nbn co Submission to the *Productivity Commission Issues Paper—Telecommunications Universal Service Obligation*

29 July 2016

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Contents

Executive Summary

The current USO was introduced at a time when industry conditions justified addressing existing market failures. Significant changes over the past two decades in technology, government policy, industry structure, and consumer behavior mean that these market failures have been, or soon will be, addressed.

The establishment of **nbn** is a significant policy initiative that will play a part in all Australians having access to broadband services. Once the **nbn**™ network is complete, **nbn** will have obligations to provide wholesale access services that result in retail broadband services being available to all premises. There are no further policy changes necessary to ensure that Australians will have access to broadband services given current policy and legislative settings.

In relation to the current retail voice USO, the market failure that it was intended to address has largely been solved by the expansion of mobile networks and widespread adoption of mobile telephony by Australians. At least 98.5% of the population has access to voice services provided by two mobile networks. As demonstrated by consumer behavior, these services are a viable substitute for fixed line voice services, and should be seen as an alternative means of delivering the baseline service for voice.

In **nbn**'s view, the USO policy focus should be on addressing availability of voice services in areas not currently served by mobile networks.

Rather than assuming the currently defined USO "standard telephone service" continues in its current form, a "first principles" approach should be used to determine what essential features for voice services are necessary in Australia today. These "baseline service" features should be described in a technology agnostic manner to support economically efficient delivery.

Where vulnerable groups have needs that cannot reliability be met by the market, regulatory intervention is appropriate. However, features that are needed over and above those delivered by the baseline service should be transparently identified and funded. Otherwise, there will be a risk of over-investment in the baseline service. The funding for these specific needs could come from a variety of sources, and be provided either directly to end users or to the service providers who deliver the additional capabilities.

The appropriate funding arrangements for the universal service regime also need to be reviewed in this context. **nbn** appreciates that this process will present challenges, given the long-term nature of the current arrangements, but believes that this work needs to start now so that a reformed approach is developed before the **nbn** rollout is complete, as it will likely take some time to implement. In **nbn**'s view, these funding arrangements should directly support entities that incur loss-making activities involved in the provision of USO services.

nbn is playing a transformative role in the delivery of telecommunications services in Australia. However, it is important to recognise that **nbn** has planned, designed and deployed its networks in regional Australia specifically to deliver its mandate for ***broadband*** service availability. In doing so, it has dimensioned and planned its network investments on the basis that voice-only services in regional Australia would continue to be provided by Telstra under its contractual arrangements with the Commonwealth.

Any shift in the scope of what **nbn** is expected to deliver, in support of a future USO policy, would need to transparently identify how that additional scope would be funded. **nbn** incurs significant losses from providing non-commercial services outside its fixed line footprint, and an increase in the scope of what is delivered there would generate additional losses that would need to be recovered. It should not be assumed that **nbn** is able to expand its mission scope without addressing its funding.

This submission addresses a number of the key issues that arise in the transition to a USO regime that better reflects industry structural changes, including as a result of the introduction of **nbn**, as well as changes in technology and consumer behaviour.

Section 1 provides an outline of **nbn**'s role in the telecommunications industry, and how it will play a major part in broadband services being available to all Australians, without the need for further regulatory intervention.

Section 2 describes how the current USO for voice services is not delivering the most efficient outcomes, and should be redesigned. Inherent in this process is the need to identify a new baseline voice service that can be provided in a technology agnostic manner, including by mobile networks, which should allow more efficient delivery of voice services. The need for regulatory intervention in relation to voice services should be significantly smaller than it is today.

This section also discusses the issues associated with the use of **nbn**'s fixed wireless and satellite networks for the delivery of voice services, including the implications of any expansion of the mandated scope of **nbn**'s activities.

Section 3 addresses the needs of vulnerable groups that require features and capabilities beyond that delivered by the redefined baseline service. These specific capabilities need to be transparently identified and specifically funded.

Section 4 considers a number of issues relating to the funding of the current and any future USO regime. In particular, there is a need to fund infrastructure providers *transparently* for the provision of non-commercial services that are inputs to retail USO services. There are also important transitional issues to address in the shift from the current industry structure to one where **nbn** has completed its rollout, which need to be addressed before that rollout is completed.

In preparing its response to the Productivity Commission's review of the USO, **nbn** has engaged Competition Economists Group (**CEG**) to consider the need for a USO in Australia, and matters that the Government should take into account if a USO is necessary. This report is attached to **nbn**'s submission.

1. **nbn**'s role means a broadband USO is not required

nbn was established to implement two key policy objectives—to enable the delivery of broadband services to all Australians, and to provide the vehicle for significant structural change in the telecommunications industry to encourage retail competition. Once the **nbn**™ network is complete, all Australians will have access to retail broadband services. At the same time, legislative settings and the design (including pricing) of **nbn**'s products will ensure that there are no impediments to a competitive retail market for broadband services being established wherever Australians live or work. As a result, there is no rationale for additional regulatory intervention in relation to the supply of broadband services to all Australians.

1.1 Establishment of **nbn**

The Government established **nbn co** as a Government Business Enterprise (**GBE**) in April 2009 to design, build and operate a new superfast national broadband network to provide access to high speed broadband to all Australian premises. **nbn** was also established to deliver a wholesale-only, open access telecommunications market structure, transforming the competitive dynamics in the Australian telecommunications industry.

1.2 **nbn**'s network will provide ubiquitous broadband availability

nbn has always been expected to deploy infrastructure to ensure that broadband services are available at all Australian premises. This aim has been enshrined in the Statements of Expectations (**SOE**) issued to **nbn** by its Shareholder Ministers. The latest, the April 2014 SOE,[1] requires the **nbn**™ network to be capable of providing download data rates of at least 25 Mbps to all premises in Australia, and at least 50 Mbps to 90% of fixed line premises as soon as possible. **nbn** has discretion regarding the choice of network technology to use in any given area, as long as these speed and coverage requirements are met, and it ensures upgrade paths are available as required.

In its fixed line footprint (expected to be around 90% of premises), **nbn** is currently using Fibre to the Premises (**FTTP**), Fibre to the Node (**FTTN**), Fibre to the Basement (**FTTB**) and Hybrid Coaxial Fibre (**HFC**) technology to connect end users. It has also deployed Fixed Wireless (**FW**) and Satellite networks to provide services in regional and remote areas not connected to the **nbn** fixed line network.[2] As at 30 June 2016, the **nbn**™ network had passed 2.9 million premises and is expected to be available at 9.1 million premises by mid-2019.[3]

Once the **nbn**™ network is completed, **nbn** will be required to provide connections wherever its network reaches. In accordance with the Government's Telecommunications Infrastructure in New Developments policy,[4] **nbn** anticipates that it will have a statutory infrastructure provider (**SIP**) obligation, which will require **nbn** to be the broadband infrastructure provider of last resort for all of Australia once its network rollout is completed, except where Telstra needs to provide infrastructure to fulfil its USO to provide a voice service, or in areas specifically served by competing carriers.[5] **nbn**'s understanding is that this obligation will effectively enshrine in legislation the mandate that **nbn** has already been implementing under its various Statements of Expectations.

As a result, **nbn** has planned, designed and deployed its network on the basis of the existing and foreshadowed regulatory framework—including the SOE and Telstra's arrangements with Government for the current USO, which require Telstra to maintain its copper network outside **nbn**'s fixed line footprint, and to provide

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[1] Department of Communications and the Arts, *Statement of Expectations for NBN Co* (2 May 2014) <https://www.communications.gov.au/departmental-news/statement-expectations-nbn-co>.
[2] Further details on these networks are contained in **nbn**'s Network Design Rules: nbn, *Network Design Rules* (30 June 2016).
[3] **nbn** estimates that 9.1 million will be approximately 76% of the total footprint: nbn, *Corporate Plan 2016* (August 2015), 23.
[4] Australian Government, *Telecommunications Infrastructure in new development A new approach to competition*, (1 March 2015) (**TIND Policy**), 22.
[5] TIND Policy, 22-24.

alternative infrastructure to support USO services where necessary. As Telstra has responsibility and is funded (by both Government and industry) to perform these activities, it would be an economically inefficient use of public funds to provision the **nbn**™ network to deliver these services as well.

