

D Maintaining momentum

Government has set an objective to construct the NBN within 8 years. This rate of build—in terms of the number of premises covered per year—has been achieved in other international FTTP builds; however, it represents a sustained and rapid pace of implementation that has not been attempted elsewhere on a geographic scale comparable to the NBN. Achieving this goal will require careful coordination and effective execution by multiple stakeholders over the 8 year period. Unexpected hurdles will undoubtedly emerge, so the implementation process will need to incorporate sufficient flexibility to respond and adjust as required.

NBN Co is already working on a planned schedule for the network roll-out. At present, NBN Co must proceed on the basis of the default policy settings implicit in the current regulatory regime, the draft legislation before parliament and Government policy statements. As NBN Co's preparations for deployment become more advanced, it will become more difficult, expensive or, in some cases, impossible to shift away from these default settings.

The Implementation Study's recommendations to Government set out a number of proposed changes to current policy settings, many of which will require regulatory or other action by Government. It is critical that Government rapidly determines the policy settings it wishes to add or modify and establishes a framework of regulation and guidance to implement those changes. Providing this clarity will be a key element of enabling NBN Co and other providers involved in delivering the NBN to meet the rapid implementation schedule set out by Government.

Government's role in facilitating the timely delivery of the NBN will not be limited to one-off policy decisions at the beginning of the project. Compared with an established government-owned utility, the start-up nature of NBN Co will lead to a much greater number of decisions with policy implications on a month-to-month basis over the course of the roll-out. This will necessitate streamlined mechanisms to provide policy guidance on a rapid and sometimes informal basis.

Ultimately, responsibility for roll-out actions across the fibre footprint will lie with NBN Co. The company's corporate plan will require regular review and revision. While recognising that it is impossible to foresee the challenges that the coming years will bring, NBN Co should establish an initial roadmap of actions and a mechanism for revision and government approval.

Part D consists of one chapter:

- Chapter 11 discusses how Government can provide appropriate support and guidance to NBN Co in a timely manner and how NBN Co can establish a corporate plan that provides an initial framework for the journey ahead.

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11 Facilitating implementation of the NBN

SUMMARY

- The development and approval of NBN Co's corporate plan provides an effective mechanism to achieve formal alignment between Government objectives and the design and operation of the NBN, as the company translates these objectives into practical measures and manages implementation risks.
 - Government will need to provide timely guidance to NBN Co on the Implementation Study recommendations. This guidance will inform decisions that need to be taken over the next few months around network design, product and service specifications and regulatory undertakings.
 - Government should explore a governance approach which balances the legal and administrative responsibilities of multiple Government departments with the need for unique levels of co-ordination, flexibility, expertise and timeliness in decisions.
 - Government will need to employ a variety of mechanisms to implement the recommendations of the Implementation Study. While a number of these recommendations require new legislation, momentum can be maintained through alternative mechanisms such as licence conditions, funding agreements and GBE oversight before this legislation is in place. Careful consideration of the appropriate sequencing of actions will be required to facilitate implementation of the project.
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NBN Co's corporate plan should be used as the primary vehicle for communicating and gaining alignment around NBN Co's intended actions. In the initial plan, NBN Co should develop a detailed roadmap of implementation actions over the next 12–18 months. Experience with FTTP roll-outs overseas highlights a number of challenges that present particular risks to timing. Addressing these should be a high priority for NBN Co.

Government will also need to provide continuing policy guidance and other support to NBN Co as new issues arise. An appropriate governance framework for managing interaction between NBN Co and Government should be developed.

Finally, the recommendations in this report set out the ways in which Government should facilitate the NBN project and safeguard the achievement of its policy objectives. This requires addressing practical issues around available mechanisms and timing.

This chapter discusses these implementation issues in three sections:

- 11.1 Overseeing the development of the NBN Co corporate plan
- 11.2 Establishing a governance model
- 11.3 Implementing the recommendations.

