

COMMUNICATIONS  
ALLIANCE LTD



THE NATIONAL BROADBAND NETWORK  
IMPLEMENTATION STUDY

SUBMISSION BY COMMUNICATIONS ALLIANCE

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## 1 INTRODUCTION

### 1.1 General

Communications Alliance welcomes both the release of the NBN implementation study (the Study) and the invitation<sup>1</sup> to provide views on the Study.

### 1.2 About Communications Alliance

Communications Alliance is the peak telecommunications industry body in Australia. Its membership is drawn from a wide cross-section of the communications industry, including carriers, service providers, vendors, consultants and suppliers as well as business and consumer groups. Its vision is to provide a unified voice for the telecommunications industry and to lead it into the next generation of converging networks, technologies and services. The prime mission of Communications Alliance is to promote the growth of the Australian communications industry and the protection of consumer interests by fostering the highest standards of business ethics and behaviour through industry self-governance. For more details about Communications Alliance, see <http://www.commsalliance.com.au>

Communications Alliance has been leading industry activity on the National Broadband Network (NBN) through its NBN Project. More information on the NBN Project is available from the Communications Alliance website<sup>2</sup> and a dedicated NBN wiki<sup>3</sup> established to facilitate the NBN Project outcomes, including a number of documents<sup>4</sup> that identify required arrangements including for greenfields, end user premises, operational and technical issues.

## 2 STRUCTURE OF THIS SUBMISSION

Communications Alliance has structured its response around the recommendations in the Study. The main table is based on Exhibit 11-3 *Recommendations and implementation considerations* of the Study with an added column titled "Communications Alliance response".

Importantly where responses are provided these reflect the outputs of the Communications Alliance NBN Project. These outputs represent a range of issues and options identified by participating members produced for broader stakeholder comment and with the objective of adding value to discussions and debate on the NBN. As such they do not represent the views of individual members.

The responses to a number of recommendations are that "*Communications Alliance has no comment to make on this recommendation at this time*". This is because many of the issues covered are yet to be discussed in Communications Alliance or are

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<sup>1</sup> The invitation to "key stakeholders and the general public" in the joint Ministerial media release "Landmark Study confirms NBN vision is achievable and affordable" of 6 May 2010, see [http://www.minister.dbcde.gov.au/media/media\\_releases/2010/040](http://www.minister.dbcde.gov.au/media/media_releases/2010/040)

<sup>2</sup> Refer to <http://commsalliance.com.au/Activities/nbn>

<sup>3</sup> Refer to [https://commswiki.dgit.biz/index.php/Main\\_Page](https://commswiki.dgit.biz/index.php/Main_Page)

<sup>4</sup> Refer to <http://commsalliance.com.au/Documents/national-broadband-network>

about recommendations that may be the subject of commercially sensitive bilateral discussions underway between Communications Alliance members, of which Communications Alliance has no visibility. As such it is inappropriate for Communications Alliance to comment on these matters.

### **3 OTHER**

#### **3.1 The utility of clear definitions**

Communications Alliance understands benchmark data rates (e.g. "Speeds of up to 100Mbps", "peak speeds of 12Mbps"), commonly assumed to refer to data rates for transmission toward the end user/site (popularly referred to as download rates), are currently undefined for the NBN. In line with the comments included in these responses there is an industry expectation these matters will be more precisely defined by NBN Co and policy makers as soon as possible.

#### **3.2 Many components to a service**

Communications Alliance notes that data rates for transmission away from the end user/site (commonly referred to as upstream rates) may also be relevant for end user experience of a service or application, depending on its nature e.g. videoconferencing. In addition, parameters for network performance including latency (also known as delay), jitter (also known as delay variance) and loss (also known as packet loss) have an impact on end user experience of a service or application delivered over telecommunications network(s) and should be included in the definition of underlying services.

#### **3.3 The term "terrestrial wireless"**

Communications Alliance has referred to "terrestrial wireless" in its *NBN Reference Architecture – High Level Options for the NBN* paper<sup>5</sup>, and uses it in this submission, to make the distinction between satellite services and services using wireless technology that may have characteristics of:

- (a) fixed services (i.e. available at a specific location, sometimes due to the physical asset(s) in use such as an antenna); or
- (b) nomadic services (i.e. able to be relatively easily relocated, with temporary interruption to service); or
- (c) mobile services (i.e. able to operate while moving, with no apparent interruption to service e.g. using cell handover); and
- (d) lower delay and latency through the use of terrestrial base-stations instead of satellite transponders.

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<sup>5</sup> Release1 of the paper was published in January 2010. It is available from <http://commsalliance.com.au/Documents/national-broadband-network>

## 4 RESPONSES TO NBN IMPLEMENTATION STUDY RECOMMENDATIONS

Recommendation	Implementation considerations	Communications Alliance response
<b>Chapter 2. Establishing a mandate for NBN Co</b>		
<p><b>Recommendation 1.</b> That NBN Co only enter markets where there is insufficient infrastructure to support superfast broadband or where retail service providers are unable to access bottleneck assets on reasonable terms.</p>	<p>NBN Co’s mission should be set out in the statement of expectations, but where there are well-defined markets from which it should be excluded, a binding prohibition through legislation or licence conditions may be appropriate.</p>	<p>Communications Alliance notes the prior announcements from NBN Co executives of the intention not to overbuild existing FTTP services. Industry experience has been that “reasonable terms” depends on the perspective of the person (e.g. wholesale provider, retail service provider, end user) and therefore is subjective and bodies such as the ACCC who may still be required to determine what access arrangements might be “reasonable” may benefit from further guidance or clarification.</p>
<p><b>Recommendation 2.</b> That Government’s objective of providing superfast broadband to premises be measured in terms of coverage, with premises considered covered by the NBN where:</p> <p>1. NBN Co is able to provide a wholesale service to those premises at the request of a retail service provider within a maximum number of days, specified by Government. For premises to be defined as ‘covered’, NBN Co should not be required to install CPE, or for fibre to perform the ‘drop’ and install the ONT. NBN Co should not perform the ‘drop’ and install the ONT until services</p>	<p>In relation to premises that NBN Co lists in its coverage register as ‘covered’, it is appropriate to compel NBN Co to meet minimum standards for service activation times. This should be legally binding and should be monitored, to ensure that NBN Co’s roll-out does not distract it from ensuring adequate service levels in covered areas.</p> <p>The maximum time for activation of ‘covered’ premises could be</p>	<p>Subject to clarifying the definition of “superfast broadband”, the proposed measurement of the objective in terms of “coverage” is reasonable.</p> <p>The suggested timeframe of “days” for provision of a wholesale service may be appropriate for situations where the physical cables and NTU are yet to be installed, however it may be at odds with current industry best practice for activation of some services, which can be measured in terms of hours or minutes.</p> <p>Communications Alliance suggests maximum times for activation should differentiate between</p>

Recommendation	Implementation considerations	Communications Alliance response
<p>are ordered via a retail service provider;</p> <p>2. The ACCC or appropriate agency has declared the premises to be 'adequately served' by other providers where premises already have access to last-mile services of the required speed, with infrastructure-based competition and/or open-access wholesale arrangements in place, and with pricing comparable with NBN services; that to the extent that premises are deemed to be 'adequately served' by FTTP infrastructure, these should be counted towards the FTTP coverage objective.</p>	<p>included in NBN Co's licence conditions, together with an obligation to provide ACMA with data on activation time performance.</p> <p>Maximum activation times impact on the activation / maintenance resources NBN Co needs to provision for areas where roll-out has occurred. The maximum activation time permitted may need to be modified if experience shows it not to be feasible.</p>	<p>a wide range of scenarios e.g. to account for single and multi dwelling units, whether an ONT or drop is in situ, whether or not there is an existing active service.</p> <p>From an Retail Service Provider (RSP) perspective it is critical that these timeframes provide for customer service standards in place today including timeframes mandated by legislation e.g. the <i>Telecommunications (Customer Service Guarantee) Standard</i><sup>6</sup>.</p> <p>The recommendation that "NBN Co should not perform the 'drop' and install the ONT until services are ordered via a retail service provider" has the potential to increase the cost of construction for the NBN e.g. instead of provisioning the maximum number of premises in a street on the first pass when the distribution network is being deployed and cabling crews are in the areas, it could require multiple visits (also known as "truck rolls") to the same street. Multiple truck-rolls are expensive to the provider and often disruptive to the end-user, and the industry is developing processes to reduce the number of truck-rolls required to connect a retail premise. The range of possible approaches to deployment require tradeoffs e.g. choices about</p>

<sup>6</sup> See [http://www.acma.gov.au/WEB/STANDARD/747931/pc=PC\\_2017](http://www.acma.gov.au/WEB/STANDARD/747931/pc=PC_2017)

Recommendation	Implementation considerations	Communications Alliance response
		<p>service levels, utilisation of capital equipment.</p> <p>An alternate proposition is that NBN Co should perform the 'drop' and install the ONT:</p> <p>(a) initially with agreement from the owner of the premises while the network is being deployed in the area; and subsequently</p> <p>(b) when an initial service is ordered via a retail service provider, if no ONT was commissioned previously.</p> <p>Where an alternative last-mile access network provides the required performance and commercial structure that an NBN Co access service would, such that the premises is considered "adequately served", Communications Alliance believes this is sufficient, and that this condition should be technology-neutral – there should not be an additional requirement that the alternative access network necessarily be a FTTP architecture, and not necessarily constructed of optical fibre.</p>
<p><b>Recommendation 3.</b> For the purposes of NBN Co's coverage requirement, that premises be defined, to mean any building (or part of a building) that meets one of the following criteria:</p> <p>1. Currently has a standard telephone service activated as defined under the USO;</p>	<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</p>	<p>Communications Alliance notes the proposed definition of "coverage" of premises is generally reasonable i.e. effectively residential, business or educational buildings in use, with a telecommunications service in use.</p> <p>This assumes government premises that are not</p>

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<p>2. Currently has a fixed-line residential or business broadband product activated;</p> <p>3. Is used on an ongoing basis for residential, business, health or educational purposes; or,</p> <p>4. Is defined as a school by the Department of Education, Employment and Workplace Relations.</p>	<p>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.</p> <p>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>hospitals or educational facilities are included by the reference to buildings that have a "business broadband product activated".</p> <p>A clear definition of coverage requirement is useful but should be kept simple. Additional complexity in the definition could lead to excessive resource expenditure on the definitions that could be better expended on expanding coverage.</p> <p>Communications Alliance notes there exists strong support within the communications community, government and utility end-users that NBN Co will connect to 'non-premises' locations. These could not be considered 'premises', and additional consideration for these types of locations should be included in the 'coverage' definition and coverage requirement.</p>
<p><b>Recommendation 4.</b> That Government permit NBN Co to provide connections to non-premises on a commercial basis; that Government retain the option to require NBN Co to cover specified classes of non-premises on terms approved by</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,</p>	<p>Communications Alliance agrees that non-premises need to be considered, noting the Communications Alliance <i>NBN Reference Architecture – High Level Options for the NBN</i> paper and <i>Overview of Technical Standards</i> paper identify examples of non premises sites</p>

