



Submission in response to Mobile Coverage  
Programme Discussion Paper

Public version

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# Contents

<b>Section 1.</b>	<b>Executive Summary</b>	<b>3</b>
<b>Section 2.</b>	<b>Open Access and co-location provisions</b>	<b>6</b>
	Structural barriers limit competitive entry in regional Australia	6
	Current co-location provisions	8
	Open access provisions can generate significant benefits	10
<b>Section 3.</b>	<b>Optimal delivery approach</b>	<b>12</b>
<b>Section 4.</b>	<b>Selection Criteria</b>	<b>16</b>
<b>Section 5.</b>	<b>Leveraging the NBN to support regional mobile competition</b>	<b>17</b>

## Section 1. Executive Summary

- 1.1 The past decade has seen a significant shift in Australian consumers telecommunication needs with an increasing requirement for mobility. Australian consumers expect seamless access their mobile services wherever they use their devices. Mobile carriers have responded to consumer demands by extending the coverage of their networks and rolling out new technologies and services. Investment in mobile telecommunications is around \$3 Billion annually.
- 1.2 However, Australia's size and unique geography creates challenges for the deployment of mobile networks. As the population density around particular mobile sites diminishes the relative costs to support that site increase. The large distances between population centres exacerbate the problem. Whilst existing networks provide extensive coverage to where the majority of Australians live and work; coverage is not ubiquitous and there are still small communities that do not receive reliable coverage or any coverage.
- 1.3 Consistent with schemes undertaken overseas Optus considers that there is a role for targeted Government assistance to facilitate the improvement and extension of mobile services in locations where the conditions of supply are challenging. Optus supports the Government's proposed Mobile Coverage Programme.
- 1.4 In designing the scheme the Government should seek to maximise both the direct and indirect benefits of the taxpayer funding. This will be achieved by designing a scheme which delivers maximum coverage for taxpayer dollars and facilitates an improvement in competition thereby enabling as many consumers as possible to benefit from the taxpayer funded infrastructure.
- 1.5 A key objective in the Government's pre-election policy is that infrastructure funded under this scheme should be made available to third parties on open access terms to improve competition in the provision of mobile services. Optus welcomes the fact that this principle has been clearly restated as a priority objective in the Discussion Paper.
- 1.6 In this respect the Discussion Paper has identified some key "open access and co-location" obligations that are proposed to be applied to funding allocated under the scheme. Importantly, these obligations go further than the existing co-location obligations set out in the Telecommunications Act. Whilst the obligations under the Telecommunications Act enable carriers to access each-others facilities the cost of such co-location can be prohibitive. This is because significant re-work and duplication of activities has to be undertaken to provide access to an existing facility. In regional locations, co-location may not generate sufficient cost savings to justify accessing a site.
- 1.7 By contrast the open access provisions set out in the Discussion Paper are aimed at improving the efficiency of co-locating mobile equipment on Government funded sites through measures designed to encourage parties to collaborate on co-location activities before a site is built. If carriers jointly undertake design, build and deployment work, then the costs of such activities can be shared and significant cost savings can be generated sufficient to justify co-location.
- 1.8 Optus strongly supports the open access principles set out in the Discussion Paper. In the absence of these it is unlikely that third parties will seek to co-locate on the Government funded sites as the cost to access those sites will remain high and will outweigh any potential revenue uplift from the deployment of equipment at that site.

- 1.9 By increasing the opportunities for co-location of sites under the programme, these open access arrangements also create an opportunity for Government to fund more sites. Where the costs of a site can be shared across multiple providers the subsidy required from Government for each site will be lower, enabling Government to fund more sites. The public benefits associated with these sites will be further enhanced since these sites are likely to also serve a broader customer base.
- 1.10 To properly realise these benefits Optus recommends that the Government adopts a multi-operator approach on the following lines:
- (a) Government should seek tenders on a site by site or cluster basis.
  - (b) From the proposals submitted, Government should identify sites that are likely to be of interest to multiple providers. These sites should be prioritised for funding.
  - (c) The Government can achieve this outcome by publishing a list of the sites it proposes to fund after receiving tenders and seek binding expressions of interest from MNO's to co-locate on sites. This would include commitments from MNO's to co-ordinate build activities and share the costs associated with the establishment and ongoing maintenance of the site. This should include arrangements for the provision of backhaul capacity into a site.
  - (d) Whilst one of the carriers could take ownership of a multi-carrier site, Government should consider the option of appointing an infrastructure-only provider to project manage, build, own and operate the sites under economics comparable to a public private partnership.
- 1.11 The approach proposed above should enable the fixed costs associated with establishing a mobile site to be shared across multiple providers. In this way the subsidy required for these sites will be reduced and the Government will be in a position to fund a greater number of sites.
- 1.12 Optus estimates that co-build of sites can reduce the Government subsidy required at a site by up to a third, depending upon the number of co-build partners<sup>1</sup>. These substantial savings mean the Government would be able to fund substantially more sites for its proposed \$100 Million of funding.
- 1.13 To further maximise the number of sites that can be funded by the Government subsidy, then where it can be established that a site is of interest only to a single MNO, then that site should be excluded from the Open Access provisions. However, such sites should be ranked lower in the order of priority for funding than sites that with interest from multiple MNO's.
- 1.14 Optus considers that this co-build model is likely to best serve the public interest as it will achieve greatest value for taxpayer dollars and will promote competition in the provision of mobile services in regional Australia. It is also has the potential to deliver cost savings for NBN Co. Optus notes that it has a strong record of partnering with other players to roll-out mobile infrastructure in a collaborative and efficient way.
- 1.15 Implementation of this approach is likely to be best achieved through Delivery Option 2 proposed in the Discussion paper. Optus cautions against a winner takes-all approach (Delivery Option 1) since this is likely to limit participation in the tender. Such an outcome is

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<sup>1</sup> This reduction could be higher if there are additional contributions from local communities.

unlikely to achieve maximum value for taxpayer funding under the scheme; nor will it advance competitive outcomes in the mobile market.

