Response to DCITA Discussion Paper

Broadband Connect and Clever Networks: Supporting Investment in Sustainable Broadband Infrastructure

Securing Wireless Broadband Services In Regional And Rural Australia

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1. INTRODUCTION

AUSTAR United Communications Limited (**AUSTAR**) welcomes the opportunity to contribute to the consultation process being conducted by the Department of Communications, Information Technology and the Arts' (**DCITA**) in relation to the Broadband Connect and Clever Networks programs. AUSTAR is very supportive of the announced objectives of these programs.

Australia's wireless future

AUSTAR recently announced its plans to commence providing wireless broadband services to selected regional areas using the spectrum that AUSTAR already holds under spectrum licences issued by the Australian Communications and Media Authority (**ACMA**). AUSTAR's objective is to provide regional and rural consumers with efficient and competitively priced broadband services, and in so doing, offer such consumers a genuine alternative choice to Telstra. AUSTAR has a supportive, experienced majority shareholder in Liberty Global, a company with investments in subscription TV distributors, content companies and broadband providers in Europe, South America and the Asia-Pacific region. In particular, Liberty Global is examining wireless broadband opportunities in many of its other markets. AUSTAR and its customers will benefit from the global scale, knowledge and experience that AUSTAR's relationship with Liberty Global brings.

Promotion of sustainable infrastructure-based competition

Before summarising AUSTAR's key responses to the *Discussion Paper: Broadband Connect and Clever Networks* (**Discussion Paper**), AUSTAR wishes to explain some assumptions upon which our responses are based.

AUSTAR's view is that Australian telecommunications policy (including the design of telecommunications programs) should continue to recognise that the promotion of sustainable infrastructure-based competition in telecommunications services is in the public interest. Where market failure or Government priorities identify a need for public funding, promotion of sustainable competition and maximisation of the social and economic efficiency of that funding should be the central considerations in determining the allocation of that public funding. Long term, cost effective and sustainable broadband services will only be provided on an equitable basis in many parts of regional Australia if closely targeted public funding is available to address the costs of providing connectivity to identified higher cost customers.

AUSTAR also considers that where possible, a "technology neutral" approach should be adopted in the implementation of the Broadband Connect and Clever Networks programs. Such an approach is also pro-competitive, and will mean that the Government is not required to predict what technologies will prevail in the longer term.

AUSTAR's proposal

AUSTAR understands the capital investment component of $1.1 billion Connect Australia program package (as described in the introduction to the Discussion Paper) is intended to meet the Government's goal of creating "a program that stimulates the industry to deliver more innovative and effective solutions."

In this submission, AUSTAR outlines how the Broadband Connect and Clever Networks programs can ensure successful, sustainable and equitable roll out of broadband services across Australia, including in areas that would not have been commercially feasible in the absence of public funding.

To summarise, AUSTAR's proposal is to reach a much broader class of regional customers than can be addressed through DSL broadband through the combination of a limited and highly targeted up-front capital investment subsidy with a "per-user" subsidy.

AUSTAR's proposal draws heavily on the best elements of the existing Higher Bandwidth Incentive Scheme (**HiBIS**), but modifies HiBIS to more efficiently target funding towards a broader class of prospective broadband customers than those customers that can be served through DSL. Implementation of AUSTAR's proposal would not unduly advantage Telstra as against other potential providers of broadband services - and would not favour particular technologies, or otherwise give AUSTAR or other alternative service providers an unfair 'leg-up'.

Adoption of a "hybrid" model of limited and targeted up front capital grants and a "per user" subsidy would assist in reduction of barriers to entry for alternative providers and mitigate the substantial competitive advantage that Telstra enjoys under the current HiBIS scheme as a result of its inherited sunk costs in existing infrastructure.

This proposal differs from a scheme whereby the Government "matches" capital funds invested by a network builder. AUSTAR's proposal is not based upon selection of particular technologies or service providers and funding of their network development – any such 'picking winners' approach clearly would require an appropriate tendering process (as indicated at section 3.2 of the Discussion Paper). AUSTAR's proposal builds on the approach presently used under HiBIS. Instead of a tender process, AUSTAR suggests that applicants undertake a "pre-qualification" process in order to be

eligible for limited up-front capital funding. This process could result in a number of providers qualifying in a particular area (consistent with the results under the HiBIS scheme). Following this process, per-user subsidies could be made available as services are taken up. The suggested process is outlined in detail in AUSTAR's response to Question 3 below.

Operational separation of Telstra

In addition to outlining our suggestions about how the Broadband Connect and Clever Networks programs could be implemented, AUSTAR has also identified how the process for the operational separation of Telstra could be utilised to promote competition in broadband services in regional areas, particularly in relation to "backhaul" services.

In this submission, references to "backhaul" are references to the transmission of internet traffic from a remote site to a central site (eg from a regional area to a capital city). Backhaul services are an essential element of broadband services in regional areas.

AUSTAR acknowledges that designation of the "Domestic Transmission Capacity Service" by the Minister on 21 December 2005 has the effect that Telstra will need to demonstrate a "commitment to equivalence" in relation to the provision of those services (which AUSTAR understands will include some, but not all, "backhaul" services).

However, AUSTAR's view is that in order for this equivalence requirement to be meaningful to AUSTAR and other operators who require backhaul services, an appropriate level of detail will need to be available about the type of backhaul services that Telstra is able to provide. At present, the information that is available about the scope and cost of backhaul services is very limited. AUSTAR suggests that an appropriate level of detail (as outlined in this submission) about backhaul services should be included in the interconnection agreement between Telstra Wholesale and Telstra Retail, and that as part of the process by which the Minister approves Telstra's operational separation plan, Telstra should be required to publish that interconnection agreement. Availability of this information would assist access seekers to request the appropriate service and to make appropriate commercial decisions based on comparisons of charges for the various backhaul services that are available. In turn, this would promote the provision of competitive and efficient broadband services in regional Australia.

AUSTAR also notes that the relevant "designation" is linked to those services that have been declared by the ACCC (which excludes backhaul services from some key regional centres to capital cities). However, as AUSTAR's understanding is that the

interconnection agreement should relate to all relevant services (not only designated or declared services), publication of the interconnection agreement would ensure that information about those excluded backhaul services is also available. This is an important commercial issue for new entrants such as AUSTAR.

AUSTAR would welcome the opportunity to discuss these issues further with DCITA.

2. BACKGROUND

2.1 OVERVIEW OF AUSTAR's CURRENT BROADBAND PLANS

2.1.1 AUSTAR recently announced its intention to invest A$50m in building a wireless broadband internet network to service approximately 750,000 homes in rural and regional Australia.

2.1.2 AUSTAR expects this initial rollout will commence in 2 locations from Q2 2006, expanding to another 23 locations by the end of 2007. The network will utilise the spectrum that AUSTAR holds under spectrum licences issued for the 2.3GHz and 3.4-3.5GHz spectrum bands.

2.1.3 AUSTAR's objective is to provide regional and rural consumers with efficient and competitively priced broadband services, and in so doing, offer such consumers a genuine alternative choice to Telstra. AUSTAR estimates that of the 1.6 million households eligible for the Broadband Connect program, approximately 76% fall within our 2.3Ghz and 3.4-3.5Ghz spectrum band coverage areas – so the potential for AUSTAR to provide a genuine alternative choice to Telstra on a large scale is great. Particularly given that AUSTAR has also agreed to build a network that is interoperable with wireless broadband provider Unwired who hold the 2.3Ghz and 3.4-3.5Ghz spectrum in the remaining (mainly metropolitan) areas nationally. This means customers will be able to roam across both networks, which will provide an effective national network to compete with Telstra.

2.1.4 AUSTAR's experience, excellence and scale in servicing customers, creating products and managing the supporting infrastructure and systems will be the key to ensuring that AUSTAR's broadband service is sustainable. As an experienced broadcasting and communications service provider - particularly in the provision of regional services - and as a spectrum licensee AUSTAR has the capability and commitment to provide broadband services extending across regional and rural Australia:

- 10 years experience in regional Australia – over the past 10 years, AUSTAR has demonstrated its strong commitment to regional and rural Australia in its subscription television footprint of one third (2.4m) of all Australian homes;

- Strong brand recognition in regional Australia - with 98 per cent brand awareness;

- Over half a million customers - with more than 525,000 customers, AUSTAR is one of Australia's leading subscription television providers, and has experienced strong growth since the launch of its new digital television product in March 2004;

- Enhanced products and services – in addition to its subscription television services, AUSTAR also offers dial-up internet and mobile telephony to regional Australians. Wireless broadband will further enhance this product suite;

- Scale and financial stability – AUSTAR is a stable, profitable, cashflow generative business with a market capitalisation on the Australian Stock Exchange of around A$1.5 billion. It has a supportive, experienced major shareholder in Liberty Global, a company with investments in subscription TV distributors, content companies and broadband providers in Europe, South America and the Asia-Pacific region. In particular, Liberty Global is examining wireless broadband opportunities in many of its other markets. AUSTAR and its customers will benefit from the global knowledge, skills, resources, and experience that AUSTAR's relationship with Liberty Global brings.