11.1 Overseeing the development of the NBN Co corporate plan

The complexity and rapid pace of the planned roll-out of the NBN makes it critical that NBN Co develops a comprehensive corporate plan. A number of activities require long lead-times, such that their failure would jeopardise the entire project schedule. Focussing on, and developing mitigation strategies for, the areas of greatest risk to timing will reduce the likelihood of delaying deployment of the NBN.

NBN Co's corporate plan will serve two important purposes:

- It will assist NBN Co in ensuring that it has a clear roadmap of actions to address implementation challenges and give effect to its objectives;
- It will provide a mechanism for Government to verify that plans are consistent with Government's objectives and to identify issues that warrant Government intervention.

NBN Co must be the principal architect of the corporate plan. However, Government will wish to ensure that the plan is consistent with its expectations, requiring additions to the plan where necessary.

An exhaustive list of the elements that should be included in the corporate plan is beyond the scope of the Implementation Study, and new issues will no doubt emerge over time as planning and trials continue. At a minimum the plan should outline the core elements of the corporate model, the coverage approach, operations, services and pricing, and financial aspects of standing up the company, as outlined in Exhibit 11-1.

In developing the plan, the company should take account of lessons learned from international fibre deployments around potential implementation pitfalls. These include:

- **Gaining approvals for physical network deployment:** in Chapter 7 the Implementation Study recommends changes to the legislation defining Low Impact Facilities to facilitate the roll-out of the NBN. Experience with other roll-outs has shown that in addition to any legislative action, active outreach to local communities, councils and state governments is essential to success—for example to establish rights to deploy cables aerially or gain access to homeowners' private property. Similarly, as outlined in Chapter 2, access to common areas in MDUs will be essential to deploy fibre to individual units, and has proven very time-consuming in some European roll-outs such as those in France and Portugal. NBN Co should therefore engage with MDU corporate bodies well before entering a given area to explain options for installation and gain permission to access relevant infrastructure.

- **Managing availability of skilled labour and equipment:** experience with major fibre builds overseas has highlighted the potential bottlenecks in key skill categories, such as fibre splicing. While these skill gaps can be addressed in part through the choice of technology (e.g. deploying pre-connectorised cables), NBN Co will inevitably face capability gaps in the available workforce, and should develop a plan early in the process for accessing sufficient labour pools. This will include developing strong internal capabilities for project management, contractor management and procurement, and deciding which capabilities to develop in-house and which should be provided by contractors.
- **Managing the supply chain:** the construction of the NBN represents a substantial logistical challenge. Detailed planning will be needed for: the procurement, delivery and management of materials and equipment; implementation of contractual frameworks with suppliers; rigorous contract management; and the development of flexible and responsive delivery mechanisms. Detailed contingency planning will also be needed to minimise impact on NBN Co's schedule from disruptions to the supply chain, such as delays in delivery, supply shortages and force majeure events. Deployments in Japan, France and Portugal successfully used short pilots and 1–2 year pre-deployment phases to refine processes before engaging in wide-scale roll-out. NBN Co should start by building a strong internal procurement function, and working with the vendor community to ensure a robust supply chain is established.
- **Establishing the OSS/BSS:** for both incumbent and greenfield network builds, choosing the right OSS/BSS design and implementing it efficiently is a critical enabler of success. In the Netherlands for example, implementation of the OSS/BSS for an FTTP network fell behind by 18 months. Investing sufficient time in defining the OSS/BSS functionality upfront is critical as subsequent changes are typically substantially more expensive and time-consuming. The service offering is the main driver of OSS/BSS complexity, so it is preferable that the initial design should account for both initial and future service offerings. In particular, as we discuss in Section 10.3.4, NBN Co should consider designing the OSS/BSS at the outset to provide for future unbundling of dark fibre and potential structural separation of NBN Co into active and passive service companies. In addition, NBN Co should therefore engage early with existing carriers and carriage service providers to understand the likely challenges around interfacing with their systems to provide service.