- 1.16 Optus also encourages the Government to consider the opportunities for NBN Co to participate in the scheme. NBN Co is likely to have a direct interest in co-locating its equipment on towers and sites funded under the scheme to deliver its fixed wireless services. There is a clear opportunity for NBN Co to participate in the co-build arrangements Optus has outlined in this submission. In addition, there may be opportunities for NBN Co to provide fibre backhaul services into certain sites at a lower cost than is currently available in the market.
- 1.17 To help drive the synergies that can be obtained from better utilisation of NBN infrastructure, NBN Co could be given a stronger mandate to consider co-build opportunities with MNO's prior to the deployment of an NBN Fixed Wireless tower.
- 1.18 Finally, Optus considers that the Government should seek encourage and leverage the opportunities for broader community participation and collaboration in the project. Community groups can participate through provision of either financial or non-financial contributions to the establishment of a site. Such participation is likely to increase the number of sites that can be funded under the scheme.

## Section 2. Open Access and co-location provisions

- 2.1 In its “Mobile Black Spots Programme” policy paper released prior to the recent Federal election, the Coalition indicated that it would seek to use the funding to be applied through the programme to improve competition in the provision of regional telecommunications. Specifically the policy paper stated that:

*“Preference will be given to proposals that provide open access infrastructure to improve coverage along major transport routes. Increased competition will sharpen incentives for carriers to provide better quality services and lower prices in regional areas, as it does in the cities”.<sup>2</sup>*

- 2.2 Optus welcomes the fact that the Discussion Paper has reiterated this commitment by identifying that a key objective of the programme is to improve competition in the provision of mobile services in regional services.

*The objective of the Mobile Coverage Programme is to invest in telecommunications network infrastructure to improve both coverage of high quality terrestrial mobile voice and wireless broadband services in regional Australia, **and competition in the provision of such services.**<sup>3</sup>*  
**[Emphasis added]**

- 2.3 An important policy goal is that where taxpayer funds are used to invest in telecommunications infrastructure, then it should be done so in a manner that is competitively neutral.
- 2.4 This principle is specifically important in the context of the areas where this funding is likely to be made available, i.e. regional areas with low population density, because;
- (a) Competition is less well developed in regional Australia;
  - (b) In the absence of such open access arrangements, coverage is only likely to be provided by one carrier given the challenging economics of supplying services to such locations; and
  - (c) It will increase the number of customers who will be able to benefit from Government funding.

### Structural barriers limit competitive entry in regional Australia

- 2.1 Competition in the provision of mobile services has been the stand-out success of telecommunications. The market is served by three national MNOs and a number of established resellers and Mobile Virtual Network Operators.
- 2.2 The mobile services market in Australia has been characterised by fast growth, with mobile penetration surpassing population levels and usage surpassing fixed line usage. As highlighted by the ACCC:

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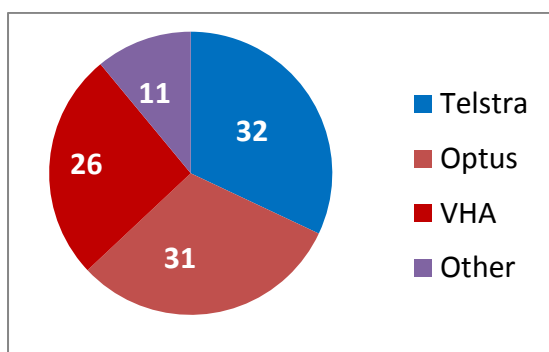
<sup>2</sup> The Coalition’s Mobile Blackspot Programme August 2013, page 4

<sup>3</sup> Discussion paper, page 3

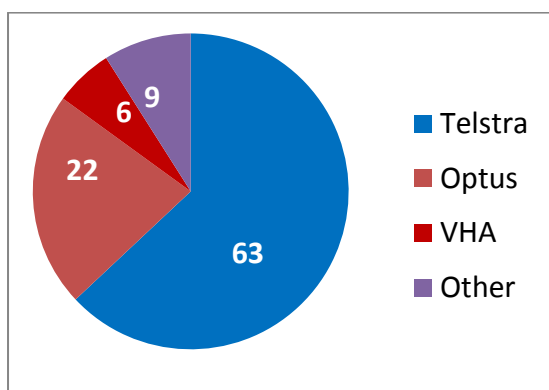
*In 2012, there were twice as many mobile phones than fixed line phones, and currently more calls are made on mobile phones than on fixed line.<sup>4</sup>*

- 2.3 Whilst demand for traditional voices services has started to decline, the industry has witnessed explosive growth in mobile data since 2009. This has been driven by the rollout and increased accessibility of 3G and 4G networks. For example, mobile handset internet demand increased by 97% (from 9,943TB to 19636TB) over a 12 month period for the quarter ending June 2013.<sup>5</sup>
- 2.4 The benefits of competition have flowed through to consumers in the form of lower prices and improved service offerings. The ACCC's most recent Telecommunication Report (2011-12) indicates that prices for mobile services have fallen by 51.1% since 1997/8.<sup>6</sup>
- 2.5 Whilst the mobile market has been characterised by strong competition its impact has not been geographically uniform. Whilst all three MNO's compete on a level footing in metropolitan Australia, Telstra has a substantially greater share of the market in regional Australia. This is demonstrated by the following tables:

**Metro Mobile market shares %<sup>7</sup>**



**Regional Mobile market shares %**



## 2.6 C-i-C

<sup>4</sup> ACCC, *Review of the declaration of the Domestic Mobile Terminating Access Service*, Discussion Paper, May 2013, p.11

<sup>5</sup> ACMA, *Communications Report 2012-13*, p.11

<sup>6</sup> Page 91

<sup>7</sup> Optus estimates based on analysts' reports. "Other" includes MVNO's and resellers