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Government.	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.	(e.g. "traffic control systems, street lights, surveillance cameras") as a class of sites that could connect to the NBN.
<p><b>Recommendation 5.</b> That Government set NBN Co the objective that, once NBN roll-out is complete, all premises in Australia have access to superfast broadband services, specifically that:</p> <ol style="list-style-type: none"> <li>1. 93 percent of premises be covered by a fibre-to-the-premises (FTTP) network that can deliver speeds of up to 100 Mbps;</li> <li>2. All other premises be covered by NBN Co via satellite technologies that deliver peak speeds of at least 12 Mbps;</li> <li>3. A fixed-wireless network be provided beyond where fibre is deployed to 4 percent of total premises, but that this not be the responsibility of NBN Co unless there are no acceptable tenders by commercial operators;</li> <li>4. These coverage objectives be reviewed over time based on actual costs of deployment and technology developments.</li> </ol>	<p>While the network is incomplete, it is not feasible to codify NBN Co's coverage objectives as a universally enforceable obligation. Instead they could be included in the statement of expectations, leaving NBN Co with flexibility around roll-out scheduling.</p> <p>Coverage objectives could also be included in the Funding Agreement between the Government and NBN Co, to provide directors with certainty around these obligations, but again it is important to maintain flexibility for NBN Co to determine the details of the roll-out schedule.</p> <p>Government expectations of premises to be covered should be clarified as soon as possible to facilitate network planning.</p>	<p>Communications Alliance suggests acceptance of the current recommendation on a split of FTTP, terrestrial wireless and satellite services, recognising that the economics of differing technologies are likely to vary over time and may vary the split.</p> <p>Accumulated learning from deployments are likely to inform future decision making, so the split of technologies may vary over the number of years anticipated for the construction of the NBN.</p> <p>Communications Alliance notes the recommendation for "<i>satellite technologies that deliver peak speeds of at least 12 Mbps</i>" appears to be an evolution from the original joint Ministerial announcement of 7 April 2009<sup>7</sup> to "<i>use next generation wireless and satellite technologies that will be able to deliver 12 megabits per second or more to people living in more remote parts of rural Australia</i>".</p>

<sup>7</sup> [http://www.minister.dbcde.gov.au/media/media\\_releases/2009/022](http://www.minister.dbcde.gov.au/media/media_releases/2009/022)

Recommendation	Implementation considerations	Communications Alliance response
	<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><b>Recommendation 6.</b> That NBN Co select a number of priority areas for roll-out that together comprise a representative mix of the country; that, once NBN Co has completed its roll-out to these priority areas Government review whether NBN Co is on track to achieving the objective of 93 percent FTTP coverage and use performance management mechanisms as required; that the Minister request NBN Co include details of its progress in achieving the 93 percent FTTP coverage objective in each corporate plan.</p>	<p>It is sufficient for this to be set out in the statement of expectations, as coverage will be complete well before the entry of private equity. These expectations regarding coverage should be set as soon as possible to enable NBN to plan its initial roll-out schedule.</p>	<p>Trialling construction techniques and service characteristics in manageable locations – and evaluating the results - prior to full-scale deployment on a wider scale is a prudent and common strategy within the telecommunications industry, and Communications Alliance supports this recommendation, noting:</p> <ul style="list-style-type: none"> <li>(i) the comment on recommendation 5 about the possibility of coverage objectives varying over time as learning accumulates on the rollout options.</li> <li>(ii) NBN Co has already selected " a number of priority areas for roll-out that together comprise a</li> </ul>

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		<p><i>representative mix of the country</i>" with its announcement<sup>8</sup> on 2 March 2010 of its five "first release" sites on mainland Australia as part of live trials of its network design and construction methods; and</p> <p>(iii) the importance of providing transparency to the broader industry on the outcomes achieved in these priority areas including any technical aspects related to activities being considered within the Communications Alliance NBN Project.</p>
<p><b>Recommendation 7.</b> That NBN Co be permitted to establish a mechanism by which a community can fully or partially fund the extension of the FTTP network to cover its location, provided that these premises will not be counted towards the FTTP coverage objective. This could include financial contributions towards the network extension from businesses, not-for-profit organisations, state and local governments or from Government, independent of its equity investment in NBN Co.</p>	<p>While NBN Co is in the early stages of deployment, such a scheme would be an unnecessary distraction and would be based upon inadequate roll-out cost data.</p> <p>Any formal appeal process would be impractical, and NBN Co's commercial incentive is likely to cause it to establish a pragmatic approach. Transparency of its decision-making and its treatment</p>	<p>Communications Alliance supports this recommendation as a reasonable option for NBN Co to enable a community to achieve or enhance the coverage of FTTP connections, noting the initial priority for NBN Co is likely to be on the most effective way to achieve its coverage objectives before considering "special" cases.</p> <p>Communities may require significant time and will expend significant resources in planning and raising such funds. NBN Co should publish as early as possible its indicative maps showing the</p>

<sup>8</sup> The relevant NBN Co media release is available from <http://www.nbnco.com.au/publications-and-announcements/latest-announcements>

Recommendation	Implementation considerations	Communications Alliance response
	<p>of applications will exert sufficient pressure to compel NBN Co to comply with the substance of this recommendation.</p>	<p>boundaries of its intended fibre network build, well before detailed construction planning commences, to enable communities the months or possibly years that might be required to benefit from this Recommendation.</p>
<p><b>Recommendation 8.</b> That until the FTTP roll-out is complete in a given area, only premises that cannot access a metro-equivalent service as defined under the Australian Broadband Guarantee program be eligible for an NBN satellite service.</p>	<p>While the network is incomplete, it is not feasible to codify NBN Co's coverage objectives as a universally enforceable obligation. Instead they should be included in the statement of expectations, leaving NBN Co with flexibility around roll-out scheduling.</p> <p>Coverage objectives could also be included in the Funding Agreement between the Government and NBN Co, to provide directors with certainty around these obligations, but again it is important to maintain flexibility for NBN Co to determine the details of the roll-out schedule.</p> <p>Government expectations of premises to be covered should be clarified as soon as possible to facilitate network planning.</p>	<p>Communications Alliance supports this recommendation as the alternate outcome risks 'double deployment' of a satellite service to a site that may later have FTTP available.</p> <p>Communications Alliance also notes the recent Ministerial announcement<sup>9</sup> to double the threshold service speed under the Australian Broadband Guarantee.</p>

<sup>9</sup> See Ministerial media release: [http://www.minister.dbcde.gov.au/media/media\\_releases/2010/043](http://www.minister.dbcde.gov.au/media/media_releases/2010/043)

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<p><b>Recommendation 9.</b> That NBN Co be granted a right of access to shared property in multi-dwelling units to undertake the inspection, installation and maintenance of FTTP infrastructure and that an obligation be imposed on building managers and bodies corporate to facilitate NBN Co exercising that right of access.</p>	<p>This requires legislative action, such as insertion of a new provision into the Telecommunications Act.</p> <p>This should be implemented as soon as the legislative process allows to avoid unnecessary cost and delay in the NBN roll-out.</p>	<p>The <i>Telecommunications Act 1997-Schedule 3</i> provides access powers to carriers and for the purpose on installing and maintaining communication facilities. Existing carriers operate under these provisions including the need for notification to building owners. Regard will need to be had to these existing powers and whether building owners can be required to provide access not already required under existing legislation.</p> <p>In the interests of competitive neutrality, any new or clarified rights of access should be enacted within the access powers under the <i>Telecommunications Act 1997</i>, and should apply to all Carriers, not just NBN Co. Communications Alliance requests that there be broad industry based consultation on the content of any such changes.</p>
<p><b>Recommendation 10.</b> That NBN Co follow a defined process in the event that it cannot install FTTP infrastructure in a multi-dwelling unit (MDU) because it has been denied access to the building; that this process include:</p> <ol style="list-style-type: none"> <li>1. NBN Co conducting a notice process to ensure the building entity understands the implications of its decision;</li> <li>2. If the building entity does not grant NBN Co access to the building after the notice process,</li> </ol>	<p>As it relates to the integrity of the key performance metrics of NBN Co's roll-out and service levels, the process NBN Co must undertake before it may enter premises as 'frustrated' in the Coverage Register should be made binding, for example by stipulation in licence conditions.</p>	<p>In addition to the response to Recommendation 9, Communications Alliance notes the importance that both building owners and contractors know their rights and obligations, and that an invitation to a licensed Carrier to enter a building and install FTTP infrastructure after a prior denial of access to the building may involve additional costs that may need to be recovered by the Carrier.</p> <p>Consideration should be given to the formulation of materials and an education</p>

Recommendation	Implementation considerations	Communications Alliance response
<p>then NBN Co can list the MDU on the NBN Coverage Register as 'frustrated';</p> <p>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>		<p>program for MDU building entities highlighting the access powers of a licensed Carrier under the <i>Telecommunications Act 1997</i> (including any new powers created pursuant to Recommendation 9), and their rights and obligations under existing Access Codes such as the <i>Telecommunications Code of Practice 1997</i>. This could build on existing material such as the Communications Alliance guideline on <i>Building Access Operations and Installation (G571:2002)</i><sup>10</sup> and the Australian Building Codes Board <i>Digital Buildings Telecommunications Access Guideline</i><sup>11</sup>.</p> <p>In regard to part 3 of the recommendation, any changes to the access regime should be extended to include RSPs. It is important that a building entity not be allowed to discriminate in respect of RSPs being granted access to provide services to the occupants.</p>
<p><b>Recommendation 11.</b> That NBN Co be required to install FTTP in MDUs as opposed to alternative technologies such as VDSL; that Government review this policy if widespread building access problems or cost overruns emerge as NBN Co</p>	<p>This could be specified in the statement of expectations and potentially in the Funding Agreement.</p>	<p>Communications Alliance supports the provision of optical fibre where reasonably possible, noting the preference for FTTP has the advantage of reduced upgrade costs to enable future technologies currently under</p>

<sup>10</sup> See <http://commsalliance.com.au/Documents/Documents/guidelines/g571>

<sup>11</sup> Available from <http://www.abcb.gov.au/download.cfm?downloadfile=437E5920-2C94-11DF-AD33001143D4D594&typename=dmFile&fieldname=filename> as a pdf file.