3. BROADBAND CONNECT

3.1 POTENTIAL FOR INNOVATION IN PROGRAM DESIGN

QUESTION 1 *- **How can the design and delivery of Broadband Connect be optimised to achieve long term sustainable quality broadband solutions for regional, rural and remote Australians?***

3.1.1 The design and delivery of Broadband Connect should promote new network and infrastructure investment by providers other than Telstra, in order to deliver long term sustainable broadband solutions and competition. Implementation of Broadband Connect should:

- extend the reach of broadband, to made available on an equitable basis, to the extent reasonably feasible;
- be 'technology neutral'; (AUSTAR assumes neutrality to mean technologies that are durable, scaleable and upgradeable);
- ensure Telstra is not unduly advantaged in comparison to 'new entrant' operators; and
- ensure that Telstra is not provided with incentives structured to deter the deployment of obsolete technology, such as ISDN.

3.1.2 AUSTAR's responses to the questions raised in the Discussion Paper reflect these principles. Further details and practical examples of current issues and suggested solutions are provided as answers to the questions which pertain specifically to each issue. In summary, AUSTAR's view is that design and delivery of Broadband Connect should draw on the HiBIS approach but addresses the deficiencies of the HiBIS scheme. An approach which combines a limited and conditional up-front capital grant with a per-user subsidy would best promote sustainable broadband solutions in regional Australia. This approach is discussed in more detail in response to Question 2 below.

QUESTION 2 - What means can/should be used to encourage further capital investment in infrastructure that will support competitive networks and services under Broadband Connect and beyond?

3.1.3 As a scheme for encouraging investment in infrastructure to support competitive broadband networks and services, HiBIS is a good starting point. HiBIS has provided effective incentives for the deployment of broadband services in previously underserved areas (and especially in regional areas), at least in areas capable of being served by DSL. However, AUSTAR considers that there are ways that HiBIS could be improved, so that the reach of broadband is extended without favouring any particular technology and so that incumbent infrastructure operators are not unduly advantaged.

3.1.4 Before outlining specific details of AUSTAR's proposals, some practical issues that have emerged under HiBIS are explained below .

Technology neutral planning

3.1.5 HiBIS currently provides a per user incentive for the deployment of broadband services. The underlying assumption in this approach is that there is an incremental network side per customer cost in the delivery of each service. This model of payment for incremental demand provides an incentive for those with existing infrastructure to proceed with the incremental per service cost associated with the delivery of each service, and assumes limited barriers to entry for new providers.

3.1.6 In Australia, this model encourages the delivery of broadband service for those with substantial existing infrastructure – that is Telstra - when it is delivered by means of digital subscriber line (DSL), where the upgrade takes the form of adding a subscriber line card for each group of subscribers which, depending on the specific type of DSL access multiplexer (DSLAM) used, will represent an increment of 8, 16, 24 or 48 users.

3.1.7 However, alternative access technologies such as wireless access or satellite based services have a very different cost structure. Wireless broadband services use local base stations (for example, placed on a hill, and potentially co-sited on an existing mobile telephony transmission tower), to transmit directly to homes. These homes can then receive broadband speed internet access comparable to

capital city broadband services even if these homes cannot receive wireline (eg DSL) broadband internet services.

3.1.8 Hence, for broadband wireless access, the initial cost of the establishment base stations is a fixed cost and the incremental cost of adding new subscribers is relatively low. A per-user incentive model reinforces and extends the existing high barriers to entry, and provides a substantial competitive advantage to the incumbent operator.

3.1.9 The WiMAX forum suggests that, for deployment in regional areas, a broadband wireless access base station (excluding backhaul link) would cost approximately US$200,000. Assuming that there is a 10% uplift for costs in Australia (to reflect tripping to Australia, duty and warehouse costs), an exchange rate of A$1=US$0.75, and making a further allowance to reflect Australian deployment conditions, then the capital cost for a broadband wireless access base station would be approximately A$400,000. The number of base stations that are required to serve a particular community will depend on geographical characteristics and the "spread" of the population (for example, a population may be spread along a river, rather than fanning out from a town centre). Thus, the capital cost to service a particular community would be A$400,000, multipled by the number of broadband wireless access base stations required.

3.1.10 By contrast, the approach used by carriers in the United States for the deployment of DSL services is US$200 per subscriber. At a per DSLAM level, a target opening customer base of 144 customers would not be unreasonable. 144 customers at US$200 per line implies a capital outlay of approximately A$42,000 using the same assumptions on freight and import costs.

3.1.11 While this may initially suggest that DSL is a more cost effective technology path, DSL has significant practical limitations and therefore cannot be relied upon as the principal technical solution for consumer broadband in regional Australia. DSL may only be deployed over short distances from a telephone exchange, and is dependent upon the quality of the underlying copper. The quality of copper in many parts of regional Australia is relatively poor. A wireless service achieves broader greater broadband coverage. Implementation of Broadband Connect should not, therefore, be based on assumptions specific to DSL.

Telstra's advantage vs. 'new entrant' operators

3.1.12 Since introduction of HiBIS, Telstra has deployed DSLAMs on the basis of "known demand". Potential users of broadband services are encouraged to

register with Telstra. When the register indicates sufficient prospective customers to justify deployment of a DSLAM at an exchange, Telstra then commences the provisioning process and registers the customers 'in a block'. Telstra can in this way use its existing infrastructure and customer base to derive timing and cashflow advantages under HiBIS that only Telstra can derive.

3.1.13 It is believed Telstra pays its suppliers 30 days after the end of the month in which supplies are invoiced. If a DSLAM is delivered at the beginning of a month, payment to the supplier may not occur for up to 60 days. Applying realistic assumptions that:

- the DSLAM is promptly delivered (e.g. from the supplier's stock); and
- there is a two-week testing period between delivery of the DSLAM and customers being connected and provided with broadband services,

Telstra is able to claim for the incentive payments just two weeks after the DSLAM is installed. Telstra can therefore claim HiBIS incentive payments six weeks before the cost of the DSLAMs is due to the vendor.

3.1.14 By contrast, the only practical option for all other new entrant competitors is to first deploy infrastructure and then seek to acquire customers onto that infrastructure. All competitors to Telstra have a significantly higher cost of capital than Telstra.

3.1.15 The net outcome is that HiBIS provides Telstra with a very substantial cash flow advantage compared to all competitors.

3.1.16 Even if the changes proposed by AUSTAR proposes were introduced, Telstra would continue to enjoy considerable advantages over new entrants like AUSTAR, as a result of existing infrastructure and the scale of its operations. However, AUSTAR's suggestions would assist to ameliorate such advantages.

3.1.17 AUSTAR's proposal is that the implementation of Broadband Connect should be based on a combination of "up front" capital funding, and a "per user" grant. AUSTAR suggests that there be three different structures for funding grants, based on the geographic characteristics of the relevant region. This approach recognises the fact that some areas with particular geographic characteristics are more suited to particular technologies than others, but the approach is technology neutral in its effect - funding is not contingent upon a particular technology being selected.

3.1.18 A more detailed explanation of AUSTAR's proposal is outlined below in response to Question 3.

QUESTION 3 - How can Broadband Connect funding be structured to provide the best incentives for investment?

3.1.19 As outlined in response to Question 2, AUSTAR believes that the best incentives to encourage investment and competition are those incentives that foster the development of economically efficient competition and alternative infrastructure.

3.1.20 In an analysis which is similar to the one conducted by **DCITA** in its review of alternative mechanisms for selecting a universal service provider, it is useful to consider concentric rings around the post office (**GPO**) of a regional centre in considering the appropriate form of funding support.

3.1.21 AUSTAR believes its proposal outlined below:

- recognises the cash flow issues associated with the deployment of broadband services in a practical but technology neutral manner;

- promotes broader and economically efficient provision of broadband service at a cost to the Government which is significantly lower than that proposed by Telstra on 11 August 2005 and which will be achieved using the funds established by the Minister; and

- diminishes the unique cash flow advantage that Telstra derives from the current scheme and ensures that Telstra is not unduly advantaged in comparison with 'new entrant' competitors.

