

10 Securing competition outcomes

SUMMARY

- NBN Co should operate as transparently as possible, subject to requirements of commercial confidentiality. This includes publishing data on roll-out progress and service performance levels and engaging in regular industry consultation.
 - NBN Co should offer services on a wholesale-only, open-access and equivalent basis. It should structure its services and pricing to facilitate vigorous retail competition on a level playing field, for example by offering services on a modular basis and locating POIs at points where there are multiple backhaul providers.
 - NBN Co should enable development of the wireless broadband market by offering fit-for-purpose access and transit services to wireless base stations within the FTTP footprint on a commercial basis and extending transit backhaul links to existing towers and new tower sites where requested by the fixed-wireless NBN provider(s).
 - Government and the ACCC should ensure that the fibre topology implemented by NBN Co supports both physical and wavelength unbundling in the future, to enable active-layer competition.
 - Government should discourage inappropriate ‘cherry picking’ of attractive markets by other carriers building superfast broadband networks. This can be achieved by imposing technical standards to ensure these networks are compatible with NBN infrastructure, as well as applying open-access and equivalence wholesale conditions.
 - Prior to privatisation, Government should hold an independent inquiry to determine the optimal timing and structure of privatisation, potentially including structural separation of NBN Co. NBN Co should take appropriate interim steps to preserve the option of structural separation.
 - Given that uncontested backhaul will remain a bottleneck asset that is difficult to regulate, it is unlikely that backhaul should be privatised.
 - An ownership cap of no more than 15 percent of NBN Co equity should be imposed on carriers, CoSPs and CaSPs.
-

To secure long-term innovation and cost efficiencies, it is necessary to transition the industry to a self-sustaining pro-competitive market structure. As discussed in Chapter 9, the Implementation Study considers that notwithstanding the wholesale-only, open-access status of NBN Co, adverse competition scenarios may still unfold. This chapter proposes a suite of measures that collectively are aimed at mitigating the risks inherent in the industry transition and delivering the desired competition outcomes.

Chapter 10 is organised in 5 sections:

10.1 Ensuring NBN Co operates transparently

10.2 Creating a pro-competition environment

10.3 Setting a course to active-layer competition

10.4 Maintaining competitive outcomes through privatisation

10.5 Preserving a vibrant mobile market structure.

10.1 Ensuring NBN Co operates transparently

NBN Co will be an essential element in the value chain for the majority of telecommunications services. Other industry participants and, indeed, Australian consumers are all key stakeholders in its success and its ability to fulfil the industry's needs. NBN Co must ensure that its strategy, services and operations are aligned with the needs of these stakeholders. An open, transparent and consultative approach will reduce the risk of misalignment and assist more rapid adjustments. Mandating such an approach is consistent with international best practice (Exhibit 10–1).

Exhibit 10–1. International examples of transparency arrangements

International examples of transparency arrangements

United Kingdom. Separation of BT and creation of last-mile network operator Openreach was effected by a set of Undertakings by BT to Ofcom in response to the Telecommunications Strategic Review in 2003. Openreach must provide access to the last mile on an equivalence-of-inputs basis, including on the FTTP connections it is rolling out across the UK.

- The Undertakings require that if Openreach provides an FTTP product, the product development is in accordance with a roadmap developed through 'appropriate ongoing consultation' with Openreach's customers (communications providers).
- Openreach must publish its FTTP product consultation approach, including objectives, the questions it will ask, the decisions that the answers will inform, timeframes, etc.

New Zealand. The government is selecting partners to co-invest in local fibre companies (LFCs) which will roll out fibre to 75 percent of NZ's population via an open-access, wholesale-only structure providing Layer 1 services and, optionally, Layer 2 services. Government funding of up to NZ\$1.5 billion is expected at least to be matched by the private sector partner(s). Proposals, including 2 nationwide proposals, are being evaluated. Requirements are:

- Proposals must specify pricing methodology and actual prices that will be charged;
- LFCs to provide regular reports on compliance with transparency requirements;
- Equivalence and non-discrimination will be implemented via behavioural undertakings (not yet prepared). Compliance will be monitored by the Commerce Commission;
- No specific operational transparency requirements are included for engagement with customers except for separation and transparency of the Layer 1- from the Layer 2-service business. The LFC can offer Layer 2 services but the equipment to do so must be funded by the partner only.

Singapore's next-generation broadband is expected to reach 95 percent of homes and offices by 2012. Government has required structural separation of the Next Gen NBN NetCo (passive layer), and operational separation of the Next Gen NBN OpCo (active layer). OpenNet was selected to design, build and operate the passive infrastructure.

- The tender required the winning bidder OpenNet to submit a Proposed Interconnection Offer (the terms under which OpenNet will offer services) which was put through public consultation before being approved by the Infocomm Development Authority (IDA).
- Pricing was not part of the consultation process but IDA will conduct scheduled reviews of prices, terms and conditions 3–5 years hence.

Source: Implementation Study

NBN Co has already commenced engaging with industry in an open and transparent way. Nevertheless, formal requirements are an important enabler of a successful wholesale business, particularly when a monopoly. Furthermore, subjecting NBN Co to full public transparency will apply valuable discipline to a company that will initially be shielded from the rigour of private ownership and the capital markets.

There will be some information which NBN Co is not able to provide due to commercial confidentiality. However, it is important that this legitimate qualification not prevent the publication of key data such as roll-out progress and service performance levels, which will enhance the accountability of the Board and management team.

Accordingly, it is appropriate that the Government impose a regime of transparency on NBN Co, requiring regular industry consultation and public reporting.

Recommendation 64. That NBN Co be required to conduct its strategy, planning and operations in a publicly transparent manner, subject to any requirements of commercial confidentiality.

Recommendation 65. That NBN Co be required to ensure its service offerings are developed in consultation with a wide variety of service providers through a transparent process including:

1. Holding regular industry forums to seek the views of current and prospective customers on the service offering;
2. Publishing a revised service development roadmap on at least an annual basis, and ensuring that demonstrable and reasonable market requirements are met.

Recommendation 66. That NBN Co be required to publish in its annual report comprehensive information on its performance, including:

1. Network roll-out performance and costs;
2. Achievement of service levels;
3. Faults;
4. Customer complaints;
5. Any matters, whether or not related to those above, that Government, represented by the shareholder Ministers, considers appropriate.

Highlight. Transparency will also be enhanced by the publicly-accessible Coverage Register discussed in Chapter 1.

10.2 Creating a pro-competition environment

A key objective of the NBN initiative is to foster competitive telecommunications markets in Australia. This requires the establishment of a regulatory environment that provides adequate constraints on NBN Co as the owner of bottleneck infrastructure. It must also facilitate vigorous retail competition while leaving scope for investment in innovation. In addition, given its mandate to deliver public policy outcomes by meeting ambitious coverage objectives and providing affordable services across all geographies, it is important to ensure that NBN Co is not disadvantaged by competitor ‘cherry picking’.

Three subsections address these challenges:

10.2.1 Creating an effective and limited wholesale operator

10.2.2 Meeting the needs of a diverse range of access seekers

10.2.3 Ensuring a level playing field for all superfast broadband networks.

10.2.1 CREATING AN EFFECTIVE AND LIMITED WHOLESALE OPERATOR

The Government has determined that NBN Co will be a wholesale-only, open-access telecommunications carrier applying the principle of equivalence to its provision of services to retailers. These policy conditions are driven by a desire to create a level playing field at the retail level.

Implementing this policy requires the concepts of wholesale services and equivalence to be thoroughly defined. It also requires measures to ensure that NBN Co remains an enabler of competition, rather than an inhibitor. The Implementation Study does not suggest that NBN Co Board or management have any intention other than implementing Government’s policy as intended. Nevertheless, a framework is required that creates certainty and contemplates the adverse conduct described in Section 9.4—particularly given NBN Co has been established to operate commercially with an intention to privatise.

Limiting the scope of NBN Co operations

Section 9.4 outlines forms of monopoly conduct in which NBN Co may have an incentive to engage. In particular, it highlights the danger that NBN Co may be tempted to enter markets for other network elements, or even devices and content. If it were to do so, leveraging the advantages of its monopoly network, or merely of its implicit Government backing, it could distort those markets and reduce competition. It is important that NBN Co be prevented from growing beyond its mandate.

Recommendation 67. That NBN Co be prohibited from engaging in commercial or investment activities unrelated to the provision of wholesale telecommunications services in Australia. For the avoidance of doubt, provision of content services as defined by the *Telecommunications Act 1997* would constitute prohibited activities.

In addition, we note that the exposure draft of the *National Broadband Network Companies Bill 2010* includes a provision for the Minister to impose a licence condition mandating or prohibiting NBN Co from offering particular services. This mechanism provides a valuable failsafe which could be employed to enforce the general prohibition.

Imposing a wholesale-only requirement

The Government has stated a clear intention that NBN Co will be wholesale-only. Our understanding is that this is intended to maximise competition and prevent NBN Co from becoming vertically integrated and thus distorting competition in retail markets.

To ensure NBN Co operates on a wholesale-only basis, it will be necessary to prevent it from offering retail services. Although we recommend the exclusion of NBN Co from some markets, we do not recommend attempting to include an exhaustive definition of wholesale or retail services in the legislation. Given the dynamic nature of broadband technology, there is a real risk of the definition rapidly becoming outdated.

A better means by which legislative provisions might limit NBN Co to wholesale services is by specifying the classes of customer to whom NBN Co may offer services (Exhibit 10–2). The exposure draft of the *National Broadband Network Companies Bill 2010* adopts this approach, limiting NBN Co to offering services to carriers and service providers, as defined in the Telecommunications Act, with scope for the Minister to declare exceptions by regulation.

Under this proposed approach, there are two end-user groups at either extreme of the market that deserve special consideration: sophisticated end users; and uneconomic, or low priority, customers who may not be offered services by any retailer.

Exhibit 10–2. Definitions of permitted NBN Co customers

Definitions of permitted NBN Co customers

- **Carrier** means the holder of a carrier licence granted by ACMA. Carrier licences are required by owners of network units that are used to provide carriage services, which are services involving communications using guided or unguided electromagnetic energy.
- **Service provider** means the provider of either carriage services (as described above; e.g. iiNet is a carriage service provider) or content services. Content services include broadband services and online information and entertainment services (e.g. Foxtel is a content service provider).

Source: Implementation Study

Sophisticated end users, such as large banks or technology-services companies may demand services similar to those offered by NBN Co to retailers. It is possible that they could establish their own proprietary carrier or service provider entities, acting as shell retailers and thereby allowing NBN Co to offer services to companies that are essentially agents of end users.

Obtaining a carrier licence is not difficult in itself; there are more than 250 currently on issue in Australia. However, as NBN Co is limited to the provision of Layer 2 services, any shell retailer (i.e. one established for the primary purpose of providing services to a single end user, to which it is probably related) would require a significant level of sophistication to use these services to provision services at Layer 3 or higher. The sorts of services being provided by NBN Co will be of the character of wholesale rather than retail services.