1.3 **nbn** provides inputs to retail services

nbn is required by legislation to operate as a wholesale-only, open access, non-discriminatory operator. In doing so, **nbn** has developed wholesale products that Retail Service Providers (**RSPs**)[6] use as inputs to their own retail products. The key input to RSPs is the **nbn** Ethernet Bitstream Service (**NEBS**), which is an Ethernet-based Layer 2 virtual connection that carries traffic between the user-network interface (**UNI**) at each premises and a point of interconnection (**POI**). The key **nbn** components acquired by RSPs as inputs to their retail services are access virtual circuits (**AVC**s), which are the links to each individual premises, and connectivity virtual circuits (**CVC**s) which aggregate traffic from AVCs at each POI.

Competing RSPs acquire NEBS as an input to deliver downstream internet and/or telephony services. RSPs are able to configure the NEBS in a number of ways to enable them to differentiate their services and compete accordingly (e.g., by price, speeds, congestion ratios, service levels, customer service, content services, etc.).

The NEBS is a relatively simple bitstream "pipe". While **nbn** is responsible for the availability of that "pipe", RSPs are responsible for providing the functionality that actually delivers retail services. For example, RSPs are responsible for implementing the network functionality required to deliver voice and broadband services, end user service management, and for the other network elements required to deliver the retail service, such as internet peering, backhaul and international transit. RSPs have ultimate control of the quality of retail voice and broadband services offered over the **nbn**™ network.

1.4 Retail broadband services can be provided nationally over the **nbn**™ network

This section outlines how **nbn**'s regulatory framework, products and pricing ensure that RSPs can compete to deliver broadband services wherever **nbn** provides its infrastructure. In summary:

- All RSPs have certainty that they can acquire **nbn** services on a non-discriminatory basis wherever the **nbn**™ network has been deployed.
- **nbn**'s pricing means that there is no impediment to RSPs providing services to any location within an **nbn** POI area, once the RSP has made the decision to supply from that POI.
- The location of **nbn**'s POIs, and the ACCC's regulation of domestic backhaul, means that there are no insurmountable barriers to entry or to competition by access seekers at **nbn**'s POIs. The existence of aggregators in the supply of **nbn** services further reduces any potential impediment to supply by smaller RSPs. In practice, there is already demonstrated diversity of suppliers at all **nbn** POIs where significant rollout of the **nbn** has taken place. These factors have resulted in retail pricing outcomes that demonstrate retail competition for broadband services is occurring today.

1.4.1 nbn's regulatory framework ensures availability of services to all Australians

When **nbn** was established, legislative changes were made to address **nbn**'s anticipated role as the regulated fixed line wholesale monopoly service provider.[7] An understanding of the regulatory framework in which **nbn** operates is critical to considering its potential role in any USO regime.

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[6] Throughout this submission, **nbn** uses the term "RSP" in the generic sense of carriers who provide services over the **nbn**, which could also include wholesale service providers.

[7] Since **nbn**'s establishment, Government policy has changed, and **nbn** how faces more infrastructure-based competition than originally anticipated. This has reduced **nbn**'s ability to cross-subsidise non-commercial services in high cost areas.

All of **nbn**'s wholesale services must be declared under the *Competition and Consumer Act 2010* before they can be supplied. This can be done through **nbn**'s accepted Special Access Undertaking (**SAU**), a published Standard Form of Access Agreement (**SFAA**) or by an ACCC declaration. **nbn** has elected to use a combination of an SAU and SFAAs to declare its services.[8]

Once declared, **nbn**'s standard access obligations (**SAOs**)[9] require **nbn** to supply its wholesale services on request to RSPs wherever **nbn** is capable of doing so within its network footprint (subject to very limited exceptions). Together, the April 2014 SOE, the foreshadowed SIP obligation and **nbn**'s SAOs ensure that all Australians have access to the **nbn**™ network wherever it is deployed.

nbn is also subject to broad non-discrimination obligations, which prohibit **nbn** from discriminating between access seekers. These obligations include that **nbn** must not discriminate between access seekers when supplying services (i.e., with respect to both price and non-price terms) or, with respect to related activities—such as developing new products and providing information about **nbn**'s services.[10]

Significantly, **nbn** is prohibited under the *National Broadband Network Companies Act 2011* from being a retail service provider, and may only supply wholesale products and services.[11]

Thus, as a result of Government policy and current regulatory settings, any RSP is able to acquire **nbn** services on a non-discriminatory basis wherever **nbn**'s network has been deployed.

1.4.2 nbn's pricing encourages nationwide supply of retail services by RSPs

nbn's approach to pricing its services means that RSPs face similar input wholesale costs from **nbn**, irrespective of geography. **nbn** operates under a "Wholesale Price Cap Model", in accordance with Government policy.[12] Prices for **nbn**'s services from the end user premises to the **nbn** POI are the same across all its technology platforms—FTTP, FTTB/N, HFC, FW and Satellite, with no geographic differentiation.

As a result, once an RSP has established a presence at an **nbn** POI, it faces the same input costs from **nbn**. Whether an RSP supplies a retail service to a remote location via Fixed Wireless, or to a household adjacent to the POI using FTTP, its incremental cost of supply is the same.[13] **nbn**, on the other hand, faces significantly higher costs to deploy infrastructure in FW and Satellite areas (as well as in some fixed line locations), connect premises to the network and provide ongoing maintenance. Where RSPs' retail pricing of **nbn**-based services varies, it is largely due to factors other than the cost of acquiring inputs from **nbn**.

Furthermore, RSPs have long-term certainty in respect of **nbn**'s prices. Under **nbn**'s SAU, **nbn** commits to a range of long-term price controls that apply to **nbn**'s products, including that prices of individual products may increase by no more than CPI minus 1.5% in any year. Accordingly, RSPs have long-term certainty to move into geographically diverse markets in the knowledge that they will face stable prices for **nbn** services.

RSPs also require inputs, other than from **nbn**, in order to provide an end-to-end service. For example, RSPs will typically provide sales support, activations support, equipment to connect to the retail service (e.g., Wi-Fi routers and other customer premises equipment), fault troubleshooting, general customer service, billing functions, marketing and promotions. These activities are often centralised by the RSP and do not necessarily require local presence. Accordingly, they need not have a significant impact on the cost of providing a service

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[8] *Competition and Consumer Act 2010* (Cth) (**CCA**) s 152AL. **nbn**'s Special Access Undertaking was accepted by the ACCC on 13 December 2013 <https://www.accc.gov.au/regulated-infrastructure/communications/national-broadband-network-nbn/nbn-co-special-access-undertaking-2013>. **nbn**'s current SFAAs are available on its website at <http://www.nbnco.com.au/sell-nbn-services/supply-agreements.html>.

[9] CCA s 152AXB.

[10] CCA ss 152AXC-152AXD.

[11] **nbn** may also supply services to "specified utilities" for their own use. This includes electricity, sewerage and transport authorities, but does not include Commonwealth, State or Territory governments.

[12] Australian Government, *Telecommunications Regulatory and Structural Reform* (December 2014), 5.

[13] **nbn** also notes that in the case of its satellite services, a single POI is used to deliver the traffic from all satellite end users, meaning that RSPs providing satellite services only need to access that one POI.

to an individual premises once the RSP has made the decision to provide services within a particular **nbn** POI area.

Given the approach adopted by **nbn** in relation to its pricing, there should be no impediment to RSPs' ability to provide services to end users in different locations served by an **nbn** POI.

1.4.3 The location of nbn's POIs facilitates the supply of nationwide retail services by RSPs

RSPs connect to the **nbn**™ network at its POIs. These POI locations have been selected to promote competition between RSPs across Australia. In November 2010, the ACCC advised the Government on the number and location of the POIs for the **nbn**™ network. The ACCC advised that a "semi-distributed" approach was most likely to promote retail competition across all geographic markets via the location of **nbn** POIs where there are competitive transmission services. **nbn** has implemented the ACCC's advised approach through the establishment of 121 POIs across Australia.[14] **nbn**'s fixed line and fixed wireless services are connected to the nearest POI, while **nbn**'s long term satellite services are connected to a single metropolitan POI.[15]

To connect to the POIs, RSPs source backhaul transmission services to take the end user traffic back to their own network infrastructure, which provides the retail service capabilities. Backhaul is regulated by the ACCC through the declared domestic transmission capacity service (**DTCS**), and the ACCC determines the price (and non-price) terms of access to the DTCS via access determinations. The ACCC most recently made a final access determination (**FAD**) for the DTCS in April 2016,[16] which provides for pricing that is significantly lower than the regulated prices set in 2012, particularly for regional routes. Accordingly, RSPs should be able to compete on an equal footing by acquiring backhaul at regulated prices.

nbn's position is supported by the CEG analysis in the attached report, which concludes:

