.</p>	<p>Government should set out this policy in the statement of expectations, recognising that it is subject to the regulatory regime. If Government proposes to introduce a Ministerial Pricing Determination, it should ensure that the determination is consistent with this recommendation. Government should ensure that the implementation of 'equivalence' requirements in legislation is consistent with this policy.</p>	<p>Optus agrees that incentives could be used to drive-up migration of existing services to the NBN. However, the incentive arrangements will need to be monitored carefully to avoid overly favouring any one party.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 42.</b> That Government not constrain the commercial flexibility of NBN Co to design and update a price architecture, within the requirements of regulation and its obligations for affordability and take-up of services; that Government support NBN Co's adoption of price mechanisms such as price differentiation (except where it is based on geographic location) and differentiated commercial terms and charges that are consistent with equivalence</p>	<p>No additional regulatory action required.</p>	<p>Optus understands the intent of this recommendation, but we believe that pricing of services on the NBN will be so critical to the delivering the Government's objectives for the NBN, that the ACCC should be required to provide up front guidance on access pricing.</p> <p>Specifically, the legislation should require the ACCC develop and publish pricing principles for services offered on the NBN.</p> <p>In respect of the pricing principles, the legislation should also provide the following guidelines to the ACCC;</p> <ul style="list-style-type: none"> <li>a) That prices should be based on the prudent cost of supply that will generate a return for NBN Co over the life of the project commensurate with the risks involved;</li> <li>b) That the ACCC will have scope to set a Regulated Asset base for NBN Co;</li> <li>c) That the Regulated Asset Base can be rolled forward from period to period, but should take account of prudent additional capital expenditure, prudent operational expenditure and depreciation of the assets;</li> <li>d) That pricing principles should provide incentives for NBN Co to reduce costs or otherwise improve efficiency;</li> <li>e) That whilst NBN Co should have some flexibility to set prices for individual services , overall pricing must be subject to price cap mechanism to ensure that any future adjustments to access prices take into account both the need for pricing stability as well as to reflect the commercial reality of long term retail price;</li> <li>f) That pricing should be offered on an equivalent basis consistent with any equivalence criteria set down by the ACCC; and</li> <li>g) That any pricing proposed by NBN Co should be subject to ACCC approval to ensure there is compliance with these principles.</li> </ul>

Recommendation	Implementation considerations	Comments
<b>Chapter 5. Ensuring national availability of high-speed broadband</b>		
<p><b>Recommendation 43.</b> That NBN Co be required to provide a next-generation satellite service ensuring access to at least 12 Mbps peak data rates to all premises beyond the fibre footprint. Satellite system capacity should be dimensioned to offer an average data rate per premises that reflects potential growth in usage patterns over the lifetime of the satellite system.</p>	<p>While the network is incomplete, it is not feasible to codify NBN Co's coverage objectives as a universally enforceable obligation. Instead they should be included in the statement of expectations, leaving NBN Co with flexibility around roll-out scheduling.</p> <p>Coverage objectives could also be included in the Funding Agreement between the Government and NBN Co, to provide directors with certainty around these obligations, but again it is important to maintain flexibility for NBN Co to determine the detail of the roll-out schedule.</p> <p>Satellite solutions involve significant deployment risks. Moreover, it takes 3 to 4 years from the starting design date to launch a satellite. For this reason, funding and policy issues should be resolved as quickly as possible.</p>	<p>Optus agrees with the recommendation and the implementation considerations. Capacity for the satellites should be consistent with current peak hour contention ratios (e.g. around 30 to 40 to 1).</p>
<p><b>Recommendation 44.</b> That Government ensure affordability of next-generation satellite broadband services for premises underserved by other technologies through a program that funds satellite CPE costs incurred by retailers and guarantees a high quality of service.</p>	<p>This could be modelled on the Australian Broadband Guarantee. It will be necessary to provision adequate satellite capacity to manage the expected demand, so the timing issues referred to in relation to Recommendation 43 apply.</p>	<p>Optus agrees with the recommendation and the implementation considerations. Pricing for NBN satellite services should be equivalent to similar service offerings over FTTP.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 45.</b> That an Expression of Interest (Eoi) and tender process be conducted for a commercial provider to build and operate a fixed-wireless network, specifically:</p> <ol style="list-style-type: none"> <li>1. That the network offer services on both a wholesale and retail basis beyond the fibre footprint to cover 4 percent of total premises;</li> <li>2. That the services include an offer with at least 12 Mbps peak data rates and high average data rates, with service characteristics subject to periodic review; that the services include an entry-level offer providing a high-quality broadband experience at a specified price comparable to entry-level pricing on the fibre and satellite footprints; that Government specify as part of the tender a mechanism for adjusting prices of the entry-level and 12 Mbps offerings over time, for example via a cap on annual price rises or another regulatory mechanism;</li> <li>3. That the tenderer(s) describe an expected upgrade path for the implemented technology;</li> <li>4. That spectrum renewal rights for the fixed-wireless network operator be guaranteed;</li> <li>5. That, in the absence of an acceptable bid, NBN Co be required to build the network and offer services on a wholesale-only basis.</li> </ol>	<p>Government should set NBN Co's coverage obligations in the statement of expectations consistent with this recommendation, noting the proposed contingency role of NBN Co.</p> <p>Government should immediately start preparations for the Eoi and tender process, as the possibility of an unsuccessful process would put pressure on the Government's timeline.</p> <p>In the event that NBN Co is allocated the task, Government should revise NBN Co's coverage objectives to require the fixed-wireless network build and ensure that NBN Co's corporate plan is altered to prioritise wireless deployment. This may require a specific licence condition, or could be incorporated in a new funding agreement.</p> <p>Government may wish to engage in an iterative tender design process in consultation with likely bidders and other industry experts.</p>	<p>Optus does not agree with this recommendation, as it is inconsistent with the NBN Co acting as the sole provider of fixed equivalent wholesale services.</p> <p>Without this consistency a number of potential issues may arise. First, despite in some cases the close proximity of premises to be served by all proposed technologies (fibre, fixed wireless and satellite), such an approach will likely add cost to RSPs and ultimately end users by requiring RSPs to deal with multiple wholesale providers offering potentially different products via different systems, in order to serve all potential retail customers in a given geographic area. Second, given that the location of premises that should receive a fixed wireless service is highly interrelated to which premises will receive a fibre service or have to receive a satellite service, allowing a third party to provide these services may contribute to an inefficient network design from NBN Co, again likely adding cost to RSPs and ultimately end users.</p> <p>Optus recommends that instead NBN Co be required to build and operates a fixed wireless network to cover 4 percent of the total premises beyond the fibre footprint. To maximise service comparability to the NBN Co FTTP network, all premises using the network should be required to use an externally mounted fixed antenna, with the cost of this additional equipment versus FTTP addressed in a similar fashion to that recommended for satellite.</p>