- 2.7 There are a number of structural issues that have contributed to this outcome and which continue to limit the development of mobile competition in regional areas. In particular, regional areas face relatively higher costs to serve and deliver relatively lower returns compared to the more heavily populated metropolitan areas. These circumstances favour Telstra which can leverage its position as the incumbent national fixed line carrier to support its presence in regional mobile services.
- 2.8 A critical advantage for Telstra relative to competitors is its ability to leverage its fixed line infrastructure to support its mobile business in Regional Australia. Firstly, it can utilise its fixed line network to provide backhaul transmission capacity to mobile base stations. The cost of backhaul is a significant component in the cost of delivering mobile services. This cost is proportionally higher in regional Australia with large distances between population centres resulting in longer backhaul runs and lower traffic volumes over which these costs can be recovered. Telstra has a significant advantage as it has sunk infrastructure available to provide backhaul services. Secondly, Telstra has an established retail presence with rusted on customer base. The opportunities for it to cross-sell fixed and mobile services are strong. Further, the costs of this infrastructure can be recovered over more services (including both fixed and mobile services).
- 2.9 This advantage has become more pronounced with the increasing growth of data services that require higher capacity backhaul to be provisioned to mobile sites.
- 2.10 In addition to these structural barriers, Telstra has also been the beneficiary of significant Government funding and industry subsidies over the years. Much of this funding has related to schemes designed to support the roll-out of infrastructure in regional areas. Few if any of these schemes have sought to enhance competition or at least ensure funds were allocated in a competitively neutral manner. Optus estimates that since 1997 Telstra has received approximately \$462M in direct Government funding<sup>8</sup>. In addition it continues to receive subsidies from industry under the USO arrangements that total some \$882 Million since 1997. These USO payments will increase as a result of the arrangements agreed between Telstra and the Government to secure Telstra's participation in the roll-out of the NBN.
- 2.11 With the present funding programme the Government has the opportunity to take a different approach. It can ensure that funding is allocated in a way that both improves mobile coverage and enhances competitive outcomes in regional Australia by ensuring that taxpayer funds are applied in a competitively neutral manner. This can be achieved by ensuring that any Government funded infrastructure is subject to open access principles.
- 2.12 However, the detail of the open access arrangements will be significant. Competition will not be advanced if these simply amount to a restatement of the existing co-location obligations that apply under the Telecommunications Act.

#### **Current co-location provisions**

- 2.13 The Telecommunications Act sets out a facilities access regime. Part 5 of Schedule 1 of the Act contains access provisions that specifically apply to telecommunications towers and sites of towers. It essentially requires a carrier to provide access to the facilities if requested to do so by a third party carrier. A carrier is not required to comply with this obligation only if it is not technically feasible to provide such access.

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<sup>8</sup> This includes funding from Federal and State Governments.



- 2.14 The Act also empowers the ACCC to make a Facilities Access Code to govern how access to eligible telecommunications facilities is provided. The ACCC first published such a code in 1999, and it recently updated the Code in September 2013. The Facilities Access Code sets out a number of obligations and procedures that are designed to assist carriers in gaining access to eligible facilities, including mobile towers and sites.
- 2.15 There is no doubt that the current regulations have assisted carriers in obtaining access to each other's facilities. It is often more effective for an MNO to seek to co-locate on an existing facility than to build a separate facility. As a result there is a reasonable level of co-location of mobile facilities across the country.
- 2.16 However, the existing arrangements are somewhat static since they focus on existing facilities, i.e. they assist access seekers gain access to towers that are already built. Whilst co-location can drive efficiencies and cost savings, co-location still requires a significant investment by an MNO to establish access at an existing site.
- 2.17 Establishing access to an existing site involves duplication of certain infrastructure and activities. Planning and design work will have to be repeated to assess the feasibility and practicalities of locating new equipment at a site. In some cases a tower or site might require augmentation, such as strengthening of the structure, the construction of additional support facilities to house equipment and to upgrade the power supply to the site. This means that a number of the costs incurred when the site was first established are re-incurred to provide co-location by a second or third MNO. In addition to these upfront costs a co-locating MNO will also face ongoing access fees. Although it will still be cheaper to co-locate than build a new site the costs of co-location are still relatively high. The costs can be prohibitive if the traffic generated by a site is modest, which is often the case for more remote locations.
- 2.18 However, where co-location requirements can be established before a site is constructed then MNO's can undertake joint build and deployment activities, thereby reducing the amount of duplication and enabling a greater proportion of costs of deploying and maintaining a site to be shared. As an example, for a co-build site design and planning activities only need to be undertaken once. Similarly, common support structures including a shelter can be built so reducing the build cost. Through a "co-build" approach it will be possible to drive significant costs efficiencies.
- 2.19 There is an opportunity under this scheme for the Government to promote such an outcome by adopting co-build principles as a key element of the scheme.

#### **Proposed Open Access and co-location provisions**

- 2.20 Optus welcomes the fact that the Discussion Paper has proposed to include a mandatory range of open access and co-locations provisions and arrangements as part of the scheme. These build on the existing co-location obligations under the Telecommunications Act and are aimed at delivering the efficiency and pro-competitive outcomes discussed above.
- 2.21 There are four key components to these proposed provisions;
- (a) Promoting efficient and cost effective co-location by ensuring that sites are designed to accommodate multiple MNO's and providing a mechanism for MNO's to pre-notify their interest in co-locating at a site before any acquisition, design and build activity is undertaken. Where such an interest is registered then MNO's are encouraged to "use all reasonable endeavours" to work together to coordinate build activities and so maximise efficiency and reduce costs. As will be discussed below these provisions

can be strengthened by giving priority to sites that are subject to co-build and seeking commitments from MNO's to co-locate on those sites;

- (b) Ensuring that an MNO co-locating equipment at a Government funded site should also benefit from any Government funding. This is important in ensuring that taxpayer funds are allocated in a competitively neutral manner and that no MNO gains a commercial advantage through such a subsidy. The practicalities of the cost sharing arrangements are discussed in more detail below;
- (c) Ensuring that sites are provisioned with sufficient backhaul capacity to meet the needs of at least three MNO's, thereby addressing the concerns discussed above about the provision of backhaul in regional locations; and
- (d) Inclusion of dispute resolution arrangements to enable MNO's to efficiently resolve any disagreements that might arise in connection with co-location at the relevant sites, including ACCC arbitration where necessary.