> *In sum, given the uniform wholesale prices already being charged by nbn co, as well as the fact that the ACCC's benchmark backhaul prices are fairly even across all 121 POIs, the costs faced by RSPs should be fairly uniform across Australia. Under these conditions, one can rely on competitive pressure to force retail prices to induce RSPs to set uniform retail prices for all locations without having to rely on a separate USO at the retail level.* [17]

The framework described above can be seen to be operating in practice today on the **nbn**™ network. Multiple RSPs are already directly connected to **nbn**'s POIs. **Table 1** below sets out a count of **nbn**'s permanent, or "listed" POIs (categorised by their geographic type) by the number of access seekers that have contracted to acquire **nbn** CVC at the POI.[18]

As **Table 1** shows, there are two or more access seekers at all 121 POIs and three or more access seekers at 118 POIs. Of particular relevance in the USO context is that for POIs classified as "regional", there are at least four access seekers at all POIs. In addition, the average number of access seekers at regional POIs is 5.7, compared to 4.2 for metropolitan POIs.

nbn notes that this table is not entirely reflective of the actual number of RSPs at each POI—for instance, RSPs purchasing services through an aggregator, rather than by directly connecting to an **nbn** POI, are not reflected

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[14] ACCC, NBN Points of Interconnect POIs (1 August 2012) <https://www.accc.gov.au/regulated-infrastructure/communications/national-broadband-network-nbn/nbn-points-of-interconnect-pois/final-list-of-pois>.

[15] All long term satellite traffic will necessarily be concentrated at the satellite Data Processing Centre (**DPC**) in Sydney. The DPC performs many functions for the control and management of data to and from the satellites. Given this centralised architecture it is efficient to offer interconnection at the DPC, which is co-located at an **nbn** POI.

[16] ACCC, *Public inquiry to make a Final Access Determination for the Domestic Transmission Capacity Service Final Report*, (April 2016), 64.

[17] CEG, *Economics aspects of the USO, A report for nbn co* (July 2016) (**CEG Report**) [68].

[18] Where one or more RSPs that acquire services from **nbn** are owned or controlled by the same entity, these RSPs are reported as a single access seeker.

in this table.[19] Accordingly, the actual state of retail competition is greater than that shown in **Table 1**. It is also important to recognise that the **nbn**™ network has not yet been fully deployed in all areas, with some access seekers therefore deferring their decision to connect to some POIs until network construction is more progressed. This is the case for the three POIs with only two access seekers today.

	POI Type			
Number of Access Seekers at POI	**Metro**	**Outer Metro**	**Regional**	**Total**
2	3			3
3	18	2		20
4	29	1	9	39
5	11	4	13	28
6	5	2	9	16
7	4		5	9
8			2	2
9	1		2	3
10			1	1
Total	**71**	**9**	**41**	**121**

Table 1: Number of access seekers at each listed nbn POI – June 2016

Nonetheless, this data demonstrates the presence of retail competition at **nbn**'s POIs. As CEG states:

> *The majority of the POIs have a large number of access seekers, which is an indicator of competition at the retail level (particularly as the cost structure of each firm can be expected to be reasonably similar). The economic literature suggests that an industry with three or more firms is unlikely to result in collusive prices. An industry with three firms would generally be regarded as sufficiently competitive, subject to the risk of future conditions reducing the number of surviving firms from three to a duopoly. Based on these insights, we can therefore conclude that the 118 POIs with three or more access seekers are likely to be workably competitive.*[20]

Thus, in both theory and in practice, **nbn** considers the location of its POIs (as established with the ACCC), together with the ACCC's ongoing price regulation of access to backhaul, promotes retail competition and allows all RSPs to have a national presence via the **nbn**™ network.

nbn's position is further supported by observable retail prices for **nbn**-based services in the market, which demonstrate that retail competition is already occurring. CEG concluded from its retail pricing analysis that:

> *…the minimum prices of nbn services appear to be fairly similar across RSPs, with most price differentials arising out of variations in the quality of service provided, such as differences in speeds and bandwidth limits. The fact that the pricing between RSPs is already similar can be an indicator of competition at the retail level.* [21]

[19] Smaller RSPs may choose to order via an aggregator, allowing them to access a greater customer footprint without having to directly connect to all POIs. A number of supply models exist, depending on the scale and capability of RSPs. Over 100 RSPs are currently listed on **nbn**'s website as being able to provide services over the **nbn**.

[20] CEG Report [47].

[21] CEG Report [57].

2. The current STS USO needs to be updated

The establishment of **nbn** represents a major shift in the way that broadband services will be supplied in Australia. However, the current USO is focussed on the delivery of voice services, and needs to be re-examined in the context of the significant changes in industry structure, technological changes, and evolution of consumer behaviour that have occurred over the past two decades. In **nbn**'s view there needs to be a new baseline voice service defined in a way that is technology agnostic, allowing for mobile networks (amongst others) to deliver the baseline service more efficiently than possible today.

If this is done, and the role of **nbn** appropriately recognised, the need to designate a universal service provider of last resort could be significantly wound back. This would occur over time as the **nbn**™ network is deployed, rather than at the completion of the **nbn**™ network rollout. As part of this transition, there are a number of issues that would need to be addressed if there are any changes in **nbn**'s mandate that would require it to support retail voice services outside its fixed line footprint.

2.1 The current USO is a product of the past

The substance of the current USO requires the universal service provider to ensure that standard telephone services (**STS**) and payphones[22] are "reasonably accessible to all people on an equitable basis wherever they reside or carry on business."[23] These requirements were based on the needs of people at the time the current USO regime was introduced in the 1990s.

When delivering the current USO, Telstra, as the universal service provider, is required to provide both the underlying infrastructure for the STS and the STS itself. Telstra may use its choice of network technology to deliver an STS, and is not limited to its copper network—so long as it is able to meet all of the requirements that attach to a standard telephone service. However, in practice, the nature of the current STS has restricted the technology choices that Telstra has available to it. For example, while mobile networks can be used to emulate fixed line voice services, through use of appropriate terminal devices in end user premises (e.g., Telstra's Next G Wireless Link service[24]), and provide services with similar pricing to fixed line services, Telstra does not use this technology to deliver USO services.

The essential feature of an STS is that it allows an end user to communicate with other users, regardless of which telecommunications network they are connected to ("*any-to-any connectivity*"). Where voice telephony is not suitable for a person with a disability, an STS is another form of communication "equivalent" to voice telephony.[25]

An STS, whether supplied by Telstra or any other RSP, must include at least the following features:

- access to untimed local calls within standard zones or nominated zones (determined by the ACMA);
- 24-hour free access to emergency service numbers;
- calling line identification;
- operator and directory assistance;
- itemised billing; and
- if requested by an end user, a standard telephone handset for an additional cost.[26]

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[22] While payphones have played a significant role in the USO, **nbn**'s focus here is on the supply of the STS.

[23] *Telecommunications (Consumer Protection and Service Standards) Act 1999* (Cth) (**TCPSS Act**) s 9.

[24] The "Next G Wireless Link Service (NGWLS)" <https://www.telstra.com.au/content/dam/tcom/personal/consumer-advice/pdf/consumer/wirelesslink.pdf> is not intended to fulfil Telstra's USO (it does not include CSG service levels, pre-selection or the option of priority assistance), but has the same retail pricing as Telstra's fixed line services. Thus, the NGWLS provides an *alternative* to a USO service.

[25] TCPSS Act s 6.

[26] TCPSS Act pt 4 (untimed local calls); TCPSS pt 5 sch 2 (itemised billing); TCPSS Act pt 8 (emergency call services); *Telecommunications Act 1997* (Cth) (**Telecommunications Act**) pt 2, pt 3 sch 2 (operator and directory assistance); Telecommunications Act s 355 (calling line identification); TCPSS Act s 9E (standard telephone handset).

Furthermore, and central to **nbn**'s arguments below, where Telstra supplies an STS in fulfilment of the USO, it must meet other requirements, including delivering CSG service levels, pre-selection, and, where requested, Priority Assistance (for consumers with documented life-threatening medical conditions).

These arrangements were put in place in an era where Telstra was the vertically integrated monopoly provider of voice services, which were seen to be the only services that required regulatory intervention. As such, the definition of the STS that is required to be provided was predicated on there being no viable alternative provider of voice services. As discussed in the following section, this is no longer the case, and the STS as currently defined does not allow the most efficient delivery of voice services.