<b>Recommendation</b>	<b>Implementation considerations</b>	<b>Comments</b>
<p><b>Recommendation 46.</b> That carrier licence conditions associated with the 700 MHz spectrum be added to require network operators to implement future technology upgrades in rural/regional areas in parallel with metropolitan areas; that Government review prior to the 700 MHz auction the value of requiring one or more successful bidders to expand their coverage footprint.</p>	<p>These licence conditions would have to be clarified prior to the auction for 700 MHz spectrum, with enough time allowed for bidders to estimate the impact on value.</p> <p>Government should seek submissions from network operators and other stakeholders in relation to the possibility of a coverage requirement.</p>	<p>Optus is strongly of the view that the 700 MHz spectrum should not be used for fixed NBN services.</p> <p>Conditions for roll out of networks should include practical upgrade timing for rural regional areas and to take into account any limitations that may need to be required due to the cost or unavailability of sufficient backhaul in regional areas.</p>
<p><b>Recommendation 47.</b> That Government instruct NBN Co to extend transit fibre backhaul to existing towers and new tower sites needed by the fixed-wireless network operator to provide coverage in the designated areas (e.g. between the 94th and 97th percentiles); this transit backhaul to be offered to all operators and priced at the same rates as transit backhaul within the fibre footprint.</p>	<p>This should be set out in the statement of expectations and potentially codified in a binding licence condition. If Government chooses to privatise backhaul assets, codification in a licence condition would be appropriate.</p>	<p>Optus agrees with the recommendation and the implementation considerations, subject to the comments made on Recommendation 45.</p>
<p><b>Chapter 6. Ensuring ubiquitous backhaul availability</b></p>		

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 48.</b> That NBN Co be required to construct a transit backhaul network to connect all fibre exchanges to the nearest practical point where backhaul services are available from Government (e.g., Regional Backbone Blackspots Program) or multiple providers, not including NBN Co; for fibre exchanges that are already located at a point with multiple backhaul providers or Government backhaul services, NBN Co not to construct transit backhaul links.</p>	<p>As per Recommendation 47</p>	<p>Optus agrees with the recommendation and the implementation considerations, subject to the comments made on contestable backhaul in Section 2.</p>
<p><b>Recommendation 49.</b> That NBN Co be directed to construct the transit backhaul network including passive fibre elements and active electronics, except where NBN Co is able to secure long-term indefeasible rights of use (with options to renew) to other parties' fibre assets at the physical layer ('dark fibre') more economically.</p>	<p>This should be set out in the statement of expectations but not made binding, as there may be a need for flexibility in some cases.</p>	<p>Optus agrees with the recommendation and the implementation considerations, subject to the comments made on contestable backhaul in Section 2.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 50.</b> That NBN Co be required to offer a single POI in relation to a given premises:</p> <ol style="list-style-type: none"> <li>1. At a fibre exchange where there are multiple alternative backhaul providers; or</li> <li>2. At a fibre exchange linked to the Regional Backbone Blackspots Program; or</li> <li>3. At a point accessible from the fibre exchange over an NBN Co transit backhaul link.</li> </ol>	<p>This may be included in a licence condition. Post-privatisation, implementation may require negotiation between the privatised NBN Co and the public backhaul company.</p> <p>This policy should be clarified as soon as possible, as NBN Co is already developing its product offering.</p>	<p>Optus agrees with the recommendation and the implementation considerations. It is important that the contestable backhaul fibre provides fully redundant capability (including separate physical paths) in all cases including for any fibre provided under the RBBP program.</p>
<p><b>Recommendation 51.</b> That the location of NBN Co's POIs be reviewed on a regular basis to permit new investment below the POIs and to ensure the objectives of affordability and a level playing field are met above the POIs.</p>	<p>This can be left to the Company's discretion prior to privatisation, as the ACCC will retain the power to declare a service and access to facilities is provided for in Schedule 1 of the <i>Telecommunications Act 1997</i> (to which the Implementation Study has proposed amendments). In practice, it is expected that NBN Co would consult with the ACCC to ensure alignment.</p>	<p>Optus supports this principle but recommends that in cases where there is a market failure a consultative process is undertaken involving NBN Co and the ACCC to seek to rectify the problem with backhaul pricing and terms prior to the overbuild decision by NBN Co.</p>