2.22 Optus strongly supports these principles and recommends that they are adopted as mandatory requirements under the scheme. The promotion of a co-build model, in particular, can drive significant cost efficiencies. These are consistent with similar arrangements under schemes adopted in New Zealand and the UK. In 2013 the UK Government announced funding to expand mobile coverage under its Mobile Infrastructure Programme. Under the scheme Arqiva, an infrastructure provider, was awarded funding to build sites and the Government commitments from each of the MNO's to co-locate and offer services from those sites. Details of a similar scheme undertaken in New Zealand are set out in Appendix 1.

#### **Open access provisions can generate significant benefits**

2.23 By adopting the mandatory open access provisions which seek to promote co-build, Optus believes that the Government can achieve some significant tangible benefits over and above the primary objective of enhancing mobile coverage in regional areas. Specifically, it will:

- (a) Advance competition in regional Australia by promoting more efficient co-location opportunities;
- (b) Improve customer choice by ensuring customers have access to alternate providers of mobile services; and
- (c) Increase the number of sites that Government is able to fund through the scheme by reducing the subsidy required at sites where co-location can occur.

2.24 The analysis in the table below shows the potential cost efficiencies that can be derived through co-ordinated and collaborative co-location at greenfield sites. This is based on the costs of deploying a site in a typical regional location (the costs of sites in more remote areas could be much greater due to electricity access, physical access, mobilisation of workforce and access to backhaul). It includes all the capital costs associated with deploying a site, such as:

- (a) Planning and design work;
- (b) Construction of the tower and site;
- (c) Construction of related support facilities;

- (d) Provision of power to the site;
- (e) Deployment of equipment at the site; and
- (f) Provisions of backhaul capacity.

2.25 **CiC**

2.26 **CiC**

2.27 **CiC**

## Section 3. Optimal delivery approach

### **An amended Option 2 will maximise the public benefit**

- 3.1 Optus considers that Delivery Option 2, the order of merit based tender, will offer the best approach from the delivery options canvassed in the Discussions Paper. Under this approach the Government will seek bids in respect of individual base stations or groups of base stations. This would enable MNO's to make bids for all or only a portion of the proposed funding.
- 3.2 As indicated in the Discussion Paper this approach is likely to increase interest in the scheme. In doing so it will likely increase competitive tension in the bidding process, provide an opportunity to canvass more creative funding options (including those from State and/or community based initiatives) and will ultimately deliver better value for money for the Government.
- 3.3 In order to maximise the public benefits from this scheme Optus proposes some modifications to the approach outlined in the Discussion Paper. These are aimed at better crystallising the opportunities for "co-build" at funded sites and to maximise the benefits outlined in section 2 above.
- 3.4 In particular, the process of site selection should encourage parties to identify sites that are likely to be mutually beneficial, as this will ensure the most efficient outcome of the programme, and the best value for money for the government.
- 3.5 Once proposals are submitted Government should identify sites that are likely to be of interest to multiple providers. These sites should be prioritised for funding as they are likely to generate the greatest level of public benefit under the scheme.
- 3.6 In a refinement to the process outlined in the Discussion Paper under Option 2, the Government should pro-actively seek binding commitments from multiple MNO's to co-locate on the proposed sites. In practical terms the Government could achieve this outcome by publishing a list of the sites it proposes to fund after receiving tenders and seek binding expressions of interest from MNO's to co-locate on sites. This would likely fast track the process of establishing co-located sites and maximise the efficiency and cost benefits to be obtained through site sharing arrangements.
- 3.7 Optus considers that this approach will maximise the number of sites that can benefit from co-build. In this way the subsidy required for these sites will be reduced since there will be at least one other party contributing to the site deployment. This should mean that Government will be in a position to fund a greater number of sites. In contrast to the concern raised in the Discussion Paper, Optus considers that the benefits generated from co-location are likely to far outweigh any possible losses in scale efficiency by not having a single MNO deploy all the sites.
- 3.8 To ensure that costs are not incurred unnecessarily, Optus recommends that following the binding expression of commitment process those sites which remain of interest to only a single MNO should not be subject to the mandatory open access provisions under the scheme. Application of this principle will help ensure that value for money is maximised and it will remove any potential claims that the open access provisions will lead to gold plating as these obligations will only apply where third party access is practically likely to be required.

For the avoidance of doubt, the single MNO sites should have a lower priority and should only receive funding once funds have been allocated to the multi-carrier sites.

### **Option 1 should not be the preferred approach**

- 3.9 Optus considers that the “Winner Takes All approach” (Option 1) is unlikely to generate any competitive tension in the bidding process. It is also likely to limit the scope of funding models to be canvassed with fewer parties likely to be able to tender for all sites. In fact there is a risk that Government would only receive a single compliant bid if this approach was to be adopted. For this reason, it should not be the preferred approach.
- 3.10 That said, if the Government was minded to consider Option 1, then the modifications Optus has outlined (paragraphs 3.60 above which aim to maximise the opportunities for co-build could be included in Option 1. Having identified the sites to receive funding the Government could seek binding expressions of interest from other MNO’s to co-locate on those sites prior to build occurring. Again the aim should be to reduce the subsidy required per site and maximise the number of sites that can be funded under the scheme.
- 3.11 Optus does not concur with proposition set out in the Discussion Paper that awarding funds to a single MNO can generate scale benefits, which in turn will lead to more sites being deployed under the scheme. The scale benefits of deploying multiple sites in disparate locations are likely to be minimal and would be significantly less than the benefits that could be generated by seeking to maximise the co-build opportunities identified in the discussion of Option 2 above. (Refer analysis in section 2 above).

### **Option 3**

- 3.12 Optus considers that network infrastructure providers should be encouraged to participate in the scheme both directly or as part of a consortium bid. As discussed further below there is may be merit in an infrastructure-only provider taking control of the deployment and ongoing operation of multi-operator sites.