Therefore, to the extent that a large and sophisticated end user business finds it more efficient to establish such a shell retailer, this would indicate a lack of efficiency or value-add on the part of the major retailers. On balance, there is a strong practical argument that such an outcome would represent enhanced competition at a retail level, rather than being interpreted as an implicit entry of NBN Co into the retail market. Accordingly, the Implementation Study believes there is no need at present to make a special provision in relation to this scenario. Similarly, the Minister should have the discretion to make exceptions to the strict definition of customers defined as wholesale.

This conclusion is dependent on the Government restricting NBN Co to offering Layer 2 services and, potentially, unbundled Layer 1 services. A number of stakeholders have suggested that NBN Co should offer Layer 3 services, to lower barriers to entry into the retail market. We believe this would be undesirable.

- If NBN Co were to provide only Layer 3 services, the scope for service innovation would be greatly reduced and NBN Co's customers would be relegated to the status of resellers of NBN services.
- If NBN Co were to provide both Layer 2 and Layer 3 services, its Layer 3 business unit would be in effective competition with its own Layer 2 customers. This would undermine the Government's policy objective of establishing a level playing field in the retail market, underpinned by NBN Co's disinterest in downstream competition.

However, in light of representations from some industry participants, the Government may wish to request that the ACCC's annual report on competitive safeguards in the telecommunications industry address the availability of Layer 3 wholesale services, to determine whether any further intervention is merited, and to retain the flexibility to relax this restriction should market or technological developments necessitate it.

These conclusions are consistent with the discussion of appropriate service offerings in Chapter 3.

The second class of end user that must be considered in defining the wholesale-only requirement is uneconomic customers. If the Universal Service Obligation were removed in the future, it is possible that uneconomic or low-priority customers may not be offered services by any retailer. Should this eventuate, Government could consider either a subsidy or a tender process to secure retail services for such customers. This option is preferable to allowing NBN Co to act as a retailer of last resort, which would compromise its wholesale-only nature and place it in competition with its customers.

Recommendation 68. That Government implement a wholesale-only restriction on NBN Co preventing it from offering or providing services to anyone other than a carrier or service provider as defined by the *Telecommunications Act 1997*; that Government retain the flexibility for the Minister to make exceptions to this rule.

Restricting NBN Co's ownership of retail operators

Given the policy objective of preventing the re-establishment of a vertically-integrated monopoly, we recommend restricting NBN Co from acquiring equity in telecommunication retailers. However, there is a need to include provisions for exceptions. For example, it may be desirable for NBN Co to acquire businesses with infrastructure or capabilities to develop its wholesale offerings. Such businesses may include service offerings which violate the set restrictions. We propose the following mechanisms to preserve the NBN objectives but allow acquisition flexibility:

- The acquisition by NBN Co of a business which offers services outside the regulated NBN services framework should only be considered if a compelling infrastructure asset is associated with the business and the acquisition of the infrastructure alone is either not practical or would result in an inferior commercial outcome for NBN Co.
- If the target business offers services inconsistent with NBN Co regulations, then the target should be allowed to apply to keep offering these services through a transitional period.
- If the target business offers services directly to end users then these services would need to be divested/transitioned within an appropriate timeframe.
- The regulatory scheme should include some discretion to relax restrictions on a case-by-case basis based on the magnitude of the problem (e.g. number of customers receiving non-compliant services), the threat to equivalence (for example, a grandfathered corporate Layer 1 service is less threatening than a differentiated video service to consumers) and the expected timeframe and complexity for remedying the breach.
- Additional transitional measures could be enabled to offset the risks of compromising Government's competition objectives during the transition period. These might include maintaining functional separation principles, giving powers to the ACCC to provide heightened regulatory oversight (potentially drawing on current powers under the TPA) and enforcing termination of services or divestment after a certain period.

Recommendation 69. That NBN Co be prohibited from investing in retail telecommunication companies and content service providers, subject to special provisions for transitional ownership where incidental to the acquisition of network assets relevant to its objectives.

Implementing open access and equivalence in a wholesale-only context

The Government's NBN policy recognises that open access and equivalence are an essential part of fair wholesale dealings. If the objective of creating a level playing field in the retail market is to be achieved, retailers must have confidence that no favouritism will be shown to particular retailers by the owner of the bottleneck infrastructure over which they will all compete.

Open access requires that NBN Co offer its services to any retailer which seeks them. This is a relatively simple principle, which should be made subject to exceptions based on technical feasibility, existing supplier commitments and creditworthiness in a similar manner to existing access obligations under Part XIC of the Trade Practices Act.

Equivalence is a more complex principle. The strictest interpretation of equivalence, known as equivalence of inputs, would require all customers to be provided with services at identical prices, on identical terms and using identical technical and business process interfaces with NBN Co. While this would achieve a theoretical equity between retailers, it would provide too little flexibility to recognise the different needs of the diverse range of potential customers of NBN Co. Interfaces that might suit a large retailer with substantial market share around the country are likely to be ill-suited to a boutique ISP operating in a single area.

The case for a more flexible interpretation of equivalence is strengthened by the wholesale-only nature of NBN Co. As NBN Co is not competing against its customers, it has less incentive to discriminate between them in a harmful way than does a vertically-integrated network owner.

We therefore believe that equivalence should be implemented principally by means of transparency and common availability.

- NBN Co should be obliged to publish its service offerings, its standard terms and conditions and any variations to those agreed with individual customers.
- NBN Co should be prohibited from discriminating between customers. Where a potential customer wishes to obtain like services, in like circumstances, and on like terms to those agreed in respect of another customer, NBN Co should be obliged to comply, subject to the usual qualifications to open access.

- While interpretation and enforcement of non-discrimination should be left to the discretion of the ACCC, it would be concerning if NBN Co were to offer terms and conditions of a nature that could not feasibly be accepted by at least three retailers (e.g. a volume discount requiring volumes so large that only one retailer could benefit).

Transparency ensures that customers are aware of opportunities and builds confidence in NBN Co's fair conduct. Availability ensures that customers are able to take advantage of these opportunities.

The Implementation Study does not believe a pre-approval process for access agreements should be introduced. As noted throughout this report, the telecommunications sector is highly dynamic. Cumbersome processes are to be avoided where possible. Commercial agreements should be able to be implemented rapidly. Publication of terms and hence independent vetting for consistency with the principle of equivalence should provide adequate safeguards in a wholesale-only environment.

An exception to these conclusions on equivalence is where NBN Co is offering services in competition with its customers. For example, this could occur if, subsequent to physical unbundling, NBN Co were to compete with its customers at Layer 2.

In relation to these services, NBN Co has a clear incentive to discriminate. Accordingly, a stricter interpretation of equivalence would be necessary, to ensure that the internal technical and business processes of NBN Co do not give its internal customer (e.g. the Layer 2 services unit) an unfair advantage. To avoid this, it would be necessary to implement strict equivalence of inputs in relation to such services.

Recommendation 70. That NBN Co be subject to an access regime similar to that set out in Part XIC of the *Trade Practices Act 1974*, 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:

1. Except in relation to services that NBN Co also provides to itself, equivalence should not require identical terms, conditions and processes so long as any variations (e.g. discounts) aid efficiency and are available to all access seekers in like circumstances, where 'like circumstances' are not taken to include scale unless at least three access seekers are of sufficient scale to qualify;
2. NBN Co is to publish any such variations;
3. In relation to services provided by NBN Co to itself and to other access seekers (such as any unbundled Layer 1 services), equivalence should be defined on an 'equivalence of inputs' basis, requiring identical terms, conditions and processes of supply;
4. The principle of open access should not require NBN Co to offer services to access seekers where NBN Co has good cause to believe the access seeker is not creditworthy or is otherwise unlikely to comply with the terms and conditions of supply.

10.2.2 MEETING THE NEEDS OF A DIVERSE RANGE OF ACCESS SEEKERS

Vibrant retail competition will only be created if NBN Co offers services that are suitable for, and accessible by, a diverse range of access seekers.

Points of Interconnect

Chapter 6 discusses the role of NBN Co in establishing a national backhaul network in areas where the backhaul market is uncompetitive. This is necessary to provide retailers with practical access to the fibre exchange.

If retailers are only permitted to access the fibre exchange on an unequal basis, the Government's objective of a level playing field for retailers will not be achieved. To resolve this problem, it is important that retailers only be allowed to connect to the NBN at points where they and their competitors will face similar backhaul costs.

In practice, this means that NBN Co should not allow access to its network except at points reached by competitive backhaul. Consistent with the recommendations of Chapter 6, NBN Co will provide transit backhaul from the fibre exchange to these locations, except where there is competitive backhaul at the fibre exchange itself.

While the fibre exchange and transit backhaul products offered by NBN Co should be separate, to enable access seekers to determine their own contention rates over backhaul, interconnection should not be offered at the fibre exchange if there is no competitive backhaul.

It is not a trivial matter to determine whether a particular backhaul link is genuinely competitive. We propose that NBN Co should build backhaul on links that are clearly not competitive, i.e. links where there is only one provider. While the presence of two backhaul providers does not guarantee competitive pricing, we believe that NBN Co should not extend its backhaul network to such links at this stage, in light of the following:

- The roll-out of the NBN access network may prompt further private investment in backhaul, increasing the competitiveness of some links;
- The ACCC has mechanisms to prevent anti-competitive conduct and has declared access to services of specific backhaul links;
- NBN Co can consult with potential providers of backhaul as it prepares its roll-out schedule and ensure that its POIs will be accessible over adequately competitive backhaul;
- To the extent that these mechanisms fail to address concerns on some links, the policy can be re-evaluated after roll-out of the access network is complete and the market has been given a chance to work.

Recommendation 50 (repeated). 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.

Practical access to a POI requires the co-location of customer equipment at the POI. This will create another potential bottleneck in the form of limited physical space at the POI. If NBN Co secures space for its POIs that is merely sufficient for its own equipment, the difficulty in obtaining space for retail service providers to locate equipment could impede competition, particularly at such point as physical unbundling is permitted.

This problem will be exacerbated if many NBN Co POIs are located in current Telstra exchanges. In this scenario, Telstra would enjoy a unique advantage over its competitors in gaining access to the NBN.

Accordingly, NBN Co should ensure that it secures ample space at its POIs to provide for interconnection by a range of retailers. To ensure a genuinely level playing field, reasonable space for retailer equipment should be provided free of charge, with costs covered with an interconnection fee at each POI that applies to each retailer choosing to connect there even if they do not have space requirements due to co-location of their own facilities.