Recommendation	Implementation considerations	Comments
<p><b>Recommendation 52.</b> That for defining NBN Co's backhaul services:</p> <ol style="list-style-type: none"> <li>1. NBN Co be required to offer backhaul services as single Ethernet links from the POI to the fibre exchange, with some level of protection (alternative secondary links in the case of outages on the primary link) available on all links;</li> <li>2. The transit backhaul bitstream product to be specified as a separate product from the access bitstream product, allowing service providers to select their preferred combination of backhaul capacity and access services;</li> <li>3. NBN Co not to offer or be required to offer connection below the POI to an NBN Co access network.</li> </ol>	<p>This should be set out in the statement of expectations. As it relates to service standards, it should also be stipulated in licence conditions. Post-privatisation, NBN Co will need to reach an agreement with the Government-owned backhaul unit on the continued provision of transit backhaul to the POI.</p>	<p>Optus strongly agrees with the need for all transit backhaul provided by NBN Co to provide full redundancy (including separate physical paths)</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 53.</b> That NBN Co be required to specify transit products to meet an affordability test; specifically:</p> <ol style="list-style-type: none"> <li>1. That the price of transit backhaul services attributable to a single premises' access service be not more than a certain percentage of the retail price of a typical entry-level NBN wholesale broadband product;</li> <li>2. That Government define the percentage, preferably not more than 10 percent; the transit backhaul service be defined from the POI to the fibre exchange, on a per-user basis, given a defined contention ratio;</li> <li>3. That NBN Co be required to set a minimum contention ratio based on international benchmarks, and to review it annually based on ongoing monitoring of customer experience and observed network performance;</li> <li>4. That the NBN Co transit backhaul prices scale linearly with bandwidth for contention ratios higher than the one used in the affordability test.</li> </ol>	<p>As it is not appropriate to refer directly to the variable retail price in a licence condition, this policy is best effected by certification in a Ministerial Pricing Determination, so that it can be administered by the ACCC.</p>	<p>Optus agrees with the recommendation and the implementation consideration.</p>

<b>Recommendation</b>	<b>Implementation considerations</b>	<b>Comments</b>
<p><b>Recommendation 54.</b> That NBN Co be required to provide transit backhaul services to alternative network operators, specifically:</p> <ol style="list-style-type: none"> <li>1. That such transit backhaul services be offered on equivalent terms to those offered to customers of its own access network;</li> <li>2. That NBN Co provide a point of interconnect for the transit backhaul service in the fibre exchange environment (but not the access service if not at a POI) and access seekers be responsible for all costs of reaching and entering the fibre exchange environment to meet this point of interconnect;</li> <li>3. That the Minister consider granting temporary relief from this requirement, but not in relation to backhaul services necessary to enable the provision of wireless broadband services beyond the fibre footprint, once it is defined.</li> </ol>	<p>This should be set out in the statement of expectations. Assuming that Government accepts the recommendation to maintain backhaul in public hands, there may not be a need to codify this expectation into a binding licence condition, although it would be beneficial for creating certainty. Instead, ongoing backhaul decisions can be taken in line with the statement of expectations as modified from time to time. However, it may be desirable to set licence conditions in relation to associated standards of service.</p>	<p>Optus agrees with the recommendation and the implementation considerations, with the exception that we do not agree that the Minister should be given discretion to grant temporary relief from this obligation. Any application of such an exemption would unfairly impact all existing wireless network operators who suffer severe backhaul disadvantages versus the incumbent. If there are practical considerations that may temporarily limit NBN Co's ability to offer these services, then these should be dealt with between NBN Co and its customers.</p>
<b>Chapter 7. Delivering a sustainable business case</b>		