3.1.22 While still remaining technology neutral, AUSTAR's proposal recognises that:

- wireline solutions efficiently compete with wireless solutions in an area close to the Telstra exchange building;

- wireless solutions are likely to be the most appropriate and cost effective implementation of broadband services in a concentric ring out from the area where wireline solutions compete to the area where population density does not support the capital expenditure for wireless solutions; and

- sparse population density areas are likely to be best served using satellite based solutions.

3.1.23 AUSTAR proposes that there be three levels of funding grants, determined solely by geographic areas and without reference to obsolete technologies such as ISDN. For example, the subsidy levels would be $1,400, $2,100 and $3,000 per subscriber as illustrated by reference to the relevant geographic areas in Figure 1 below:

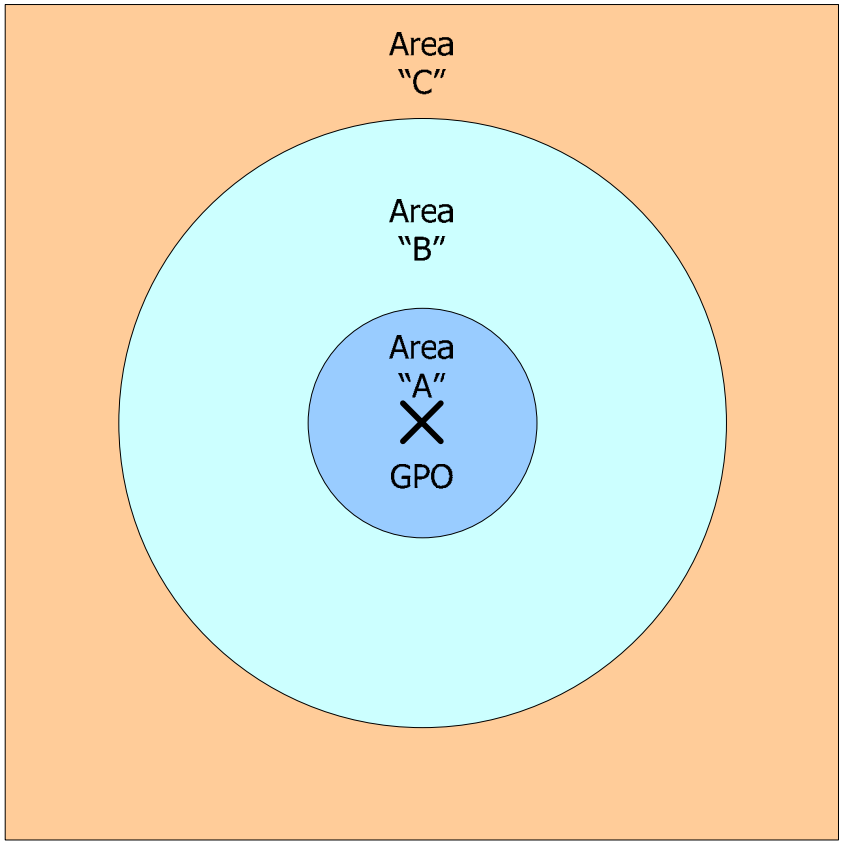

Figure 1 – Proposed subsidy areas

3.1.24 DSL services are typically restricted to a line length of 4 kilometres from the exchange building. Given that lines run parallel to roads, then the maximum radius is 2.8 kilometres. For convenience of calculation, AUSTAR suggests that this be rounded up in setting the inner ring which bounds area "A", so that the radius of ring "A" is 3 kilometres.

3.1.25 The wireless coverage ring range would extend to at least 8 kilometres from the GPO or central telephone exchange. This defines area "B".

3.1.26 The satellite coverage area “C” would lie beyond this until the next 8 kilometre ring is intersected. Therefore, in an area where the town population fans out from the GPO or central telephone exchange in the centre (eg in Benalla, Victoria), most of the population will be in area “A”. By contrast, in an area where the town population is spread along a river, and into a surrounding rural region (eg in Yarrawonga, Victoria), most of the population will be in area “B” or “C”.

3.1.27 Accordingly, AUSTAR proposes that under the Broadband Connect program, in area “A”:

- there is a payment of 12.5% of the actual capital expenditure incurred to a cap of $50,000 on completion of the “ready for service” certification by the operator;

- the first 150 subscribers receive a lower incentive payment of $1,070 (ex GST) per service deployed; and

- the lower incentive payment continues to be $1,400 (ex GST) for all subscribers in that area above 150.

3.1.28 In the proposal for area “A” above (and also in relation to the discussion of areas “B” and “C” that follow), AUSTAR has not suggested having different approaches for different types of topography. Due to the unique geographic characteristics of some towns, towns with similar population density can cost quite different amounts to ‘cover’. However, noting the importance of minimising the costs of administering the HiBIS scheme (where possible), AUSTAR considers that a uniform approach across areas “A”, “B” and “C” is acceptable. AUSTAR’s suggestions for areas “B” and “C” are discussed below.

3.1.29 AUSTAR proposes that under the Broadband Connect program, in area “B”:

- there is a payment of 25% of the actual capital expenditure incurred to a cap of $100,000 on completion of the “ready for service” certification by the operator; and

- the first 150 subscribers receive a lower mid incentive payment of $1,440 (ex GST) per service deployed; and

- a mid incentive payment be provided at the rate of $2,100 (ex GST) for all subscribers in that area above 150 subscribers.

3.1.30 AUSTAR proposes that an approach similar to that under HiBIS be used in area "C", so that the subsidy would be at the rate of $3,000 (ex GST) per subscriber.

3.1.31 The absence of a capital expenditure subsidy in relation to area "C" reflects the sparse population densities in these areas, which make them less suitable for cable, DSL or wireless technologies. Whilst resale of satellite services is at best a 'break-even' proposition, AUSTAR is reviewing its resale options in an effort to maximise the coverage of its proposed broadband service.

3.1.32 The models for areas "A" and "B" above illustrate a capital subsidy model which is approximately cost neutral for the Government at 150 subscribers when compared to the existing scheme structure. The cost data outlined for alternative wireless offerings demonstrates there is no incentive for new competitors to enter markets unless they can substantially exceed this number.

3.2 RETAINING SOME KEY ELEMENTS OF HiBIS

3.2.1 Although there were no specific questions posed in this section of the discussion paper, AUSTAR would like to highlight two suggestions to improve upon the current HiBIS / Broadband Connect Stage 1 schemes.

3.2.2 Firstly, AUSTAR notes the Stage 1 introduction of a 12 month time limit on the ability of a provider to claim incentives within any service area. AUSTAR assumes the purpose of this is to ensure that funding is directed to providers who are commercially sustainable beyond that 12 month period.

3.2.3 However, this proposal is not technology neutral, in that it deters investment in alternative infrastructure by introducing greater risk and pressure to a business case. The investment payback of a larger infrastructure deployment – and the time required to build the necessary scale in a customer base - is longer than 12 months.

3.2.4 It also encourages service providers to make metro comparable services available for 12 months only. AUSTAR suggests appropriate checks in the application process could be an alternative to replace the 12 month time limit and still ensure funding was only directed to commercially sustainable providers.

3.2.5 Secondly, AUSTAR notes that the process of checking the eligibility of premises for the current HiBIS scheme could also be improved.

3.2.6 To promote transparency with regard to assessing the extent of HiBIS funding available within an area, AUSTAR proposes that if historic Telstra ADSL availability is required at any stage of the assessment, this information should be provided directly to the provider, without that provider incurring a cost to obtain it within 48 hours of the provider requesting the information.

3.2.7 The current business rules state that if a Stage 3 assessment (full ADSL service qualification test) is required to confirm HiBIS availability:

> *"this further test also available online through the Telstra BigPond website, is without charge to a customer; however, a customer must first order a Telstra ADSL service (but may cancel an order at any time prior to completion of a sale without penalty)"* and
>
> *"Telstra will not undertake a full ADSL Service Qualification test at the request of another HiBIS Provider unless that provider is a Telstra reseller, due to commercial considerations".*

3.2.8 This clearly disadvantages new entrant operators in obtaining critical information to check the eligibility of a premises for the current HiBIS scheme.

3.2.9 Customers are also significantly inconvenienced by this process. The process means the customer could feel 'guilty' about ordering something from Telstra and then cancelling it – or conversely never cancel it and remain with Telstra.

3.2.10 The customer might also be confused by the requirement to order from Telstra, and wonder if the original provider's service that was sought was a "real deal" at all. Finally, the resultant delay in service connection is a disincentive for them to follow through with a connection to an alternate service provider.