#### *Mandatory roaming service*

- 3.13 Optus considers that the co-build open access model we have described above is likely to better maximise the competition outcomes and public benefits of the proposed Mobile Coverage programme than mandating a roaming service. There will be a number of complexities associated with providing a roaming service that may limit its appeal for third parties compared to the co-build model discussed above. The complexities include:
- (a) Funding under this programme is likely to cover a relatively small number of sites that will be dispersed over a wide footprint. Such a roaming service is likely to be available only in very small pockets with no contiguous coverage back to an access seekers network.
  - (b) There are technical complexities with roaming that would need to be resolved (such as use of different spectrum bands by MNO’s and soft handover requirements). These can add cost and complexity and results in customer experience issues when switching between networks (e.g. increased call drop-out).
  - (c) A third party MNO would also need to make a substantial investment to deploy the technical capability to access the roaming service. The expected traffic would need to justify this up-front investment.

- (d) The cost of providing a roaming service is likely to be relatively expensive given the modest traffic volumes over which those costs can be recovered. To compound this it is likely that the pricing of the service will be set on commercial terms. Optus' experience is that even where Telstra is required to offer a service, if prices are commercially set they are typically set at a level to discourage take-up of the service.

3.14 In summary, Optus considers that the co-build open access arrangements we have outlined in this submission will better enhance competition outcomes than a mandated roaming service. Mandating roaming service is unlikely to help the Government maximise the number of sites that can be funded under the programme.

### **Practical considerations**

- 3.15 The co-build model proposed by Optus above does raise some practical issues around site ownership and how funds are should be allocated. One approach is for the Government to appoint a lead MNO at each site which would "own" the infrastructure and take the lead in coordinating build activities. Government funding would be allocated to the lead MNO, but would then be deducted from the build costs. All costs over and above the Government subsidy would be shared equally between the MNO's. Any ongoing costs, such as operations, maintenance and rental costs associated with the site could also be shared between the MNO's.
- 3.16 As an alternative the Government could also consider appointing an infrastructure-only provider to deploy the multi-operator sites through a build, own and operate model. The infrastructure owner would receive the Government subsidy and any costs over and above the subsidy would be incurred by the infrastructure provider and then charged to the MNO's. This would incorporate some of the benefits of option 3 into option 2. In this respect, it is important that infrastructure-only providers are invited to participate in the tender process.
- 3.17 Appointment of an infrastructure-only provider to deploy co-build sites would also provide the Government with the benefit of an impartial Program Manager to coordinate the build activities and to take on the role of settling commercial arrangements with the MNO's. Such a provider would also have strong incentives to ensure that over time other parties can access such sites (such as emergency services, other access seekers etc).
- 3.18 Whilst there are some practical complexities with co-build, it is not a theoretical model. It is similar in many respects to existing joint venture arrangements deployed by MNO's around the world, including the existing joint venture arrangement between Optus and VHA.
- 3.19 Under that agreement Optus is given lead responsibility to design, build and deploy equipment at a number of greenfield sites on behalf of both parties. VHA has a similar lead responsibility at another set of sites. Under the agreement sites have to be built to specifications and there are defined processes, timelines and cost sharing arrangements, including arrangements to drive operational efficiencies. These arrangements have helped to support more efficient site deployment by the parties.

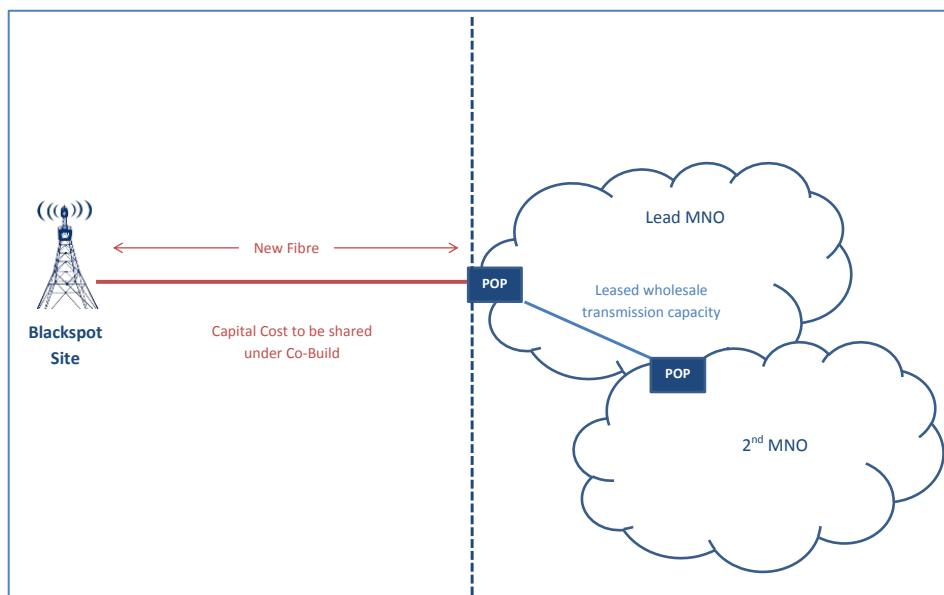
### *Treatment of backhaul capacity*

- 3.20 As indicated in section 2, providing backhaul capacity to a regional mobile site often represents a significant component of the total cost of deploying a site. For a greenfield site an MNO is likely to have to extend its existing backhaul to link into the new site. This means that backhaul capacity will be provided over a combination of new and existing infrastructure (fibre or microwave). This adds some potential complexity in terms of how the cost of

backhaul should be treated under the scheme. Optus considers that it should be broken into two components as follows:

- (a) **New capacity:** The cost of extending an existing fibre run or microwave hop would represent a capital cost. This capital cost should be included in the cost of establishing the site and would be shared between the Government and an MNO's under the co-build arrangements described above.
- (b) **Existing capacity:** A co-locating MNO can purchase a wholesale backhaul service from the lead MNO to connect to the new fibre. In practical terms this service would run from a Point of Presence (POP) nearest to the new fibre back to the nearest POP on the co-locating MNO's network. The cost of this transmission service would be set by reference to the existing ACCC rates for Domestic Transmission Capacity Service. To be clear though, the purchased link would be a sub-component of the full link to reflect a co-locating MNO's contribution under (a) above.