Exhibit 11–1. Example elements that should be included in an initial corporate plan

Category	Example elements
Corporate and regulatory	<ul style="list-style-type: none"> ■ Company Charter, including commitments to transparency, approach to industry interaction, and core management principles; ■ Statement of lines of business and scope of operations; ■ Corporate structure, including key roles; ■ Human resource and industrial relations strategies; ■ Calendar of formal reporting to Government; ■ Regulatory management update and plan, including any undertakings submitted (Special Access Undertaking if applicable); ■ Plan for engagement with the ACCC on unbundling regime, including assessment of network suitability for future unbundling; ■ Approach and progress on stakeholder and industry reporting and consultation; ■ Corporate social responsibility update and plan.
Coverage planning	<ul style="list-style-type: none"> ■ Definition of premises, illustrated with example cases and benchmarked against current service availability; ■ Details of Coverage Register, including categories and description of online portal; ■ Three-year coverage and activation forecasts by service line, including assessment of market and competitive environment (for example, greenfields competition); ■ Proposed levels of provisioning for growth, business demand, including mix of shared and home-run fibre, space in ducts and exchanges; ■ Initial fibre coverage plan, detailing areas to be covered over next 18 months, planning for 93 percent of selected areas with fibre; ■ Coverage plan for greenfields, including market assessment, engagement model for developers, and estimates for premises to be served by NBN Co in first 18 months; ■ Coverage plan for transit backhaul; ■ Projected coverage for non-fibre solutions, including interim measures, if any.
Operations and progress reporting	<ul style="list-style-type: none"> ■ Fibre deployment reporting, including review of methods and processes; ■ Cost analysis for fibre deployment, with comparisons between geographical types and topologies as appropriate; ■ Satellite deployment reporting, including review of methods and processes; ■ Description of end user premises installation; ■ Supply chain establishment and procurement processes, including availability of key inputs and engagement with major contracting partners and vendors; ■ OSS/BSS planning and key linkages to services development

Category	Example elements
	<p>roadmap</p> <ul style="list-style-type: none"> ■ Labour management plan, including ensuring availability of skilled workforce, approach to industrial relations, and management of risks; ■ Network maintenance plan; ■ Customer service operations plan; ■ Operational targets and SLAs for service activation and maintenance ■ Quality control procedures and reporting, including faults and customer complaint reporting; ■ Policy and program for engaging with householders, building managers, and bodies corporate to gain necessary access; ■ Local community engagement, including potential for various forms of community collaboration, including property access, funding of coverage extensions, etc.
Services and pricing	<ul style="list-style-type: none"> ■ Process for defining FTTP standards (if not already completed); ■ Wholesale service plan of record, including launch dates, specifications, pricing, ancillary charges / incentives; ■ Technical review of proposed offers to confirm suitability for next-generation services (particularly those requiring QoS); ■ Voice services plan, including product definition, pricing, bundling; ■ Review of services with respect to market needs, including identification of new customer requirements; ■ Description of entry-level service specifications; ■ Upgrade policy, including proposed benchmarking on service specifications; ■ Solution for providing end user location and complying with security agency requirements; ■ Revenue and service take-up, including product mix.
Financial	<ul style="list-style-type: none"> ■ Description of asset base, forecast for three years; ■ Statement of financial position and forecast, including funding requirements; ■ Details of any significant contractual commitments, including for plant, materials, or services.

Source: Implementation Study

11.2 Establishing a governance model

NBN Co will be almost unique among large, publicly-financed enterprises in that it is a start-up company. In contrast to Government-owned utilities, which have legacy infrastructure and long-standing business models that evolve only slowly, NBN Co is establishing an entirely new business model and infrastructure.

On a day-to-day basis, NBN Co will be making many decisions with policy implications for Government, far more than a mature GBE. Government will need to react quickly to new developments if it is to retain practical control of policy; otherwise, the pace of events will dictate that the default position on every issue becomes the final position. NBN Co will seek rapid policy guidance and, if it is not forthcoming, will respond either with indecision, leading to delay, or by pressing ahead using its best judgement.