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 55.</b> That Government, in consultation with NBN Co, expand the definition of Low Impact Facility in the <i>Telecommunications (Low-impact Facilities) Determination 1997</i> to include facilities likely to be included in NBN Co's roll-out; that Government consult NBN Co to determine the appropriate items for inclusion in the revised definition.</p>	<p>Regulatory instrument required; legislative amendment may be required if, for example, Government chooses to extend to cables over 13 mm in diameter.</p>	<p>Optus agrees with the recommendation and the implementation considerations.</p>
<p><b>Recommendation 56.</b> That Government reform the process of seeking access to infrastructure of telecommunications carriers under Part 5 of Schedule 1 of the <i>Telecommunications Act 1997</i> such that:</p> <ol style="list-style-type: none"> <li>1. The 'negotiate-arbitrate' model is replaced with a model consistent with the changes to the access regime in Part XIC of the <i>Trade Practices Act 1974</i> proposed in the <i>Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2009</i>;</li> <li>2. This reformed right of access is extended to grant NBN Co access to infrastructure potentially relevant to its network deployment, including ducts, poles and pipes belonging to non-telecommunications utilities and other parties, such as owners of ducts in greenfields.</li> </ol>	<p>This requires legislative action; revision of Schedule 1 Part 5 of the <i>Telecommunications Act 1997</i> is the likely mechanism.</p>	<p>Optus agrees with the recommendation and the implementation considerations. However, to ensure competitive neutrality such changes should also be considered to apply to alternate networks such as mobile networks.</p>

<b>Recommendation</b>	<b>Implementation considerations</b>	<b>Comments</b>
<p><b>Recommendation 57.</b> That Government require telecommunications carriers, non-telecommunications utilities and other owners of relevant infrastructure, such as owners of ducts in greenfields estates, to provide to Government such information on their networks, infrastructure and operations as Government requests from time to time for purposes directly related to the deployment of the NBN; that Government provide such information to NBN Co on a confidential basis for purposes directly related to the deployment of the NBN, subject to appropriate safeguards around commercially confidential information.</p>	<p>Legislation on this topic is currently before the Parliament.</p>	<p>Optus agrees with the recommendation and the implementation considerations. We note that the terms of the confidentiality and use of the information needs to be similar to those applied to the carrier information provided under the initial NBN Request for Proposals.</p>
<p><b>Chapter 8. Funding the NBN</b></p>		

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 58.</b> That Government retain full ownership of NBN Co until roll-out is complete; that this include not issuing equity in return for vended-in assets.</p>	<p>This recommendation should be implemented through NBN Co's constitution to prevent it from issuing equity to non-government investors. Legislative limitations could also be implemented, but this appears unnecessary given that Government will be the sole shareholder for the period that this recommendation is relevant.</p> <p>It is unlikely that NBN Co will seek equity finance from private investors in the near future. Nonetheless, to provide clarity to NBN Co, a prohibition on issuing equity to private investors should be included in the NBN Co constitution.</p>	<p>Optus agrees with the recommendation and the implementation considerations.</p>
<p><b>Recommendation 59.</b> That NBN Co be funded with Government equity until NBN Co can support private sector debt without explicit Government support and achieve an investment grade credit rating; that private sector debt be permitted to be accessed to repay Government capital while maintaining an investment grade credit rating.</p>	<p>As NBN Co will ultimately be responsible for raising its own financing, Government endorsement of the maximal use of private sector debt as it becomes available at investment grade should be communicated to NBN Co. The statement of expectations would be an appropriate mechanism.</p>	<p>Optus agrees with the recommendations and the implementation considerations.</p>

<b>Recommendation</b>	<b>Implementation considerations</b>	<b>Comments</b>
<p><b>Recommendation 60.</b> That flexibility be maintained in the timing and structure of privatisation of NBN Co: prime determinants of timing should be favourability of market conditions and readiness of the company for private ownership.</p>	<p>The exposure draft of the <i>National Broadband Network Companies Bill 2010</i> is consistent with this recommendation.</p>	<p>Optus agrees with the recommendation and the implementation considerations.</p>
<p><b>Recommendation 61.</b> That NBN Co be directed to evaluate alternatives for a corporate structure that preserves flexibility and considers transaction costs at privatisation.</p>	<p>This could be communicated through the statement of expectations</p>	<p>Optus agrees with the recommendation and the implementation considerations.</p>
<p><b>Recommendation 62.</b> That Government and NBN Co enter into formal agreements for security of funding.</p>	<p>This would take the form of a long-term funding agreement under which the Government agrees to provide funding to NBN Co in return for pursuing and ultimately achieving the Government's coverage objective.</p> <p>The initial agreement should be set in place as early as possible to signal commitment to the project and give the NBN Co board confidence to enter long-term contracts. It could be supplemented as roll-out progresses.</p>	<p>Optus agrees with the recommendation and the implementation considerations. This will be a necessary condition to create certainty for the market, especially those participants who will have to undertake their own investment to interact with the NBN (suppliers, vendors, customers etc), that the NBN will become a reality.</p>
<p><b>Chapter 9. Understanding adverse competition scenarios</b></p>		