Recommendation	Implementation considerations	Communications Alliance response
<p>seeks to cover MDUs in the early phase of the roll-out.</p>		<p>development e.g. 10Gbps PON (10GPON), WDM-PON.</p> <p>Communications Alliance disagrees in general with the statement on Page 83 of the Report that FTTB deployments are difficult to unbundle – a VDSL2 solution can be wholesaled precisely as a FTTP connection can, and unbundling through installing a second DSLAM is no more difficult than unbundling fibre through installing a second provider’s OLT equipment set in a FTTP deployment.</p> <p>If a second provider needs to invest in a DSLAM for each building they would in essence be obtaining a layer 1 service from NBN.</p> <p>Operating any DSL technology in MDUs from a basement would be like operating from a Fibre To The Node (FTTN) connection. When there are services operating on copper back to an exchange the services operating from the basement may cause interference and this will need to be addressed.</p> <p>Communications Alliance does not agree with the Study’s comments that both technologies have similar costs. This may be so in cases where (a) the new optical fibre can be easily installed and (b) the new services are quickly</p>

<sup>12</sup> See <http://commsalliance.com.au/Documents/Documents/Standards/s009>

Recommendation	Implementation considerations	Communications Alliance response
		<p>taken up. However additional costs may be incurred in MDUs where the new fibre installation proves difficult and time consuming, e.g. if existing physical pathways are inadequate. Overall, there are various cost trade-offs in MDU installations and FTTB deployments offer advantages in some cases. So the installation policy should allow an appropriate flexibility.</p> <p>Communications Alliance endorses the policy review process, and suggests that one or more areas with a high concentration of MDUs should be included in the trial locations to allow this policy to be tested early.</p> <p>Communications Alliance notes the commentary on Page 87 that optical fibre is deemed to be owned by the carrier all the way from the building entry to the NTU, while for copper cabling the carrier owns the cable only to the (basement) MDF, and the cabling from the MDF to the premises is owned by the building owner. The Study opines that NBN Co would (and implies it should) own the optical cabling within MDUs, as a potential bottleneck asset.</p> <p>Communications Alliance notes that an alternative way of dealing with the bottleneck might be to amend AS/ACIF S009<sup>12</sup> to include</p>

Recommendation	Implementation considerations	Communications Alliance response
		the future installation of optical fibre customer cabling and equipment.
<p><b>Recommendation 12.</b> That NBN Co's coverage objective include new premises that are constructed during the period of the roll-out; however, that NBN Co not be expected to cover these new premises prior to the NBN access network being deployed to that geographic area.</p>	<p>As per Recommendation 8</p>	<p>Communications Alliance notes the recommendation is referring to NBN Co's coverage objective and may include premises provisioned with FTTP under competitive greenfields arrangements. This distinction is important, understanding that deployment of FTTP to many new premises will be in greenfields areas by providers other than NBN Co.</p>
<p><b>Recommendation 13.</b> That NBN Co be required to act as the network provider of last resort for premises constructed within, or adjacent to, NBN Co's fibre access network; that developers be required to cover the costs of trenching and providing the duct, pit and pipe network; that NBN Co cover the costs of installing all other FTTP network infrastructure up to the premises.</p>	<p>The obligation to act as a provider of last resort may best be imposed by legislation, although Government should initially communicate this as part of the coverage objectives as per Recommendation 8, so that NBN Co can account for this obligation in its planning. Government must also ensure that proposed greenfields legislation is consistent with this recommendation.</p>	<p>Communications Alliance notes:</p> <ul style="list-style-type: none"> <li>(i) the term "the network provider of last resort" requires clarification</li> <li>(ii) that consistent with competitive greenfields arrangements and where a carrier has provided FTTP, it would not normally be expected that the developer be obliged to provide additional pit and pipe for overbuild by NBN Co.</li> </ul>
<p><b>Recommendation 14.</b> That ACMA be tasked with issuing national FTTP design standards that all parties should adhere to when deploying an FTTP network for the purposes of providing</p>	<p>This would require legislative action. ACMA should be the regulator setting the standards, but it should</p>	<p>Communications Alliance supports the need for FTTP design standards and would see the ACMA playing a key role in enforcing these. The existing regulatory framework is one</p>

Recommendation	Implementation considerations	Communications Alliance response
<p>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>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>designed to make greatest practicable use of industry with industry codes and standards being made by Communications Alliance and enforceable by the ACMA.</p> <p>The ACMA retains the power to make such standards where it believes this is necessary.</p> <p>Some consideration needs to be given to Communications Alliance taking a lead role in developing these design standards, recognising the need for industry expertise in their making.</p>
<p><b>Recommendation 15.</b> That the national FTTP standards require that the topology deployed in new developments be home-run and not shared; that this requirement be reviewed in conjunction with the broader review of topologies to be completed by the earlier of:</p> <ol style="list-style-type: none"> <li>1. Coverage of 15 percent of premises within the proposed fibre footprint;</li> <li>2. 31 December 2013.</li> </ol>	<p>As per Recommendation 14</p>	<p>Communications Alliance does not support the recommendation that:</p> <ol style="list-style-type: none"> <li>(a) "<i>the topology deployed in new developments be home-run and not shared</i>"; and</li> <li>(b) it be reviewed prior to reaching either of             <ol style="list-style-type: none"> <li>(i) a defined coverage percentage; and</li> <li>(ii) a date.</li> </ol> </li> </ol> <p>The deployment of homerun fibre is predicated on the assumption that NBN Co equipment should be able to be installed to service each location within a greenfields development, overbuilding the incumbent provider. Instead, if an existing greenfields network provider is</p>

Recommendation	Implementation considerations	Communications Alliance response
		<p>providing the required speeds and commercial wholesale-only services equivalent to NBN Co services, then these networks should be classed as 'adequately served' per Recommendations 1 and 2. Equivalence principles would indicate greenfields fibre network builders should not be required to build networks differently to those NBN Co builds for itself.</p> <p>Communications Alliance has no comment on whether or not to retain or vary the specified conditions of 15 per cent coverage or the 31 December 2013 timeframe.</p>
<p><b>Recommendation 16.</b> That NBN Co overbuild third party FTTP networks that do not comply with the FTTP design standards; that, where a deployment does comply with the FTTP design standards established by Government, NBN Co may:</p> <ol style="list-style-type: none"> <li>1. Apply to ACMA to have the premises declared 'adequately served';</li> <li>2. Attempt to secure access from the network owner that would allow NBN Co to offer wholesale services over the network;</li> <li>3. Overbuild the network where NBN Co is unable to secure necessary access and the premises are not declared 'adequately served'.</li> </ol>	<p>This policy should be communicated to NBN Co through the statement of expectations, potentially reinforced through the Funding Agreement between the Government and NBN Co.</p> <p>As it relates to the integrity of the key performance metrics of NBN Co's roll-out and service levels, the process NBN Co must undertake before it may enter premises as 'adequately served' in the Coverage Register should be made binding, for example by stipulation in licence conditions.</p>	<p>Noting:</p> <ol style="list-style-type: none"> <li>(i) the objective for the NBN to be a wholesale only, open access network, and</li> <li>(ii) that Communications Alliance does not support recommendation 15 and the suggestion that NBN Co be able to access dark fibre of greenfields estates as opposed to the same level of access it be required to provide itself, such as layer 2 access,</li> </ol> <p>there should be clarification of what process precedes overbuild by NBN Co of a network " <i>where NBN Co is unable to secure necessary access and the premises are not declared</i></p>

Recommendation	Implementation considerations	Communications Alliance response
<p><b>Recommendation 17.</b> That all new developments where fixed telecommunications infrastructure is deployed be required to provide a duct, pit and pipe network with sufficient additional capacity to allow for an FTTP deployment by NBN Co; that this infrastructure be provided at the developer's expense—an exemption being made for new premises where no fixed-line telecommunications infrastructure is installed.</p>	<p>This could be required by regulation under Government's proposed greenfields legislation. The standards imposed should be developed in consultation with NBN Co to ensure suitability. The current Bill does not require that the developer fund such infrastructure, but the mandatory nature of the requirement makes this the probable outcome.</p> <p>Government should ensure that developments where infrastructure roll-out is already planned by the time the standards are issued are not affected, and that sufficient additional notice period is granted so as not to delay developments.</p>	<p>'adequately served'.</p> <p>Communications Alliance notes:</p> <ul style="list-style-type: none"> <li>(i) Recommendation 1 and the Communications Alliance response to it, which indicates the intent is not to overbuild existing FTTP networks;</li> <li>(ii) A "duct, pit and pipe network with sufficient additional capacity" could be built that is then utilised by other network providers before NBN Co wants to deploy FTTP;</li> <li>(iii) this recommendation is consistent with the intent of the <i>Telecommunications Legislation Amendment (Fibre Deployment) Bill 2010</i> currently before Federal Parliament in requiring a "fibre ready facility", and that Communications Alliance is preparing technical guidelines to support the passive infrastructure.</li> </ul>
<p><b>Recommendation 18.</b> That the national FTTP design standards include a requirement, to come into effect after a sufficient notice period, that internal wiring installed in all new premises be of a standard that allows high-speed data transfer,</p>	<p>This is likely to require legislative action.</p> <p>A notice period of at least six months would be appropriate.</p>	<p>Noting that NBN Co services may not always be such that twisted-pair data transfer cables are the only form, or even the most appropriate form of in-building cabling, Communications Alliance supports the recommendation</p>

Recommendation	Implementation considerations	Communications Alliance response
<p>e.g. CAT 5 or CAT 6.</p>		<p>because if high-speed data transfer is available in the network then the in-building cabling should complement the FTTP rollout.</p> <p>Communications Alliance has experience in establishing customer cabling standards. An important requirement for internal wiring to “<i>be of a standard that allows high-speed data transfer</i>” is for appropriate compliance and enforcement arrangements to ensure installation is in line with the standards.</p> <p>Consideration should be given as well to how to resolve wiring issues in existing installations.</p> <p>Noting that in-building cabling is not within scope for carrier regulation, this requirement may be more appropriately addressed through modifications to the Building Code or similar regulations.</p> <p>Arrangements for cabling standards will require updating over time to reflect ongoing changes and the range of situations e.g. outdoor Network Termination Unit (NTU) vs. indoor NTU.</p>
<p><b>Recommendation 19.</b> That a register (the NBN Coverage Register) be maintained of all premises in Australia; that the register meet the following requirements:</p> <p>1. Be publicly available through mechanisms approved by Government;</p>	<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</p>	<p>Recommendation 1 indicates that the NBN Co is not expected to connect to all premises in Australia, and that some premises (particularly business premises) may already be adequately served, therefore there will be multiple providers of high-speed connections to premises and</p>