To respond to unfolding events and provide guidance on emerging policy issues, Government will need to ensure that it maintains at all times a detailed knowledge of progress on the NBN initiative and potential issues. If issues are addressed only on an ad hoc basis by officials who turn their attention to NBN Co only when guidance is requested, the ability of Government to engage in relevant and timely intervention will be compromised, especially given the technical complexity of many of the issues, requiring a strong foundation of understanding and context. Only dedicated departmental officials who remain deeply involved in the NBN project can hope to fulfil this function in a meaningful way.

Government will need not only to provide rapid policy guidance, but also the right guidance. There will be situations where NBN Co's commercial interests diverge from Government's coverage and competition policy objectives, which may lead to healthy tension and debate, if constructively managed. The temptation will be for officials maintaining a 'watching brief' over NBN Co to accept the Company's proposals and assurances uncritically, rather than subject them to genuinely independent review. It is critical therefore that there be departmental officials assigned to the NBN project with sufficient depth of expertise that they can identify key issues and have sufficient confidence in the detail that they can challenge NBN Co's positions.

The complexity of the project and its implications across multiple departmental portfolios means that substantial interdepartmental coordination will be required. It will be important to implement a governance model that keeps stakeholder agencies updated on the project's progress, so that decisions with policy implications can be syndicated and resolved. Each agency will have its own legal and administrative responsibilities and processes, which must be respected, but coordinated in a way that is practical and efficient for NBN Co management.

Similarly, the cross-portfolio implications of the project will mean that multiple Government stakeholders will be inclined to make requests of, or present views to, NBN Co. In the absence of a governance model that manages this process, uncoordinated communications from different Government stakeholders are likely to act as an unnecessary distraction to NBN Co management and leave NBN Co in the awkward position of having to resolve potentially conflicting messages from different parts of Government.

While policy objectives will be communicated to the company by a Statement of Expectations from the Minister, and through other formal exchanges between the company and the Government, these standard mechanisms for interaction are likely to be too formal and unwieldy to provide in themselves the frequent and rapid policy guidance that NBN Co will require.

While it is beyond the scope of this report to address issues internal to Government regarding how it might provide ongoing oversight and guidance to NBN Co, the Implementation Study highlights that these challenges need be considered by Government in designing its internal governance model for the NBN Co initiative. This model would need to balance the legal and administrative responsibilities of each interested Government agency with the need for unique levels of coordination, flexibility, expertise and timeliness required to implement the NBN successfully

11.3 Implementing the recommendations

This section discusses the practical mechanisms that may be employed to implement the recommendations, in two subsections:

11.3.1 Identifying the relevant mechanisms

11.3.2 Implementing the individual recommendations.

11.3.1 IDENTIFYING THE RELEVANT MECHANISMS

Government has at its disposal a range of mechanisms to give effect to the recommendations in this report, including:

- Legislating to mandate the desired outcome of a recommendation;
- Using subordinate instruments such as licence conditions or Ministerial Pricing Determinations to mandate the desired outcome;
- Using legislation or a subordinate instrument to empower a regulator, such as ACMA or the ACCC, to monitor an issue and enforce the desired outcome;
- Imposing an obligation to implement the recommendation under a Funding Agreement between Government and NBN Co;
- Including provisions in NBN Co's constitution to stipulate the desired outcome;
- Requiring the desired outcome to be reflected in NBN Co's corporate plan as submitted annually to the Minister, and issuing a Ministerial direction to modify the plans if necessary (Section 11.2);
- Expressing the desired outcome in a statement of expectations of NBN Co and/or other formal correspondence from the shareholder ministers;
- Communicating the desired outcome informally through interactions between NBN Co and departmental officials (Section 11.3).

Exhibit 11–2 summarises the advantages and limitations of each of these mechanisms.