3.2.11 The process also gives Telstra absolute transparency and visibility of areas where it may face increased competition ahead of deployment – and the potential to act anti-competitvely by marketing to these customers themselves.

3.3 EVOLUTIONARY OPPORTUNITIES

QUESTION 4 - Is terrestrial or satellite the most appropriate means of delivering broadband in regional, rural and remote areas?

3.3.1 AUSTAR believes a mix of technologies will best achieve the Government's broadband objectives. The diversity of regional, rural and remote areas of Australia – in terms of population, topography, demography and existing infrastructure – means no one technology will be a 'cure all' for issues in broadband delivery.

3.3.2 AUSTAR undertook significant research and analysis into alternative delivery methods in the development of its broadband business case. The conclusions AUSTAR formed from this analysis were:

- For medium sized towns and surrounding areas in regional Australia, wireless services are the most cost effective and efficient broadband delivery mechanism for AUSTAR to deploy; and

- For lower population density areas, neither WiMAX nor DSL is an appropriate, cost-effective technology. It is in these areas where broadband is best delivered using two-way satellite services, directly to the home, or to a wireless distribution network.

3.3.3 AUSTAR does not consider that a "DSL + satellite" solution will be adequate. Our reasoning leading to this view is outlined below.

3.3.4 A "one-way satellite service" works by delivering internet services to the end user using a geostationary satellite with a return path implemented using a basic rate ISDN service. The service has a limited return path (64 kbit/s or 128 kbit/s) along with a forward service of either 256 kbit/s or 512 kbit/s. Two-way satellite uses satellite as the return path.

3.3.5 There is a signal delay caused by the use of satellite technology. This latency, or delay, is caused by the fact that the satellite is geostationary and 36,000 kilometres above the earth. The time it takes for a signal to leave the earth, go to the satellite and return to earth is approximately one-quarter of a second. This is multiplied by two in the case of two-way satellite services.

3.3.6 This type of delay is dealt with by "workarounds" when the service being used is the delivery of internet services or email. However, one-way and two-way satellite services cannot be used to provide other internet-based solutions such as Voice over Internet Protocol, Shared Gaming (such as XBox Live!) or streaming of video. Therefore, there are inherent limitations with these kinds of services, however AUSTAR does note that IPStar's satellite service was designed to overcome these limitations, and is an exception to this general rule.

3.3.7 Further, the ISDN service, which is provided to implement the one-way satellite return path, is an obsolete technology. Telstra has previously indicated that ISDN is declining[1] and that consumers now largely regard ISDN as a "service of last resort".[2] ISDN is only showing minor growth as part of the provision of one-way satellite services.

3.3.8 ISDN itself is limited in terms of distance from the last consumer access multiplex. Given that this consumer access multiplex is most often a telephone exchange building in regional areas, the effect of promoting one-way satellite is that select technology which is limited in its range to approximately 6 kilometres from the exchange building is being used as an alternative to a technology which is limited to 4 kilometres. That is, the one-way satellite technology extends a concentric ring away from the centre of a population centre by a mere 2 kilometres.[3]

3.3.9 Overall, both one-way and two-way satellite services provide a reasonable solution for surfing the worldwide web and for the exchange of emails. However, such services are limited when it comes to providing a broadband service, because of the introduced "latency". In practice, one-way satellite is being used as a retrograde technology deployment in areas relatively close to exchange buildings.

3.3.10 These examples illustrate why AUSTAR considers that a combination of technologies will be required. This is another reason why AUSTAR considers a "tender" process should not form part of the Broadband Connect program, as this would be likely to require the selection of a dominant form of technology (which may not be appropriate for all areas).

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1 http://www.accc.gov.au/content/item.phtml?itemId=690414&nodeId=file42ae7068c3dfb&fn=Final%20report%E2%80%94ISDN%20and%20DDAS%20declaration%20review%20(Jun%2005).pdf

2 http://www.accc.gov.au/content/item.phtml?itemId=677949&nodeId=file425f250112806&fn=Telstra.pdf

3 It is useful to compare this with the diagram in section 3.1.30, and the accompanying discussion, which set out AUSTAR's proposed geographical distinctions for future schemes

QUESTION 5 - Can satellite be delivered as competitively as terrestrial services?

3.3.11 While resale of satellite services is at best a 'breakeven' proposition for resellers, AUSTAR is reviewing its resale options to maximise the coverage of its proposed broadband service. The viability of satellite resale would be dependent upon mechanisms that ensure fairness in pricing and resale agreement negotiation.

QUESTION 6 - Should participating providers be required to commit formally to service the areas they identify in registration applications?

3.3.12 AUSTAR believes providers should be required to make some level of service commitment to ensure that services are established and sustained.

3.3.13 However, it would be difficult for a new entrant such as AUSTAR to make coverage commitments on a "percentage of population" basis (within transmission areas), before it has undertaken extensive radio frequency planning in each relevant area. Such planning will be required to inform rollout decisions, in terms of the number of towers required, and expected coverage from those towers.

3.3.14 This kind of planning is costly and resource intensive in itself. Detailed radio frequency planning in more marginal areas, could also potentially result in AUSTAR discovering the number of towers required to service that location, may be greater than its original estimates. In such an instance, AUSTAR may decide not to proceed with a deployment in that location.

3.3.15 AUSTAR suggests the alternative safeguard may be a rule that a subsidy is only delivered to a provider once the scale of that network is confirmed and that construction has commenced. This is consistent with a capital subsidy model which by its nature forces an investment commitment on a greater scale than per-user subsidy models.

QUESTION 7 - Should annual renewal of funding agreements specify timeframes for commencement of services in areas of greatest need?

3.3.16 AUSTAR believes providers should be required to make some level of commitment to meet rollout timeframes in any areas where Broadband Connect funding has been committed – with appropriate caveats for elements that may be outside the service provider's control.

QUESTION 8 - Should a system of prioritised funding for services connected in areas of greatest need (beyond what has been provided under the HiBIS two-tiered incentive structure) be introduced?

3.3.17 AUSTAR has not identified a need for funding to be "prioritised" in the way suggested by Question 8.

3.3.18 AUSTAR believes that to encourage broadband access in areas of greatest need, a more strategic regionalised partnership approach – rather than simply prioritising or increasing funding – could be considered.

3.3.19 AUSTAR also suggests that Broadband Connect should have the same "Start of the Scheme" date as in the existing HiBIS scheme (which is currently 8 April 2004).

3.3.20 The current HiBIS scheme gives Telstra an incentive to 'turn off' ISDN in areas where it is likely to be the only provider of broadband services, while 'turning on' ISDN in areas where there are likely to be broadband competitors for Telstra. This scenario has significant, potentially unfair, consequences for Telstra's competitors.

3.3.21 Telstra has an incentive to downgrade equipment in certain regional areas in order to ensure that Telstra receives the "High Cost Incentive Payment" under the HiBIS scheme. This incentive arises from the operation of paragraph 4.9(b)(ii) of the HiBIS Funding Agreement template. Telstra also has an incentive to deploy ISDN technology in those geographic areas where Telstra considers that its competitors may seek to operate with the assistance of the HiBIS scheme.

3.3.22 For example, if Telstra believes that a competitor is going to operate in a particular area which would currently be subject to a higher payment under one of the HiBIS incentive schemes (ie because there is no ISDN technology available in that area), Telstra has an incentive to deploy ISDN technology in that region. Such deployment would ensure that its competitor does not receive a higher level incentive payment.

3.3.23 Either way, it is not appropriate for Telstra to have these regulatory incentives. To ensure that Telstra does not have incentives to selectively "turn on" and "turn off" ISDN, AUSTAR proposes that the HiBIS scheme and any future scheme clearly state that the reference date for the "Start of the Scheme" (which is the term used in the current HiBIS scheme) is 8 April 2004.

QUESTION 9 - What can be done further to overcome barriers to capital investment in sustainable technologies in less commercially viable regional areas?

3.3.24 AUSTAR believes there are 2 key issues that would help overcome barriers to capital investment in sustainable technologies in less commercially viable regional areas.

3.3.25 Firstly, the introduction of a "grace period" under future funding schemes would assist in addressing the existing competitive imbalance between Telstra and new entrants, and hence overcome barriers to capital investment in sustainable technologies in less commercially viable regional areas.

3.3.26 For example, during a "grace period", the capital funding under the Broadband Connect program (as referred to in response to Question 3) would only be provided to "new entrants". The term "new entrants" could be defined by reference to a person who was not providing relevant services at the "Start of the Scheme" date under the existing HiBIS scheme.