Recommendation	Implementation considerations	Communications Alliance response
<p>2. List premises in specific categories that detail the coverage status of each premises;</p> <p>3. Be updated at regular intervals;</p> <p>4. Identify premises with specific geographical location data.</p>	<p>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>non-premises sites.</p> <p>The existence of multiple NBN infrastructure providers, including privately operated greenfield housing estates, means the definition of a common format for the information contained in a "NBN Coverage Register" is important because it could enable service providers to access consistent information formats across different wholesale providers of NBN access.</p> <p>Development of a consistent information format would require consultation with and agreement by industry as it will have implications for and the potential to simplify operational systems and processes for ordering, provisioning, maintaining and terminating services, with flow on effects for end users in areas such as waiting times for service connection, fault management and termination.</p> <p>The public availability of the information in a recommended "<i>NBN Coverage Register</i>", subject to industry consultation and appropriate controls for factors such as privacy and the public interest, has a potential to facilitate the operational systems and processes referred to above. Note that this register is yet to be discussed as part of the Communications Alliance Operations Working Group.</p>

Recommendation	Implementation considerations	Communications Alliance response
		In doing so there would need to be a common understanding on the ownership of the information in a "NBN Coverage Register".
<p><b>Recommendation 20.</b> That a register be maintained of all monopoly transit backhaul routes between NBN Co's proposed fibre exchanges and POIs, on which NBN Co intends to build or purchase capacity; that NBN Co be required to update this register as it secures access to and offers services over each backhaul route; that the backhaul register be made accessible to wholesale customers of NBN Co.</p>	<p>As it relates to the integrity of the key performance metrics of NBN Co's backhaul roll-out, the requirement to keep a backhaul register should be made binding, for example by stipulation in licence conditions. The ACCC should be tasked with determining which routes are uncompetitive.</p> <p>The requirement to maintain a backhaul register should come into effect by 1 October 2010, to give NBN Co time to identify relevant backhaul and establish necessary systems.</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>
<p><b>Recommendation 21.</b> That NBN Co be required to deliver in its annual report detail of its progress towards meeting its coverage objective, expenditure incurred in doing so and provide such interim progress reports as Government requires and are reasonable.</p>	<p>Reporting requirements will be included in the establishing legislation; informal requests may be made for interim updates</p>	<p>Communications Alliance notes the existing Department of Finance and Deregulation publication <i>Governance Arrangements for Commonwealth Government Business Enterprises</i><sup>13</sup> includes requirements for both annual reporting by a GBE plus six monthly or quarterly progress reports to shareholder</p>

<sup>13</sup> Available from <http://www.finance.gov.au/publications/governance-arrangements/index.html>

Recommendation	Implementation considerations	Communications Alliance response
		<p>Ministers.</p> <p>Meeting NBN coverage objectives and the cost of doing so is arguably included in the annual report requirement for “a review of performance (financial and non-financial)”.</p>
<p><b>Recommendation 22.</b> That NBN Co be permitted to use HFC networks as an interim technology, provided that these networks are capable of providing wholesale open-access services; that NBN Co be required to plan and establish a construction schedule to achieve its FTTP coverage objective by the end of its roll-out, regardless of coverage of HFC networks.</p>	<p>As per Recommendation 8</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>
<p><b>Recommendation 23.</b> That NBN Co be directed to set wholesale prices and offer migration incentives with the objective of achieving broadband take-up targets that Government sets at regular intervals and in accordance with the applicable regulatory pricing regime.</p>	<p>The pursuit of a take-up objective can be included in the statement of expectations. However, pricing and migration incentives remain subject to the regulatory regime.</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>
<p><b>Recommendation 24.</b> That NBN Co be permitted to apply differentiated wholesale pricing for each technology platform used in its customer access network; that, within each technology platform, uniform wholesale pricing be required for all access products.</p>	<p>As initial pricing of at least some services will be set in a Special Access Undertaking, the Government should clarify its pricing requirements as soon as possible through the statement of expectations, which could then be reflected in the special access</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>

Recommendation	Implementation considerations	Communications Alliance response
	<p>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><b>Recommendation 25.</b> That the entry-level services offered over each technology platform in NBN Co’s customer access network be available to end users at a comparable but not necessarily identical price; that the same performance specifications of entry level services on different technology platforms not be required.</p>	<p>As per Recommendation 24</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>
<p><b>Recommendation 26.</b> That NBN Co be required to provide industry standard PSTN emulation at the ONT on all connections to its FTTP access network and bear the associated network costs.</p>	<p>This should be set out in the statement of expectations. As it relates to service standards, it should also be stipulated in licence conditions.</p>	<p>Discussions within the Communications Alliance NBN Project have assumed an ONT for the NBN includes at least one port for analogue telephony. There are a number of options available for PSTN emulation and the idea of "<i>industry standard PSTN emulation</i>" contains a number of sub-options that are under investigation in the Communications Alliance NBN Project.</p> <p>No comment is provided on network cost allocation because commercial matters such as cost allocation are typically discussed on a</p>

Recommendation	Implementation considerations	Communications Alliance response
		<p>bilateral basis or with regulators such as the ACCC and not in Communications Alliance on a multilateral basis.</p>
<p><b>Recommendation 27.</b> That NBN Co be required to provide an ONT power supply unit to all FTTP customers with the potential for a back-up battery to be installed; that Government establish a program for subsidising the provision of back-up batteries for end users that Government identifies as requiring lifeline services at the time that those customers migrate from the copper network to the NBN—with the distribution and maintenance of batteries to be undertaken by retail service providers; that beyond these identified end users, provision of a battery be the choice of the end user and supply and maintenance be the responsibility of the end user.</p>	<p>As per Recommendation 24. Government will also need to establish a mechanism to require retail service providers to distribute and maintain batteries. This could be done by creating an appropriate regulation that allows ACMA to make a service provider determination containing a new service provider rule under s.99 of the <i>Telecommunications Act 1997</i>.</p>	<p>Communications Alliance suggests a clarification in relation to “<i>NBN Co be required to provide an ONT power supply unit to all FTTP customers</i>” because Recommendation 1 indicates that NBN Co may not connect all FTTP customers.</p> <p>As a general principle responsibility for the provision of an ONT power supply unit (either built-in or stand alone) should accompany the responsibility for the installation of the ONT.</p> <p>The recommendation for an ONT to have the potential for installation of a back up battery is consistent with the Communications Alliance NBN End User Premises Handbook<sup>14</sup>.</p> <p>A government program to subsidise the provision of back-up batteries for end users should not be limited to the one-off migration to the NBN. Subject to relevant eligibility criteria and review processes, this subsidy should be extended to be available for the duration of an eligible lifeline service.</p> <p>The recommendation that “<i>the distribution and</i></p>

<sup>14</sup> Available from . <http://commsalliance.com.au/Documents/national-broadband-network>. Communications Alliance published Release 1 of the Handbook in March 2010, and released a draft second version for public comment in May 2010.

Recommendation	Implementation considerations	Communications Alliance response
		<p><i>maintenance of batteries to be undertaken by retail service providers" is inconsistent with the Communications Alliance NBN Overview of Technical Standards<sup>15</sup>. Although the Overview states " battery backup devices can be offered by operators as an option" it goes on to observe "...it is common practice for operators to require that end-users accept responsibility for monitoring the battery function, purchase of a replacement battery, installation of the new battery, and recycling of the spent battery" .</i></p> <p>Note this does not preclude the emergence of a third party market for the general distribution and maintenance of back-up batteries, either with or independent of a retail service provider.</p> <p>In addition it is unclear under this Recommendation which provider would have the primary responsibility for a battery when there can be multiple retail service providers delivering services via an ONT, including overlapping periods of service where some service(s) may be terminated but other service(s) continue or commence operation.</p> <p>Noting the terms " <i>lifeline functionality</i>" and " <i>lifeline service</i>" are used but undefined in the Study, Communications Alliance recommends</p>

<sup>15</sup> Available from . <http://commsalliance.com.au/Documents/national-broadband-network>. Communications Alliance published Release 1 of the Overview of Technical Standard in April 2010.

Recommendation	Implementation considerations	Communications Alliance response
		that references to a 'lifeline' service be replaced with a more accurate description given the term is highly sensitive, when the objective is for an end user to access emergency services in the event of a "power outage".
<p><b>Recommendation 28.</b> That NBN Co be required to support retail service providers' ability to provide end-user location information including the enablement of emergency call operators to automatically locate a caller.</p>	<p>This should be set out in the statement of expectations. As it relates to service standards, it should also be stipulated in licence conditions. It may also necessitate changes to the <i>Telecommunications (Emergency Call Services) Determination 2002</i></p>	<p>Communications Alliance suggests a consistent approach to the provision of location information from NBN end points to the emergency call service, that is as technology neutral as possible, could improve the reliability of the information available to emergency call operators.</p> <p>Noting that the <i>Telecommunications (Emergency Call Services) Determination 2002</i> has been replaced by the <i>Telecommunications (Emergency Call Services) Determination 2009</i>, (the 2009 Determination), the current ACMA consultation paper <i>Enhanced mobile location information for the Emergency Call Service</i> suggests the possibility of (technology specific) amendments to the 2009 Determination on location information for mobiles. There should be a consistent regulatory approach to location information for emergency calls that can be adopted as the NBN is rolled out.</p>
<p><b>Recommendation 29.</b> That a minimum public notice period be required for deactivating any</p>	<p>As this requirement will in practice only affect Telstra's network, it</p>	<p>Communications Alliance notes that:</p> <p>(i) the Study refers to "the copper</p>

Recommendation	Implementation considerations	Communications Alliance response
<p>copper exchange; in this context 'deactivating' would mean the withdrawal of a significant proportion of copper services.</p>	<p>could be included in licence conditions of the network owner.</p>	<p><i>network"</i> when Australia has multiple operators of networks based on copper wire.</p> <p>(ii) For any major change to services (such as deactivating an exchange) it is prudent and routine procedure for a service provider to inform affected stakeholders.</p> <p>(iii) Any notice period will need to be in line with existing requirements e.g. those required under the <i>Trade Practices Act</i>.</p> <p>(iv) Any notice period will need to consider that multiple parties typically would be affected by the deactivation of an exchange e.g. the access provider and all access seekers.</p> <p>The communications industry has several precedents for notification periods when services or infrastructure might be withdrawn, however the length of time that is considered sufficient for notification is subjective. The length of notice period should be discussed and agreed with industry and other stakeholders.</p>
<p><b>Recommendation 30.</b> That a review be undertaken</p>	<p>A review of the USO has previously</p>	<p>Communications Alliance has no comment to</p>