Recommendation 71. That NBN Co be required to provision its physical infrastructure, including POIs and fibre exchanges, to accommodate reasonable expectations for customer equipment in anticipation of multiple retail competitors:

1. Seeking access to its Layer 2 services;
2. Seeking access to transit backhaul services;
3. Seeking access to unbundled physical fibre or wavelengths in the future.

Diversity and modularity of products

As discussed in Section 3.3, some retailers will wish to provide bundled services such as triple-play packages, while others may wish to become niche providers offering individual services. To enable vibrant competition between alternative business models at the retail level, it is important to ensure that NBN Co's service offering and pricing architecture are not prejudiced in favour of a particular model.

This will require NBN Co to offer services on a modular basis to avoid conferring a price advantage on large retailers who seek a discount on bundled services that would undermine the competitiveness of single-service retailers.

NBN Co should endeavour to offer a range of service and pricing options that maintains neutrality between competing business models.

Recommendation 72. That NBN Co be required to design its price architecture on the basis that services with distinct characteristics (e.g. level of aggregation or capacity) should be offered on a modular basis. For example, a multicast product suited to IPTV delivery should be sold independently of a standard bitstream service.

Enabling competition in premises

While the recommendations above will enable competition between multiple retailers, a truly innovative and dynamic retail market will be created only if competition is facilitated within the home. If the ONT is designed to allow a single retailer to effectively capture the premises, the ability for consumers to select innovative niche content, applications or devices will be subject to the intermediation of that retailer.

To open up competition within the home, it is important that the design of the ONT and method of installation allows other retailers to provide services by connecting to ports on the inside of premises. Ultimately, this will enable competing retailers to sell devices that the customer can self-install. Without adequate provision of ports internal to the premises, the scope for competition to drive service innovation within the home will be compromised.

This issue is discussed in Section 4.2.

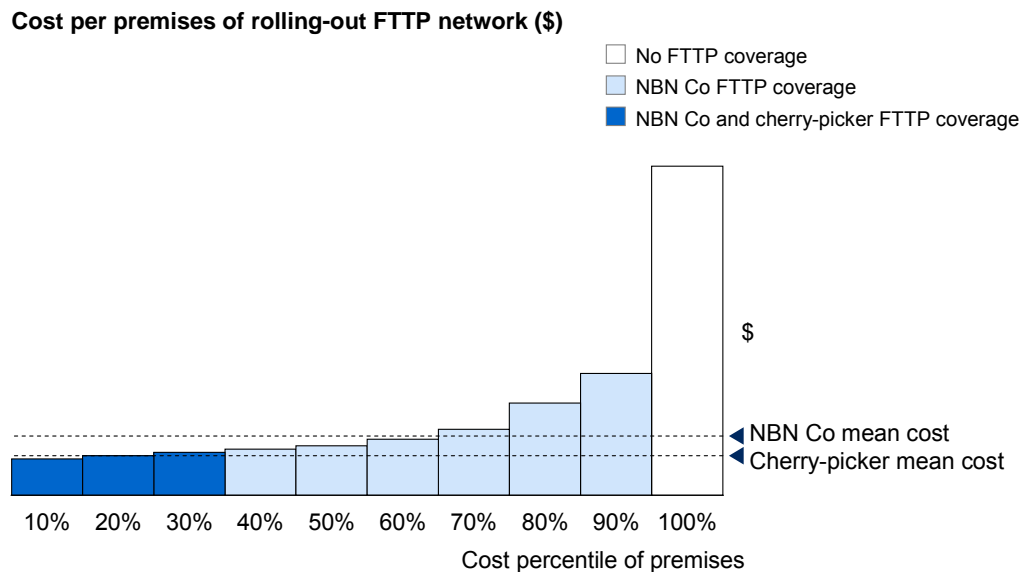
10.2.3 ENSURING A LEVEL PLAYING FIELD FOR ALL SUPERFAST BROADBAND NETWORKS

Consistent obligations for all new network builders

It is the stated intention of the Government to provide affordable broadband to all Australians. If, as proposed, NBN Co charges a uniform wholesale access price across its fibre footprint, this implies providing an implicit cross-subsidy to higher cost-to-serve areas from lower cost-to-serve areas. In effect, NBN Co will be charging an averaged price across the FTTP footprint, rather than the geographically-differentiated prices that would result from purely cost-based pricing.

This raises the risk that carriers other than NBN Co might construct fixed-line superfast access networks (such as FTTN, DOCSIS 3.0 or competing FTTP networks) only in high-income and low-cost, high-density areas and then undercut NBN Co's average price due to the lack of any need to subsidise operations in higher-cost areas. This cherry-picking approach could undermine Government's affordability policy by enabling the cherry picker to undercut NBN Co's pricing based on its lower costs (Exhibit 10-3), hence placing at risk NBN Co's ability to serve less attractive areas at affordable prices.

Exhibit 10–3. Effects of cherry-picking on average cost to serve premises (illustrative)



SOURCE: Implementation Study

In light of the policy of wholesale pricing uniformity, NBN Co would be caught between conflicting imperatives to:

- Match the competitor’s pricing in high-value, low cost areas, thereby requiring it to reduce its pricing across the entire fibre footprint and thus fundamentally compromise its commerciality;
- Maintain pricing at a level designed ultimately to cover costs, in which case it would be unable to attract customers in the cherry-picked areas.

Any such limited, opportunistic network would not only pose a commercial threat to NBN; it would also advantage a vertically-integrated network operator over independent retail service providers using NBN services in those areas.

Another source of advantage for builders of such a third-party network would be the choice to ignore technical standards applied to NBN Co for policy reasons, such as implementing network topologies that facilitate unbundling.

The Implementation Study has considered multiple possible policy responses to this threat. Options considered included:

- Imposing technical standards on new FTTP networks, to ensure that they are compatible with NBN Co infrastructure and thus equally amenable to unbundling;
- Imposing open and equivalent access wholesale conditions on carriers building or upgrading to new, fixed-line superfast access networks in Australia, in relation to

services offered over those networks, so that vertically-integrated network owners are not able to gain unfair advantage at a retail level;

- Mandating that pricing of services on such fixed-line superfast access networks be set by the ACCC to match a rate of return based on NBN Co's actual, or anticipated, rate of return;
- Imposing a universal service levy on carriers building or upgrading to new fixed-line superfast access networks in Australia, calculated on a basis inversely related to their breadth of coverage in less attractive areas;
- Prohibiting the construction of competitor fixed-line superfast access networks.

On balance, we believe that the first two of these measures are appropriate.

Imposing open and equivalent access wholesale conditions in relation to these third-party networks is consistent with the Government's policy objective of achieving a level playing field at a retail level. Where the networks are compliant with the Government's policy objectives, the need for roll-out by NBN Co will be negated.

Consistent with the policy intent of the exposure draft of the *Telecommunications Legislation Amendment (Fibre Deployment) Bill 2009*, it is also appropriate to ensure that any FTTP network be compliant with technical standards promulgated by ACMA and based on the standards applied by NBN Co to the construction of its own network. This will ensure that areas of Australia are not left with sub-optimal FTTP networks.

Mechanisms such as a levy or capped return, which create a disincentive against building competing networks limited to the highest value areas, need to be considered carefully. They could create deterrents to desirable investment.

If cherry-picking were to emerge as a concrete threat during the NBN build, notwithstanding the measures proposed above, Government may wish to implement temporary protection for NBN Co against the commercial impact of cherry-picking beyond setting technical standards and ensuring open access and equivalence.

Rather than either outright prohibition of competing networks, which would reduce innovation and remove the discipline of competitive pressure from NBN Co, or linking rates of return explicitly to those of NBN Co, the simplest disincentive against cherry-picking would be to impose a levy on cherry-pickers, payable to the Government, with proceeds to be directed towards telecommunications subsidy programs (Exhibit 10–4).

Exhibit 10–4. Design of a possible Universal Service Levy

Example approaches to the design of a levy to prevent cherry-picking

- The ACCC's classification of areas into different zones for the purposes of ULL pricing provides a useful precedent, and a levy could be based upon the ratio of premises served in different zones and proportional to the total number of premises served.
- The levy could be hypothecated to specific telecommunications subsidy programs, such as the provision of affordable CPE upgrades for users of satellite broadband services.

Source: Implementation Study

Given the undesirability and potential controversy of punishing or prohibiting the deployment of FTTP technology by third parties, a universal service levy should be regarded as a last resort measure to be employed only if a significant threat of cherry-picking actually emerges.

Government should recognise that the rationale for such a levy would be that it was a necessary measure to enable NBN Co to deploy a superfast broadband access network, including FTTP to 90% of premises, over the next 8 years. There would be no justification for a levy in the absence of strong, ongoing Government commitment to the NBN initiative. The worst possible outcome would be a scenario in which the NBN was not being deployed, yet the levy continued to deter private sector investment in superfast broadband infrastructure. Under this scenario, the levy would become an obstacle to Australians accessing superfast broadband services. Indeed, if NBN Co's deployment was slowed substantially or the scope was narrowed, there would be a strong case to reconsider the other anti-cherry-picking measures.

In light of this risk, if a levy is implemented, it should be subject to a strict sunset clause of no more than ten years, recognising that it is a mechanism to prevent pre-emptive cherry-picking builds during the NBN roll-out. The possibility of private operators deploying competing FTTP infrastructure after the NBN roll-out is complete will, in the long term, be important to apply discipline to NBN Co and provide it with an incentive for innovation.

In practice, so long as NBN Co operates efficiently and responsively, it is doubtful that third parties will build significant networks when forced to offer open and equivalent access to wholesale services, even in the absence of a levy. In the case of pre-emptive builds they would still face the threat of NBN Co overbuild on top of the risks associated with entering a market which is undergoing such rapid regulatory change. Where the NBN is already deployed, they would face certain competition, while any benefits of vertical integration would be eliminated by the open and equivalent access conditions.

On balance the Implementation Study does not anticipate that a universal service levy is likely to be required as an additional deterrent, particularly preemptively.

Regardless of the measures which are adopted, they should not apply to small, proprietary networks that are not used to provide services to the public. This is consistent with the scope of the carrier licence regime in the Telecommunications Act.

Recommendation 73. That any future fixed-line superfast access network built in Australia must offer wholesale services on an open-access and equivalent basis and, if it is an FTTP network, must comply with the technical specifications mandated in relation to the construction of FTTP access networks in greenfields; that this recommendation be subject to the following qualifications:

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 *Telecommunications Act 1997*;
2. For the purposes of this recommendation, a fixed-line superfast access network should be defined as a fixed-line access network delivering download data rates consistently exceeding 25 Mbps;
3. ACMA should be empowered to agree to variations to the technical specifications in specific cases where those variations do not interfere with the Government's NBN objectives and result in significant cost savings through the use of existing infrastructure.