3.21 The diagram below helps to explain the charging arrangements described above.



### 3.22 CiC

- 3.23 An exception to the treatment of backhaul capacity described above could apply to sites where NBN Co is a co-locating party. NBN Co's transmission requirements are likely to be significantly greater than those of co-locating MNO's because of the nature of the highspeed broadband service it has to deliver. In this instance, NBN Co could build the capacity into a site and MNO's could then purchase a wholesale backhaul service from NBN Co. Under this approach co-locating MNO's would not contribute to the capital cost of building transmission capacity to a site.

## Section 4. Selection Criteria

- 4.1 Optus considers that the overall objective of the scheme should be to maximise the public benefit arising from the investment of Commonwealth funds in the new infrastructure. In assessing the public benefit, the Government should take account of both the direct and indirect benefits attributable to the scheme.
- 4.2 Direct benefits will relate to the improvement in mobile coverage that will be achieved, which might be measured by the number of premises or kilometres of highway covered. Indirect benefits are those that will likely to arise from the enhancement of competition and customer choice through the scheme.
- 4.3 Optus believes that the public benefits from the scheme are likely to be maximised by giving weight to criteria 6 and criteria 7; the Open access criteria and sites that have a commitment from more than one MNO. The reasons for this are discussed in detail in section 2 above. In summary this is because prioritising criteria 6 and 7 will:
- (a) Lead to more cost effective site deployment, as it will encourage sharing of costs between multiple parties;
  - (b) Improve competition by facilitating more efficient co-location by third party MNO's; and
  - (c) Increase customer choice as the towers can provide access to multiple networks rather than just one network.
- 4.4 However, by weighting criteria 6 and 7 Optus submits that the Government is also likely to be able to better achieve its objective under criteria 2, 3, 4 and 5. This is because;
- (a) Sites that are of interest to multiple MNO's are likely to be those which generate highest usage which means that they are likely to satisfy criteria 2 and 3 (new coverage and extent of coverage); and
  - (b) By making sites more economic for MNOs, the government can also minimise its per-site contribution, and get the best value for money. This achieves criteria 4 and criteria 5 (co-contributions and value for money)
- 4.5 The remaining (important) criteria which will need to be met by the participating MNOs is that the sites selected match with the priority programme locations (criteria 1). Again, it is likely that sites which are of interest to multiple MNO's will correlate with priority locations as they are likely to have highest demand for access.
- 4.6 As a final observation, Optus notes that Government should consider expanding criteria seven to place a priority on sites with commitments from:
- (a) infrastructure players; and
  - (b) NBN Co.
- 4.7 With this proposed weighting Optus considers that the criteria are likely to achieve an appropriate balance for assessing bids under the scheme.



## Section 5. Leveraging the NBN to support regional mobile competition

- 5.1 The Discussion Paper identifies that the roll-out of NBN infrastructure provides an opportunity to improve mobile phone coverage and competition. This is especially the case in regional Australia where NBN Co is deploying an extensive tower network to support its Fixed Wireless Broadband service.
- 5.2 There are three ways in which NBN infrastructure can be leveraged to support mobile coverage and competition:
- (a) To encourage greater sharing of NBN facilities and NBN's use of other carriers facilities;
  - (b) To encourage NBN to provide access to its remote sites, on a co-build model ; and
  - (c) For NBN to supply a competitively priced backhaul service to mobile towers.
- 5.3 In respect of the first opportunity above, Optus notes that NBN is participating in a number of co-location arrangements with other MNO's. However, there is an opportunity to drive a deeper level of engagement with industry to maximise the opportunities for site sharing. As indicated in the Discussion paper, in considering the precise location of its sites NBN Co could consult industry to identify mutually acceptable site locations. This would enable NBN Co and MNO's to undertake co-build and site sharing, and hence drive the sorts of efficiencies and costs savings identified in section 2 above.
- 5.4 **CiC**
- 5.5 To help deliver this objective NBN Co could be given a stronger mandate to consider co-build opportunities with MNO's prior to the deployment of an NBN Fixed Wireless Tower.
- 5.6 In addition, an analysis of the potential overlap between NBN Co's prospective roll-out and likely mobile black spot locations should also be undertaken to help assess the opportunity for NBN infrastructure to be leveraged under the programme. Again, where there is a potential overlap then NBN Co should be prepared to commit to co-locate on a site prior to the deployment of a site under the process outlined in section 3 above.
- 5.7 In respect of the second opportunity above, NBN could build its sites on an open access basis and undertake co-build with MNOs that are prepared to commit to co-location on these sites.
- 5.8 In addition to increased sharing of NBN infrastructure by MNO's, the NBN can be leveraged to assist mobile coverage and competition by NBN Co developing a mobile backhaul service. To make a real difference this service would need to provide a quality of service that is comparable with existing backhaul services but at a lower price point.
- 5.9 Optus is aware that NBN Co is developing a "Cell Site Access Service". However, this service is at an early stage in its development, with limited quality of service options and pricing yet to be made available.

### Overview of the New Zealand Regional Broadband Initiative

The New Zealand Government provided NZ\$300m for the Rural Broadband Initiative (RBI). The objectives of the RBI are to:

- Improve broadband coverage in rural areas to 80%;
- Provide ultrafast broadband to at least 93% of schools in rural areas; and
- Make available open access backhaul services over grant funded connections.

The RBI is being developed over both fixed fibre and copper; and wireless technologies. Chorus and Vodafone won a joint bid to provide the service. Under the agreements Chorus will provide:

- Fibre to schools, hospitals and wireless sites;
- FTTN extended in rural NZ;
- Backhaul services over open access fibre (including fibre backhaul to the 154 RBI mobile towers); and
- FTTP for some customers.

While Vodafone will:

- Identify mobile tower sites, build open access towers and equip with technology to deliver coverage;
- Build 154 new towers using RBI money and upgrade an additional 387 sites to provide high speed broadband at Vodafone's own cost;
- Manage tower co-location, with price set to cover operational costs;
- Provide an RBI Wholesale product.<sup>9</sup>

### Open access & non-discriminatory requirements

Under the NZ RBI agreements, any service provided over RBI-funded infrastructure must be supplied on a non-discriminatory basis and with equivalence of service obligations. The obligations are set out in Deeds of Undertaking between the Government and winning bidders. The Undertakings comprise broad non-discrimination obligation which prevent the winning bidders from:

- Treating different Access Seekers differently; or
- Where winning bidder supplies itself with colocation or broadband services using RBI-funded infrastructure, to treat itself differently from Access Seekers.