Recommendation	Implementation considerations	Communications Alliance response
<p>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>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>	<p>make on this recommendation at this time.</p>
<p><b>Recommendation 31.</b> That NBN Co be directed to develop a Charter that outlines how it will conduct its affairs to best meet the needs of stakeholder groups—for example, the Charter should state a commitment to consultation with the industry and end-user groups</p>	<p>It is sufficient to set out this requirement in the statement of expectations.</p> <p>This should be implemented immediately as NBN Co is already involved in stakeholder consultations.</p>	<p>Communications Alliance is presently in discussion with stakeholders, including DBCDE, NBN Co, regulators and consumer/end-user groups to cooperatively establish an education and dialogue program for end-users of NBN services.</p>
<p><b>Chapter 3. Enabling a new generation of services for end users</b></p>		
<p><b>Recommendation 32.</b> That NBN Co only be permitted to operate at the lowest layer of the network stack that enables sufficient retail competition and diversity of services for end users. Initially, this will translate into Layer 2 bitstream services in the FTTP network, and Layer 3 IP services in the satellite access footprint; that Government request that the ACCC periodically monitor competition, and recommend necessary</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</p>	<p>The recommendation for NBN Co to offer services at Layer 2 in FTTP network and Layer 3 in satellite access footprint is consistent with options listed in the Communications Alliance <i>NBN Reference Architecture – High Level Options for the NBN</i> paper.</p> <p>The suggested restraint on NBN Co "from offering services above the stipulated layers"</p>

Recommendation	Implementation considerations	Communications Alliance response
<p>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>recommendation.</p>	<p>would require careful definition since there are a range of views on the degree of involvement of NBN Co and its network functionality and features in the provision of higher layer services such as telephony and multicast IP distribution. For efficiency in enabling RSPs to provide advanced services the NBN Co network may need to include specific functionality usually considered to be characteristic of a Layer 3 or higher network.</p>
<p><b>Recommendation 33.</b> That NBN Co be required to offer services with comparable levels of performance in all geographies within a technology footprint, specifically:</p> <ol style="list-style-type: none"> <li>1. While it is the sole provider of active layer NBN services, NBN Co should upgrade services over time and demonstrate that the functionality and performance of its services are in line with international benchmarks; NBN Co's upgrade plans should be submitted for ACMA's approval that they are sufficient to maintain Australia's broadband position internationally;</li> <li>2. As network elements are upgraded over time, NBN Co should ensure all equipment within an access technology platform is on a similar upgrade path. If active-layer competition is in place, NBN Co's offers in competitive areas should</li> </ol>	<p>Government's requirements should initially be communicated to NBN Co through the statement of expectations. As roll-out continues, and prior to privatisation, they should be rendered enforceable, for example by inclusion in licence conditions. Administration of the detailed requirement for technological upgrades could be conducted by ACMA.</p>	<p>Noting Recommendation 1 indicates that NBN Co will not be the only provider of services, this recommendation suggests that NBN access providers other than NBN Co are not to be subject to the requirement to report to ACMA.</p>

Recommendation	Implementation considerations	Communications Alliance response
<p>be consistent with NBN services in all areas;</p> <p>3. In the satellite footprint, NBN Co should ensure that CPE upgrades continue to be offered via service providers.</p>		
<p><b>Recommendation 34.</b> That Government permit NBN Co to offer an RF overlay service on its FTTP network provided it meets these conditions:</p> <p>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;</p> <p>2. The deployment of RF overlay capability is commercially viable for the Company as a standalone service.</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>Communications Alliance notes that many greenfields developments and fibre network operators currently provide video distribution for multiple content providers using RF-overlay technology – and in many cases each premises can access multiple content providers simultaneously.</p> <p>Communications Alliance may consider video distribution services as a future component of its NBN Project.</p>
<p><b>Recommendation 35.</b> That NBN Co be required to provide a wholesale Layer 2 bitstream service which enables multi-operator delivery of next-generation video services (e.g. high definition, video-on-demand) that meets industry standards.</p>	<p>This should be set out in the statement of expectations. As it relates to service standards, it should also be stipulated in licence conditions, although inclusion in NBN Co’s special access undertaking would delay the need for a binding licence condition to be added.</p>	<p>The provision of “<i>a wholesale Layer 2 bitstream service which enables multi-operator delivery of next-generation video services</i>” is consistent with the use of an Ethernet Line Access Service in the Communications Alliance NBN Service Definition Framework – Ethernet and the Communications Alliance NBN Reference Architecture – High Level Options for the NBN papers, which include a multicast service.</p> <p>Communications Alliance notes that the Study may confuse unidirectional broadcast-like video distribution, which is facilitated by multicast capabilities, with video-on-demand</p>

Recommendation	Implementation considerations	Communications Alliance response
		<p>services, which by their nature are unique to an individual viewer and not receptive to multicast techniques, resembling more closely a QoS-managed point-to-point datastream similar to an Internet or IP Telephony service. Care should be taken to ensure service performance characteristics and expectations are correctly mapped to the intended end-user activities expected to be facilitated..</p>
<p><b>Chapter 4. Building a fibre access network to 90 percent of premises</b></p>		
<p><b>Recommendation 36.</b> That NBN Co be required to deploy fibre topologies that support the ongoing needs of multiple stakeholders, including:</p> <ol style="list-style-type: none"> <li>1. Service providers who may seek access to Layer 1 services, anticipating the likelihood of future unbundling requirements;</li> <li>2. High bandwidth, dedicated class-of-service requirements for enterprise and government users, and for mobile base-stations and other users.</li> </ol>	<p>Government’s policy principles should be communicated through the statement of expectations. Recommendation 75 deals with the issue of determining the network topology, which will then need to be made binding in a licence condition.</p>	<p>The provision of Layer 1 services, shared Layer 2 services, and point-to-point dedicated Layer 2 services are included in the Communications Alliance <i>NBN Reference Architecture – High Level Options for the NBN</i> paper.</p>
<p><b>Recommendation 37.</b> That NBN Co be required to ensure that the assets used to physically deploy the network support an enduring open-access network; specifically for:</p> <ol style="list-style-type: none"> <li>1. New trenches and ducts: to be over-provisioned</li> </ol>	<p>These requirements will remain a matter of subjective judgement and are best implemented as guiding principles through the statement of expectations. The</p>	<p>The Early Stage Deployments working group in the Communications Alliance NBN Project has included some guidance on trench and duct dimensioning in the Communications Alliance drafts for comment <i>FTTP Planning – Express</i></p>

Recommendation	Implementation considerations	Communications Alliance response
<p>to ensure sufficient space for future expansion or alternative use; detailed records of the location of ducts to be maintained;</p> <p>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;</p> <p>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>	<p>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><i>Conduit and Fibre Ready Distribution Networks</i><sup>16</sup>.</p> <p>Communications Alliance has no additional comment to make on this recommendation at this time.</p>
<p><b>Recommendation 38.</b> That the network access point at end-user premises (i.e. the ONT) be required to provide a sufficient number of physical ports to enable multiple providers to offer services to each premises; that NBN Co ensure physical access to this point within the premises, at a location reasonably requested by the user (e.g. within close proximity to existing copper lead-in); this requirement includes:</p> <p>1. If the ONT is installed externally, an internal patch panel providing open access to service</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. Three ports on the ONT would be an appropriate minimum</p>	<p>It is unclear whether or not the recommended minimum count of physical ports on an ONT includes only data (i.e. Ethernet) ports or data ports plus any analogue telephony port(s).</p> <p>At present the Communications Alliance NBN Project has not recommended a minimum number of physical ports on an ONT.</p> <p>The Communications Alliance <i>NBN End User Practices Handbook</i> states " <i>The NTU may have single or multiple standard Ethernet ports (i.e. 10/100BASE-T 'Fast Ethernet' and/or</i></p>

<sup>16</sup> Communications Alliance drafts for comment are available from <http://commsalliance.com.au/Documents/public-comment>

Recommendation	Implementation considerations	Communications Alliance response
<p>providers on an equivalent basis; or</p> <p>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>		<p><i>10/100/1000BASE-T 'Gigabit Ethernet') to support multiple services within the EUP."</i><sup>17</sup></p> <p>The recommended objective "<i>to enable multiple providers to offer services to each premises</i>" may be achieved a number of ways, including via:</p> <ul style="list-style-type: none"> <li>(i) a separate physical port per service;</li> <li>(ii) the provision of multiple providers using different logical channels over the same physical port<sup>18</sup>; or</li> <li>(iii) a mix of both (i) and (ii).</li> </ul>
<p><b>Recommendation 39.</b> That an entry-level wholesale bitstream service for NBN Co's fibre network be defined that would be the minimum acceptable service for residential broadband use, specifically:</p> <p>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;</p> <p>2. That this entry-level speed be reviewed over time to ensure it continues to deliver sufficient</p>	<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</p>	<p>Communications Alliance notes that:</p> <ul style="list-style-type: none"> <li>(i) the residential broadband services offered via NBN Tasmania include 25, 50 and 100Mbps data rates; and</li> <li>(ii) the Communications Alliance <i>NBN Reference Architecture – High Level Options for the NBN</i> paper identifies examples of non-premises sites (e.g. "traffic control systems, street lights, surveillance cameras") that may not require data rates of 20Mbps.</li> </ul>

<sup>17</sup> In part of section 4.13.4 of the Communications Alliance NBN End User Practices Handbook.

<sup>18</sup> Appendix A of the Communications Alliance *National Broadband Network Wholesale Service Definition Framework – Ethernet* paper has information on technical and operational matters associated with this option.