Recommendation 74. That, if plans are announced for significant third-party deployments in high-value, low-cost areas of fixed-line superfast access networks (defined as a fixed-line access network delivering download speeds consistently exceeding 25 Mbps but excluding small proprietary networks) during the NBN roll-out, Government consider the introduction of a universal service levy on the owners of all such networks; this levy to be inversely related to a network's contribution to the Government's objective of providing affordable broadband coverage to all Australians. It would be hypothecated to fund telecommunications subsidy schemes; any such levy to be subject to a sunset clause causing its expiry after no more than ten years.

10.3 Setting a course to active-layer competition

If the NBN initiative is to deliver on its promise as a sound investment in Australia's broadband future, it must enable competition in active infrastructure in the decades ahead.

Healthy competition is the most effective driver of innovation in a telecommunications market. The NBN initiative represents a singular opportunity to establish a market structure that effectively harnesses this driver for decades to come.

While active-layer competition can reasonably be delayed to facilitate roll-out and industry transition, failure to set a path to achieve such competition would severely compromise the Government's long-term objectives. It would potentially necessitate further substantial and periodic Government subsidy of NBN Co to create an incentive for upgrades of active layer infrastructure to keep pace with technological developments. This issue is explored in four subsections:

10.3.1 Establishing active-layer competition once the platform is established

10.3.2 Ensuring a network topology that allows for physical unbundling

10.3.3 Determining the start of active-layer competition

10.3.4 Anticipating the equivalence of inputs obligation.

10.3.1 ESTABLISHING ACTIVE-LAYER COMPETITION ONCE THE PLATFORM IS ESTABLISHED

As we discuss in Chapter 9, Australia's endorsement of a single passive fibre network makes infrastructure-based competition from alternative networks unlikely. The Government must therefore plan for active-layer competition over the long term. A single passive network is efficient, but poses risks if it is permanently vertically integrated with the management of active electronics. Such a vertically integrated monopoly will lack the incentives to deliver dynamic improvements to active services. The need for such performance improvements is almost certain: Google recently announced its plan to deploy a 1 Gbps FTTP network to between 50,000 and 500,000 homes in the US, and Singapore's planned FTTP network is ultimately intended to enable peak download speeds of over 1 Gbps.

While a monopoly active layer service provider could be forced to introduce new products (through user forums, international benchmarking and regulation) and pursue cost reductions (through price regulation), these measures are substantially less effective than competition, as they cannot accurately align the incentives of the network service provider with the needs of a diverse market.

There is a sound precedent for such competition on existing copper infrastructure, and on long-distance fibre networks. The unbundling of Telstra's copper access network, and subsequent entry of competitors, spurred introduction of fast ADSL2+ services by the incumbent (Exhibit 10–5).

Exhibit 10–5. Unbundling of Telstra's copper access network

Copper access network unbundling drove roll-out of ADSL 2+ in Australia

As of today, Telstra's Customer Access Network (CAN) remains a bottleneck infrastructure in most areas, as it has not been commercially viable for a competitor of Telstra to duplicate it. However, some competitors were not content with merely reselling Telstra's telecommunications services as retailers. They sought access to unconditioned local loop (ULL) services from Telstra. Telstra resisted this strongly. This reflects the fact that, in the absence of ULL access, Telstra was able to leverage its bottleneck asset, the CAN, to restrict competition in downstream active layer services.

The ACCC declared ULL services. This decision reflected the fact that there was a potentially competitive market in active layer services, downstream from the passive copper network: specifically, competitors installed their own DSLAMs in selected Telstra exchanges. Competitor equipment is now located in 557 exchanges, with 1.3 million out of 10 million services based on competitor access to ULL or line sharing services (LSS).

Active-layer competition provided discipline even on parts of the network which were not subject to competition at a given time, eventually driving upgrades. Prior to 2008 Telstra upgraded its exchanges to ADSL 2+ only as competitors installed DSLAMs in each exchange and began to provide that service. Competition on the active layer eventually created the incentive for Telstra to roll-out ADSL 2+ more broadly on its network. In 2008, Telstra began providing ADSL 2+ even in areas which competitor DSLAMs had not reached.

Competitive markets also place downward pressure on costs. Advertisements for retail broadband plans focus primarily on price. While comparisons are complex due to the number of variables involved, we note that the price of an incremental gigabyte of data over an ADSL or ADSL 2+ service varies substantially between incumbent providers (\$1.19 for Telstra) and attackers (\$0.54 for iiNet).

Source: Implementation Study

Enabling both physical unbundling and wavelength unbundling

There are three forms of unbundling that can be used to enable competition between retailers on a wholesale network:

- **Bitstream unbundling:** the provision of generic Layer 2 services to competing retailers. This will be the default method of unbundling on the NBN.
- **Wavelength unbundling:** the allocation of specific bands of the optical spectrum to individual retailers, so that they can define the Layer 2 services they desire. NBN Co would then use its active layer infrastructure to provide these.

- **Physical unbundling:** the provision of unique fibres to individual retailers. This enables the retailers to place their own active layer electronics at the ends of the fibre, allowing them to upgrade at will.

Some stakeholders have questioned the need to enable physical unbundling in light of the possibility of wavelength unbundling—the assignment of different segments of the optical spectrum to different retailers, enabling them to deliver services over the same fibre, and hence over the same splitter in a GPON network.

While wavelength unbundling may well play a role in enabling future competition on the NBN, the Implementation Study believes it would be risky and short-sighted to rely on this as the sole solution to the threat posed by NBN Co’s future active layer monopoly, since:

- Wavelength unbundling does not remove NBN Co’s monopoly on the active layer infrastructure. While retailers could request the delivery of particular forms of Layer 2 service over their segment of the spectrum, the active layer electronics would remain in NBN Co’s control and upgrades would occur only at NBN Co’s discretion.
- Wavelength unbundling technology has been applied on backhaul links but, due to its expense, has not been used for any wide-scale deployment over an access network. Relying on the future development of this technology to provide an alternative to physical unbundling presumes that wavelength unbundling technologies will develop with sufficient speed to meet future bandwidth requirement. Such reliance carries risk, given the inherent uncertainty involved in predicting future technological developments.
- Incumbents will no doubt resist unbundling internationally. Consequently, major global vendors may have little incentive to develop technologies that their largest customers do not want. This may constrain the development of an effective ecosystem, in which there will be enough scale and economic viability to deploy wavelength unbundling as a mass-market access technology.

For these reasons, the Implementation Study believes it is important to preserve the option of physical unbundling.

The risk of trying to pick WDM-PON technology developments now would be analogous to installing a leading edge ADSL 1 technology that foreclosed a later installation of VDSL 2

Telecom New Zealand Limited
(2009)

The need to provide for physical unbundling to future-proof networks and drive active-layer competition and innovation has been recognised by other nations building superfast broadband networks (Exhibit 10–6).

Exhibit 10–6. Other countries have concluded that physical unbundling is needed

Country	Situation
Singapore	The Singaporean Government's FTTP network will be structurally separated between passive, active and retail layers, to enable future active-layer competition. Ultimately, the duct infrastructure that houses the fibre will also be divested into an independent entity.
Japan	The regulator has declared access to NTT's Layer 1 services, albeit at prices that enable full cost recovery including depreciation. Despite high prices, several competitors utilise these services.
New Zealand	The planned national broadband network will be controlled by public/private partnerships offering Layer 1 services, with active equipment to be built independently by the private sector wherever possible.

Source: Implementation Study

10.3.2 ENSURING A NETWORK TOPOLOGY THAT ALLOWS FOR PHYSICAL UNBUNDLING

Physical unbundling is only possible where enabled by an appropriate network topology. Chapter 4 discusses the possible network topologies and concludes that:

- A home-run topology is best-suited for physical unbundling;
- Where a shared topology is used, the economic feasibility of physical unbundling increases with the number of premises served by each splitter cabinet.

Incumbent telecommunications carriers have preferred to deploy shared network topologies. The effect of this is to make future physical unbundling difficult if not impossible.

Government's competition objective suggests that NBN Co should prefer topologies that are more easily unbundled. To the extent that shared topologies are employed, larger splitter cabinets serving greater numbers of premises should be preferred, increasing the economic feasibility of physical unbundling in the future. See Section 4.2 for further explanation of the topology choices.

Ideally, a home-run topology would be implemented across the fibre footprint. However, as there are varying cost implications in different geographies, we recognise that this may not be feasible. Nonetheless, it is important to recognise that ubiquitous deployment of a topology that can be unbundled is not necessary to derive significant competition benefits.

For example, if home-run technology is deployed over a substantial proportion of the fibre footprint, thus enabling physical unbundling, the conduct of active-layer competitors in those areas will provide a useful benchmark for the appropriate service offerings and standards that NBN Co should be expected to offer in other regions. This effect was

demonstrated by the unbundling of ULL services, which ultimately led to the roll-out of ADSL2+ by Telstra even in exchanges which did not contain competitor DSLAMs (Exhibit 10–5).

Highlight. Unbundling over a substantial proportion of the network leading to competition, once established, provides sufficient pressure to drive improved services over the entire network.

As indicated in Chapter 4, we believe construction of the NBN with 50 percent of premises in the fibre footprint being covered by home-run topology would incur approximately an 8 percent cost premium over that half of the network, or approximately 4 percent as a portion of the spend on the fibre access network. The entire NBN would still be constructed within Government’s \$43 billion expenditure estimate. The appropriate mix of network topologies for NBN Co to deploy across the country can be estimated today based on pre roll-out and limited field trials, but it is prudent to retain some flexibility until actual roll-out cost data are available. The Implementation Study is also cognisant of NBN Co’s tight schedule and of the undesirability of delaying network roll-out.

As it may not be in NBN Co’s long-term commercial interests to construct a network that is easily unbundled, there is a need for external policy oversight on the appropriate topology. While detailed network design is best left to NBN Co, the Government and the competition regulator have a legitimate interest in ensuring that the topology meets competition objectives. For example, in the United Kingdom, Ofcom has intervened in the issue of cabinet size in BT’s FTTN network on the basis that the proposed small size would frustrate sub-loop unbundling.

Having regard to these considerations, the Implementation Study suggests that the exact extent of deployment of different network topologies be determined once adequate roll-out experience has been gained.

Recommendation 75. That, to determine NBN Co’s fibre network topology:

1. Once NBN Co has gained adequate network roll-out experience and has had the opportunity to conduct demonstrations of alternative topologies NBN Co determine the appropriate network topology to enable both physical and wavelength unbundling;
2. NBN Co, in consultation with the ACCC, develop a plan setting out the appropriate extent of deployment of this topology having regard to construction cost and competition outcomes;
3. Government determine interim deadlines to complete this process in consultation with the ACCC and NBN Co;
4. NBN Co be required to secure Government approval of its topology plan, by the earlier of: coverage of 15 percent of premises within the proposed fibre footprint; and 31 December 2013.