Exhibit 11–2. Mechanisms Government may use to effect recommendations

Mechanism	Advantages	Disadvantages
Legislation	<ul style="list-style-type: none"> ■ Provides highest level of policy certainty to NBN Co and investors ■ Can be legally binding on NBN Co 	<ul style="list-style-type: none"> ■ Potential uncertainty and delay of parliamentary process ■ Inflexibility: may require subsequent legislation to amend
Subordinate instruments	<ul style="list-style-type: none"> ■ Flexibility: can be adjusted rapidly at Ministerial discretion ■ Legally binding on NBN Co 	<ul style="list-style-type: none"> ■ Must be within power under the enabling legislation and made for a 'proper purpose' ■ Most subordinate instruments are disallowable
Monitoring and enforcement by regulator	<ul style="list-style-type: none"> ■ Allows for dynamic monitoring of compliance at a detailed level 	<ul style="list-style-type: none"> ■ Monitoring regime imposes compliance costs on NBN Co and the regulator
Funding Agreement	<ul style="list-style-type: none"> ■ Clarifies Government's expectations for NBN Co within a binding commercial framework 	<ul style="list-style-type: none"> ■ Will require reconsideration in the context of privatisation
Company constitution	<ul style="list-style-type: none"> ■ Easily set and modified while Government is the sole shareholder in NBN Co 	<ul style="list-style-type: none"> ■ Cannot override legislation (such as the <i>Corporations Act 2001</i>) ■ Following privatisation, other shareholders may wish to amend it
Requiring inclusion in NBN Co's plans	<ul style="list-style-type: none"> ■ Provides a formal mechanism to align NBN Co's plans with policy objectives 	<ul style="list-style-type: none"> ■ Ensures alignment annually at a high level but not self-enforcing
Statement of expectations	<ul style="list-style-type: none"> ■ Provides a clear communication of Government's policy objectives for NBN Co 	<ul style="list-style-type: none"> ■ Not legally binding on NBN Co without an appropriate legislative framework ■ Will have less influence once non-government investors are introduced
Communication with departmental officials	<ul style="list-style-type: none"> ■ Allows for dynamic policy guidance to be provided in an informal manner 	<ul style="list-style-type: none"> ■ Not legally binding on NBN Co ■ Will have less influence once non-government investors are introduced

Source: Implementation Study

The Implementation Study acknowledges that a number of relevant legislative measures have already been developed. Nonetheless, the uncertainty of the legislative process and the likelihood of additional legislative measures mean that NBN Co is planning its network design, roll-out and operations in the context of significant uncertainty over the legislative framework that will apply to it and to the telecommunications industry generally.

- The *Telecommunications Regulation (Competition and Consumer Protection) Bill 2009*, currently before the Parliament, would have significant effects on the competitive dynamics of the Australian telecommunications industry;
- Exposure drafts of the *National Broadband Network Companies Bill 2010* and the *Telecommunications Legislation Amendment (National Broadband Network Measures—Access Arrangements) Bill 2010* have been released. These Bills establish regulatory settings for NBN Co itself;
- There remain other relevant regulatory issues not addressed in any of the Bills above which Government may wish to address through legislation.

Resolution of these uncertainties will be needed to ensure that NBN Co's planning is consistent with Government policy objectives as expressed through the ultimate regulatory settings.

The Implementation Study has reviewed the exposure drafts of the *National Broadband Network Companies Bill 2010* and the *Telecommunications Legislation Amendment (National Broadband Network Measures—Access Arrangements) Bill 2010*. Under this draft legislation:

- NBN Co would be governed by Part XIC of the *Trade Practices Act 1974*, but a number of NBN Co-specific measures would apply;
- NBN Co would be obliged to operate as a wholesale-only, open-access telecommunications carrier;
- A process for privatisation would be put in place.