2.2 The world has changed since the USO was established

Significant changes to telecommunications technology, industry structure and consumer preferences have taken place since the USO was introduced. The structural separation of Telstra, the establishment of **nbn**, the rise of mobile services and mass adoption of broadband services have dramatically changed the options available to consumers, and hence their use of telecommunications services. In addition, the market for retail-level communications services is significantly more competitive than it was when the current USO was put in place, and the current regulatory settings are not delivering the most efficient outcomes.

Consequently, **nbn** agrees with the Government that the current regulatory settings for ***voice*** services need to be reviewed.[27] However, as noted in *Section 1*, **nbn** believes that no additional regulatory intervention is required in relation to ***broadband*** services, given the policy and legislative changes that have been introduced with the establishment of the **nbn**. This section considers the nature of any USO that might now be required to deliver voice services.

2.2.1 Industry structure has changed significantly

At the time the USO framework was put in place, Telstra was a vertically-integrated and ubiquitous fixed line operator, providing retail services on its copper network (connecting almost every house in Australia) and supplying wholesale services to service providers that it competed with in downstream and retail markets. Concerns with the detrimental effect this structure was having on downstream competition led, in part, to the decision that **nbn** should be created and that Telstra should be structurally separated.

Telstra's Structural Separation Undertaking and migration plan will result in Telstra ceasing to supply fixed line voice and broadband services over its copper and HFC networks within **nbn**'s fixed line footprint and migrating these services to **nbn**. This process is already well under way. Once the migration is complete, Telstra will no longer control the fixed line network that will be used by it—and its competitors—to serve customers in urban areas.

Within the **nbn** fixed line footprint, the STS will be delivered over the **nbn**™ network. Telstra then provides retail services over this network, and only requires infrastructure beyond **nbn**'s POIs. Outside **nbn**'s fixed line footprint, under the current USO regime Telstra is expected to continue to use its copper network as the primary means of fulfilling the USO (but in conjunction with its digital radio networks and satellite services).

nbn operates on a structurally different basis to Telstra. **nbn** is prevented from competing with or discriminating between retail providers, enabling them to compete on a level playing field with Telstra in the supply of **nbn**-based services.

2.2.2 Mobile coverage has produced a shift towards a new "ubiquitous" service

The emergence and growth of mobile telecommunications services has had a fundamental impact on the availability of telecommunications services to the Australian public. Mobile phones are increasingly becoming the preferred device for making voice calls and accessing the internet. As at June 2015, there were three times

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[27] Scott Morrison, Treasurer, *Telecommunications Universal Service Obligation Terms of reference* (28 April 2016) <http://www.pc.gov.au/inquiries/current/telecommunications/terms-of-reference>.

as many mobile services in operation compared to fixed line voice services, with that trend continuing.[28] According to the GSMA's Mobile Connectivity Index, Australia is ranked the highest for its ability to connect its citizens to mobile networks.[29]

Mobile carriers in Australia compete on price, network coverage, service quality, and the services offered on each carrier's network. This has resulted in near-ubiquitous coverage of the Australian population by competing networks, with the currently reported population coverage being:

- **Telstra**: 99.3%[30] voice coverage, and 96% 4G coverage;[31]
- **Optus**: Over 98.5%[32] voice coverage, and 94% 4G coverage;[33]
- **Vodafone:** 96% voice and 4G coverage.[34]

In addition to the mobile coverage already provided, the Government has committed $100 million through the Mobile Black Spots Programme (**MBSP**), together with private sector and State/local Government investment. For the second round of funding, the Government has announced that it will commit $60 million, with the funding to be available over two years from July 2016.[35] This will further extend the reach of mobile services to regional areas, providing customers in those areas with further options for their voice and broadband services. **nbn** also notes that it has been developing and trialling a product which provides backhaul from mobile base stations to **nbn** POIs, which may further assist with the expansion of mobile networks.

nbn notes that much of the expansion of mobile networks in Australia appears to have been undertaken for commercial reasons, augmented by Government funding programs; most recently the MBSP. Given there is currently no regulatory imperative to provide mobile services in non-commercial locations, the continued expansion of these networks is fundamentally commercial—whether as a result of the incremental revenues generated by expansion into new areas, or of the increased value in the mobile "brand" resulting from improved coverage and perception of the reach and quality of the network.

Even with the intervention of the MBSP, improving the reach of mobile networks is at the sole discretion of mobile operators, who choose whether to seek MBSP funding. Presumably, if the costs of participating in the MBSP exceeded the benefits obtained, mobile operators would not take part in this program. Unlike (say) **nbn**'s provision of fixed wireless and satellite networks, or Telstra's provision of copper, point-to-point radio or satellite services in remote locations, which are mandated, the drivers for current mobile coverage are primarily commercial.

2.2.3 Consumer usage of telecommunications services has evolved significantly

It is no longer the case that Australian consumers consider a fixed line voice service to be the only, or indeed the best, way to serve their communications needs. The Regional Telecommunications Independent Review Committee considers that within the next few years the majority of consumers, and notably those in regional

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[28] ACCC, *ACCC telecommunications report 2014-15* (19 April 2016), 14.

[29] GSMA, *Mobile Connectivity Index Launch Report* (24 June 2016), 24 <http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/06/Mobile-Connectivity-Launch-Report.pdf>.

[30] Telstra, *Outback and beyond Connecting all Australian's* <https://www.telstra.com.au/aboutus/community-environment/community-programs/rural-regional>.

[31] Telstra, *Telstra Corporation Limited - Financial results for the half-year ended 31 December 2015 – CEO/CFO Analyst Briefing Presentation and Materials* (18 February 2016), 27 <https://www.telstra.com.au/content/dam/tcom/about-us/investors/pdf%20D/Analyst-briefing-presentation-and-materials-2016.pdf.

[32] Optus, *Mobile network coverage* <http://www.optus.com.au/shop/mobile/network/coverage>.

[33] Optus, *Management discussion and analysis of financial condition, results of operations and cash flows for the fourth quarter and year ended 31 march 2016* (12 May 2016), 31 <https://media.optus.com.au/wp-content/uploads/2016/05/Q4-FY15-16-MDA.pdf>.

[34] Vodafone, *Coverage Checker* <http://www.vodafone.com.au/network/coverage-checker>.

[35] Department of Communications and the Arts, *Mobile Black Spot Programme* (2016) <https://www.communications.gov.au/what-we-do/phone/mobile-services-and-coverage/mobile-black-spot-programme>.

Australia, will not be making voice calls over the public switched telephone network, but will be using mobiles, VoIP and other social media applications as their primary communication method.[36]

2.2.3.1 Preference for mobile services continues to grow

As mobile networks have increased in coverage, quality and capability, and mobile services have become increasingly affordable, more people are choosing to forego fixed line voice services and rely on mobile voice services alone. Since 2004, the number of mobile voice services has grown and fixed line voice services have fallen.[37] As at June 2015, 29% of adult Australians were mobile-only voice users and had no fixed line voice service.[38] In December 2014, it was reported that 12% of adult Australians had neither a fixed line voice nor fixed-line internet service in their homes.[39] Regional Australia in particular is trending towards mobile over fixed line services; the proportion of mobile only users in regional areas is 50% higher than in capital cities (15% versus 10%).[40]

The evolution of mobile telecommunications technology has occurred at a rapid pace, enabling fixed line to mobile substitution. As noted by CEG in the attached report:

> *The empirical literature indicates that fixed-mobile voice substitution has increased considerably over the past decade at a very fast pace. When mobile was first introduced, it had an apparent complementary effect on fixed-line telephony since it expanded the available communications network. As mobile penetration increased, however, mobile telephony eventually had a substitutive effect on fixed-line telephony, starting with substitution in terms of traffic before leading to substitution in access.* [41]

There is strong consumer preference for using mobiles for emergency calls, with 66.9% of emergency calls in 2014-15 made from mobile phones, 33.2% from fixed line telephones and 2.4% from public payphones.[42]

While consumers are increasingly using their mobile phones as a way of accessing the internet, the vast majority of data downloads actually occurs over fixed line connections. Data downloaded via fixed line broadband accounted for 98% of all internet downloads in the three months ended 31 December 2015.[43] Thus, while mobile networks play a significant role in how people use the internet, particularly for less data-intensive applications, they are not necessarily a substitute for more data- or speed-intensive broadband services.