3.3.27 Under this proposal, it would still be open to Telstra to roll out new broadband services in previously under-served areas, but it could not claim capital funding during the grace period (although Telstra could claim the relevant per subscriber payments).

3.3.28 AUSTAR believes the introduction of a two year "grace period" (eg from 1 July 2006 to 30 June 2008) would encourage new entrants to invest in infrastructure in under-served areas, knowing that they were more likely to have a "head start" over Telstra in such areas.

3.3.29 If no "new entrant" commenced services in a relevant under-served community, Telstra would still be able to offer broadband services in that community. However, it could not claim capital funding until after the expiry of the "grace period". AUSTAR requests that this suggestion be considered in addition to the suggestions made in answer to Question 3 above.

3.3.30 Secondly, the ability of new entrants such as AUSTAR to obtain appropriate transmission services (specifically "backhaul" services) will be central to their ability to offer broadband services in regional and rural Australia.

3.3.31 AUSTAR welcomes the Minister's recent specification of "transmission services" as "designated services" under the Telecommunications Act 1997, but notes that further steps are also needed to ensure that AUSTAR is able to request backhaul services from Telstra on the same terms that Telstra provides to itself (ie Telstra Wholesale to Telstra Retail). This is discussed in more detail in AUSTAR's response to Clever Networks Questions 22, 23, and 24.

QUESTION 10 - How can the high cost of some technologies be reconciled with increasing customer expectations for higher speeds and usage allowances especially in more remote areas?

3.3.32 AUSTAR believes that customers will ultimately choose the speed they need – and customer demand for speed is price sensitive. So whilst 256kps is not considered true broadband and never has been, it is still around 10 times faster than dial up and would be attractive to some as an entry level broadband product if priced accordingly. Toward the other extreme, 10 Mbps is not necessary to support the kinds of applications that the majority of consumers demand and are likely to demand in future (such as web browsing, sending and receiving emails, and perhaps VoIP). Despite the hype surrounding IPTV, AUSTAR's own subscription television service (delivered pre-dominantly by satellite with more than 525,000 customers) is a good example of a commercially viable, efficient model for the delivery of linear channels to regional and rural Australia.

3.3.33 In terms of relative costs, AUSTAR's own research and analysis in building our broadband business case demonstrated that the cost of technology is not necessarily indicative of the relative efficiency and effectiveness of that technology in delivering higher speeds and usage allowances. The high cost of cable for regional broadband delivery, when compared with its expected benefits relative to other technologies (such as wireless), is a good example.

3.3.34 AUSTAR's proposed wireless broadband service will deliver high speeds (up to 2 Mbps) and usage allowances to match customer demands and usage. AUSTAR expects that as the WiMAX standard develops over the next 3 years and into the future, even greater speeds will be achievable.

QUESTION 11 - Should it be mandatory for program participants under Broadband Connect to provide additional information as listed below as a condition of registration?

intended future service areas (with approximate dates of commencement of supply);

the viable geographic reach of broadband services from central transmission points for service delivery;

technical barriers limiting the application of providers' technology in regional communities;

the capacity of providers' technology to support varying types of broadband traffic and use;

the range of service speeds providers' technology would be able to support;

the capacity of providers' technology to provide services now and to accommodate new developments such as increased speed , usage and applications in the future;

the particular relevance of the technology to other communication services (for example, capacity to be used also for supporting mobile telephony services);

a summary of the broad nature of technology they employ; and

anticipated timing and target areas for their technology deployment in regional Australia.

3.3.35 AUSTAR would support a requirement to provide information relating to the technology it plans to deploy, if such information was contained in support of an application for funding to assist in the rollout of that technology to deliver broadband services. In reference to the points raised in the question, AUSTAR would be prepared to provide the following information:

- technical barriers limiting the application of the technology that AUSTAR proposes to use in regional communities;
- the capacity of AUSTAR's nominated technology to support varying types of broadband traffic and use;
- the range of service speeds AUSTAR's technology would be able to support;
- the capacity of AUSTAR's nominated technology to provide services now and to accommodate new developments such as increased speed, usage and applications in the future;
- the particular relevance of the technology to other communication services (for example, capacity to be used also for supporting mobile telephony services); and
- a summary of the broad nature of technology that AUSTAR proposes to employ.

3.3.36 AUSTAR believes any requirement for program participants to provide additional information that is more specific to individual markets (as outlined in the points below Question 11) as a condition of registration must be balanced appropriately against:

- The commercial sensitivities of publicly disclosing detailed intentions of future service areas with approximate dates of future supply. Aggressive competitive responses that may result from such information becoming public before an alternative network such as AUSTAR's is built may render such plans in particular areas to be no longer viable.

- The commercial reality that until detailed radio frequency (RF) network planning is completed by AUSTAR in each location it proposes to roll out services to, it is difficult for a new entrant like AUSTAR to make conclusive and specific commitments to percentage coverage in those areas. While AUSTAR has a commercial business plan to roll out its broadband service past 750,000 homes – any extension of this planned network rollout in partnership with Government (as part of Broadband Connect or Clever Networks) will depend upon AUSTAR having some certainty of the initial upfront investment and hence ongoing operating cost of the network. This certainty can only be delivered by detailed RF planning (which in itself has cost implications).

3.3.37 In reference to the points raised in the question, due to commercial confidentiality AUSTAR would not support a requirement to provide the following information:

- intended future service areas (with approximate dates of commencement of supply);

- the viable geographic reach of broadband services from central transmission points for service delivery; and

- anticipated timing and target areas for their technology deployment in regional Australia.

QUESTION 12 - On what basis would you argue that certain specific technologies will have the most impact on the delivery of regional broadband services in the next three to five years?

3.3.38 Delivery of high quality, high speed (up to 2 Mbps) broadband services to areas beyond the 4km line length limit for DSL connection has been made possible by the recently ratified WiMAX standard (IEE 802.16e) and associated technologies (such as the pre WiMAX wireless broadband service Unwired is successfully delivering to approximately 36,000 customers in Sydney as at September 30 2005).

3.3.39 AUSTAR intends to partially close the "coverage gap" that exists between DSL and satellite services by initially using pre WiMAX technology (that will be upgradeable to the recently ratified WiMAX standard IEE 802.16e) within our 2.3Ghz and/or 3.4-3.5Ghz licence bands.

3.3.40 While AUSTAR considers that any program introduced by the Government should be technology neutral, AUSTAR considers that programs for the delivery of regional broadband services should take account of the following factors:

- different technologies will have different capability to deliver broadband to regional areas. This impacts the quality of the relevant service in terms of speed and ability to support multiple users on the network;

- different technologies will have different costs and varying "lead times" in terms of delivering services to users; and

- the potential for economies of scale and standardisation to deliver future benefits. For example, the GSM standard for mobile telephony drove down prices for network equipment and customer access devices, and delivered international roaming and inter-operability to customers. AUSTAR expects the recently ratified WiMAX standard – with the backing of more than 300 global IT&T giants, such as Intel, via the WiMAX forum – to have the same effect on broadband services in the medium term.

QUESTION 13 - How would you compare the effectiveness of these technologies to others in the market place?

3.3.41 In answering this question, AUSTAR's preference is to focus on why it prefers a technology with a clear path to "WiMAX" for its broadband rollout.