<b>Recommendation</b>	<b>Implementation considerations</b>	<b>Comments</b>
<p><b>Recommendation 63.</b> That the Government request the ACCC to monitor and report annually on the market for Layer 3 telecommunications services.</p>	<p>The Minister could request that the ACCC include this in its annual review of competitive safeguards in the telecommunications industry.</p>	<p>Optus agrees with the recommendation. However, any adverse decision on the current situation regarding the market for Layer 3 services should not automatically involve NBNCo entering into the provision of Layer 3 services. If necessary the Government should adopt alternate mechanisms to rectify any problems.</p>
<b>Chapter 10. Securing competition outcomes</b>		
<p><b>Recommendation 64.</b> That NBN Co be required to conduct its strategy, planning and operations in a publicly transparent manner, subject to any requirements of commercial confidentiality.</p>	<p>These requirements could be included in the statement of expectations. Prior to privatisation, a binding mechanism should be put in place, such as a licence condition. This could require compliance with transparency rules established from time to time and approved the regulator.</p>	<p>Optus agrees with the recommendation, but further details will need to be determined on the types of information that NBN Co should be required to make publicly available. Optus recommends that this detail could best be obtained by the ACCC consulting the industry and determining the appropriate reporting obligations for NBN Co</p> <p>Optus agree that any reporting obligation should be set out in a licence condition.</p>