2.2.3.2 Consumers are taking advantage of other communications options

In addition to consumers' preference for mobile over fixed line voice calls, consumers are increasingly using a variety of communications services for a range of activities. In the six months to May 2015, 64% of consumers used five or more separate communication services. Over the last four years, there has been continued growth in the use of over-the-top communications services such as Facebook and Twitter; as at May 2015, 65% of adult Australians used social networking communications services and 42% had used instant messaging in the previous six months. Adult Australians are also increasingly using VOIP services; as at June 2015, 27% of adult Australians used VOIP services.[44]

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[36] Regional Telecommunications Independent Review Committee, Parliament of Australia, *Regional Telecommunications Review 2015* (2015) (**RTIRC Review 2015**), 46.
[37] ACCC, *ACCC telecommunications report 2014-15*, 14.
[38] ACMA, *Communications report 2014-15*, 13.
[39] ACMA, *Australians get mobile* (9 June 2015) <http://www.acma.gov.au/theACMA/engage-blogs/engage-blogs/Research-snapshots/Australians-get-mobile>.
[40] RTIRC Review 2015, 13.
[41] CEG Report [82].
[42] ACMA, *Communications report 2014-15*, 90.
[43] ABS, *Volume of data downloaded* (6 April 2016) <http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/8153.0Main%20Features4December%202015?opendocument&tabname=Summary&prodno=8153.0&issue=December%202015&num=&view>.
[44] ACMA, *Communications report 2014-15*, 51, 50, 15.

These trends collectively highlight that the standard telephone service provided by the current USO regime, with its focus on fixed line voice services, is of declining relevance. In reviewing whether there should be a continuing USO, the nature of what is actually required to be provided by a future USO should be taken back to first principles—what are the fundamental characteristics of the voice service that are actually required today?

2.3 Principles for developing a new baseline service for voice

Any baseline service should:

(a) satisfy basic consumer needs;

(b) be defined in functional terms, and adaptable to technological, industry and consumer changes over time;

(c) only include a mandated service level requirement where it is necessary to designate a universal service provider of last resort.

The approach that **nbn** advocates for developing a new baseline service for voice does not depend on the completion of the **nbn**™ network. Rather, it is based on current settings and consideration of how the USO can be delivered most efficiently.

nbn proposes that the definition of the STS supplied under the USO be stripped back to its essential features, allowing it to be delivered in a technology agnostic manner that does not impose inefficient costs. If this is done, the locations where policy intervention is still required may be limited to only those areas outside the competitive mobile network footprint, somewhere between the most remote 0.7% and 1.5% of the population.

As noted by CEG, in order to maximise competition (and thus beneficial end user outcomes):

> *…the universal service obligation should be minimally specified, without mandated service levels or features above the most basic "connectivity elements".*[45]

2.3.1 The baseline service should satisfy basic consumer needs

When the USO regime was introduced in 1996, its fundamental purpose was noted to be:

> *…to safeguard access to a minimum level of essential telecommunications services for all persons in Australia. This recognises the fundamental importance of telecommunications in supporting effective participation in Australian society….the universal service is a 'needs-based' concept and the designation of a service as a USO service would depend on the need for it in the community.*[46]

nbn considers that this description of the "*fundamental purpose*" of the USO remains relevant. However, the nature of the service that satisfies the notion of the "*minimum level of essential telecommunications services*" is no longer the STS that is delivered by the present USO.

The STS as currently defined includes both features that are of minimal ongoing utility (such as pre-selection), or that no longer need regulatory intervention given the level of retail competition (such as CSG service levels). Including non-essential features and functionality will increase costs and complexity. As a result, it is important that any new baseline service only includes features required to address those needs that cannot be delivered in an efficient way without regulatory intervention. Identifying those needs should be done via a rigorous, evidence-based assessment.

To be clear, **nbn** is not suggesting that the needs of vulnerable groups that are not met by the baseline service should no longer be provided, but rather that these should be separately specified and funded (see *Section 3.2* and *Section 4.5*).

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[45] CEG Report [31].

[46] Explanatory Memorandum, Telecommunications Bill 1996, 75-76.

2.3.2 The baseline service should be defined in functional terms and be able to adapt over time

The baseline service should be defined in a manner that allows as many technology options as possible to be used. The definition should not lock out future technologies.

A baseline service for voice, described in functional terms rather than technology-specific terms, will ensure that a range of technologies can be utilised to deliver functionality in a cost-effective way, while also facilitating the competitive supply of the baseline service.

When the STS was defined in the context of the current USO, it was noted that it should not be explicitly linked to any particular service technology.[47] However, the current feature set required for the STS impedes the use of possibly more efficient technologies for its delivery, for example, by making it costly to deliver all mandated USO functionality via mobile networks.

nbn is not suggesting that mobility should be a feature of the baseline service (as that would not be technology agnostic). However, mobile networks should be able to be used to deliver a baseline service for voice.

The definition of the current USO has led to the situation where Telstra may, in theory, use its choice of technology to deliver the STS in the most efficient manner possible, but in practice, the additional requirements for the STS may make this choice difficult to exercise.

In **nbn**'s view, the STS should be "stripped back" of all non-essential features and functionality that may make it possible to be delivered over only one network technology. CEG summarises the downside of a technology specific approach to defining the USO service as follows:

> *…imposing a universal service obligation runs the risk of crowding out alternative investments that could be viable for serving unprofitable areas, which could distort competition in the long run, particularly if the obligation is set in a technology-specific manner.*[48]

Defining the baseline service in a way that is not linked to a particular technology will enable service providers to deliver it over the most efficient network. It will also assist in future-proofing the baseline service by de-linking it from technologies that may become obsolete sooner than anticipated.

2.3.3 There is no need to mandate service levels for the baseline service in all areas

As noted above, the baseline service should deliver essential functional aspects, and not include additional requirements such as mandated service levels. **nbn** submits that absent this intervention, providers would be able to compete on the basis of the quality of offerings, charging for the incremental costs of providing more stringent service levels if they deemed that approach to be appropriate. Instead, imposing service levels may limit the provision of services on alternative infrastructure.

CEG states:

> *In addition, if universal service attaches regulatory obligations or consumer guarantees that are costly to replicate it may drive competitors out of high-cost areas, cementing the universal supply as a monopoly in those areas*.[49]

The market should be able to provide a range of service levels. Competition should ensure that service levels are set at appropriate levels and will improve over time. Some consumers will want the highest service levels and be prepared to pay for them. Others will be satisfied with the service levels delivered by the market, or happy with relatively low service levels as long as they have the ability to choose from a diversity of providers and pay the lowest price. The definition of the baseline service should not pre-empt or eliminate this choice being made available to consumers.

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[47] Explanatory Memorandum, Telecommunications Bill 1996, 18.
[48] CEG Report [31].
[49] CEG Report [31].

Instead of mandated retail service levels, **nbn** considers that a better approach would be to require transparency of the services levels that are actually delivered by RSPs. This would allow more informed choices to be made by consumers about the "price-quality" bundles that are available. This transparency is also important in allowing competitive processes to drive improved service levels. Instruments already exist that could be used to require such service level transparency. The Telecommunications Consumer Protection Code sets out rules that carriage service providers must follow when communicating with customers in advertising and billing services.[50] The Code could be used to supplement existing information requirements with service level information.

In locations where it has been deemed necessary to designate a universal service provider of last resort (see *Section 2.4*), and there are no competitive options available to end-users, **nbn** understands that it may be necessary to continue with some mandated service levels. However, consistent with the discussion earlier in this section, any such service levels should encourage the use of the most efficient technology, and not lock service providers into a particular approach simply to meet the mandated service levels.

2.4 No need to mandate a single *national* universal service provider

A USO regime can be justified on a number of economic grounds. However, as CEG states in its report:

> *One key economic rationale for imposing a universal service obligation is that some form of market failure is preventing an efficient price-quality bundle from being provided to the market. In the absence of market failures, competitive markets will deliver the efficient quantity and quality of services at prices that reflect the least cost of production.*[51]

The current USO regime was a response to market failure, in which it was not clear that basic consumer needs would be met without intervention. The prevailing view was that fixed line voice telephony was an essential service—and the network controlled by Telstra was by default the only viable means of providing it. The relatively small population and vast geographic scope of Australia meant that any unsubsidised retail provider was unlikely to provide connectivity outside of urban areas.

At that time, it was reasonable for Telstra to be designated as the sole universal service provider (**USP**) of last resort. However, with the advent of **nbn** and the growth in mobile network deployment, combined with a redefinition of the baseline service in the manner outlined in *Section 2.3*, the rationale for mandating a single ***national*** USP going forward no longer exists.

Instead, the scope of any potential USP should be restricted to areas where there remains a need for regulatory intervention to ensure the baseline service is made available. As outlined below, this may only be required for a small percentage of the population. The transition from the current arrangements will need to happen over time, as the **nbn**™ network is rolled out, but it is not too soon to commence transitioning to a new approach.