Recommendation	Implementation considerations	Communications Alliance response
<p>performance relative to other fixed broadband networks;</p> <p>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>	<p>licence condition to be added.</p>	
<p><b>Recommendation 40.</b> That NBN Co be required to offer wholesale services that support the implementation of carrier-grade QoS functionality, allowing retail service providers to deliver premium services from within their network to end users:</p> <p>1. Initially, this means ensuring that the appropriate specifications are adopted through consultation with industry and potential customers;</p> <p>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>	<p>This should be set out in the statement of expectations. As it relates to service standards, it should also be stipulated in licence conditions.</p>	<p>The offering of " <i>wholesale services that support the implementation of carrier-grade QoS functionality</i>" is consistent with the Communications Alliance <i>NBN Reference Architecture – High Level Options for the NBN</i> paper, the <i>NBN Wholesale Service Definition Framework – Ethernet</i> paper and the <i>NBN End-User Premises Handbook</i>.</p> <p>Communications Alliance notes NBN Co has been consulting with stakeholders on possible requirements for class of service.</p> <p>Communications Alliance has no comment to make on the recommendation that " <i>this may require</i>" NBN Co " <i>offering services that are higher in the network stack</i>" at this time, noting that any future " <i>decisions to expand the scope of NBN Co operations should not be taken lightly</i>" and would require consultation.</p>
<p><b>Recommendation 41.</b> That NBN Co be permitted</p>	<p>Government should set out this</p>	<p>Communications Alliance has no comment to</p>

Recommendation	Implementation considerations	Communications Alliance response
<p>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>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>make on this recommendation at this time.</p>
<p><b>Recommendation 42.</b> That Government not constrain the commercial flexibility of NBN Co to design and update a price architecture, within the requirements of regulation and its obligations for affordability and take-up of services; that Government support NBN Co's adoption of price mechanisms such as price differentiation (except where it is based on geographic location) and differentiated commercial terms and charges that are consistent with equivalence</p>	<p>No additional regulatory action required.</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>
<p><b>Chapter 5. Ensuring national availability of high-speed broadband</b></p>		
<p><b>Recommendation 43.</b> That NBN Co be required to provide a next-generation satellite service ensuring access to at least 12 Mbps peak data rates to all</p>	<p>While the network is incomplete, it is not feasible to codify NBN Co's coverage objectives as a</p>	<p>In line with its response to Recommendation 5, Communications Alliance notes the recommendation for " <i>a next-generation satellite</i></p>

Recommendation	Implementation considerations	Communications Alliance response
<p>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>universally enforceable obligation. Instead they should be included in the statement of expectations, leaving NBN Co with flexibility around roll-out scheduling.</p> <p>Coverage objectives could also be included in the Funding Agreement between the Government and NBN Co, to provide directors with certainty around these obligations, but again it is important to maintain flexibility for NBN Co to determine the detail of the roll-out schedule.</p> <p>Satellite solutions involve significant deployment risks. Moreover, it takes 3 to 4 years from the starting design date to launch a satellite. For this reason, funding and policy issues should be resolved as quickly as possible.</p>	<p><i>service ensuring access to at least 12 Mbps peak data rates to all premises beyond the fibre footprint"</i> appears to be an evolution from the original joint Ministerial announcement of 7 April 2009 to "use next generation wireless and satellite technologies that will be able to deliver 12 megabits per second or more to people living in more remote parts of rural Australia".</p>
<p><b>Recommendation 44.</b> That Government ensure affordability of next-generation satellite broadband services for premises underserved by other technologies through a program that funds satellite CPE costs incurred by retailers and guarantees a high quality of service.</p>	<p>This could be modelled on the Australian Broadband Guarantee. It will be necessary to provision adequate satellite capacity to manage the expected demand, so the timing issues referred to in relation to Recommendation 43</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>

Recommendation	Implementation considerations	Communications Alliance response
	apply.	
<p><b>Recommendation 45.</b> That an Expression of Interest (Eoi) and tender process be conducted for a commercial provider to build and operate a fixed-wireless network, specifically:</p> <ol style="list-style-type: none"> <li>1. That the network offer services on both a wholesale and retail basis beyond the fibre footprint to cover 4 percent of total premises;</li> <li>2. That the services include an offer with at least 12 Mbps peak data rates and high average data rates, with service characteristics subject to periodic review; that the services include an entry-level offer providing a high-quality broadband experience at a specified price comparable to entry-level pricing on the fibre and satellite footprints; that Government specify as part of the tender a mechanism for adjusting prices of the entry-level and 12 Mbps offerings over time, for example via a cap on annual price rises or another regulatory mechanism;</li> <li>3. That the tenderer(s) describe an expected upgrade path for the implemented technology;</li> <li>4. That spectrum renewal rights for the fixed-wireless network operator be guaranteed;</li> <li>5. That, in the absence of an acceptable bid, NBN Co be required to build the network and offer services on a wholesale-only basis.</li> </ol>	<p>Government should set NBN Co's coverage obligations in the statement of expectations consistent with this recommendation, noting the proposed contingency role of NBN Co.</p> <p>Government should immediately start preparations for the Eoi and tender process, as the possibility of an unsuccessful process would put pressure on the Government's timeline.</p> <p>In the event that NBN Co is allocated the task, Government should revise NBN Co's coverage objectives to require the fixed-wireless network build and ensure that NBN Co's corporate plan is altered to prioritise wireless deployment. This may require a specific licence condition, or could be incorporated in a new funding agreement.</p> <p>Government may wish to engage in an iterative tender design</p>	<p>The use of a fixed wireless network is consistent with the option of a terrestrial wireless network in the Communications Alliance NBN Reference Architecture – High Level Options for the NBN paper.</p> <p>Communications Alliance notes the recommendation "<i>That the services include an offer with at least 12 Mbps peak data rates and high average data rates</i>" appears to be an evolution from the original joint Ministerial announcement of 7 April 2009 to "<i>use next generation wireless and satellite technologies that will be able to deliver 12 megabits per second or more to people living in more remote parts of rural Australia</i>".</p>

Recommendation	Implementation considerations	Communications Alliance response
	process in consultation with likely bidders and other industry experts.	
<p><b>Recommendation 46.</b> That carrier licence conditions associated with the 700 MHz spectrum be added to require network operators to implement future technology upgrades in rural/regional areas in parallel with metropolitan areas; that Government review prior to the 700 MHz auction the value of requiring one or more successful bidders to expand their coverage footprint.</p>	<p>These licence conditions would have to be clarified prior to the auction for 700 MHz spectrum, with enough time allowed for bidders to estimate the impact on value.</p> <p>Government should seek submissions from network operators and other stakeholders in relation to the possibility of a coverage requirement.</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>
<p><b>Recommendation 47.</b> That Government instruct NBN Co to extend transit fibre backhaul to existing towers and new tower sites needed by the fixed-wireless network operator to provide coverage in the designated areas (e.g. between the 94th and 97th percentiles); this transit backhaul to be offered to all operators and priced at the same rates as transit backhaul within the fibre footprint.</p>	<p>This should be set out in the statement of expectations and potentially codified in a binding licence condition. If Government chooses to privatise backhaul assets, codification in a licence condition would be appropriate.</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>
<p><b>Chapter 6. Ensuring ubiquitous backhaul availability</b></p>		
<p><b>Recommendation 48.</b> That NBN Co be required to construct a transit backhaul network to connect all fibre exchanges to the nearest practical point where backhaul services are available from</p>	<p>As per Recommendation 47</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>

Recommendation	Implementation considerations	Communications Alliance response
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.		
<b>Recommendation 49.</b> That NBN Co be directed to construct the transit backhaul network including passive fibre elements and active electronics, except where NBN Co is able to secure long-term indefeasible rights of use (with options to renew) to other parties' fibre assets at the physical layer ('dark fibre') more economically.	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.	Communications Alliance has no comment to make on this recommendation at this time.
<b>Recommendation 50.</b> That NBN Co be required to offer a single POI in relation to a given premises: 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.	This may be included in a licence condition. Post-privatisation, implementation may require negotiation between the privatised NBN Co and the public backhaul company.  This policy should be clarified as soon as possible, as NBN Co is already developing its product offering.	Communications Alliance has no comment to make on this recommendation at this time, noting that NBN Co has been briefing stakeholders on its two proposed Ethernet products (i.e. the Local Ethernet Bitstream (LEB) service and Aggregated Ethernet Bitstream (AEB) service), including via presentations at the Communications Alliance industry connection forums in February 2010 <sup>19</sup> .
<b>Recommendation 51.</b> That the location of NBN Co's POIs be reviewed on a regular basis to	This can be left to the Company's discretion prior to privatisation, as	Communications Alliance notes that:  (i) a regular review of activities and

<sup>19</sup> Available from <http://commsalliance.com.au/events/Calendar/2010-Event-01>

Recommendation	Implementation considerations	Communications Alliance response
<p>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>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>decisions is a routine part of business planning.</p> <p>(ii) an effective change in a POI location is likely to require careful planning and consultation with those providers utilising the POI e.g. if a new POI is created closer to a service end point and the proposed rule for mutually exclusive LEB/AEB connectivity points is maintained, this would force all affected retail service providers to relocate their POIs.</p>
<p><b>Recommendation 52.</b> That for defining NBN Co's backhaul services:</p> <ol style="list-style-type: none"> <li>1. NBN Co be required to offer backhaul services as single Ethernet links from the POI to the fibre exchange, with some level of protection (alternative secondary links in the case of outages on the primary link) available on all links;</li> <li>2. The transit backhaul bitstream product to be specified as a separate product from the access bitstream product, allowing service providers to select their preferred combination of backhaul capacity and access services;</li> <li>3. NBN Co not to offer or be required to offer connection below the POI to an NBN Co access</li> </ol>	<p>This should be set out in the statement of expectations. As it relates to service standards, it should also be stipulated in licence conditions. Post-privatisation, NBN Co will need to reach an agreement with the Government-owned backhaul unit on the continued provision of transit backhaul to the POI.</p>	<p>Communications Alliance notes that the <i>NBN Reference Architecture – High Level Options for the NBN paper</i> defines a number of possible locations for a POI.</p> <p>The recommendation that “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” is consistent with the <i>NBN Wholesale Service Definition Framework – Ethernet</i> paper.</p> <p>Communications Alliance notes the proposed NBN Co AEB product mentioned in response to</p>

Recommendation	Implementation considerations	Communications Alliance response
network.		Recommendation 50, did not envisage a backhaul component that could be purchased separately.
<p><b>Recommendation 53.</b> That NBN Co be required to specify transit products to meet an affordability test; specifically:</p> <ol style="list-style-type: none"> <li>1. That the price of transit backhaul services attributable to a single premises' access service be not more than a certain percentage of the retail price of a typical entry-level NBN wholesale broadband product;</li> <li>2. That Government define the percentage, preferably not more than 10 percent; the transit backhaul service be defined from the POI to the fibre exchange, on a per-user basis, given a defined contention ratio;</li> <li>3. That NBN Co be required to set a minimum contention ratio based on international benchmarks, and to review it annually based on ongoing monitoring of customer experience and observed network performance;</li> <li>4. That the NBN Co transit backhaul prices scale linearly with bandwidth for contention ratios higher than the one used in the affordability test.</li> </ol>	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.	Communications Alliance has no comment to make on this recommendation at this time.
<p><b>Recommendation 54.</b> That NBN Co be required to provide transit backhaul services to alternative network operators, specifically:</p>	This should be set out in the statement of expectations. Assuming that Government	Communications Alliance has no comment to make on this recommendation at this time.