Advice. That the NBN Co Board arrange for trials of alternative network technologies across different geographic types; these trials should include home-run topology and shared topologies involving varying levels of aggregation at the splitter cabinet; the trials should be conducted as early as possible so that they can inform network design at an early stage in the roll-out.

10.3.3 DETERMINING THE START OF ACTIVE-LAYER COMPETITION

Chapter 9 discussed the benefits of vertical integration of NBN Co's active layer and passive-layer activities during the roll-out period. This consideration sets a bound on how early physical unbundling should occur.

Chapter 8 discussed the importance of establishing a stable NBN Co business model and track record prior to privatisation. This effectively sets a bound on how late physical unbundling should occur, as its impact on NBN Co's commercial performance could be interpreted by the capital markets as a risk necessitating a significant discount on the Government's likely proceeds.

In the ordinary course of events, physical unbundling will occur at such time as Layer 1 services are declared by the ACCC, as NBN Co is unlikely to decide to reduce the market share of its active layer services unit by offering such services of its own accord. The ACCC would make this decision based on the usual statutory considerations, having regards to the long term interests of end users.

However, given the Government's interest in the privatisation of NBN Co, it is possible that the Government will wish to pre-empt the declaration process by mandating the provision of Layer 1 services to accelerate the process of moving towards an appropriate privatisation structure. Provision for such an action has been made in the draft legislation prepared by the Department.

Regardless of the catalyst, the ACCC will have to consider a number of issues at the time of unbundling.

- How should NBN Co determine which retailers can receive Layer 1 services where network topology limits the number of competitors (e.g. limited space for OLTs in the fibre exchange, or a limited number of fibres feeding a cabinet)?
- How should the pricing of unbundled Layer 1 services be determined, especially if some of the network construction cost is effectively written off?
- How should Layer 1 service pricing vary between different network topologies?
- Should integrated service providers be permitted to access Layer 1 services or should it be restricted to wholesale-only active-layer operators (Layer 2 and 3)?

Given the uncertainties surrounding network topology, business performance and technological and market developments, these issues will be best resolved by the regulator at the time of unbundling.

Recommendation 76. That Government not require NBN Co to unbundle Layer 1 services before network roll-out is almost complete; that Government endorse unbundling of Layer 1 services to occur at the earliest of:

1. Voluntary unbundling of Layer 1 services by NBN Co;
2. Declaration of Layer 1 services by the ACCC;
3. A requirement to provide Layer 1 services being imposed by the Minister.

Highlight. It is unlikely that NBN Co will voluntarily offer Layer 1 services. While declaration of Layer 1 services would remain at the discretion of the ACCC, it is difficult to envisage it being in the long term interests of end users to disrupt NBN Co's operations by requiring physical unbundling to occur before the roll-out period has concluded.

10.3.4 ANTICIPATING THE EQUIVALENCE OF INPUTS OBLIGATION

Section 10.2 above discusses the definition of equivalence and recommends that strict equivalence of inputs be imposed on NBN Co only in circumstances where it is competing with its own customers.

The unbundling of Layer 1 services will lead to such a situation. To ensure that NBN Co does not favour its own active operations above active-layer competitors, it will be appropriate to mandate strict equivalence of inputs in relation to those services.

There are a number of steps NBN Co could take to facilitate its compliance with this obligation. While it is a commercial matter for NBN Co to determine which of these steps should be taken initially and which should be left until the time of unbundling, it is important that the Government provide NBN Co with sufficient guidance to ensure that these issues are given proper consideration.

To enable regulated pricing of Layer 1 services on the basis of actual costs, it will be important for NBN Co to have accounting systems in place that enable costs associated with passive and active infrastructure to be differentiated.

This should be considered for the upfront design of product definitions, business processes and OSS/BSS systems. On the basis of discussions with vendors, failure to prepare for physical unbundling in the design of systems and processes may lead to the preparations for unbundling stretching for a period of up to three years due to the need for a wholesale replacement of OSS/BSS systems, as opposed to around one year if adequate preparation is made upfront. By comparison, the additional time required to make such preparations would be limited to the design phase and less significant in the context of the

overall initiative. These factors notwithstanding, ultimately such decisions should be based on the NBN Co Board's commercial judgement, subject to Government oversight as shareholder.

Recommendation 77. That NBN Co be asked to demonstrate that in the design of its products, systems and processes it has anticipated the likely unbundling of Layer 1 services on an equivalence-of-inputs basis and future ACCC price regulation of Layer 1 services based on actual costs; that in doing so NBN Co have regard to the commercial impact and technical feasibility of upfront preparation compared with steps taken at the time of unbundling.

Advice. That the NBN Co Board consider measures to prepare for the future unbundling of Layer 1 services on an equivalence of inputs basis; that the NBN Co Board determine on a commercial and pragmatic basis which steps to take in advance and which to leave to the time of unbundling; that the NBN Co Board consider in particular:

1. Maintaining accounting structures that will enable future regulated pricing of NBN Co's Layer 1 services on the basis of cost by differentiating active and passive units;
2. Defining products and designing its business processes and OSS/BSS to maintain a distinction between passive and active products and divisions, so that NBN Co is capable of offering passive products to its active layer business and to third parties on an 'equivalence of inputs' basis.

10.4 Maintaining competitive outcomes through privatisation

Government has stated its intention to privatise NBN Co subsequent to the roll-out of the network. While privatisation will impose market disciplines on NBN Co, the company's exclusive focus on commercial performance following privatisation could compromise the Government's competition objectives.

At the time of privatisation, Government will naturally be focussed on the proceeds it will receive. There is a risk that a future government with this focus might undertake a privatisation at a time, or in a form, that would undermine the achievements of the NBN initiative. This risk can be mitigated, although not eliminated, by setting in place statutory mechanisms to ensure that competition objectives are not forgotten.

Privatisation should only occur when it can be implemented in a manner that establishes an appropriate market structure to preserve competition and when adequate regulatory safeguards are in place. These issues are addressed in five subsections:

- 10.4.1 Addressing the key risks of private ownership
- 10.4.2 Privatising only when the right competition settings in place
- 10.4.3 Keeping backhaul in public ownership
- 10.4.4 Enacting the trigger for separation and maintaining ease of separability
- 10.4.5 Setting ownership caps to support continued wholesale independence.

10.4.1 ADDRESSING THE KEY RISKS OF PRIVATE OWNERSHIP

The privatisation of NBN Co will significantly reduce the Government's subsequent capacity to influence its operations and market conduct. At the same time, pressure from private shareholders and the appointment of a new board representing them will create an incentive for NBN Co to focus on commercial returns to the exclusion of other objectives. This will enhance the need for competition safeguards.

The wholesale-only, open-access and equivalence principles will continue to apply and will help to ensure that NBN Co continues to provide a level playing field for retail competition. Ownership caps, discussed below in Section 10.4.5, will buttress this regime.

However, the risks of monopoly behaviour outlined in Chapter 9 will remain, and Government will be less able to address them. In the absence of appropriate regulatory measures, there could be a strong incentive for NBN Co to:

- Under-invest in upgrading and maintaining its network infrastructure, leading to degraded service standards and a failure to adjust to ongoing technological innovation;
- Seek monopoly rents by increasing prices, without commensurate improvement in value delivered;
- Even if basic service prices are regulated, use market segmentation to improve returns by extracting monopoly rents from premium products, reducing the take-up of premium services.

The enhanced risk of such conduct will need to be addressed through regulation at the time of privatisation.

- To ensure adequate investment in maintenance, detailed service standards will need to be imposed on NBN Co, as they are today on the existing CAN. The exact nature of these standards will best be determined and refined as the regulator is informed by experience during the roll-out and pre-privatisation process.
- Upgrades to keep pace with changing technology will be difficult to enforce. It is for this reason that we believe the privatisation of a monopoly Layer 2 service provider is undesirable, as outlined in 10.3 above. Passive infrastructure is unlikely to require an upgrade once unbundling has occurred and a competitive Layer 2 market exists.
- Pricing will continue to be monitored by the ACCC under the competition regulatory regime. It is obviously too early to assess the impact of the changes to Part XIC contained in the *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2009* which is before the Parliament. We merely note that upon privatisation, Government will lose its ability to influence pricing through other means and will be reliant upon the regulatory regime to prevent NBN Co from extracting monopoly rents.

10.4.2 PRIVATISING ONLY WHEN THE RIGHT COMPETITION SETTINGS IN PLACE

The construction of a publicly-owned NBN will restore to Government a degree of influence over the market structure and competitive dynamics of the telecommunications industry that it has not enjoyed since before the privatisation of Telstra.

The flawed nature of the current market structure has led Government to intervene in a substantial and unprecedented way to reform it. The privatisation of NBN Co will see Government relinquish its principal lever of intervention. If the structure is not right when Government withdraws from the industry as an owner, competition issues will become much more difficult to address.

In Chapter 9, we discuss a number of possible development paths for the telecommunications industry. As noted there, it is not possible to foresee with any certainty which of these will prevail. While we may speculate on future developments, it would be unrealistic to attempt to set in stone today the market structure that Government should establish at the time of privatisation over a decade hence.

The Implementation Study believes the most appropriate approach is to retain maximum flexibility in relation to future market structure. This does not mean doing nothing today. On the contrary, it requires that Government take three steps to prepare for privatisation by:

- Establishing tools that the government of the day can use to optimise the market structure;
- Ensuring that the lasting elements of the network infrastructure do not foreclose possible market structure solutions;
- Putting in place mechanisms to ensure a thorough review of competition issues immediately prior to privatisation.

First, Government should retain the ability to require structural separation of NBN Co and divestment of specified assets to optimise market structure at the time of privatisation. This is discussed and recommended in Section 10.3 in the context of establishing active-layer competition.

The flexibility of this tool should not be constrained—providing the Minister with a power to define structural separation will enable a decision to be taken in the context of the market structure that has been established at the time. By establishing this power in legislation today, a key hurdle is removed from the path of a future government seeking to preserve competitive outcomes.

Second, Government's power to determine the optimal post-privatisation market structure must not be compromised by passive infrastructure that forecloses likely solutions. This issue is discussed in Section 10.3. In particular, the construction of a passive network that cannot feasibly be unbundled at Layer 1 would preclude the possibility of full active-layer competition.

Third, it is critical that Government maintain competition objectives as a primary consideration when determining the timing and nature of privatisation. It is possible that a future government, keen to maximise privatisation proceeds, might neglect some of the market structure issues that Government today is committed to resolving. While this risk cannot be eliminated, it could be mitigated by the creation of a statutory requirement to hold an independent review by a body such as the Productivity Commission prior to privatisation to advise on issues of desirable market structure and implications for the nature and timing of privatisation. Such an inquiry would be consistent with the recommendations of the Hilmer Report into National Competition Policy.