3.3.42 AUSTAR's recently announced A$50m broadband strategy is a major capital investment in the most recently standardised broadband wireless technology. This standard is IEEE 802.16e and is referred to as "WiMAX". This technology is

expected to be widely deployed on a global basis and Intel anticipates that WiMAX capability will be built into notebook computers later in 2006.[4]

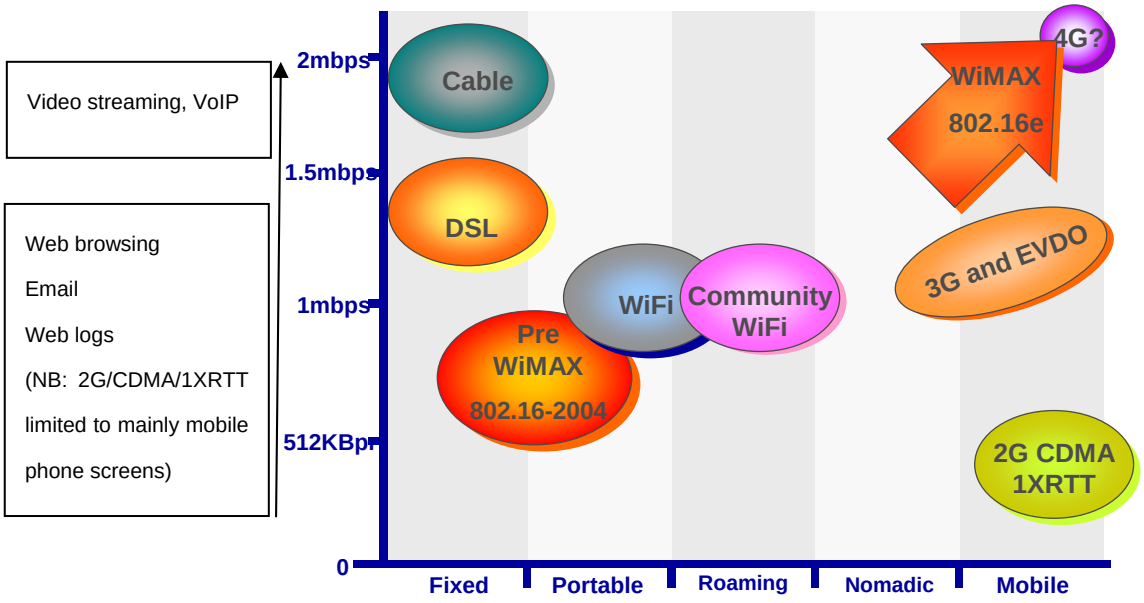

Figure 2 – Broadband delivery technologies and examples of services they support

3.3.43 A comparison of the relative speed and mobility attributes of WiMAX and associated pre WiMAX wireless technologies is represented in Figure 2 above.

3.3.44 WiMAX has significant advantages over the more well-known "WiFi" technology, and this is why it is preferred by AUSTAR. While wide-area WiFi services present a relatively low cost option for the delivery of broadband services (as they are provided under class licences), consumers cannot expect their use of such WiFi services to be protected from interference by other services. This can present real practical problems.

3.3.45 To illustrate, WiFi broadband services could be lost simply as a result of other legitimate users of this class-licensed spectrum exercising their spectrum use rights. For example, industrial heating, Bluetooth devices and home WiFi hot spots can effectively limit the use of WiFi for wide area broadband solutions. This explains why AUSTAR needed to wait for the WiMAX standard to be settled before AUSTAR deployed broadband services in under-served areas. WiFi could

4 http://www.intel.com/standards/case/case_wimax.htm

however be used in conjunction with the services AUSTAR proposes, to extend convenience and portability within a customer's home.

QUESTION 14 - To what extent will broadband technologies be able to augment capacity to meet rapidly expanding consumer expectations for higher bandwidth and more advanced applications?

3.3.46 As demonstrated in Figure 2 in response to Question 13 above, pre WiMAX wireless broadband is more than capable of delivering the levels of speed sufficient for current market demands – with the added benefit of being portable. For example, these services are portable within a home – or to another coverage area such as a café. These services are proven and operating in the market today, for example by Unwired to 36,000 customers (as at September 30 2005) in Sydney.

3.3.47 The upgrade path from these services to WiMAX wireless broadband will deliver increased speeds beyond 2Mbps, true mobility and global interoperability – but importantly WiMAX is more spectrally efficient than its 3G and EVDO cousins.

QUESTION 15 - Can complementary technologies provide better solutions for delivery of services in regional Australia?

3.3.48 As per AUSTAR's response to Question 4, AUSTAR believes a mix of technologies may be complementary in achieving the Government's broadband objectives.

3.3.49 The diversity of regional, rural and remote areas of Australia – in terms of population, topography, demography and existing infrastructure – means that no one technology will be appropriate for all areas.

3.3.50 Please refer to AUSTAR's response to Question 4 for details of the conclusions AUSTAR made following significant research and analysis into this issue, undertaken as part of the development of its broadband business case.

QUESTION 16 - What innovative approaches should Broadband Connect adopt in its program design to utilise these technologies most efficiently and effectively?

3.3.51 As outlined in detail in response to Question 3, AUSTAR proposes that there be three levels of funding grants, determined solely by geographic areas and without reference to obsolete technologies such as ISDN. For example, the subsidy levels would be $1,400, $2,100 and $3,000 per subscriber as illustrated by

reference to the relevant geographic areas in Figure 1 earlier in this paper. Please refer to AUSTAR's response to Question 3 for the detailed analysis of this proposal.

QUESTION 17 - What capacity do existing technologies have to accommodate the introduction of new developments, such as increased speeds, usage and other applications?

3.3.52 In answering this question, AUSTAR's preference is to repeat why it has selected wireless broadband with a WiMAX upgrade path as the preferred technology for its broadband rollout.

3.3.53 WiMAX technology is expected to be widely deployed on a global basis, and Intel anticipates that WiMAX capability will be built into notebook computers later in 2006.[5] Other semi-conductor manufacturers, such as AMD and LG have made similar commitments.

QUESTION 18 - Should the current system of incentive payments to providers for the supply of broadband services be retained?

3.3.54 As explained in response to Question 2, to promote a "technology neutral" approach that takes into account the relative availability of WiMAX and other wireless technologies, and a "level playing field", AUSTAR proposes that the incentive payments under the Broadband Connect program be split into a fixed payment for the deployment of a service capable of providing broadband services and a subsequent incentive payment (based on the number of subscribers). The size of the subsequent incentive payment could reflect the importance of promoting the availability of broadband services outside large regional centres.

3.3.55 As per its response to Question 3, AUSTAR proposes that there be three levels of funding grants, determined solely by geographic areas and without reference to obsolete technologies such as ISDN.

3.3.56 Please refer to AUSTAR's response to Question 3 for the detailed workings for this proposal.

5 http://www.intel.com/standards/case/case_wimax.htm

QUESTION 19 - Would an up front method of payment be more effective?

3.3.57 The policy objectives for Broadband Connect highlight access to broadband services and promotion of competition in the provision of services.

3.3.58 The availability of funding under the HiBIS scheme focused more on the number of subscribers rather than on the deployment of services (even if such services would be potentially available to a large number of subscribers). AUSTAR considers that it is important for both these elements to be recognised, and this is a reason why AUSTAR has suggested that up front capital funding form a part of the new Broadband Connect program.

3.3.59 Please refer to AUSTAR's responses to Questions 2 and 3 for the detailed reasoning and workings for this assertion.

QUESTION 20 - How else could the method of payments to providers be adjusted to achieve more satisfactory outcomes for providers and people living in regional, rural and remote Australia?

3.3.60 Please refer to AUSTAR's responses to Questions 2 and 3 for AUSTAR's detailed proposals regarding method and structure of payments to providers.

QUESTION 21 - Should funding be provided:

- based on the number of customers connected?

- the number of potential premises with potential access?

- a combination of both methods?

3.3.61 As per its response to Question 3, AUSTAR has suggested a "hybrid" approach that combines up front funding for capital works with the number of subscribers or "connected customers".

3.3.62 AUSTAR's proposal also reflects the fact that WiMAX and other wireless technologies have a different cost structure to DSL, and that this should be taken into account under the new funding scheme.

3.3.63 AUSTAR would support the provision of funding based on a combination of both upfront and per subscriber subsidy – however AUSTAR believes the most suitable method for achieving this balance would be based on distance from a

central point such as a GPO or central telephone exchange as outlined in response to Question 3.

3.3.64 Please refer to AUSTAR's responses to Questions 2 and 3 for the detailed reasoning and workings for this assertion.

QUESTION 22 - If funding was based on the number of premises with potential access should it then only be provided for infrastructure?

3.3.65 AUSTAR does not support a scheme that is based on up front capital funding alone. This is because there would be little incentive under such a scheme to actually supply services to sparsely populated areas which make them unsuitable for any technology that would require additional infrastructure.

3.3.66 For example, as identified in AUSTAR's response to Question 3, AUSTAR believes that sparsely populated area "C" regions should continue to be funded at the rate of $3,000 (ex GST) per subscriber. This emphasises the importance of ensuring that services are actually delivered in those areas, and the fact that the demographic characteristics of those areas make them unsuitable for any other technology apart from satellite.

3.3.67 Please refer to AUSTAR's responses to Questions 2 and 3 for the detailed reasoning and workings for AUSTAR's proposed funding model.

QUESTION 23 - How can methods of payment under Broadband Connect be better structured to ensure that providers are not overcompensated for the supply of broadband services?

3.3.68 AUSTAR believes its proposal outlined in response to Question 3 appropriately recognises the differences in the costs of supplying broadband services. The existence of caps and requirement to demonstrate actual expenditure will ensure that operators are not over compensated for the supply of broadband services.