<b>Recommendation</b>	<b>Implementation considerations</b>	<b>Comments</b>
<p><b>Recommendation 65.</b> That NBN Co be required to ensure its service offerings are developed in consultation with a wide variety of service providers through a transparent process including:</p> <ol style="list-style-type: none"> <li>1. Holding regular industry forums to seek the views of current and prospective customers on the service offering;</li> <li>2. Publishing a revised service development roadmap on at least an annual basis, and ensuring that demonstrable and reasonable market requirements are met.</li> </ol>	<p>As per Recommendation 64.</p>	<p>Optus agrees with the recommendation.</p>
<p><b>Recommendation 66.</b> That NBN Co be required to publish in its annual report comprehensive information on its performance, including:</p> <ol style="list-style-type: none"> <li>1. Network roll-out performance and costs;</li> <li>2. Achievement of service levels;</li> <li>3. Faults;</li> <li>4. Customer complaints;</li> <li>5. Any matters, whether or not related to those above, that Government, represented by the shareholder Ministers, considers appropriate.</li> </ol>	<p>This could be made binding on NBN Co through a licence condition, in addition to being highlighted in the statement of expectations.</p>	<p>Optus agrees with the recommendation and the implementation considerations but subject to Optus' comments on Recommendation 64 above.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 67.</b> That NBN Co be prohibited from engaging in commercial or investment activities unrelated to the provision of wholesale telecommunications services in Australia. For the avoidance of doubt, provision of content services as defined by the <i>Telecommunications Act 1997</i> would constitute prohibited activities.</p>	<p>This limitation is so critical that it would be appropriate to include it in the establishing legislation. As a substitute, it might be set through licence conditions.</p>	<p>Optus agree with the sentiment but suggests the requirement should be more narrowly defined. Firstly, it must apply to be related bodies corporate of NBN Co and, secondly “NBN Co should be prohibited from engaging in commercial or investment activities <b>other than</b> the provision of wholesale telecommunications services in Australia”.</p> <p>Optus agrees that this prohibition should be set out in legislation.</p>
<p><b>Recommendation 68.</b> That Government implement a wholesale-only restriction on NBN Co preventing it from offering or providing services to anyone other than a carrier or service provider as defined by the <i>Telecommunications Act 1997</i>; that Government retain the flexibility for the Minister to make exceptions to this rule.</p>	<p>This limitation is so critical that it would be appropriate to include it in the establishing legislation. We note that such a provision is included in the exposure draft of the <i>National Broadband Network Companies Bill 2010</i>.</p>	<p>Optus does not support the proposed discretionary power, currently included in the draft NBN Co Company Bill, for a Minister to grant NBN Co an exemption from the wholesale-only obligation. This discretion should be removed.</p> <p>To the extent that concerns arise from the restrictive nature of this obligation (such as provision of services in remote areas) alternate mechanisms not involving the NBN Co should be adopted to rectify those problems.</p>
<p><b>Recommendation 69.</b> That NBN Co be prohibited from investing in retail telecommunication companies and content service providers, subject to special provisions for transitional ownership where incidental to the acquisition of network assets relevant to its objectives.</p>	<p>This limitation is so critical that it would be appropriate to include it in the establishing legislation. We note that such a provision is included in the exposure draft of the <i>National Broadband Network Companies Bill 2010</i>.</p>	<p>Optus agrees with the recommendation. Whilst this restriction is included in the proposed <i>National Broadband Network Companies Bill 2010</i> the provisions should be strengthened to expressly require NBN Co to divest the retail components of any business it acquires as part of the acquisition or set strict time limits for such a divestiture to occur being no longer than 6 months.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 70.</b> That NBN Co be subject to an access regime similar to that set out in Part XIC of <i>the Trade Practices Act 1974</i>, but including an obligation to provide all services (other than those not available to any external parties) on an open-access, equivalent basis defined as follows:</p> <ol style="list-style-type: none"> <li>1. Except in relation to services that NBN Co also provides to itself, equivalence should not require identical terms, conditions and processes so long as any variations (e.g. discounts) aid efficiency and are available to all access seekers in like circumstances, where 'like circumstances' are not taken to include scale unless at least three access seekers are of sufficient scale to qualify;</li> <li>2. NBN Co is to publish any such variations;</li> <li>3. In relation to services provided by NBN Co to itself and to other access seekers (such as any unbundled Layer 1 services), equivalence should be defined on an 'equivalence of inputs' basis, requiring identical terms, conditions and processes of supply;</li> <li>4. The principle of open access should not require NBN Co to offer services to access seekers where NBN Co has good cause to believe the access seeker is not creditworthy or is otherwise unlikely to comply with the terms and conditions of supply.</li> </ol>	<p>This requirement is so critical that it would be appropriate to include it in the establishing legislation, with the case by case assessment of variations managed by the ACCC. This is consistent with the exposure drafts of the <i>National Broadband Network Companies Bill 2010</i> and the <i>Telecommunications Legislation (National Broadband Network Measures – Access Arrangements) Bill 2010</i>.</p>	<p>Optus agrees with these recommendations. These reinforce the comments Optus made in its submission on the draft NBN Bills that the equivalence rules need to be more tightly prescribed.</p> <p>Whilst Optus accepts that NBN Co should be permitted to set different price terms, these should be available to all access seekers on an equivalent basis. As a principle any differential pricing should be based on reasonable changes in the costs of inputs to services supplied to different access seekers. Further, to ensure that a single access seekers cannot gain an advantage through scale any price differences that arise through scale, must be made available to at least three access seekers.</p> <p>At a practical level Optus recommends that the legislation requires the ACCC to set out equivalence principles that are to apply to NBN Co and that NBN Co is obliged to comply with these principles. Further, the legislation should also require that any differential access terms are subject to ACCC approval to ensure that they are consistent with the equivalence principles and made available to all access seekers.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 71.</b> That NBN Co be required to provision its physical infrastructure, including POIs and fibre exchanges, to accommodate reasonable expectations for customer equipment in anticipation of multiple retail competitors:</p> <ol style="list-style-type: none"> <li>1. Seeking access to its Layer 2 services;</li> <li>2. Seeking access to transit backhaul services;</li> <li>3. Seeking access to unbundled physical fibre or wavelengths in the future.</li> </ol>	<p>While this requirement can be left as a principle in the statement of expectations, the potential conflict with NBN Co's commercial interests makes it important that the ACCC be asked to report broadly on compliance as part of its annual review of competitive safeguards in telecommunications.</p> <p>This policy should be communicated to NBN Co immediately to inform network design.</p>	<p>Optus agrees with the recommendations under items 1 and 2.</p> <p>See previous comment regarding Layer 1 planning under item 3.</p> <p>However, Optus notes that under the current draft NBN Co Access Bill it would be possible for NBN Co to pre-sell and/or commit levels of capacity. It appears to contemplate the sale of options over capacity. Such an approach could preclude competition by denying new access seekers the opportunity to take up services. Optus submits that there should be a clear obligation on NBN Co to manage the sale of capacity in order to facilitate the delivery of competing services and encourage contestability.</p>
<p><b>Recommendation 72.</b> That NBN Co be required to design its price architecture on the basis that services with distinct characteristics (e.g. level of aggregation or capacity) should be offered on a modular basis. For example, a multicast product suited to IPTV delivery should be sold independently of a standard bitstream service.</p>	<p>As initial pricing of at least some services will be set in a Special Access Undertaking, the Government should clarify its pricing requirements as soon as possible through the statement of expectations. Such pricing principles should be made binding prior to allowing private equity in NBN Co. A Ministerial Pricing Determination is one potential mechanism.</p>	<p>Optus agrees with the recommendation about pricing services on a modular basis, subject to our comments on recommendation 42 above.</p> <p>Consistent with our comments on recommendation 42 above, we consider that the pricing of services on the NBN will be so critical that the ACCC should be required, through legislation, to provide up front guidance on access pricing. NBN Co should be required to comply with such ACCC guidance.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 73.</b> That any future fixed-line superfast access network built in Australia must offer wholesale services on an open-access and equivalent basis and, if it is an FTTP network, must comply with the technical specifications mandated in relation to the construction of FTTP access networks in greenfields; that this recommendation be subject to the following qualifications:</p> <ol style="list-style-type: none"> <li>1. This requirement should not apply to existing superfast access networks or to existing or future small proprietary networks that are not covered by the <i>Telecommunications Act 1997</i>;</li> <li>2. For the purposes of this recommendation, a fixed-line superfast access network should be defined as a fixed-line access network delivering download data rates consistently exceeding 25 Mbps;</li> <li>3. ACMA should be empowered to agree to variations to the technical specifications in specific cases where those variations do not interfere with the Government's NBN objectives and result in significant cost savings through the use of existing infrastructure.</li> </ol>	<p>It is possible that this could be introduced by licence conditions on existing carriers. However, given the magnitude of the change, Government may consider legislative action, such as extending the access regime referred to in Recommendation 70 to such networks. Ideally, this would be implemented by subjecting operators of such networks to the same set of revised standard access obligations that Government intends to apply to NBN Co's services. This has the merit of emphasising that the rule merely ensures a level playing field.</p>	<p>Whilst Optus agrees with the principle of the recommendation, we have the following additional comments:</p> <ol style="list-style-type: none"> <li>1. Any legislation should make it explicitly clear that whilst this provision might capture extensions to existing superfast infrastructure, it should not apply to existing infrastructure including existing competitive fibre access networks providing business grade services and existing HFC networks.</li> <li>2. The obligation should apply to both the satellite and wireless portions of the NBN.</li> <li>3. The obligation should apply to all Greenfield fibre deployments.</li> <li>4. The obligation to comply with FTTP access network specifications should be widened to include as many of the support systems, processes and other operating requirements as possible. Without this the objective of these changes may be undermined as the alternative FTTP provider can simply mandate different development and operation requirements which make it uneconomic for RSP's to invest in the systems for the NBN Co and the alternative FTTP provider.</li> </ol>