Continued regulatory intervention can distort market incentives, resulting in inefficient allocation of capital investment and suboptimal outcomes for consumers in the long term. As noted by CEG:

> *In order to justify imposing a universal service it must be considered that the benefits of the imposition exceed the costs. In addition, a universal service should only be considered when alternative policies cannot address the market failure at lower cost*.[52]

2.4.1 nbn's fixed line network provides a platform for delivery of baseline services

nbn has planned and deployed its fixed line network to support the delivery of retail voice services in a manner consistent with the current USO regime. *Section 1.2* noted that **nbn** is responsible for connecting all premises in an area once it has deployed its network. As described in *Section 1.3*, RSPs are responsible for provisioning

[50] Telecommunications Consumer Protection Code C628:2015, cl 4.1.
[51] CEG Report [12].
[52] CEG Report [19].

voice capabilities over the **nbn**™ network, but once **nbn** has deployed in an area, any RSP should be capable of providing voice services to any premises passed by the network.

This means that there is no barrier to any RSP providing voice services to all premises within **nbn**'s fixed line footprint. Over time, as the **nbn**™ network is deployed, and voice services migrate from Telstra's copper network, there is no rationale for mandating any USP in these areas.

2.4.2 Mobile coverage reduces the need for regulatory intervention

Today, mobile networks play almost no role in the delivery of USO services, despite covering 99.3% of the population (*Section 2.2.2*). This is for the reasons identified in *Section 2.1*. However, if a technology agnostic approach is taken to defining a new baseline service, it is likely that mobile networks would be able to play a role in many locations outside **nbn**'s fixed line footprint (*Section 2.3*). If adequate mobile coverage is available in a location, and is capable of delivering the baseline service, it would seem reasonable to do so. While further work may be required as to what constitutes "adequate" coverage, including notions of competitive network availability or signal strength in premises, mobile services should at a fundamental level be capable of providing baseline voice services to significant numbers of premises outside **nbn**'s fixed line footprint, without the need for any further regulatory intervention.

2.4.3 A reserve power should remain to nominate a USP of last resort

The scope of any regulatory intervention should be limited to areas where the baseline voice service cannot be delivered over **nbn**'s fixed line network, or over mobile networks. Given the expansive mobile coverage noted above, this would be a small percentage of the population where there is no adequate mobile coverage. Reported coverage figures by mobile network operators suggest that this could relate to 0.7% to 1.5% of the population (depending on whether one or multiple mobile networks are considered to be required to be available).

nbn submits that an appropriate form of regulatory intervention could be a reserve ministerial power to designate (by area) a USP of last resort. That is, in the first instance the market is permitted to operate without intervention, however if the need arises, the minister is able to intervene and declare a USP to deliver baseline services to a particular area. **nbn** notes that a similar approach is currently taken in Germany.[53]

2.4.4 nbn's role outside its fixed line footprint does not include voice services

Given **nbn**'s role in providing broadband services to all premises in Australia, the question naturally arises as to the role it might play in relation to voice services.

As described in *Section 1.2,* **nbn** has planned, designed and deployed its networks outside its fixed line footprint to meet expected demand for ***broadband*** services. **nbn**'s mandate has never been to deliver voice services in these areas, given Telstra's contracted responsibility and funding for voice services. Any expansion of **nbn**'s required role to support the delivery of voice-only services would mean additional services being supplied over its fixed wireless and satellite networks compared to what it has designed and budgeted for. In addition, **nbn** has designed its wholesale products on these networks to support the delivery of *broadband* services to end users. If service levels consistent with the voice CSG were required on **nbn**'s fixed wireless and satellite networks, this would also increase **nbn**'s costs.

As recognised by the review undertaken by the Bureau of Communications Research (**BCR**), **nbn** already faces significant losses from the supply of non-commercial services outside its fixed line footprint.[54] Additional services supplied by **nbn** in these areas to support voice services would add to these losses. Unlike Telstra, **nbn** is not funded to compensate for the losses associated with the deployment of infrastructure to support voice services.

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[53] *Telekommunikationsgesetz* [Telecommunications Act] (Germany) 22 June 2004, TKG, 2004, pt 6, s 81.

[54] Bureau of Communications Research, *NBN non-commercial services funding options Final Consultation Paper (*October 2015), 8.

Any framework that assumes a role for **nbn** that is in any way different from **nbn**'s current product set and rollout plans will have both operational and cost implications, and will require funding to implement and maintain. This funding requirement needs to be transparently addressed.

nbn is required to operate as a commercial enterprise and, while **nbn** has the opportunity to earn a return on its investment, **nbn** is not guaranteed a return. The imposition of further requirements on **nbn** through any amendments to the current USO framework will need to consider **nbn**'s business objectives and the ability for **nbn** to obtain a return on any additional investment required by the amended USO framework.

As **nbn** has not designed or deployed its Fixed Wireless or Satellite networks with a view to supporting voice services, further detailed analysis would be required to understand the technological, operational and service quality implications of having to do so.

In particular, **nbn** notes that its Satellite network has been deployed specifically to optimise broadband throughput. As a result, if two Satellite end users make a voice call to each other, their voice signal would experience a "double hop" (i.e., both end users would have their signal go up to the geostationary satellite and back to the ground station), which would roughly double the latency of the signal compared to "single hop" satellites that have been designed and optimised for voice. It may be the case that this degree of latency is still acceptable for the provision of a baseline service, but it is clearly a factor that would need to be addressed in the process of defining what the features of a baseline service should be. Consideration would also need to be given to the capacity requirements for the committed information rates (Traffic Class 1) required to support voice services. Again, this relates to the design decisions made in relation to the **nbn** Satellite service, which were predicated on the delivery of retail-level *broadband* services, rather than voice services. Another relevant factor specific to the Satellite service is the potential impact that "rain fade" could have on voice availability, and whether this would be acceptable in all locations.

3. Ongoing support of vulnerable groups is needed

While **nbn** considers the current STS should be stripped back to a baseline service that delivers essential voice features, it is important that the specific needs of more vulnerable groups continue to be met. This should be via separately targeted and funded programs that are "unbundled" from the delivery of the baseline voice service.

3.1 Continued support is needed to ensure the needs of vulnerable groups are met

Section 1 provided **nbn**'s arguments as to why no further regulatory intervention is needed to ensure broadband services will be available to all Australians. *Section 2* outlined **nbn**'s view that the current STS obligation should be redefined to a baseline service for voice which is capable of being provided over a range of technologies. In those sections, **nbn**'s focus was on identifying how baseline services could be delivered in the most efficient manner, recognising the changes that have taken place in technology and in the way in which consumers use that technology.

nbn recognises that continued regulatory intervention will be necessary to ensure that telecommunications solutions are provided to groups with specific needs such as persons with hearing impairments or those with documented life-threatening medical conditions, or to address challenges of affordability.

However, **nbn** considers that this important policy objective would be best met through a separate, targeted set of programs specifically designed for vulnerable groups and should be transparently funded separate to the baseline service. Mandating inclusion of these specialised solutions as part of the baseline service would inefficiently drive up per-service costs.

3.2 Solutions to the needs of vulnerable groups should be separated from the baseline service

At present, in addition to the current voice-related USO, there are a range of ancillary measures aimed at guaranteeing service levels and protecting vulnerable groups. This means that funding of the USO is not transparent, and it would be better to "unbundle" the scope and funding of baseline services from the arrangements required to deliver solutions to vulnerable groups, including to ensure that funding is most appropriately targeted. A similar approach should apply to affordability programs. Developing these initiatives in consultation with these groups will help ensure that the solutions developed are appropriate to address their specific needs.

This "unbundled" approach to delivery of solutions is consistent with CEG's economic analysis:

> *…as a general rule, policies that specifically target the source of market failure will usually be preferable in the sense that they generate the least amount of distortion… This is commonly referred to in economics as the 'specificity rule'.*[55]

In summary, **nbn** understands the need for the continued regulation of a separate set of obligations targeted at vulnerable groups, as follows:

- *Features for persons with specific needs*. Groups with hearing/speech impairments or who are otherwise unable to use typical voice services may require a separately defined baseline service. These needs are acknowledged in the current USO by defining a standard telephone service to be, where voice telephony is impractical, the provision of a service "equivalent" to voice, e.g., teletypewriter services,

[55] CEG Report [33].

supplied at the same cost as STS handsets.[56] In addition, the National Relay Service assists people with hearing or speech impairment to have access to an equivalent to a STS, which is funded by the Telecommunications Industry Levy (**TIL**). Such programs will continue to be needed to ensure that these services are provided and funded. The nature of such programs may change over time as new technology solutions emerge, and is important that whatever regulatory intervention is put in place to support these programs is flexible enough to respond to evolving technology options and consumer needs. While the introduction of **nbn**-based broadband may introduce additional options to meet these needs, a specifically targeted program will ensure that appropriate services continue to be provided and funded.