QUESTION 24 - Should the current HiBIS threshold model for speed and usage be maintained at existing levels under Broadband Connect?

3.3.69 AUSTAR takes the view that it is important that there be a threshold model for speed and usage under the Broadband Connect regime. Unless there are clear minimum criteria as to the type of service (including both minimum speed and usage requirements), then there is a risk that services which do not have the characteristics of a minimum level service in metropolitan areas will be offered in

regional areas. However, AUSTAR believes the levels of usage should be amended as set out in response to question 25 below.

QUESTION 25 - Should the model be retained with increased minimum speed and/or usage requirements?

3.3.70 AUSTAR believes the model should be retained with the same minimum speed requirements of 256Kbps, but a decrease in usage requirements to 300MB.

3.3.71 This represents the new "metro entry level base" which developed after the current HiBIS model was put in place – where providers have lowered customer entry prices and associated usage limits to encourage mass market broadband take-up, and placed tiered premiums on greater speeds and usage limits.

3.3.72 The new lower entry prices have been reflected in the reduction of the 3 year plan cost limitations and as a result AUSTAR believes reduced usage requirements should also apply to reflect the more competitive broadband entry level packages. For example, both Optus and Telstra have entry level plans with low usage at 256kbps.

QUESTION 26 - Should two separate minimum speeds with two subsidy levels be introduced?

3.3.73 AUSTAR believes it is critical that Broadband Connect encourage – on a technology neutral basis - the upgradeable, scalable alternative networks necessary for a competitive telecommunications market, and that by fostering this environment, the commercial incentive for providers to produce variations upon a base broadband product will be driven by customer demand.

3.3.74 The approach of having two separate minimum speeds with separate subsidy levels is superficially attractive. However, there is a risk that this approach would lead to an over subsidisation of services. As a practical matter, the cost to an operator of delivering higher speed services can be dealt with by:

(i) increasing the transmission capacity to the headend; or

(ii) increasing the contention ratio and there by reducing the quality of service to the customer.

3.3.75 There is a risk that this second approach will be adopted by operators if a simple, two separate minimum speed subsidy level is introduced. To some extent, there

is little incremental cost to the operator in increasing the bit rate. That is, the delivery of a service at any fixed rate can be considered as a fixed cost and the variable element is associated with the usage requirements. Ultimately operators pay for access to the global internet on a per megabyte basis.

3.3.76 For these reasons, AUSTAR believes the focus of Broadband Connect should remain upon increasing access to, and encouraging the provision of, competitive broadband services – given that putting the necessary networks in place is the most costly and prohibitive barrier, rather than any upgrades that may be required to offer greater speeds (beyond those needed for today's levels of consumer demand) offered over that network.

QUESTION 27 - Do threshold requirements need to be expanded to accommodate other issues such as latency?

3.3.77 AUSTAR believes satellite technology is an ideal means for the delivery of services which do not have latency issues (such as subscription television services), but the high levels of latency that generally occurs in satellite solutions (particularly those with a satellite return path) means that satellite delivery mechanisms should only be used where other technologies cannot be applied.

3.3.78 It does not seem appropriate that the Broadband Connect scheme or HiBIS should be applied to satellite based services other than in more remote areas. This approach is consistent with our proposal in response to Question 3.

QUESTION 28 - Should the Broadband Connect Stage 1 price caps be retained under Stage 2?

QUESTION 29 - Should a greater range of price caps be introduced than the two currently available?

3.3.79 AUSTAR believes the current model of price caps, introduced in Stage 1 is fair and reasonable. AUSTAR does not take the view that a greater range of price caps should be introduced except to the extent set out in our approach to a revised subsidy system in response to Question 3.

QUESTION 30 - Should the current funding cap level of 60 per cent continue under Broadband Connect?

3.3.80 AUSTAR believes a cap should persist, given the large capital advantage and market dominance of Telstra. However, AUSTAR believes 60 per cent for any one player in a market – particularly regional Australia – is too high, and this level should be reviewed.

4 CLEVER NETWORKS

4.1 ISSUES DISCUSSION

THE ROLE OF THE BROKERS NETWORK

As a service provider, AUSTAR believes it is more appropriate and relevant for it to limit its comments in this section to general comments on its experience and interface with the Brokers Network.

QUESTION 1 - Considering the current DAB program structure - involving State, community and sectoral brokers - is the current arrangement the best model for catalysing broadband developments in regional, rural and remote Australia or how should it evolve?

QUESTION 2 - What role can/should brokers play in promoting or facilitating the effective use of broadband applications in order to enable communities and businesses to capture the transformational benefits of broadband?

QUESTION 3 - What other resources or programs should the brokers be aware of in this role?

QUESTION 4 - Should the broker role include an increased focus on 'effective use' outcomes and, if so, how can this best be achieved?

QUESTION 5 - Should uptake and effective use of broadband by specific groups be targeted and, if so, which ones?

QUESTION 6 - How might the brokers play a role in facilitating/supporting community-wide connectivity and community-wide (cross-sectoral) networks?

QUESTION 7 - Should future demand aggregation activities be focused in areas that have yet to receive terrestrial broadband services under HiBIS to support the delivery of the new Broadband Connect program?

4.1.1 AUSTAR believes the current DAB structure has been very effective in analysing and aggregating demand for broadband services, and sharing this information to encourage the development of a supply to meet that demand. In conjunction with industry and Government, AUSTAR believes education, information and the provision of practical examples of the benefits of broadband at a local community level are an important element of a brokers role.

4.1.2 AUSTAR believes the broker's role should focus firstly on supporting investment in sustainable broadband infrastructure. From the perspective of a service

provider, AUSTAR believes uptake and effective use of broadband by specific groups such as educational institutions (eg universities) and the health sector (eg hospitals), can be an effective method in providing large "anchor" tenants for new infrastructure investment.

4.1.3 This, along with the provision of matching funding (through the "Clever Networks" program), may change a commercial business case from 'marginal' to 'viable' and result in an increased targeting of areas of demonstrated demand.

TARGETING THE DELIVERY OF KEY SERVICES THROUGH BROADBAND

QUESTION 8 - Are health, education, emergency services and local government the appropriate services for Clever Networks to target?

QUESTION 9 - Should there be priorities within this group?

QUESTION 10 - What other sectors, if any, should also be considered?

QUESTION 11 - Should there be a focus on particular applications/sectors which will require and drive network or industry capabilities?

QUESTION 12 - What strategies could be incorporated into the program design to ensure that investment under Clever Networks provides the greatest holistic community benefit?

4.1.4 As a service provider AUSTAR is agnostic as to the groups and priorities within those groups that Clever Networks should target, provided the end result focuses on supporting investment in sustainable broadband infrastructure.

INFRASTRUCTURE AND APPLICATION-FOCUSED INVESTMENT ISSUES

QUESTION 13 - Is there an ideal balance between infrastructure and applications streams and, if so, how can it be identified?

QUESTION 14 - What is the best balance between competitively determined and strategic investment funding?

QUESTION 15 - Would potential proposals be improved if the guidelines permit proposals which encompass both infrastructure and applications aspects?

QUESTION 16 - What key strategic investments in broadband infrastructure have the potential to provide the best outcomes?

4.1.5 As a service provider, AUSTAR believes Clever Networks should exclusively focus on the provision of sustainable broadband infrastructure, rather than positioning the Government in the game of 'picking winners' and funding networks on the basis of this. AUSTAR firmly believes that applications are best developed in the marketplace – on a case by case response to customer need and demand. The underlying infrastructure is key to enable these developments. This is the appropriate role of Clever Networks.

FUNDING FOR CLEVER NETWORKS INITIATIVES

QUESTION 17 - Are there complementary sources of funding/contributions which should be considered in developing the guidelines for the Clever Networks program?

4.1.6 As a service provider, AUSTAR believes Clever Networks will be most complementary to the Broadband Connect funding scheme if Clever Networks serves to promote sustainable broadband infrastructure that can be utilised for key cost elements in a commercial business case such as backhaul for wireless broadband access.

UTILISING NEW AND EMERGING TECHNOLOGIES

QUESTION 18 - Should there be specified minimum broadband specifications (eg. bandwidth, latency etc) for Clever Networks and, if so, what should they be and how should they be determined?

QUESTION 19 - What steps / mechanisms can or should be incorporated, if any, into Clever Networks to enable regional, rural and remote communities progressively to transition to high / higher bandwidth networks?

QUESTION 20 - New technologies are showing considerable promise in providing broadband access to users well outside the current DSL limitations. What strategies should be adopted to encourage and support deployment of these new technologies, and to ensure newly emerged technologies are not precluded during the lifecycle of the program?