The obligation does not apply where differential treatment is objectively justified and does not harm, and is unlikely to harm, competition in any telecommunications market.

### Tower design obligations

Whilst the RBI is primarily aimed at delivering fixed broadband services it also seeks to leverage the Government funded infrastructure to enhance competition in the delivery of mobile services in rural locations. Specifically, it includes arrangements to support co-location and co-build of towers and sites.

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<sup>9</sup> MED, Chorus, & Vodafone, Presentation to Clutha District Council on the RBI, 23 February 2013. See also, Rural Broadband Agreement between the New Zealand Crown and Vodafone NZ Ltd., Clause 8.

The Agreement contains specific obligations in relation to the physical size and capability of RBI-funded towers. This prevents the access provider from denying colocation on technical grounds. The colocation procedures also ensure that access seekers can be involved in the design and approval of sites from the start of the process (see below).

The Agreement requires that all RBI-funded towers be of a height and sufficient strength to enable colocation of at least two other access seekers in addition to the access provider (three in total), across at least two upper levels of the tower; and at least three other small access seekers at lower heights on the tower.

The Agreement requires towers be:

- At least 25m tall with ability for 5m extension;
- At least one head frame, possibly two depending on requirements; and
- Twelve hours of battery backup and an external connection for a community provided 230v AC generator;<sup>10</sup>

A fully loaded tower will be 30m high, with 18-24 panel antennas on two head frames with WiFi equipment lower down.<sup>11</sup> The network equipment on the RBI-funded tower will have a design life of eight years; and the physical infrastructures (such as ducts, towers, and buildings) will have a life of at least 25 years.

### **Open access backhaul obligations**

A condition precedent on the wireless RBI is the provision of an open access fibre backhaul link to the relevant site. That is, RBI obligations do not start until the time at which the RBI-funded tower is built and an open access fibre backhaul link is made available.

The RBI Agreement between Telecom and the New Zealand Government contains an obligation to supply a RBI backhaul service.<sup>12</sup> The fibre backhaul obligation to each of the RBI-funded mobile towers comprises a layer 2 service from the mobile site to a regional PoP where a commercial backhaul service can then be provided. The fibre service is designed to support layer 2 services of at least 10Mbps committed information rate and a peak rate of up to 100Mbps.<sup>13</sup> The backhaul service is to be provided along similar lines as the regulated ULL backhaul service.<sup>14</sup>

### **Colocation obligations**

The RBI Agreement requires that Vodafone must provide colocation services in addition to the wholesale service obligation on grant-funded towers, and after a RBI-funded fibre backhaul link is made available. The colocation service utilises the existing industry approach to colocation with several additional obligations that attach to RBI-funded towers — to ensure the effectiveness of open and non-discriminatory access.

For example, the Agreement requires the establishment of a RBI colocation database that enables access seekers to monitor the progress of funded sites and be in a position to make informed decisions

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<sup>10</sup> Rural Broadband Agreement, Schedule 1, Appendix 1.

<sup>11</sup> MED, Chorus, & Vodafone, Presentation to Clutha District Council on the RBI, 23 February 2013.

<sup>12</sup> Rural Broadband Agreement between the New Zealand Crown and Telecom NZ Ltd., schedule 1.

<sup>13</sup> Rural Broadband Agreement between the New Zealand Crown and Telecom NZ Ltd., schedule 2, p.15.

<sup>14</sup> This regulates the backhaul connection between a telephone exchange to an interconnect point.

whether to use colocation services. The database includes site name, location and key programme milestone dates. Access seekers can register their interest in the database. Registered access seekers will be notified when sites are at a stage to warrant issuing of packs to invite colocation applications. Access seekers can then notify whether they wish to be involved in the site design.<sup>15</sup>

Access seekers who register their interest are able to participate in the design of the site, including the technical and other information needed to prepare construction drawings for the site to be built. All parties are required to participate in good faith, and Vodafone is required to consider all reasonable requests for change. **Vodafone and the access seekers will then work together to coordinate the build to ensure that the site is built efficiently.**<sup>16</sup>

The Agreement also sets out the costs that can be recovered by Vodafone. The charges levelled at access seekers are limited to costs directly incurred in maintaining the RBI-funded site, including site rental costs, break fix costs and planned preventative maintenance.<sup>17</sup> Importantly, none of the capital or operating costs incurred in building the site can be recovered from access seekers. The Agreement also states that the ongoing costs of the site will be shared equally among all access seekers (including Vodafone).<sup>18</sup> Vodafone's non-discrimination Undertaking clarifies that it will not pass on to access seekers the portion of ongoing costs that relate to capacity reserved for Vodafone's use, irrespective of whether the reserved capacity is used or not.<sup>19</sup>

Vodafone is able to reserve capacity for its use if it has a reasonable intent, ability and commitment to deploy in accordance to the forecast. Any reserved capacity will lapse if not used with two years and where an Access Seeker has requested access.<sup>20</sup>

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<sup>15</sup> Rural Broadband Agreement, Schedule 1, Part C clause 2.

<sup>16</sup> Rural Broadband Agreement, Schedule 1, Part C clauses 3-5.

<sup>17</sup> Colocation is charged on a 'per antenna' basis. So that, if a tower has six active antennas and one Access Seekers has two antennas, it would pay one third of the ongoing costs. See clauses 6.12-14 of the Deed of Undertaking.

<sup>18</sup> Rural Broadband Agreement, Schedule 1, Part C, clause 7.

<sup>19</sup> MED, Vodafone, Deed of Undertaking, clause 6.9.

<sup>20</sup> MED, Vodafone, Deed of Undertaking, clauses 6.7, 6.10.