- *Service levels for vulnerable groups*. Priority Assistance service levels are available to persons with documented life-threatening medical conditions receiving a standard telephone service. While Telstra is required to provide Priority Assistance where requested, other RSPs also have the option to participate in the Priority Assistance scheme. Ultimately, the bulk of the costs of supporting Priority Assistance service levels fall on the infrastructure provider (to ensure appropriate resources are available to meet the enhanced timeframes involved), although retail providers may also face some incremental costs. If, as a matter of policy, Priority Assistance remains a requirement for vulnerable groups, the incremental cost of supporting the scheme should be transparently identified and funded.

- *Affordability programs*. Where consumers are unable to afford the cost of a baseline voice service, assistance should be provided directly to them, or via their chosen retail service provider, including via existing Centrelink funding. Upstream infrastructure providers should not be required to absorb these costs.

By separately identifying the needs of these groups, and developing targeted responses to address these needs, **nbn** considers that more efficient outcomes should be achieved. In the current regime, for example, the services provided by the National Relay Service are put out to tender at regular intervals, providing opportunities for competition in the delivery of this important service. There are likely to be similar opportunities in developing approaches to addressing the needs of other groups of people. Whether funding is provided by government or industry (or a combination of both), if the design of these targeted programs allows for competitive tension, improved outcomes should be achieved for these groups of people. However, if the solutions are wrapped into the delivery of the baseline service, these same opportunities for competitive outcomes may not be possible.

Similar issues are addressed in other countries, and useful insights can be gained by examining their experience. In the United States, for example, the Lifeline and Link Up programs support low-income group access to basic telephone services, by providing monthly discounts to mobile and fixed line services (which are reimbursed directly to participating service providers out of an industry levy imposed on carriers) and a one-off installation fee discount.[57] Additional income support measures are provided to people living on tribal lands, in addition to the standard Lifeline and Link Up programs.

nbn has, within its overall policy mandate, implemented a number of initiatives which provide the means for RSPs to address the needs of specific groups. For example, **nbn** allows RSPs to relax the general rules for NEBS—in which one connection may be used by one household only—to permit certain locations to set up local Wi-Fi networks from a single **nbn**™ network termination device. This arrangement can be valuable in some remote Indigenous communities, where the model of one **nbn**™ connection per premises may not meet the needs of people living there. RSPs can then choose how to offer and bill the retail services they deliver in these situations. In addition, **nbn** is currently developing, in consultation with the Government, specialised Satellite services to meet the distance education needs of remote communities.

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[56] TCPSS Act s 6.

[57] See Federal Communications Commission, Lifeline Program for Low-Income Consumers (June 20 2016) <https://www.fcc.gov/general/lifeline-program-low-income-consumers>.

4. USO funding arrangements need to be revisited

USO funding has traditionally been one of the most debated aspects of the Australian USO regime. Given the significant shifts in industry structure, technology, and the need to reconsider what the retail USO service should look like going forward, it is likely that major changes are required in the funding arrangements.

In **nbn**'s view, the key considerations are that any funding should be directed to the entities that actually incur the unrecoverable non-commercial costs, which in general will be the providers of infrastructure, rather than of retail services. There are a large number of issues that would need to be addressed in transitioning from the current arrangements to any future funding model, including as a result of the establishment of **nbn**, and the interactions between its role and that of Telstra.

The existing levy allocation approach also needs to be revisited. **nbn**'s current liability to contribute to the Telecommunications Industry Levy is an unnecessary and inefficient "roundabout" of funding.

4.1 Current funding arrangements are outdated

The funding of universal services is a topic that has been contentious over the entire history of the USO in Australia.[58] Parties have never agreed on the appropriate amount of funding, the basis for calculating it, or how it should be apportioned. With the changes that have taken place since the current USO framework was put in place, now is an appropriate time to revisit these issues.

nbn believes that it is critical to move away from a USO framework that supported the funding of a vertically integrated incumbent operator towards a framework in which:

- **nbn** provides the key infrastructure inputs into voice services in its fixed line network footprint, but not outside that footprint;
- numerous mobile network operators are capable of providing inputs into baseline voice services outside that footprint; and
- there is still a requirement to ensure a baseline voice service is available in the most remote areas.

Telstra currently receives all funding related to the STS and payphones USO. While this funding is provided on the basis that fulfilling the USO will involve the provision of loss-making services, there is no clear (and certainly no transparent) linkage between the funding and the costs of providing these services.

In accordance with the Telstra Universal Service Obligation Performance Agreement (**TUSOP Agreement**), Telstra is required to maintain and operate its copper network in areas outside **nbn**'s fixed-line footprint, including to provide the USO STS and payphones. In the same areas, **nbn** will be operating its Fixed Wireless and Satellite networks, without being specifically funded for its losses. Telstra's obligation to maintain its copper network remains in force under the TUSOP Agreement until 2032, with the result that both networks will operate in parallel outside **nbn**'s fixed line footprint until this time.

[58] For example, in its 2004 submission to the Government's review of the operation of the USO and CSG, Telstra noted that "*the difficulties involved in estimating the financial burden of providing universal service have been the subject of some commentary in virtually every inquiry into telecommunications held in Australia since the early 1950's.*" See Telstra, Submission to the Review of the Operation of the Universal Service Obligation and Consumer Service Guarantee, *Review of the Operation of the Universal Service Obligation and Customer Service Guarantee Part 2 and 5 of the Telecommunications (Consumer Protection and Service Standards) Act 1999* (13 February 2004), 11.

4.2 USO funding should focus on non-commercial infrastructure

4.2.1 Key USO costs are driven by the provision of infrastructure

While the USO has been (and should remain) a retail-level obligation, in reality the losses associated with delivering USO services in remote Australia are almost entirely related to the cost of the underlying network infrastructure that needs to be deployed and maintained to support retail services. As population densities decrease further from town centres, the unit cost of delivering infrastructure increases, driven by two key factors:

- Greater distances between premises and network points of concentration requires more infrastructure to be deployed simply to connect to a premises; and
- Decreasing population density reduces the economies of scale of shared infrastructure.

nbn believes that a key principle of any future USO arrangements is that funding should be directed at the entity that actually incurs costs that cannot be recovered through normal commercial means. Today, it is likely that Telstra in its role as the infrastructure provider for voice services in remote Australia is providing infrastructure that is non-commercial, as its retail revenues may not cover costs in all cases. However, given appropriate changes to the nature of the baseline service required, and therefore how that service may be provided, it is not clear that its costs would remain the same going forward.

As discussed in *Section 2.4*, there may be no need to designate a single national USP of last resort. In considering whether a USP needs to be nominated, and if so in what circumstances, **nbn** considers that it may be appropriate to provide USO funding only in respect of areas where a USP has been designated, which should correspond to locations in which telecommunications infrastructure is non-commercial.

4.2.2 The retailing of USO services is not the prime driver of costs

As discussed in *Section 2.2.1*, within **nbn**'s fixed line footprint, **nbn** delivers infrastructure that supports the provision of retail voice services. Retail providers face no different input costs from **nbn** throughout that footprint, and once they have established a presence at a POI, should face no material differences in cost to provide a voice service to one premises compared to another.

As noted in *Section 1.4.2*, RSPs are unlikely to face significant incremental costs in providing services over the **nbn**™ network to end users in remote locations compared to metropolitan locations once they have a presence at an **nbn** POI. If changes to the USO regime were contemplated that could result in the baseline service being delivered over the **nbn**™ network outside the fixed line footprint, there would be no rationale for retail providers of these services to receive USO funding, as the non-commercial services would be provided by **nbn**. However, as noted in *Section 2.4.4*, any such change in **nbn**'s obligations would require transparent funding of the additional losses borne by **nbn**.

To the extent that Telstra's network continues to be used to provide the baseline service outside **nbn**'s fixed line network, **nbn** accepts that consideration should be given to the losses associated with the provision of infrastructure in those areas. However, the determination of those losses would need to consider the most efficient means of providing the baseline service.