Recommendation 78. That for the purposes of safeguarding competition outcomes in the event of privatisation of NBN Co:

1. Government commission an independent review into the telecommunications market structure and competition safeguards subsequent to the completion of roll-out and prior to privatisation;
2. The review assess the achievement of the competition objectives of the NBN initiative, and recommend any adjustments to regulatory and other arrangements required to maintain an effective wholesale model under private ownership (including, if appropriate, structural separation and/or divestment of interests in real property associated with the network);
3. Government determine its privatisation plans and schedule on the basis of that review.

10.4.3 KEEPING BACKHAUL IN PUBLIC OWNERSHIP

There are unique issues surrounding backhaul infrastructure that make privatisation challenging.

Uncontested backhaul will remain a bottleneck asset that will be very difficult to regulate. Data volumes will be constantly increasing, requiring upgrades in equipment to keep service quality high, with backhaul providers unlikely to be able to raise prices to levels required to generate economic returns. Stand-alone commerciality will always be challenging while ensuring affordability, so a commercial owner will rationally under-invest. These issues are discussed in Section 6.1.

Recommendation 79. That the independent review of competition prior to privatisation start with a rebuttable presumption that backhaul not be privatised.

Advice. That NBN Co Board ensure that NBN Co anticipate structural separation of its transit backhaul assets, including:

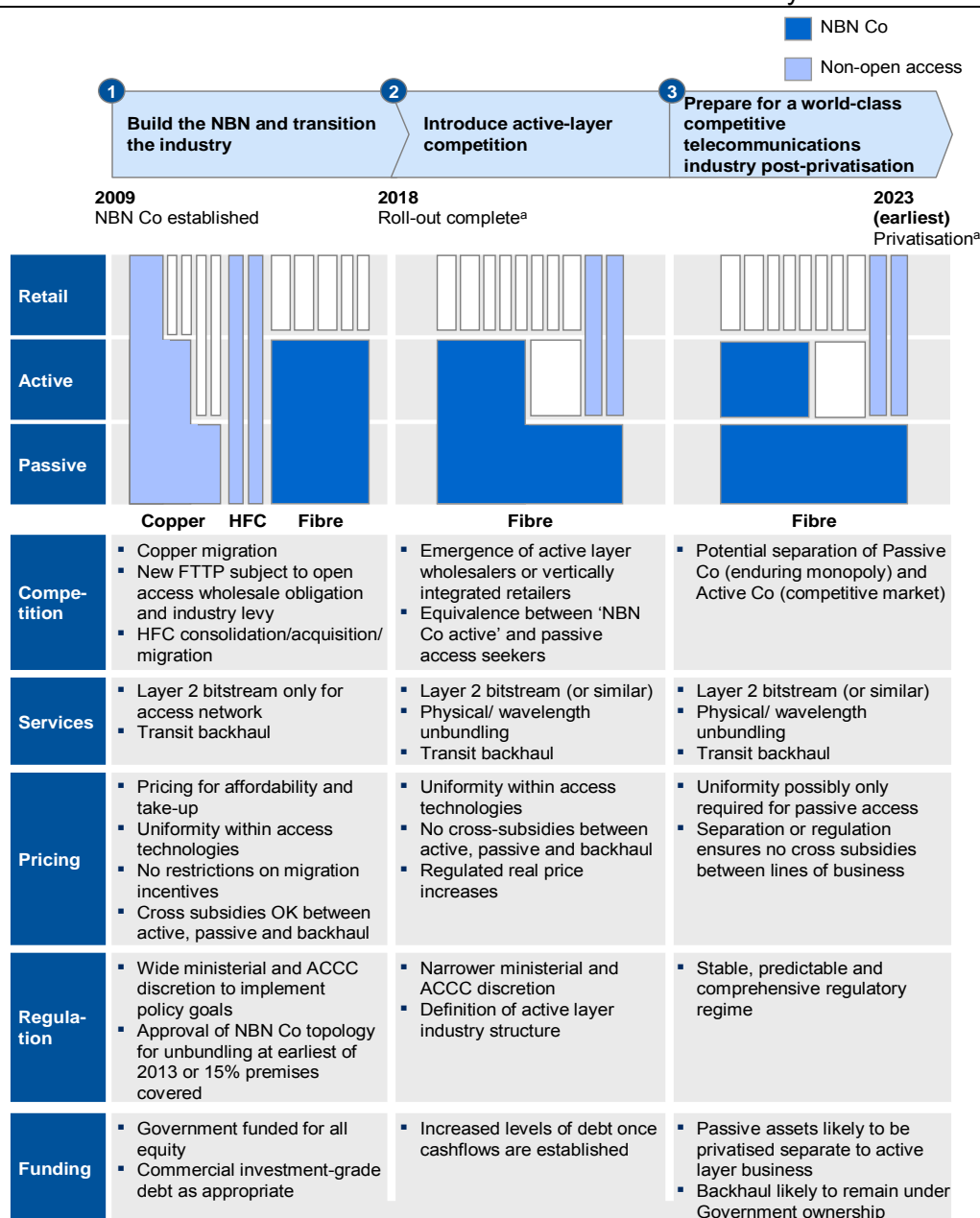
1. Maintaining accounting structures and asset registers designed to enable structural separation of NBN Co's transit backhaul assets;
2. Maintaining modularity of transit backhaul services;
3. Maintaining its interests in physical infrastructure directly associated with the transit backhaul network in a separate corporate entity.

10.4.4 ENACTING THE TRIGGER FOR SEPARATION AND MAINTAINING EASE OF SEPARABILITY

It is reasonably likely that the independent inquiry into the timing and nature of privatisation would recommend a market structure in which NBN Co's passive-layer business is privatised as a structurally separate entity from its active-layer operations (Exhibit 10–7). As discussed in Chapter 8, this may well align with the optimal way to

structure the privatisation to maximise appeal to different investors and therefore privatisation proceeds. NBN Co is also likely to be required to divest its transit backhaul assets to Government consistent with the view that these should remain publicly-owned. It is also possible that the inquiry might recommend the divestment of NBN Co’s duct, pit, pole and exchange infrastructure. This last option may be a valuable fallback to enable infrastructure competition if NBN Co’s network topology is not conducive to active-layer competition.

Exhibit 10–7. Potential evolution of fixed-line access network industry structure



a. Copper and HFC networks still likely to be in service
 Note: Layer 2 and layer 3 have been simplified here into 'Active' and 'Retail' layers
 SOURCE: Implementation Study

We believe it is appropriate that the power to implement such steps be included in legislation at an early stage:

- Any uncertainty over future measures to mandate or otherwise effect structural separation would undermine confidence in that outcome amongst telecommunications stakeholders, including NBN Co itself;
- Legislative provision of powers to implement the recommendations of the independent review will make it harder for a future government to engage in premature and/or inappropriately structured privatisation;
- Stakeholder concerns over the creation of a ‘new Telstra’ will be alleviated by the existence of concrete measures to give effect to the market structure recommended by the independent review.

We envisage that there would be provisions in NBN Co legislation empowering the Minister to trigger structural separation of NBN Co, as defined by a legislative instrument at the time, and to require NBN Co to divest assets or classes of assets specified in the instrument. A non-disallowable instrument would be preferable to provide certainty.

Should this recommendation be accepted by Government, the Implementation Study believes it would be desirable for the Minister to inform NBN Co and other telecommunications stakeholders as soon as possible of the intention to establish a mechanism for future separation. This would ensure that decisions NBN Co makes in the period prior to the introduction of the relevant licence condition and legislative triggers are consistent with future separation.

Recommendation 80. That the Minister be empowered to issue an instrument ordering structural separation of NBN Co at one or more levels (such as between active and passive layers), with the nature of separation defined by the instrument.

Recommendation 81. That the Minister be empowered to issue an instrument ordering NBN Co, or a company formed from structural separation of NBN Co, to divest its interests in defined assets or classes of asset (for example: access-network ducts, pits and exchanges; transit backhaul assets).

Recommendation 82. That NBN Co be required to maintain its interests in real property directly associated with the access network, including ducts, pits, poles and exchanges, in a separate corporate entity to facilitate divestment in the event that it is required in the future.

Advice. That NBN Co Board prepare for future structural separation to the extent that commercial and practical considerations favour the implementation of measures now rather than at the time of separation. In particular, NBN Co should maintain asset registers to enable easy separation of active, passive and backhaul business units.

10.4.5 SETTING OWNERSHIP CAPS TO SUPPORT CONTINUED WHOLESALE INDEPENDENCE

NBN Co will have substantial power in the wholesale access market. It is critical that this market power does not result in anti-competitive outcomes downstream. In particular, other Carriers, Carriage Service Providers (CaSP) and Content Service Providers (CoSP) must not be able to exert undue influence on NBN Co to stifle competition or innovation at the expense of their competitors or end users. The benefits of a wholesale-only network would be undermined if a customer of the network was able to exercise effective control, or exert undue influence, on NBN Co.

Ownership of equity is the most direct means of obtaining control or influence. Therefore, ownership caps which restrict ownership of NBN Co by other Carriers, CoSPs and CaSPs are necessary to protect the Government's objectives of a wholesale-only, open-access network providing equivalent access.

In Chapter 8, we recommended that Government maintain full ownership of NBN Co until NBN Co has established a stable and proven outlook following completion of network roll-out. If this recommendation is accepted, it would be sufficient to establish any ownership caps in the constitution of NBN Co at any point in the intervening period. To eliminate the risk of such restrictions in NBN Co's constitution being overturned in the future or becoming the subject of litigation however, the Implementation Study believes ownership caps should be legislated prior to the acceptance of private equity investment, whether or not that investment occurs in line with our earlier recommendation.

The level of control afforded by a particular percentage equity stake varies based on a host of additional factors including industry structure, the financial health of the target company, the availability of alternative sources of capital, additional levers of influence and even the personalities of key directors and executives in the target company and the owner.

If one company becomes the largest customer of NBN Co by a substantial margin (which is a distinct possibility if Telstra does become a customer) then this customer will already have a degree of influence through its buying power. Once Government privatises NBN Co, there may be no majority shareholder. In that case, a shareholding of, for example, 15 percent might be the largest shareholding, which would give that shareholder much greater influence than if there was a majority shareholder with a stake of 51 percent or more, or two other shareholders with 20 percent each. Mechanisms to prevent customers exercising undue influence need to be considered against this backdrop.

The risk of undue influence being exercised by NBN customers and thus compromising the objectives of maintaining a wholesale-only, open-access network providing equivalent access to NBN customers must be weighed against the commercial implications of setting a lower ownership cap and the ability to use non-ownership

restrictions on control to mitigate the prima facie risk of a higher cap. It also needs to be seen in the context of other competition safeguards that will be in place—most obviously, equivalence and open access. We see two specific commercial considerations: the first regarding the cost of capital; the second around preserving flexibility for negotiations.