<b>Recommendation</b>	<b>Implementation considerations</b>	<b>Comments</b>
<p><b>Recommendation 74.</b> That, if plans are announced for significant third-party deployments in high-value, low-cost areas of fixed-line superfast access networks (defined as a fixed-line access network delivering download speeds consistently exceeding 25 Mbps but excluding small proprietary networks) during the NBN roll-out, Government consider the introduction of a universal service levy on the owners of all such networks; this levy to be inversely related to a network's contribution to the Government's objective of providing affordable broadband coverage to all Australians. It would be hypothecated to fund telecommunications subsidy schemes; any such levy to be subject to a sunset clause causing its expiry after no more than ten years.</p>	<p>Note that this recommendation proposes a levy only as a 'last resort' if cherry-picking becomes an endemic problem. This would require legislative action following more detailed design of an appropriate scheme. The proceeds could be hypothecated towards telecommunications subsidy schemes.</p>	<p>Optus agrees with this recommendation, although notes it should need to be contemplated in situations where such specified networks do not also meet the requirements outlined in Recommendation 73.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 75.</b> That, to determine NBN Co's fibre network topology:</p> <ol style="list-style-type: none"> <li>1. Once NBN Co has gained adequate network roll-out experience and has had the opportunity to conduct demonstrations of alternative topologies NBN Co determine the appropriate network topology to enable both physical and wavelength unbundling;</li> <li>2. NBN Co, in consultation with the ACCC, develop a plan setting out the appropriate extent of deployment of this topology having regard to construction cost and competition outcomes;</li> <li>3. Government determine interim deadlines to complete this process in consultation with the ACCC and NBN Co;</li> <li>4. NBN Co be required to secure Government approval of its topology plan, by the earlier of: coverage of 15 percent of premises within the proposed fibre footprint; and 31 December 2013.</li> </ol>	<p>This policy should both be communicated to NBN Co through the statement of expectations and, as it may not be consistent with NBN Co's commercial interests, should be made binding through a licence condition. In particular, the agreed network topology should be made binding through a licence condition.</p> <p>Initial interim deadlines should be discussed with NBN Co and ACCC and settled by 1 October 2010 to ensure feasibility of complying with the timeline.</p>	<p>Optus has provided comments in section 2 above on the limited need for unbundling of the network. To the extent that this unbundling is required, then wavelength unbundling should be preferred over catering for physical fibre unbundling.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 76.</b> That Government not require NBN Co to unbundle Layer 1 services before network roll-out is almost complete; that Government endorse unbundling of Layer 1 services to occur at the earliest of:</p> <ol style="list-style-type: none"> <li>1. Voluntary unbundling of Layer 1 services by NBN Co;</li> <li>2. Declaration of Layer 1 services by the ACCC;</li> <li>3. A requirement to provide Layer 1 services being imposed by the Minister.</li> </ol>	<p>This would be the position under the exposure drafts of the <i>National Broadband Network Companies Bill 2010</i> and the <i>Telecommunications Legislation (National Broadband Network Measures – Access Arrangements) Bill 2010</i>.</p>	<p>Optus does not agree with the need to require unbundling of the NBN – refer to our detailed comments in Section 2 above.</p>
<p><b>Recommendation 77.</b> That NBN Co be asked to demonstrate that in the design of its products, systems and processes it has anticipated the likely unbundling of Layer 1 services on an equivalence-of-inputs basis and future ACCC price regulation of Layer 1 services based on actual costs; that in doing so NBN Co have regard to the commercial impact and technical feasibility of upfront preparation compared with steps taken at the time of unbundling.</p>	<p>This policy should be included in the statement of expectations. Due to its subjectivity, it should not be codified in a licence condition. However, the ACCC should report on compliance as part of its annual review of competitive safeguards in telecommunications under Section 151CL of the <i>Trade Practices Act 1974</i>.</p> <p>This policy should be communicated to NBN Co immediately in the statement of expectations.</p>	<p>Refer Optus' comments in 76 above.</p>