4.3 Transitional funding issues will need to be addressed

In identifying the need for revisiting the current USO funding arrangements, **nbn** acknowledges that there will be significant implementation issues to address in moving to a new funding regime. While not an exhaustive list, **nbn** considers that the following issues would need to be addressed:

- The extent to which the current USO levy amounts are related to the actual cost of providing loss-making services—as noted in *Section 4.1*, there is no transparent linkage between costs and funding, which is a key issue to address in any future arrangements;

- The implications of **nbn** providing the underlying infrastructure for voice services within its fixed line footprint, with a migration from existing networks over time;
- The funding and commitments made in the TUSOP Agreement between Telstra and the Commonwealth;
- Interactions with the Mobile Black Spot Program, particularly if the baseline service is able to be delivered over infrastructure funded by this program;
- As a result of the revised definitive agreements entered into between Telstra and **nbn**, in some areas outside **nbn**'s fixed line footprint Telstra will receive USO funding to deliver voice services over copper owned by **nbn**;
- Other aspects of the revised definitive agreements may need to be considered if changes are made to the USO arrangements;
- The analysis by the Bureau of Communications Research of the losses incurred by **nbn** in providing non-commercial services;
- Depending on the reliance on **nbn**'s infrastructure and the funding scheme adopted, the schedule for completion of the **nbn**™ network;
- The use of alternative technologies such as satellite handsets for voice services, with appropriate subsidy schemes.

4.4 **nbn**-specific funding issues need to be considered

4.4.1 nbn does not currently receive funding for its non-commercial services

The funding arrangements provided for **nbn**'s non-commercial services are not the same as those historically provided for Telstra. Even without any changes to the existing USO arrangements, **nbn** is required to deliver non-commercial services to ensure that it delivers on its policy mandate to ensure all premises in Australia have access to broadband services. These non-commercial services can include locations in its fixed line footprint, as well as services covered by the non-fixed line footprint. These losses arise because **nbn** is obligated to provide access to broadband services for all Australians, regardless of whether doing so is commercial. However, **nbn** does not receive any specific funding for the rollout and ongoing operation of the **nbn**™ network to non-commercial premises. **nbn** is also expected to operate as a commercial entity.

nbn's approach to recover the cost of non-commercial services is to employ a cross-subsidy from lower-cost areas to higher-cost areas. **nbn**'s ability to utilise this cross subsidy is undermined to the extent that competing infrastructure providers provide services in low cost, but highly profitable areas such as multi-dwelling units and greenfield sites. Competitors who seek to cherry pick the most profitable areas of **nbn**'s footprint would have an enduring cost advantage over **nbn** as they would have no obligation to serve high cost areas.

While the Bureau of Communications Research (**BCR**) has recognised there are losses associated with these non-commercial services,[59] it did not propose that these losses would be able to be recovered fully. Instead, the BCR has proposed a partial funding model, which would be intended to increase transparency and address the advantage that **nbn**'s competitors have in not being required to serve non-commercial areas. Only operators providing "**nbn** equivalent" infrastructure in the **nbn** fixed line footprint would be required to contribute to the levy (as would **nbn**), and the proposed levy is not designed to fund the full incremental cost of non-commercial **nbn** infrastructure. As yet, these arrangements have not been implemented.

[59] Bureau of Communications Research, *NBN non-commercial services funding options Final Consultation Paper* (October 2015)

4.4.2 nbn owns copper which Telstra uses to provide some USO services

Under the TUSOP arrangements, Telstra is required to continue to maintain its copper network outside **nbn**'s fixed line footprint, and provide voice services over it, for which it is provided funding. However, as a result of the revised Definitive Agreements between Telstra and **nbn**, Telstra does not necessarily own the underlying copper. In some cases, **nbn** takes ownership of copper outside its fixed line footprint, where **nbn** also requires parts of that copper cable to provide FTTN services (this copper is referred to as long copper tails).[60] Telstra then serves premises using these long copper tails, which connect to Telstra exchanges within **nbn**'s fixed line footprint.

In these cases, **nbn**, as owner of the copper infrastructure, incurs the cost of delivering and maintaining the underlying infrastructure and supplying wholesale services to the relevant premises, while Telstra receives compensation for delivering the retail service via the TIL and TUSOP.

4.4.3 If nbn's mandated scope is changed, funding needs to be addressed

As discussed in *Section 2.4.4*, if the scope of services that **nbn** is expected to support changes, it would result in additional costs being incurred by **nbn**, and would require additional funding for **nbn** to deliver. Any increase in **nbn**'s role would only increase its current losses in respect of supplying non-commercial services, which were discussed in *Section 4.4.1* above.

Accordingly, if the view is formed that changes to the current USO arrangements are required, and these changes could involve **nbn** delivering either a wider range of services than currently assumed, or to different service standards, the cost implications of doing so need to be transparently calculated, and the mechanism for funding those additional costs also clearly established.

Importantly, any such mechanism would need to deal with both the capital costs of providing the infrastructure in these locations, as well as the costs associated with the ongoing assurance of these services. If improvements in the assurance timeframes are required, this will result in additional costs to **nbn** for both the existing base of services as well as any incremental services required (as Telstra's obligations are unwound).

In addition to the funding implications of any change in **nbn**'s scope, there would likely be other consequences for **nbn**'s rollout activities, including the potential need for additional planning, design and construction activities, acquisition of spectrum, and negotiation of field workforce arrangements. These activities have the potential to impact on **nbn**'s rollout schedule.

4.5 Specific funding is required for the needs of vulnerable groups

This section has focused on the funding associated with delivery of a baseline voice service. As discussed in *Section 3.2*, **nbn** considers that the delivery of baseline services should be kept separate from the delivery of specialised features required by vulnerable customers, or to address issues of affordability.

There are a variety of funding approaches that can be implemented to address the needs of these groups which may be appropriate models moving forward. These include:

- *Direct funding by Government to end users*. Centrelink allowances are available to eligible concession card holders, which provide direct subsidies to users for telephony and internet services. This approach can be targeted at individuals with specific needs, and integrated with other support mechanisms. Such a funding approach could also be considered for the delivery of specialised end user equipment.

- *Direct funding to service providers*. This is the approach taken today in relation to funding the National Relay Service, which is put to tender on a regular basis. The current provider of the NRS receives

[60] Telstra, Letter to Australian Stock Exchange, 14 December 2014, *http://www.telstra.com.au/abouttelstra/download/document/asx-announcement.pdf?ssSourceSiteId=aboutus.*, accessed on 18 July 2016.

funding from the TIL, but this measure would arguably be more efficiently delivered by direct funding by Government. In either case, the key feature here is that a targeted need has been identified, and directly funded to be provided on a contestable basis. This approach should be suitable for a wide range of specific programs that deliver specialised services for vulnerable groups.

4.6 The industry levy allocation approach needs to be revisited

Currently, all carriers with a certain level of annual revenue fund the costs of the USO via the TIL based on eligible revenue, which is essentially gross telecommunications revenue less wholesale input costs. **nbn** is thus liable to contribute to the TIL for the delivery of voice services on Telstra's network—even though **nbn** is deploying a network to provide access to all premises, provides no retail services, and is not directly engaged in providing voice services.[61]

This outcome results in an unnecessary and inefficient "roundabout" of funding, whereby:

- **nbn**'s SAU provides the opportunity for **nbn**'s prudently incurred costs to be recovered from access seekers in the form of charges for **nbn**'s products;
- **nbn**'s contributions to the TIL will form part of **nbn**'s cost base and may ultimately be passed on to access seekers; and
- As described by CEG, these costs will then be passed-through to end-users with a margin:

  If a universal service levy is imposed on wholesale revenues it would be seen in effect as a cost increase for retailers, to which a mark-up would be added. This would result in a further distortion from the imposition of the levy and a further reduction in economic efficiency. The implication of this analysis is that taxes on wholesale inputs should generally be avoided for efficiency reasons.[62]

Instead, **nbn** submits that any industry levy scheme for recovering USO costs should be based on *retail* revenues. The current approach of a levy based on net telecommunications revenues (including wholesale and retail revenues) has the potential to be distortive. As CEG states:

> *…the net revenue definition will likely distort prices materially more than a retail revenue definition. This occurs because a net revenue approach adds to the problem of double marginalisation that exists in the vertical supply chain and its incidence is likely to disproportionately fall on upstream infrastructure operators distorting incentives to invest*. [63]

[61] **nbn** is liable to contribute to the TIL once its eligible revenues exceed $25 million per annum.
[62] CEG Report [108].
[63] CEG Report [105].