Once the market seeks to attribute value to NBN Co through the privatisation process, the removal of any opportunity for a Carrier, CaSP or CoSP to gain equity (and other) control will be a value impediment, even though the caps would be specific to a certain class of investors.

Examples where blanket caps have increased a company's cost of capital are Santos in the 1980s where a 15 percent cap translated into status as a market laggard and Air Canada where removal of the company's 15 percent cap on individual domestic ownership was required to expand opportunities for investment and thereby lower its cost of capital. One could imagine a scenario in which financial markets are frozen and a privatised NBN Co needs capital to upgrade its network. Its customers would have strong incentives to invest in NBN Co to ensure the health of their own business, without being motivated to gain control of NBN Co.

Ownership caps on NBN Co equity

Ownership caps on NBN Co will play an important role, in conjunction with other measures, in achieving the Government's policy objectives of the NBN operating as a wholesale-only, open-access business. While Section 50 of the *Trade Practices Act 1974* can be used to prevent acquisitions having the effect of substantially lessening competition, this places a substantial evidentiary burden on the ACCC. In light of the threat posed by vertical integration to the Government's central objective of fostering a competitive telecommunications market through structural separation, explicit ownership caps are appropriate.

We recommend the setting of caps on individual ownership by Carriers, CaSPs and CoSPs of NBN Co prior to the first consideration of private equity in NBN, shares to mitigate the risk of undue influence being exerted on NBN Co by one of its customers. These ownership caps should extend to an entity which is a customer of NBN Co but falls outside the definition of a Carrier, CoSP or CaSP. The caps should relate to individual customers, rather than the aggregate shareholding of competing customers, as the principal danger is that NBN Co may show preference to a particular customer. By contrast, a significant shareholding by a diverse range of customers may actually be beneficial, leading to greater responsiveness to emerging industry trends.

We believe that the Government's policy objectives can be achieved by setting individual ownership caps for carriers, CaSPs and CoSPs of no more than 15 percent, in conjunction with other measures.

Setting ownership caps is an inexact science, and needs to be considered in conjunction with other forms of influence such as monopsony power and the relative size of other shareholdings. Most relevant precedents are in the range of 5 percent to 15 percent, with 20 percent being the relevant threshold for takeover provisions under the *Corporations Act 2001*, suggesting that this is a point at which the risk of ownership conferring control is qualitatively increased.

The methodology we have used involves researching national and international ownership cap precedents, considering industry feedback and the requirements of the Government's objectives. On the basis of our research, most precedents are in the range of 5 percent (the minimum that should be considered) to 15 percent. We note that caps of 5 percent typically apply to holdings further down the value chain (i.e. holdings by suppliers in their customers). This is because an interest in a customer's company immediately creates a direct financial interest in the performance of that customer, and an incentive to discriminate in favour of that customer. There is a deliberate asymmetry in some example legislation, which allows a higher cap in shareholdings by customers in their suppliers (Exhibit 10–8).

Exhibit 10–8. Domestic and international examples of ownership caps

Equity cap	Domestic and international illustrations
5 percent	<ul style="list-style-type: none"> ■ <i>Airports Act 1996</i> restricts airlines from owning more than 5 percent of airport operator companies. Substantial shareholder notification rules of the <i>Corporations Act</i> apply. ■ <i>Victorian electricity sector</i>: under the <i>Electricity Industry Act 2000 (Vic)</i> an owner of a licensed Victorian generation, transmission or distribution licensee can have a greater than 5 percent stake in no more than one other generation, transmission or distribution licensee.^a
10 percent	<ul style="list-style-type: none"> ■ <i>Domestic takeover rules</i>: under these rules, 10 percent constitutes a blocking stake since compulsory acquisition of 10 percent of equity can be mandated where a bidder has achieved 90 percent bid approvals from voting equity holders. ■ <i>Norwegian financial sector</i>: An acquisition of more than 10 percent (and thereafter 20 percent, 25 percent, 33 percent and 50 percent) in a Norwegian financial institution is subject to licence from the Norwegian government. ■ <i>Cyprus banking sector</i>: Cypriot Central Bank's prior approval is necessary before any individual person or entity, (Cypriot or foreign) can acquire over 9.99 percent of a bank incorporated in Cyprus.
15 percent	<ul style="list-style-type: none"> ■ <i>Airports Act 1996</i> restricts cross-ownership between paired operator companies to no more than 15 percent. ■ <i>Broadcasting Services Act 1992</i> restricts cross-ownership to no more than 15 percent of more than one commercial television broadcasting licence in the same licence area. ■ <i>Medibank Private Sale Act 2006</i> proposed a maximum limit of a 15 percent stake that any entity can hold in Medibank Private companies during the 5 year period following the designated sale day.

Equity cap	Domestic and international illustrations
	<ul style="list-style-type: none"> ■ <i>Foreign Acquisitions and Takeovers Act 1975</i> contains a Foreign Investment Review Board (FIRB) compulsory notification / approval threshold. A substantial foreign interest occurs when a single foreigner (and any associates) has 15 percent or more of the ownership or several foreigners (and any associates) have 40 percent or more in aggregate ownership of any corporation, business or trust. ■ <i>Financial Sector (Shareholdings) Act 1998</i> restricts a person's ownership in a particular financial sector company to no more than 15 percent. The treasurer has the discretion to approve a higher percentage on national interest grounds. ■ <i>Santos</i>: Until 2007, under South Australian legislation there was a 15 percent ownership restriction on the oil and gas company Santos to aid share price and company growth.^b ■ <i>Air Canada</i>: Government removed the 15 percent restriction on individual domestic ownership of shares in Air Canada, to offer the private sector opportunities to invest.
20 percent	<ul style="list-style-type: none"> ■ <i>Corporations Act</i> takeover rules apply above 20 percent. ■ <i>Canadian financial sector</i>: one shareholder (either an individual or an entity) may own up to 20 percent of a large chartered bank's shares with a limit for non-voting shares of 30 percent. The Bank Act restricts any one shareholder from having control over any of the large banks.^c ■ <i>Petro-Canada Public Participation Act (1991)</i>: restricts a single shareholder from holding more than 20 percent of stock in Petro-Canada, a Canadian state owned oil and gas company. ■ <i>Electricity Industry Act 2000 (Vic)</i>: the owner of a licensed Victorian generation, transmission or distribution licensee cannot have >20 percent interest in another generation, transmission or distribution licensee. ■ <i>2009 Victorian tram and rail re-franchising</i>: the Victorian Government is currently re-franchising the rail and tram public transport services. Under new franchise contracts the owner of the train franchise cannot own more than 20 percent of the tram franchisee and vice versa.^d
30 percent	<ul style="list-style-type: none"> ■ <i>Singapore broadband</i>: 30 percent ownership restriction applies to equity interest in NetCo if the holding entity is involved in any other part of the telecommunications sector value chain.^e
<p>a. Furthermore under s.68 of the <i>Electricity Industry Act 2000 (Vic)</i>, a person (not a licensee) can hold a 20% or more interest in no more than one generation, transmission or distribution licensee and a 5% or more interest in no more than two licenses. In addition to the above limits, distribution licensees are precluded from controlling more than 200 MW of generation capacity</p> <p>b. The cap was imposed in 1979 to protect the Company from a potential takeover from Alan Bond, which threatened to divert SA gas supplies away from state.</p> <p>c. Previously, no one shareholder could have more than 10% of a bank's shares</p> <p>d. Whilst public transport fares are set by the State, the Government has sought to prohibit higher levels of cross-ownership to foster non-price competition such as quality and reliability of services. It is noted that due to the franchise nature of the transaction these caps are contained in the franchise contracts rather than legislation</p> <p>e. The Singapore model splits the network into NetCo (which owns the infrastructure) and OpCo (the operating company), which is being introduced to competition from a second OpCo. It is also noted that the Singapore Government may have more influence, due to the degree of ongoing informal supervision, to mitigate the potential risk of the higher cap interfering with policy objectives than the Australian Government would post-privatisation when the Government's shareholding is sold</p> <p>Source: Implementation Study</p>	

The Implementation Study also considered submissions received by the Department from key industry participants regarding ownership restrictions (Exhibit 10–9). Industry feedback has been in favour of the imposition of ownership restrictions on NBN Co with a focus on equity ownership caps with proposals at 5 percent, 15 percent or 20 percent. Telstra did not address ownership caps in its submission.

The Implementation Study believes that while setting the cap at the lowest practical level of 5 percent would represent the most conservative path relative to limiting undue influence by market participants, based on our review of precedents the cap in practice could be set at up to 15 percent and still achieve the Government’s policy objectives. Cap levels above 15 percent would be inconsistent with precedents, which would be a concern given the policy goals, the history of the industry and the monopsony power that Telstra

Exhibit 10–9. Submissions on equity ownership caps

Stakeholder	Submission on equity ownership cap
Telstra	<ul style="list-style-type: none"> Not addressed in its submission, except for need to operate as any other commercial entity and ensure separation between Government role as shareholder and regulator.
Optus	<ul style="list-style-type: none"> 20 percent cap on voting equity owned by any retail telecommunications provider. Cap should continue for lifetime of NBN Co even after Commonwealth has sold down and including any expansions of capital.
Macquarie Telecom	<ul style="list-style-type: none"> Propose as a principle, retail service providers and other carriers should not be allowed to have a shareholding in NBN Co. However, if assets are vended in, up to 5 percent shareholding in NBN Co would be permissible. If above cap is not sufficient to cover asset value, preferred alternatives are, in order of preference: (1) Cash only; (2) Non-voting shares up to 20 percent and (3) unlimited non-voting shares. In-principle support for direct issue of shares to Telstra shareholders in exchange for vend in of Telstra assets.
Seven Network	<ul style="list-style-type: none"> Private interests should be prevented from having control of NBN Co. Ownership interests in NBN Co should be limited to 5 percent in relation to companies active in any related industry sector, and 15 percent in the case of public or private equity investors that do not exercise control of a business active in any related industry sector.
Unwired	<ul style="list-style-type: none"> No private sector investor should be able to own (or control) more than 5 percent of the shares, or no more than 15 percent for an investor who does not exercise control of a business active in a related sector (in line with Seven Network).
ISOC AU	<ul style="list-style-type: none"> Propose no one organisation that is a carrier, a carriage service provider or a content service provider be allowed to hold more than a 5 percent shareholding in NBN Co.

Source: Implementation Study; various submissions to the Department. It is also noted that a number of stakeholders not identified in this table addressed ownership caps in their submissions, including the CCC, ATUG, DEIWG, VHA and ACTU

will enjoy. Setting a much lower cap, for example 5 percent, may restrict funding options and therefore NBN Co's value at privatisation.