Two issues that are not addressed in the draft legislation should be considered for inclusion:

- **Uniformity of pricing.** Government has announced a policy of uniform pricing on the NBN. This is not provided for in the current draft legislation. However, it is possible to address this issue through a Ministerial Pricing Determination.
- **Future changes to market structure.** Chapter 10 discusses the importance of making provision now for potential future changes to market structure, such as the divestment of ducts and exchanges or the separation of NBN Co into passive and active businesses. Under our recommendations, an independent review prior to privatisation would consider what changes are appropriate.

In general terms, it is desirable to put in place at an early stage the overarching legislative framework that will govern NBN Co. We recognise that this may not be possible in relation to some recommendations, at least in the short-term.

Where this is the case, it is generally feasible to construct an interim solution through a funding agreement, licence conditions or, where that is not appropriate, through a

statement of expectations. For most recommendations, such interim solutions are likely to be sufficient, if not ideal, during the period of sole government ownership of NBN Co. However, it is important that a full legislative framework be put in place well before privatisation, to secure policy outcomes and provide regulatory certainty for private investors.

11.3.2 IMPLEMENTING THE INDIVIDUAL RECOMMENDATIONS

While it will ultimately fall to Government to determine how to take forward our recommendations, in this section we consider the implementation issues Government will face in doing so. Exhibit 11–3 sets out an exhaustive list of the recommendations to Government contained in this report and discusses the implementation issues and timing considerations related to each. Bold numbered headings in the list refer to the chapter in which the recommendation appears.

Exhibit 11–3. Recommendations and implementation considerations

Recommendation	Implementation considerations
Chapter 2. Establishing a mandate for NBN Co	
<p>Recommendation 1. 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>Recommendation 2. 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> <ol style="list-style-type: none"> 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; 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>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>

Recommendation	Implementation considerations
<p>Recommendation 3. 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"> 1. Currently has a standard telephone service activated as defined under the USO; 2. Currently has a fixed-line residential or business broadband product activated; 3. Is used on an ongoing basis for residential, business, health or educational purposes; or, 4. Is defined as a school by the Department of Education, Employment and Workplace Relations. 	<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.</p> <p>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>Recommendation 4. 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>

Recommendation	Implementation considerations
<p>Recommendation 5. 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"> 1. 93 percent of premises be covered by a fibre-to-the-premises (FTTP) network that can deliver speeds of up to 100 Mbps; 2. All other premises be covered by NBN Co via satellite technologies that deliver peak speeds of at least 12 Mbps; 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; 4. These coverage objectives be reviewed over time based on actual costs of deployment and technology developments. 	<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>Recommendation 6. 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>

Recommendation	Implementation considerations
<p>Recommendation 7. 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>Recommendation 8. 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>Recommendation 9. 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 to avoid unnecessary cost and delay in the NBN roll-out.</p>

Recommendation	Implementation considerations
<p>Recommendation 10. 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"> 1. NBN Co conducting a notice process to ensure the building entity understands the implications of its decision; 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’; 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. 	<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>Recommendation 11. 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>Recommendation 12. 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>Recommendation 13. 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>

Recommendation	Implementation considerations
<p>Recommendation 14. 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>Recommendation 15. 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"> 1. Coverage of 15 percent of premises within the proposed fibre footprint; 2. 31 December 2013. 	<p>As per Recommendation 14</p>
<p>Recommendation 16. 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"> 1. Apply to ACMA to have the premises declared 'adequately served'; 2. Attempt to secure access from the network owner that would allow NBN Co to offer wholesale services over the network; 3. Overbuild the network where NBN Co is unable to secure necessary access and the premises are not declared 'adequately served'. 	<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>

Recommendation	Implementation considerations
<p>Recommendation 17. 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>Recommendation 18. 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>Recommendation 19. 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"> 1. Be publicly available through mechanisms approved by Government; 2. List premises in specific categories that detail the coverage status of each premises; 3. Be updated at regular intervals; 4. Identify premises with specific geographical location data. 	<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>Recommendation 20. 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>