Recommendation	Implementation considerations	Communications Alliance response
<p>1. That such transit backhaul services be offered on equivalent terms to those offered to customers of its own access network;</p> <p>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;</p> <p>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>	<p>accepts the recommendation to maintain backhaul in public hands, there may not be a need to codify this expectation into a binding licence condition, although it would be beneficial for creating certainty. Instead, ongoing backhaul decisions can be taken in line with the statement of expectations as modified from time to time. However, it may be desirable to set licence conditions in relation to associated standards of service.</p>	
<p><b>Chapter 7. Delivering a sustainable business case</b></p>		
<p><b>Recommendation 55.</b> That Government, in consultation with NBN Co, expand the definition of Low Impact Facility in the <i>Telecommunications (Low-impact Facilities) Determination 1997</i> to include facilities likely to be included in NBN Co's roll-out; that Government consult NBN Co to determine the appropriate items for inclusion in the revised definition.</p>	<p>Regulatory instrument required; legislative amendment may be required if, for example, Government chooses to extend to cables over 13 mm in diameter.</p>	<p>Noting that the Study states "The details of the nature, number and location of facilities which NBN Co will need to deploy cannot be determined until NBN Co has settled its technology and network topology choices", Communications Alliance requires additional information on the proposed NBN Co network design before it can comment on this Recommendation.</p> <p>Communications Alliance anticipates there would be consultation with industry as part of any proposal(s) related to regulatory</p>

Recommendation	Implementation considerations	Communications Alliance response
		instruments, including the <i>Telecommunications (Low-impact Facilities) Determination 1997</i> .
<p><b>Recommendation 56.</b> That Government reform the process of seeking access to infrastructure of telecommunications carriers under Part 5 of Schedule 1 of the <i>Telecommunications Act 1997</i> such that:</p> <ol style="list-style-type: none"> <li>1. The 'negotiate-arbitrate' model is replaced with a model consistent with the changes to the access regime in Part XIC of the <i>Trade Practices Act 1974</i> proposed in the <i>Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2009</i>;</li> <li>2. This reformed right of access is extended to grant NBN Co access to infrastructure potentially relevant to its network deployment, including ducts, poles and pipes belonging to non-telecommunications utilities and other parties, such as owners of ducts in greenfields.</li> </ol>	<p>This requires legislative action; revision of Schedule 1 Part 5 of the <i>Telecommunications Act 1997</i> is the likely mechanism.</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>
<p><b>Recommendation 57.</b> That Government require telecommunications carriers, non-telecommunications utilities and other owners of relevant infrastructure, such as owners of ducts in greenfields estates, to provide to Government such information on their networks, infrastructure and operations as Government requests from time to time for purposes directly related to the</p>	<p>Legislation on this topic is currently before the Parliament.</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>

Recommendation	Implementation considerations	Communications Alliance response
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.		
<b>Chapter 8. Funding the NBN</b>		
<b>Recommendation 58.</b> That Government retain full ownership of NBN Co until roll-out is complete; that this include not issuing equity in return for vended-in assets.	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.  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.	Communications Alliance has no comment to make on this recommendation at this time.
<b>Recommendation 59.</b> That NBN Co be funded with Government equity until NBN Co can support private sector debt without explicit Government	As NBN Co will ultimately be responsible for raising its own financing, Government	Communications Alliance has no comment to make on this recommendation at this time.

Recommendation	Implementation considerations	Communications Alliance response
<p>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>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><b>Recommendation 60.</b> That flexibility be maintained in the timing and structure of privatisation of NBN Co: prime determinants of timing should be favourability of market conditions and readiness of the company for private ownership.</p>	<p>The exposure draft of the <i>National Broadband Network Companies Bill 2010</i> is consistent with this recommendation.</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>
<p><b>Recommendation 61.</b> That NBN Co be directed to evaluate alternatives for a corporate structure that preserves flexibility and considers transaction costs at privatisation.</p>	<p>This could be communicated through the statement of expectations</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>
<p><b>Recommendation 62.</b> That Government and NBN Co enter into formal agreements for security of funding.</p>	<p>This would take the form of a long-term funding agreement under which the Government agrees to provide funding to NBN Co in return for pursuing and ultimately achieving the Government's coverage objective.</p> <p>The initial agreement should be set in place as early as possible to</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>

Recommendation	Implementation considerations	Communications Alliance response
	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.	
<b>Chapter 9. Understanding adverse competition scenarios</b>		
<b>Recommendation 63.</b> 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.	Communications Alliance has no comment to make on this recommendation at this time.
<b>Chapter 10. Securing competition outcomes</b>		
<b>Recommendation 64.</b> That NBN Co be required to conduct its strategy, planning and operations in a publicly transparent manner, subject to any requirements of commercial confidentiality.	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.	This recommendation appears to be addressed by the existing Department of Finance and Deregulation publication <i>Governance Arrangements for Commonwealth Government Business Enterprises</i> .  A binding mechanism, such as the introduction of a licence condition, would be consistent with a transition to some form of private ownership of NBN Co.
<b>Recommendation 65.</b> That NBN Co be required to ensure its service offerings are developed in consultation with a wide variety of service	As per Recommendation 64.	Communications Alliance understands NBN Co has been and is consulting widely including with a range of stakeholders including service

Recommendation	Implementation considerations	Communications Alliance response
<p>providers through a transparent process including:</p> <ol style="list-style-type: none"> <li>1. Holding regular industry forums to seek the views of current and prospective customers on the service offering;</li> <li>2. Publishing a revised service development roadmap on at least an annual basis, and ensuring that demonstrable and reasonable market requirements are met.</li> </ol>		<p>providers. This includes presentations by senior NBN Co personnel at Communications Alliance events such as the series of Industry Connection Forums in 2009 and 2010, plus NBN Co's own industry briefings.</p> <p>Communications Alliance is not in a position to comment on whether or not this should be required or left for reliance on regular commercial negotiations.</p>
<p><b>Recommendation 66.</b> That NBN Co be required to publish in its annual report comprehensive information on its performance, including:</p> <ol style="list-style-type: none"> <li>1. Network roll-out performance and costs;</li> <li>2. Achievement of service levels;</li> <li>3. Faults;</li> <li>4. Customer complaints;</li> <li>5. Any matters, whether or not related to those above, that Government, represented by the shareholder Ministers, considers appropriate.</li> </ol>	<p>This could be made binding on NBN Co through a licence condition, in addition to being highlighted in the statement of expectations.</p>	<p>Communications Alliance notes the existing Department of Finance and Deregulation publication <i>Governance Arrangements for Commonwealth Government Business Enterprises</i> includes requirements for annual reporting.</p>
<p><b>Recommendation 67.</b> That NBN Co be prohibited from engaging in commercial or investment activities unrelated to the provision of wholesale telecommunications services in Australia. For the avoidance of doubt, provision of content services as defined by the <i>Telecommunications Act 1997</i> would constitute prohibited activities.</p>	<p>This limitation is so critical that it would be appropriate to include it in the establishing legislation. As a substitute, it might be set through licence conditions.</p>	<p>Communications Alliance notes that the exposure draft of the <i>National Broadband Network Companies Bill 2010</i> includes:</p> <ol style="list-style-type: none"> <li>(i) a requirement that " An NBN corporation must not supply an eligible service to another person unless the other person is: (a) a</li> </ol>

Recommendation	Implementation considerations	Communications Alliance response
		<p><i>carrier; or (b) a service provider" (section 9), with Ministerial exemption possible by legislative instrument; and</i></p> <p>(ii) <i>a requirement that "An NBN corporation must not supply a content service" (section 10).</i></p>
<p><b>Recommendation 68.</b> That Government implement a wholesale-only restriction on NBN Co preventing it from offering or providing services to anyone other than a carrier or service provider as defined by the <i>Telecommunications Act 1997</i>; that Government retain the flexibility for the Minister to make exceptions to this rule.</p>	<p>This limitation is so critical that it would be appropriate to include it in the establishing legislation. We note that such a provision is included in the exposure draft of the <i>National Broadband Network Companies Bill 2010</i>.</p>	<p>Communications Alliance notes the following in relation to this recommendation.</p> <p>(i) <i>the recommendation "for the Minister to make exceptions" appears to be an evolution from the original joint Ministerial announcement of 7 April 2009 that it would be a "national wholesale-only, open access broadband network"; and</i></p> <p>(ii) <i>a number of Communications Alliance members have gone on record<sup>20</sup> opposing the proposed ministerial ability to make exceptions to offering wholesale only services e.g. as drafted in the <i>National Broadband Network Companies Bill 2010</i>.</i></p>

<sup>20</sup> See submissions to the Senate Select Committee on the National Broadband Network at [http://www.aph.gov.au/Senate/committee/broadband\\_cte/index.htm](http://www.aph.gov.au/Senate/committee/broadband_cte/index.htm)

Recommendation	Implementation considerations	Communications Alliance response
<p><b>Recommendation 69.</b> That NBN Co be prohibited from investing in retail telecommunication companies and content service providers, subject to special provisions for transitional ownership where incidental to the acquisition of network assets relevant to its objectives.</p>	<p>This limitation is so critical that it would be appropriate to include it in the establishing legislation. We note that such a provision is included in the exposure draft of the <i>National Broadband Network Companies Bill 2010</i>.</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>
<p><b>Recommendation 70.</b> That NBN Co be subject to an access regime similar to that set out in Part XIC of the <i>Trade Practices Act 1974</i>, but including an obligation to provide all services (other than those not available to any external parties) on an open-access, equivalent basis defined as follows:</p> <ol style="list-style-type: none"> <li>1. Except in relation to services that NBN Co also provides to itself, equivalence should not require identical terms, conditions and processes so long as any variations (e.g. discounts) aid efficiency and are available to all access seekers in like circumstances, where 'like circumstances' are not taken to include scale unless at least three access seekers are of sufficient scale to qualify;</li> <li>2. NBN Co is to publish any such variations;</li> <li>3. In relation to services provided by NBN Co to itself and to other access seekers (such as any unbundled Layer 1 services), equivalence should</li> </ol>	<p>This requirement is so critical that it would be appropriate to include it in the establishing legislation, with the case by case assessment of variations managed by the ACCC. This is consistent with the exposure drafts of the <i>National Broadband Network Companies Bill 2010</i> and the <i>Telecommunications Legislation (National Broadband Network Measures – Access Arrangements) Bill 2010</i>.</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>