The ownership caps must be supported by appropriate tracing provisions and adequate penalties and powers:

- **Tracing provisions:** tracing provisions are necessary to ensure that the policy intention of a cap is not breached by individuals, groups or their associates. Relevant precedents for this exist in, for example, the *Foreign Acquisitions and Takeovers Act 1975*, the *Airports Act 1996*, *Telstra Corporation Act 1991* and the *Medibank Private Sale Act 2006*. The scope of application of tracing provisions may be quite broad, for example, to include any agreement, arrangement, understanding, promise or undertaking, whether express or implied and whether or not enforceable as is contained under the *Medibank Private Sale Act 2006*. We believe this is an appropriate precedent to adapt to the ownership caps applying to NBN Co.
- **Penalties and powers:** the Implementation Study recommends following existing precedents and practices contained in legislation for penalties and powers. For example, the *Airports Act 1996* stipulates that, should an unacceptable ownership situation arise (i.e. breaching ownership cap), the Federal Court of Australia can make orders as it considers appropriate, such as ordering the disposal of shares, restraining exercise of any rights attached to shares or prohibiting/deferring payment of any money due in respect to shareholdings etc, for the purpose of ensuring that the situation ceases to exist. Where fines are appropriate the level of such fines will need to be calibrated such that they are proportionate to the severity of contraventions under the legislation to mitigate any reluctance by a court to penalise. In practice, it is probable that only a small number of customers will ever be in danger of breaching the cap. Accordingly, to avoid the practical complexity of NBN Co attempting to maintain a register of shareholdings traceable to customers, we suggest that the ACCC be given a power to compel a declaration from any person as to the shareholding in NBN Co attributable to them under the tracing provisions, on both a periodic and ad-hoc basis, with appropriate penalties for false disclosure. The ACCC would be authorised to apply to the Federal Court for appropriate orders in circumstances where it believed a breach had occurred. Given that the ACCC is responsible for monitoring competition in the telecommunications market, it is the agency most likely to become aware of behaviour that might signal a potential breach.

The ownership caps should be legislated prior to any private investment in NBN Co.

Recommendation 83. That an individual ownership cap (including associated interests) be set of no more than 15 percent each on Carriers, CoSPs and CaSPs in relation to shareholdings in NBN Co, subsidiaries of NBN Co, or any company resulting from structural separation of NBN Co; that practical control tests be imposed in relation to such investors; that a public inquiry be required before altering these caps.

Other ownership caps

Further to the analysis of individual ownership caps discussed above, the Implementation Study examined other types of ownership caps that may be applied:

- The Implementation Study considered whether an aggregate cap should apply to Carrier/CoSP/CaSP entities. Aggregate caps are used in relation to foreign ownership under a number of the precedents that examined (e.g. Qantas Sale Act). However, given the competitive dynamics of the telecommunications industry, we consider it unlikely that a coordinated coalition of Carrier/CoSP/CaSPs promoting anti-competitive interests would emerge, and that individual caps will provide sufficient safeguarding.
- As discussed in Chapter 8, private equity investment should not occur until at least after completion of network roll-out, including vending in assets in return for equity.
- The Implementation Study believes ownership-cap restrictions on entities that are not Carriers, CoSPs, CaSPs are not necessary. It will be important to enable private sector investment to meet NBN Co's significant post-privatisation funding requirements. Furthermore, investment by any such entity will not result in direct vertical integration and therefore would be unlikely to compromise the Government's objective of equivalence. Such restrictions should be left to existing takeover rules.

Non-ownership control restrictions

In addition to the ownership restrictions discussed above, the Implementation Study considered additional permanent control restrictions to mitigate risks of improper influence.

On balance, the Implementation Study considers that restrictions on the voting rights of shares owned by Carriers/CaSPs/CoSPs should not be constrained; nor should they be prohibited from Board representation. Ownership caps make such protections redundant, and these investors have a legitimate interest in the conduct of NBN Co. Their inclination to invest would likely be reduced if such protections were implemented, making more difficult NBN Co's capital raising task at privatisation.

However, we believe that practical control tests (i.e. de facto control as distinct from direct control tests) should also be included in legislation. Such provisions would examine whether other entities are in a position to exercise indirect control over NBN Co through either formal or informal means. Practical control provisions are part of the *Airports Act 1996* and the *Financial Sector (Shareholdings) Act 1998*. For example, in addition to direct control, the *Airports Act 1996* contains a provision where the Minister may declare a person to have practical control of an airport-operator company if:

- The directors of an airport-operator company are accustomed or under an obligation, whether formal or informal, to act in accordance with the directions, instructions or wishes of a person; or a person is in a position to exercise control over an airport-operator company; and
- The person does not have any type of stake in the company; or if the person has one or more types of stake in the company—each of those stakes is not more than 15 percent.

Provisions to control senior executives and Board members moving to Carriers, CaSPs and/or CoSPs within a reasonable period have been suggested (these provisions would be based on overseas best practice in this regard and would be informed by consultation with Commonwealth agencies such as the ACCC). However, on balance we would advise against such restrictions. They would significantly restrict NBN Co's ability to attract talented personnel, which will be critical to its success. The Implementation Study believes the intent of these restrictions—to prevent confidential information about NBN Co's operations and those of its customers passing to a customer and providing that customer with a competitive advantage—should be addressed instead through ongoing confidentiality obligations.

Foreign ownership restrictions

The Implementation Study sees no reason to constrain foreign ownership beyond existing legislation. Consistent with Government's intention for NBN Co to be privatised, access to foreign investors will be important. NBN will represent critical infrastructure, however ensuring the company is subject to the existing foreign ownership review mechanisms under the *Foreign Acquisitions and Takeovers Act 1975* (FATA) should provide sufficient protection.

FATA applies to a corporation in which a natural person not ordinarily resident in Australia or a foreign corporation holds a substantial interest, which is defined as 15 percent or more of the ownership, or several foreigners and any associates with 40 percent or more in aggregate of the ownership. Under the FATA, a foreign investment application may be blocked where it is contrary to the national interest.

A relevant precedent in relation to critical telecommunications infrastructure is the acquisition of Cable & Wireless Optus Ltd (Optus) by Singapore Telecommunications Ltd (SingTel) which was subject to review by FIRB. The existing frameworks proved adequate to allow this investment despite Optus' ownership of potentially sensitive assets such as satellites and terrestrial telecommunications links used for military applications.

There are precedents, however, where Government has exercised its discretion to impose foreign ownership restrictions separate to the FATA framework including:

- The *Telstra Corporation Act 1991*, which contains foreign ownership restrictions including:
 - A limitation on total foreign ownership of more than 35 percent
 - A limitation on foreign ownership by an individual including that individual's associated interests to no more than 5 percent
- The *Airports Act 1996* contains a 49 percent limit on foreign ownership of airport-operator companies. This effectively defines a first-in, best-dressed regime whereby if the foreign ownership level is close to the cap, any additional foreign parties seeking to invest will be prohibited from doing so.
- The *Qantas Sale Act 1992* imposes certain foreign ownership restrictions on the ownership (including joint ownership) and issue of Qantas shares, including (but not limited to) restrictions on:
 - Foreign persons having no more than 49 percent of the total value of the issued share capital
 - Foreign airlines having no more than 35 percent of the total value of the issued share capital
 - Any one foreign person having no more than 25 percent of the total value of the issued share capital.

Consideration of imposing such restrictions should be subject to appropriate legal advice as the Commonwealth needs to comply with its international obligations with respect to any restriction it may wish to put in place. The precedents outlined above imposed such restrictions prior to the implementation of the Australia–United States Free Trade Agreement (AUSFTA). The AUSFTA deems acquisitions by US investors of interests in Australian businesses, valued below specified monetary thresholds, exempt from the need to obtain FIRB approval. A threshold regime has also been enacted for non-US investors.

The Commonwealth may also consider different limits for offshore sovereign wealth funds, which are a potentially important source of infrastructure funding. We note that under recent reforms, sovereign wealth funds that wish to invest in Australia face additional requirements to those of other investors in relation to FIRB approval, including: the need to demonstrate independence; adherence to the law and common

standards of business behaviour; the impact on competition; the impact on Australian Government revenue and other policies; national security compliance; and the impact on Australian business, the economy and the broader community. These considerations will need to be balanced by the need to secure sufficient sources of funding and the Government may wish to streamline processes to deal with these issues.

Should the Commonwealth wish to impose further restrictions on foreign control of NBN Co, non-ownership restrictions which it may consider include:

- Board composition;
- Head office location;
- Place of incorporation;
- Trading exchange locations (primary and secondary).

As an example of the use of non-ownership restrictions, the *Medibank Private Sale Act 2006* required that for five years from the designated sale day, the Medibank Private companies remain under Australian management, maintain an Australian base of operations and remain incorporated in Australia. It also required that a majority of the directors of a Medibank Private company during that period be Australian citizens.

However, as noted at the beginning of this section, we do not see any reason to recommend additional restrictions on foreign ownership and control beyond those included in the FATA.

10.5 Preserving a vibrant mobile market structure

The announcement of the NBN initiative has given rise to significant public commentary on the role of wireless broadband services in Australia's broadband future. It is true that wireless technologies continue to advance, leading to expectations of ongoing growth in services. However, the technical capabilities of fibre are superior and hence the market is likely to see a bifurcation of fixed (fibre) and wireless usage in the future, making them largely complementary technologies.

In the interim, wireless services are likely to have a dampening effect on NBN take-up rates. Nevertheless, given the likelihood of the NBN becoming the predominant fixed-line network, a vibrant and competitive wireless industry is a healthy counterweight. Independent of such near-term commercial considerations, infrastructure-based competition will serve the long-term interests of end users.

For these reasons, it is important that NBN Co not make decisions that constrain the development of the wireless broadband industry, such as refusing to supply wireless operators with services within the fibre footprint where those services could be provided using NBN Co's network infrastructure.

Recommendation 84. That Government instruct NBN Co to provide fit-for-purpose access services to wireless base stations within the FTTP footprint on a commercial basis where requested by mobile operators; these access services to include transit backhaul where required to reach an NBN Co POI.

As discussed in Section 6.3.4, unless granted temporary relief by the Minister, NBN Co should provide transit backhaul as a separate service to other network operators, including mobile operators. Given NBN Co already would be providing the transit backhaul where mobile operators interconnect at relevant POIs, the only impact of this requirement is to ensure that the NBN access service is priced relative to access alternatives, and not based on leveraging NBN Co's control over the transit backhaul bottleneck.

Similarly, as discussed in Section 5.4, where requested by the NBN fixed-wireless provider(s) resulting from the public tender process, NBN Co should extend fibre transit backhaul links to existing towers and new tower sites needed to provide coverage to the designated footprint. This will remove one of the largest barriers to expanding wireless coverage areas beyond the fibre footprint: lack of access to competitively priced backhaul at adequate capacity. This transit backhaul should be priced at the same rates as transit backhaul in the fibre footprint and, consistent with NBN Co's open-access requirements, would be offered to other operators in addition to the fixed-wireless NBN network provider(s).