Recommendation	Implementation considerations
<p>Recommendation 21. 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>Recommendation 22. 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>Recommendation 23. 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>Recommendation 24. 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>Recommendation 25. 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>

Recommendation	Implementation considerations
<p>Recommendation 26. 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>Recommendation 27. 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>Recommendation 28. 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>Recommendation 29. 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>Recommendation 30. 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.</p> <p>The review should be carried out only when greater clarity around the implementation challenges of the NBN have emerged from initial roll-outs.</p>

Recommendation	Implementation considerations
<p>Recommendation 31. 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.</p> <p>This should be implemented immediately as NBN Co is already involved in stakeholder consultations.</p>
<p>Chapter 3. Enabling a new generation of services for end users</p>	
<p>Recommendation 32. 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>Recommendation 33. 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"> 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; 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; 3. In the satellite footprint, NBN Co should ensure that CPE upgrades continue to be offered via service providers. 	<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>

Recommendation	Implementation considerations
<p>Recommendation 34. 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"> 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; 2. The deployment of RF overlay capability is commercially viable for the Company as a standalone service. 	<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>Recommendation 35. 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>Chapter 4. Building a fibre access network to 90 percent of premises</p>	
<p>Recommendation 36. 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"> 1. Service providers who may seek access to Layer 1 services, anticipating the likelihood of future unbundling requirements; 2. High bandwidth, dedicated class-of-service requirements for enterprise and government users, and for mobile base-stations and other users. 	<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>

Recommendation	Implementation considerations
<p>Recommendation 37. 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"> 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; 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; 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. 	<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>Recommendation 38. 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"> 1. If the ONT is installed externally, an internal patch panel providing open access to service providers on an equivalent basis; or 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. 	<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>

Recommendation	Implementation considerations
<p>Recommendation 39. 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"> 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; 2. That this entry-level speed be reviewed over time to ensure it continues to deliver sufficient performance relative to other fixed broadband networks; 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. 	<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>Recommendation 40. 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"> 1. Initially, this means ensuring that the appropriate specifications are adopted through consultation with industry and potential customers; 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. 	<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>

Recommendation	Implementation considerations
<p>Recommendation 41. 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>Recommendation 42. 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>Chapter 5. Ensuring national availability of high-speed broadband</p>	
<p>Recommendation 43. 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>

Recommendation	Implementation considerations
<p>Recommendation 44. 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>Recommendation 45. 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"> 1. That the network offer services on both a wholesale and retail basis beyond the fibre footprint to cover 4 percent of total premises; 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; 3. That the tenderer(s) describe an expected upgrade path for the implemented technology; 4. That spectrum renewal rights for the fixed-wireless network operator be guaranteed; 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. 	<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>

Recommendation	Implementation considerations
<p>Recommendation 46. 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>Recommendation 47. 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>Chapter 6. Ensuring ubiquitous backhaul availability</p>	
<p>Recommendation 48. 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>Recommendation 49. 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>

Recommendation	Implementation considerations
<p>Recommendation 50. That NBN Co be required to offer a single POI in relation to a given premises:</p> <ol style="list-style-type: none"> 1. At a fibre exchange where there are multiple alternative backhaul providers; or 2. At a fibre exchange linked to the Regional Backbone Blackspots Program; or 3. At a point accessible from the fibre exchange over an NBN Co transit backhaul link. 	<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>Recommendation 51. 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>Recommendation 52. That for defining NBN Co's backhaul services:</p> <ol style="list-style-type: none"> 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; 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; 3. NBN Co not to offer or be required to offer connection below the POI to an NBN Co access network. 	<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>

Recommendation	Implementation considerations
<p>Recommendation 53. That NBN Co be required to specify transit products to meet an affordability test; specifically:</p> <ol style="list-style-type: none"> 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; 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; 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; 4. That the NBN Co transit backhaul prices scale linearly with bandwidth for contention ratios higher than the one used in the affordability test. 	<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>