Recommendation	Implementation considerations	Communications Alliance response
<p>be defined on an 'equivalence of inputs' basis, requiring identical terms, conditions and processes of supply;</p> <p>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>		
<p><b>Recommendation 71.</b> That NBN Co be required to provision its physical infrastructure, including POIs and fibre exchanges, to accommodate reasonable expectations for customer equipment in anticipation of multiple retail competitors:</p> <ol style="list-style-type: none"> <li>1. Seeking access to its Layer 2 services;</li> <li>2. Seeking access to transit backhaul services;</li> <li>3. Seeking access to unbundled physical fibre or wavelengths in the future.</li> </ol>	<p>While this requirement can be left as a principle in the statement of expectations, the potential conflict with NBN Co's commercial interests makes it important that the ACCC be asked to report broadly on compliance as part of its annual review of competitive safeguards in telecommunications.</p> <p>This policy should be communicated to NBN Co immediately to inform network design.</p>	<p>Communications Alliance notes that predicting demand for space for equipment:</p> <ol style="list-style-type: none"> <li>(i) is a difficult task that includes: <ol style="list-style-type: none"> <li>(a) estimation by retail service providers of end user demand;</li> <li>(b) estimation by NBN Co and other NBN providers plus retail providers of demand for equipment; and</li> <li>(c) timing risk</li> </ol> </li> <li>(ii) and has a potential impact on competition (e.g. increased service provisioning cost if there is no more space available in existing facilities).</li> </ol>
<p><b>Recommendation 72.</b> That NBN Co be required to design its price architecture on the basis that services with distinct characteristics (e.g. level of aggregation or capacity) should be offered on a modular basis. For example, a multicast product</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</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>

Recommendation	Implementation considerations	Communications Alliance response
<p>suited to IPTV delivery should be sold independently of a standard bitstream service.</p>	<p>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><b>Recommendation 73.</b> That any future fixed-line superfast access network built in Australia must offer wholesale services on an open-access and equivalent basis and, if it is an FTTP network, must comply with the technical specifications mandated in relation to the construction of FTTP access networks in greenfields; that this recommendation be subject to the following qualifications:</p> <ol style="list-style-type: none"> <li>1. This requirement should not apply to existing superfast access networks or to existing or future small proprietary networks that are not covered by the <i>Telecommunications Act 1997</i>;</li> <li>2. For the purposes of this recommendation, a fixed-line superfast access network should be defined as a fixed-line access network delivering download data rates consistently exceeding 25 Mbps;</li> <li>3. ACMA should be empowered to agree to variations to the technical specifications in specific</li> </ol>	<p>It is possible that this could be introduced by licence conditions on existing carriers. However, given the magnitude of the change, Government may consider legislative action, such as extending the access regime referred to in Recommendation 70 to such networks. Ideally, this would be implemented by subjecting operators of such networks to the same set of revised standard access obligations that Government intends to apply to NBN Co's services. This has the merit of emphasising that the rule merely ensures a level playing field.</p>	<p>Communications Alliance has published its Overview Technical Standards, draft <i>FTTP Planning – Express Conduit</i> paper and draft <i>Fibre Ready Distribution Networks</i> paper to inform decisions "in relation to the construction of FTTP access networks in greenfields".</p> <p>Communications Alliance notes the recommendation for "a fixed-line superfast access network should be defined as a fixed-line access network delivering download data rates consistently exceeding 25 Mbps" appears to be a significant lowering of the target data rate from the original joint Ministerial announcement of 7 April 2009 for "speeds up to 100 megabits per second".</p>

Recommendation	Implementation considerations	Communications Alliance response
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><b>Recommendation 74.</b> That, if plans are announced for significant third-party deployments in high-value, low-cost areas of fixed-line superfast access networks (defined as a fixed-line access network delivering download speeds consistently exceeding 25 Mbps but excluding small proprietary networks) during the NBN roll-out, Government consider the introduction of a universal service levy on the owners of all such networks; this levy to be inversely related to a network's contribution to the Government's objective of providing affordable broadband coverage to all Australians. It would be hypothecated to fund telecommunications subsidy schemes; any such levy to be subject to a sunset clause causing its expiry after no more than ten years.</p>	<p>Note that this recommendation proposes a levy only as a 'last resort' if cherry-picking becomes an endemic problem. This would require legislative action following more detailed design of an appropriate scheme. The proceeds could be hypothecated towards telecommunications subsidy schemes.</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>
<p><b>Recommendation 75.</b> That, to determine NBN Co's fibre network topology:</p> <p>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</p>	<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</p>	<p>Communications Alliance published its <i>NBN Reference Architecture - High Level Options for the NBN</i> paper to inform decisions about network topology and both physical and wavelength unbundling are consistent with the options in the paper.</p>

Recommendation	Implementation considerations	Communications Alliance response
<p>topology to enable both physical and wavelength unbundling;</p> <p>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;</p> <p>3. Government determine interim deadlines to complete this process in consultation with the ACCC and NBN Co;</p> <p>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>	<p>condition. In particular, the agreed network topology should be made binding through a licence condition.</p> <p>Initial interim deadlines should be discussed with NBN Co and ACCC and settled by 1 October 2010 to ensure feasibility of complying with the timeline.</p>	
<p><b>Recommendation 76.</b> That Government not require NBN Co to unbundle Layer 1 services before network roll-out is almost complete; that Government endorse unbundling of Layer 1 services to occur at the earliest of:</p> <p>1. Voluntary unbundling of Layer 1 services by NBN Co;</p> <p>2. Declaration of Layer 1 services by the ACCC;</p> <p>3. A requirement to provide Layer 1 services being imposed by the Minister.</p>	<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>Communications Alliance notes the availability of Layer 1 services is consistent with its <i>NBN Reference Architecture – High Level Options for the NBN</i> paper.</p> <p>Communications Alliance has no comment to make on this recommendation at this time.</p>
<p><b>Recommendation 77.</b> That NBN Co be asked to demonstrate that in the design of its products, systems and processes it has anticipated the likely</p>	<p>This policy should be included in the statement of expectations. Due to its subjectivity, it should not</p>	<p>Communications Alliance notes the availability of Layer 1 services is consistent with its <i>NBN Reference Architecture – High Level Options for</i></p>

Recommendation	Implementation considerations	Communications Alliance response
<p>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>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><i>the NBN</i> paper.</p> <p>While noting that a number of organisations, including NBN Co, participate in the Communications Alliance NBN Project activity related to the design of products, systems and processes for the NBN, Communications Alliance has no comment to make on this recommendation at this time.</p>
<p><b>Recommendation 78.</b> That for the purposes of safeguarding competition outcomes in the event of privatisation of NBN Co:</p> <ol style="list-style-type: none"> <li>1. Government commission an independent review into the telecommunications market structure and competition safeguards subsequent to the completion of roll-out and prior to privatisation;</li> <li>2. The review assess the achievement of the competition objectives of the NBN initiative, and recommend any adjustments to regulatory and other arrangements required to maintain an effective wholesale model under private ownership (including, if appropriate, structural separation and/or divestment of interests in real property associated with the network);</li> </ol>	<p>This requirement would ideally be included in the establishing legislation to ensure it is binding on future governments.</p> <p>Alternatively, we understand that the approach of expressly foreshadowing an inquiry in the Explanatory Memorandum has been adopted previously. While we understand that this provides some level of assurance, we advise that a future Government pressing ahead with privatisation of a unified NBN Co without an independent inquiry into market structure could jeopardise the Government's competition</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>

Recommendation	Implementation considerations	Communications Alliance response
3. Government determine its privatisation plans and schedule on the basis of that review.	objectives.	
<b>Recommendation 79.</b> That the independent review of competition prior to privatisation start with a rebuttable presumption that backhaul not be privatised.	<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>	Communications Alliance has no comment to make on this recommendation at this time.
<b>Recommendation 80.</b> That the Minister be empowered to issue an instrument ordering structural separation of NBN Co at one or more levels (such as between active and passive layers), with the nature of separation defined by the instrument.	<p>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</p>	Communications Alliance has no comment to make on this recommendation at this time.

Recommendation	Implementation considerations	Communications Alliance response
	Agreement.	
<p><b>Recommendation 81.</b> That the Minister be empowered to issue an instrument ordering NBN Co, or a company formed from structural separation of NBN Co, to divest its interests in defined assets or classes of asset (for example: access-network ducts, pits and exchanges; transit backhaul assets).</p>	As per Recommendation 80	Communications Alliance has no comment to make on this recommendation at this time.
<p><b>Recommendation 82.</b> That NBN Co be required to maintain its interests in real property directly associated with the access network, including ducts, pits, poles and exchanges, in a separate corporate entity to facilitate divestment in the event that it is required in the future.</p>	<p>It is sufficient to include this requirement in the statement of expectations, as its relevance will expire prior to privatisation.</p> <p>NBN Co should be informed of this policy immediately to ensure compliance as it acquires assets and interests.</p>	Communications Alliance has no comment to make on this recommendation at this time.
<p><b>Recommendation 83.</b> That an individual ownership cap (including associated interests) be set of no more than 15 percent each on Carriers, CoSPs and CaSPs in relation to shareholdings in NBN Co, subsidiaries of NBN Co, or any company resulting from structural separation of NBN Co; that practical control tests be imposed in relation to such investors; that a public inquiry be required before altering these caps.</p>	<p>These caps must be given legislative force if they are to bind NBN Co subsequent to privatisation. Assuming that the quantum of the caps is set by regulation, the legislation should require a public inquiry to be held prior to any modification of the cap.</p> <p>As an interim measure, it is sufficient to set the caps in the</p>	Communications Alliance has no comment to make on this recommendation at this time.

Recommendation	Implementation considerations	Communications Alliance response
	<p>NBN constitution; however, this will not be a sufficient solution at the time of privatisation.</p>	
<p><b>Recommendation 84.</b> That Government instruct NBN Co to provide fit-for-purpose access services to wireless base stations within the FTTP footprint on a commercial basis where requested by mobile operators; these access services to include transit backhaul where required to reach an NBN Co POI.</p>	<p>These obligations could be supported by licence conditions. The Part XIC access regime provides a fallback if NBN Co's compliance is deemed by mobile operators to be insufficient.</p> <p>This policy should be communicated to NBN Co as soon as possible to inform network design.</p>	<p>Communications Alliance has no comment to make on this recommendation at this time.</p>



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