Recommendation	Implementation considerations	Comments
<p><b>Recommendation 78.</b> That for the purposes of safeguarding competition outcomes in the event of privatisation of NBN Co:</p> <ol style="list-style-type: none"> <li>1. Government commission an independent review into the telecommunications market structure and competition safeguards subsequent to the completion of roll-out and prior to privatisation;</li> <li>2. The review assess the achievement of the competition objectives of the NBN initiative, and recommend any adjustments to regulatory and other arrangements required to maintain an effective wholesale model under private ownership (including, if appropriate, structural separation and/or divestment of interests in real property associated with the network);</li> <li>3. Government determine its privatisation plans and schedule on the basis of that review.</li> </ol>	<p>This requirement would ideally be included in the establishing legislation to ensure it is binding on future governments.</p> <p>Alternatively, we understand that the approach of expressly foreshadowing an inquiry in the Explanatory Memorandum has been adopted previously. While we understand that this provides some level of assurance, we advise that a future Government pressing ahead with privatisation of a unified NBN Co without an independent inquiry into market structure could jeopardise the Government's competition objectives.</p>	<p>NBN Co will own and operate a bottleneck. It is appropriate that the any competition implications of a potential Government sell-down are assessed and addressed prior to privatisation. Optus agrees that this requirement should be set out in legislation.</p>

Recommendation	Implementation considerations	Comments
<p><b>Recommendation 79.</b> That the independent review of competition prior to privatisation start with a rebuttable presumption that backhaul not be privatised.</p>	<p>This rebuttable presumption should be included in the terms of reference of the review. Legislative triggers for structural separation and divestment of assets are proposed in Recommendations 80 and 81; these would also facilitate implementation of the foreshadowed outcome.</p> <p>This outcome should also be foreshadowed in the statement of expectations, to ensure appropriate design of systems.</p>	<p>Agreed based on the unique nature of the regional backhaul market.</p>
<p><b>Recommendation 80.</b> That the Minister be empowered to issue an instrument ordering structural separation of NBN Co at one or more levels (such as between active and passive layers), with the nature of separation defined by the instrument.</p>	<p>This should be included in the establishing legislation, as it is a critical safeguard of future competition, and the exercise of this option at the time of privatisation should not be made subject to the uncertainty of future legislative processes.</p> <p>If this is not possible, the obligation of NBN Co to comply with such an order from the Minister could be included in the Funding Agreement.</p>	<p>Optus does not agree with the recommendation – refer to our comments in 76 above.</p>
<p><b>Recommendation 81.</b> That the Minister be empowered to issue an instrument ordering NBN Co, or a company formed from structural separation of NBN Co, to divest its interests in defined assets or classes of asset (for example: access-network ducts, pits and exchanges; transit backhaul assets).</p>	<p>As per Recommendation 80</p>	<p>Optus does not agree with the recommendation – refer to our comments in 76 above.</p>

<b>Recommendation</b>	<b>Implementation considerations</b>	<b>Comments</b>
<p><b>Recommendation 82.</b> That NBN Co be required to maintain its interests in real property directly associated with the access network, including ducts, pits, poles and exchanges, in a separate corporate entity to facilitate divestment in the event that it is required in the future.</p>	<p>It is sufficient to include this requirement in the statement of expectations, as its relevance will expire prior to privatisation. NBN Co should be informed of this policy immediately to ensure compliance as it acquires assets and interests.</p>	<p>Optus agrees with the recommendation and implementation considerations.</p>
<p><b>Recommendation 83.</b> That an individual ownership cap (including associated interests) be set of no more than 15 percent each on Carriers, CoSPs and CaSPs in relation to shareholdings in NBN Co, subsidiaries of NBN Co, or any company resulting from structural separation of NBN Co; that practical control tests be imposed in relation to such investors; that a public inquiry be required before altering these caps.</p>	<p>These caps must be given legislative force if they are to bind NBN Co subsequent to privatisation. Assuming that the quantum of the caps is set by regulation, the legislation should require a public inquiry to be held prior to any modification of the cap. As an interim measure, it is sufficient to set the caps in the NBN constitution; however, this will not be a sufficient solution at the time of privatisation.</p>	<p>Optus strongly endorses these recommendations. This requirement should be set out in the NBN Companies Bill.</p>
<p><b>Recommendation 84.</b> That Government instruct NBN Co to provide fit-for-purpose access services to wireless base stations within the FTTP footprint on a commercial basis where requested by mobile operators; these access services to include transit backhaul where required to reach an NBN Co POI.</p>	<p>These obligations could be supported by licence conditions. The Part XIC access regime provides a fallback if NBN Co's compliance is deemed by mobile operators to be insufficient. This policy should be communicated to NBN Co as soon as possible to inform network design.</p>	<p>Optus does not agree with the proposal that services to base stations should be provided on a "commercial" basis. The NBN will be a bottleneck infrastructure, funded initially by the Government, so it should supply services on a regulated cost basis.</p>