Recommendation	Implementation considerations
<p>Recommendation 54. That NBN Co be required to provide transit backhaul services to alternative network operators, specifically:</p> <ol style="list-style-type: none"> 1. That such transit backhaul services be offered on equivalent terms to those offered to customers of its own access network; 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; 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. 	<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>
Chapter 7. Delivering a sustainable business case	
<p>Recommendation 55. 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>

Recommendation	Implementation considerations
<p>Recommendation 56. 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"> 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>; 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. 	<p>This requires legislative action; revision of Schedule 1 Part 5 of the <i>Telecommunications Act 1997</i> is the likely mechanism.</p>
<p>Recommendation 57. 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>Chapter 8. Funding the NBN</p>	

Recommendation	Implementation considerations
<p>Recommendation 58. 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>Recommendation 59. 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>Recommendation 60. 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>Recommendation 61. 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>Recommendation 62. 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>

Recommendation	Implementation considerations
Chapter 9. Understanding adverse competition scenarios	
Recommendation 63. That the Government request the ACCC to monitor and report annually on the market for Layer 3 telecommunications services.	The Minister could request that the ACCC include this in its annual review of competitive safeguards in the telecommunications industry.
Chapter 10. Securing competition outcomes	
Recommendation 64. That NBN Co be required to conduct its strategy, planning and operations in a publicly transparent manner, subject to any requirements of commercial confidentiality.	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.
Recommendation 65. 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: 1. Holding regular industry forums to seek the views of current and prospective customers on the service offering; 2. Publishing a revised service development roadmap on at least an annual basis, and ensuring that demonstrable and reasonable market requirements are met.	As per Recommendation 64.
Recommendation 66. That NBN Co be required to publish in its annual report comprehensive information on its performance, including: 1. Network roll-out performance and costs; 2. Achievement of service levels; 3. Faults; 4. Customer complaints; 5. Any matters, whether or not related to those above, that Government, represented by the shareholder Ministers, considers appropriate.	This could be made binding on NBN Co through a licence condition, in addition to being highlighted in the statement of expectations.

Recommendation	Implementation considerations
<p>Recommendation 67. 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>Recommendation 68. 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>Recommendation 69. 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>

Recommendation	Implementation considerations
<p>Recommendation 70. 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"> 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; 2. NBN Co is to publish any such variations; 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; 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. 	<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>Recommendation 71. 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"> 1. Seeking access to its Layer 2 services; 2. Seeking access to transit backhaul services; 3. Seeking access to unbundled physical fibre or wavelengths in the future. 	<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>

Recommendation	Implementation considerations
<p>Recommendation 72. 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>Recommendation 73. 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"> 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>; 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; 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. 	<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>

Recommendation	Implementation considerations
<p>Recommendation 74. 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>Recommendation 75. That, to determine NBN Co's fibre network topology:</p> <ol style="list-style-type: none"> 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; 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; 3. Government determine interim deadlines to complete this process in consultation with the ACCC and NBN Co; 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. 	<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>

Recommendation	Implementation considerations
<p>Recommendation 76. 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"> 1. Voluntary unbundling of Layer 1 services by NBN Co; 2. Declaration of Layer 1 services by the ACCC; 3. A requirement to provide Layer 1 services being imposed by the Minister. 	<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>Recommendation 77. 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>Recommendation 78. That for the purposes of safeguarding competition outcomes in the event of privatisation of NBN Co:</p> <ol style="list-style-type: none"> 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; 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); 3. Government determine its privatisation plans and schedule on the basis of that review. 	<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>

Recommendation	Implementation considerations
<p>Recommendation 79. 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>Recommendation 80. 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>Recommendation 81. 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>Recommendation 82. 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.</p> <p>NBN Co should be informed of this policy immediately to ensure compliance as it acquires assets and interests.</p>
<p>Recommendation 83. 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.</p> <p>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>

Recommendation	Implementation considerations
<p>Recommendation 84. 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.</p> <p>This policy should be communicated to NBN Co as soon as possible to inform network design.</p>