### Checklist of questions and Answers

- 1. Would an appropriate minimum quality standard be that base stations must provide high-speed 4G LTE mobile broadband data communication services and also high quality 3G mobile voice and broadband data services? If this is not an appropriate minimum quality standard, what is?**

Optus considers that both 4G and 3G should be the standard technology across all sites unless Satellite is being used to provide backhaul. In this case, the minimum standard quality should be set as 3G.

Optus does not believe there is a need to mandate a specific minimum “speed” given that speed can be influenced by many external factors.

- 2. What are the most appropriate indicators that could be used to specify the minimum quality standards that should apply to the mobile services being provided through the programme? For instance, should it be a minimum received service signal indication (RSSI) in decibel-milliwatts (dBm)? A similar approach was adopted recently in the UK where a comparable programme specified a minimum RSSI for 3G voice and basic data service of -85dBm on roads and -75dBm in community areas (outside premises).**

Optus does not support the use of RSSI as a measure of success or forecast success for a 3G sites. Due to the nature of some blackspot areas, coverage predictions alone may also not be the best measure.

Using RSCP (3G) and RSRP (4G) will have its part to play, but it is important that there is participant agreement on the levels to be used and where the targets for levels are to be focussed. i.e. it is not appropriate to simply review the prediction plot of one carrier's proposal at say -78dBm to another's based purely on square km covered if the target location is only partially covered by the carrier with the largest footprint at -78dBm. Further, any predictions of coverage should be subject to verification.

If the supply of carriers current and proposed coverage layers is required as part of the submission to assist with assessment, agreement should be sought by potential participants on the varying signal levels supplied and their definition. One carrier for example, may use -110dBm RSRP as an external handheld coverage level, whilst another may choose to use -105dBm.

The use of independent drive testing to validate and measure predicted coverage has merit, but if the vehicle solely sticks to public access roads, the overall benefit of a site or problem area may not be realised. **CiC.**

Collecting data in this manner provides a truer understanding of user coverage experience where it matters most to them. It provides a useful way to verify the severity of a blackspot when reviewing funding. Optus can provide a demonstration of the tool we have developed. The fact that we use the data collect in our planning processes, demonstrates that it was developed with specific engineering requirements in mind.

- 3. Does delivery option 2 for the \$80 million Mobile Network Expansion component raise any additional issues that need to be considered?**

Refer to section 2 in Optus submission

- 4. Could options 3(a) or 3(b) for the \$80 million Mobile Network Expansion Project be delivered in conjunction with options 1 or 2 to enable network infrastructure providers to compete with MNOs?**

Refer to section 2 in Optus submission

- 5. Should bidders be able to propose to incorporate the use of base stations owned by NBN Co as part of their bid?**

Refer to section 5 in Optus submission.

- 6. Should a joint bid (between a specialist network infrastructure provider and a MNO) be permitted? Should it be encouraged?**

Joint bids between an MNO and infrastructure provider should be encouraged as this may reduce the capital commitments required for MNOs, enabling them to lodge a more competitive bid. Refer to section 2 in submission.

- 7. Is it realistic to expect specialist network infrastructure providers to provide backhaul (recognising that they would presumably need to contract with a third party to provide this)?**

A specialist infrastructure provider could obtain access to a regulated backhaul service under the existing declared Domestic Transmission Capacity Service if it has a carriage service provider licence. The capacity could then be subject to Government subsidy under the scheme.

- 8. Is option 3(b) suitable for Australia's regional mobile market?**

Refer to section 3 above.

- 9. What are the appropriate specifications for a base station to be able to accommodate at least two other MNOs?**

Under the co-build model proposed by Optus these details can be agreed on a site by site basis between the participating MNO's.

- 10. Will the proposed open access provisions be sufficient to encourage other MNOs to use the base stations to provide mobile services?**

Refer to section 2 above. As indicated the Open Access arrangements should encourage a co-build model. This will require MNO's to collaborate on the specific design of a site before it is constructed.

- 11. Should MNOs be required to pre-commit to/co-invest in the base stations for which they wish to share infrastructure?**

As indicated in section 3 above the Open Access arrangements should encourage co-build opportunities. This will necessarily require pre-commitment to investment by MNO's.

- 12. What is the estimated additional cost of requiring all new base stations to meet the open access requirements?**

Refer to analysis in section 2 above.

- 13. Should the proposed open access provisions be applicable to base stations funded under the \$20 million component, or should there be scope to exclude some base stations from these requirements?**

Optus considers that the \$20 Million funding component should be treated in the same way as the \$80 Million component. Funding should be prioritised to sites where co-build is likely to be viable.

- 14. What are the most appropriate models/benchmarks for establishing access and backhaul pricing, and for reflecting in that pricing the value of the public funding received by the owner of the facilities (such that access seekers receive an appropriate discount from the market price for access to the facility)?**

Refer to section 3.

- 15. Do the proposed assessment criteria achieve the right balance to deliver the best value for money outcomes?**  
**16. Should the proposed assessment criteria be weighted, and if so, how?**

Refer to section 4.

- 17. Is there a more effective means of assessing seasonal demand than proposed in criterion 3(c)?**

This issue is best addressed on a case by case basis once sites are identified. Optus notes that seasonal coverage demand will vary by location, it will not be limited to the traditional summer holiday period.

- 18. To what extent would the use of the NBN fixed wireless network result in improved mobile coverage outcomes in regional Australia**

Refer to section 5 of Optus submission.

- 19. How best can a greater role for NBN Co improve competition and choice for consumers in regional Australia?**

Refer to section 5 of Optus submission.

- 20. In addition to base station location, design and backhaul access, what other considerations would NBN Co need to take into account if it were to also support mobile coverage and competition benefits as part of its mandate?**

- 21. How can early engagement between NBN Co and MNOs be facilitated in the design of each base station? Is there a role here for the Australian Mobile Telecommunications Association (AMTA)?**

Refer to section 5 of Optus submission. Optus does not see the need to bring AMTA into this process; MNO's and NBN Co can deal directly with each other on co-build activities.

- 22. How can the Mobile Coverage Programme best complement any role that the NBN fixed wireless service plays in improving mobile coverage and competition?**

Refer to section 5 of Optus submission.