4.1.7 AUSTAR emphasises a caution in Clever Networks focusing too heavily on a 'build it and they will come' approach, by supporting a much higher bandwidth environment regardless of customer demand.

4.1.8 While AUSTAR's plans are presently focused more on servicing the residential market - for whom the vast majority wish to use broadband to browse the web, send and receive emails, and perhaps in future support applications such as

VoIP - AUSTAR is also open to working with organisations in sectors such as health and education (eg hospitals, universities) to develop our service for their needs. However, AUSTAR is concerned that should the requirements of the Clever Networks become too prescriptive – for example specifying minimum speeds of 10Mbps – than companies like AUSTAR may be precluded from participating in such partnerships to the detriment of the stated objectives of improved broadband access.

4.1.9 A partnership type approach could take many forms. For example, in terms of supporting deployment of new technologies, the capital cost of installing a base station suitable for use with WiMAX can be reduced through the reduction of the cost of the civil engineering component. This can be achieved by sharing the cost of tower installation and improvements with an entity (such as a local government body) that will benefit from its deployment in the relevant area.

4.1.10 Many local councils also operate radio communications sites, which would be suitable for the installation of WiMAX facilities. It might be possible for the local council, using "Clever Network" program funding, to assist with the cost of civil engineering, or to provide use of the site for no charge to the wireless service provider.

4.1.11 Another example would be the use of a facility within a university to house the base station as part of the provision of educational resources to university staff and students.

SUSTAINABILITY OF CLEVER NETWORKS INITIATIVES

QUESTION 21 - What supporting information should be required in Clever Networks proposals in order for their sustainability beyond the life of the program to be evaluated effectively, and what factors should be considered in determining sustainability?

4.1.12 AUSTAR believes input to this issue is most relevant from, and best addressed by, the public services (such as hospitals and local councils) that propose to use the Clever Networks initiatives.

NEW INFRASTRUCTURE ACCESS ARRANGEMENTS

QUESTION 22 - For any new infrastructure created or made available, should there be specified minimum infrastructure access arrangements for parties other than infrastructure owners, such as a wholesale-rate for backhaul?

QUESTION 23 - How realistic is such a requirement, and how tangible are the likely benefits of the approach?

QUESTION 24 - How can an appropriate charging regime for such access be determined?

4.4.1 AUSTAR understands that Questions 22 to 24 (as extracted above) are directed to the issues about whether additional access or other regulation is required in order to maximise the effectiveness of the Broadband Connect and Clever Networks programs.

4.4.2 AUSTAR has considered what additional measures will assist it to provide efficient and sustainable broadband services in regional Australia. The business case for AUSTAR's investment in the infrastructure needed to supply wireless broadband services is heavily dependant upon fair pricing of "backhaul" services, and the balance of this submission focuses on that issue. Some separate issues relating to access are noted in brief at the end of the submission. .

4.4.3 As noted in the Introduction to this submission, the term "backhaul" in relation to wireless network technology means the transmission of internet traffic from a remote site (such as a base station) site to a central site (such as a major regional centre or a capital city).

4.4.4 Backhaul services represent a major cost component for telecommunications operators that compete with Telstra in providing services in regional areas. Without fairly priced backhaul services competitive entrants such as AUSTAR will struggle to provide competitively priced telecommunications services in many regional areas.

4.4.5 AUSTAR proposes to use backhaul services in its planned deployment of broadband wireless services to regional areas. Telstra is the primary provider of backhaul services, and in many areas the only significant provider.

4.4.6 However, Telstra is also the sole substantial provider of retail internet access services in many regional and rural areas. Indeed, AUSTAR may well be the only competitor with the scale to compete "head to head" with Telstra across many

markets in regional Australia. Logically, Telstra will have a big incentive to see AUSTAR fail in its roll-out of wireless broadband services in regional markets.

4.4.7 In that context, AUSTAR wishes to make submissions concerning the level of detail and pricing transparency that Telstra should be required to provide in relation to backhaul services (that support applications made available through wireless broadband services).

4.4.8 AUSTAR considers that this issue is one that can be further addressed under the new regulatory scheme for the operational separation of Telstra. As part of the operational separation scheme, Telstra must provide a draft operational separation plan for the Minister's approval (pursuant to the new Part 8 of Schedule 1 the Telecommunications Act). In this context, Telstra must demonstrate a commitment to equivalence in relation to "designated services".

4.4.9 Under subclause 50A(1) of Schedule 1 to the *Telecommunications Act* 1997 (**Telecommunications Act**) the Minister is able to determine "designated services" which must be addressed in an operational separation plan developed by Telstra.

4.4.10 The Minister exercised this power on 21 December 2005 in the *Telecommunications (Operational Separation – Designated Services) Determination* (No 1) 2005 (**Determination**). Under the Determination, the "active declared services" specified in the Schedule to the Determination are determined as "designated services". Included in Schedule 1 is "The Domestic Transmission Capacity Service as described in the ACCC declaration of that name". This refers to the declaration made by the ACCC on 7 April 2004 under Part XIC of the *Trade Practices Act* 1974.

4.4.11 AUSTAR's understanding is that backhaul services are included within the "Domestic Transmission Capacity Service" that has been "designated" by the Minister. On this basis, in its operational separation plan Telstra should demonstrate a "commitment to equivalence" when such services are provided to third parties such as AUSTAR.

4.4.12 In this context, it is noted that there are some important exclusions from the scope of the declared "Domestic Transmission Capacity Service". AUSTAR has assumed that the reason for such exclusions is that there are competitive providers of backhaul services in relation to those excluded services. Nevertheless, this does not guarantee that AUSTAR will be able to obtain all the information about the excluded services that it needs, as discussed below.

4.4.13 While AUSTAR considers that "designation" of backhaul services will go some way toward ensuring that AUSTAR is able to acquire backhaul at a fair price, AUSTAR will also need additional information about all the backhaul services that Telstra can provide. Such information will be crucial if AUSTAR is to be able to provide cost-effective broadband services to customers in regional Australia.

4.4.14 In particular, it is very important for AUSTAR's proposed wireless broadband service that AUSTAR be able to acquire backhaul services at a fair price, determined at the level of particularity or granularity that Telstra provides itself – ie when Telstra Retail acquires backhaul services from Telstra Wholesale. This information is not presently available, and without some further steps being taken in the course of the approval of Telstra's operational separation plan, it does not appear that this information will be available in the future.

4.4.15 .For instance, the "Domestic Transmission Capacity Service" (as declared by the ACCC and as referred to in the Minister's Determination) has set transmission rates, which provide very limited "granularity" to new entrant providers and access seekers. The transmission rates included in the declared service do not correspond well with the likely practical requirements of providers of broadband services.

4.4.16 It is not clear whether Telstra will interpret the Determination to mean that it only needs to provide equivalency at those declared rates. If it did so, AUSTAR would consider this to undermine the objectives of the operational separation scheme.

4.4.17 To illustrate why the issue of "granularity" is important, if AUSTAR only needs relatively low bit rates to backhaul its broadband services, AUSTAR should be able to select this from Telstra's range of offerings, and pay fair prices that reflect this lower bit rate. To do so, AUSTAR needs to know exactly what services are available, so that it can request the appropriate service, and make commercial decisions based on comparisons of charges for the various available services.

4.4.18 AUSTAR's submission is that such information must be available, in order for Telstra to be able to demonstrate "equivalency" in relation to the supply of such services (for the purposes of the operational separation plan).

4.4.19 One way that such information would be able to be made available would be through the publication of any interconnection agreement between Telstra Wholesale and Telstra Retail that is developed as part of the operational separation plan, assuming that such an agreement would specify details of the range of backhaul services that Telstra Wholesale will provide to Telstra Retail.

Practical Example

4.4.20 The practical and commercial issues that AUSTAR will face in relation to backhaul pricing is illustrated in the Noosa Heads example that is set out in section 4.4.26 and following.

4.4.21 Before outlining this example, it needs to be emphasised that at present, access seekers are provided with very little information about what backhaul services are available. For example, an access seeker requesting backhaul services and requiring 20Mbit/s of backhaul is faced with a choice of:

(a) 2 x 8 Mbit/s + 2 Mbit/s; or

(b) 3 x 6Mbit/s + 2 Mbit/s; or

(c) under-utilisation of a 34 Mbit/s service.

4.4.22 In such circumstances, the access seeker will not know which is likely to be the most cost-effective and efficient combination to select, and Telstra is not required to provide information that assists access seekers in that analysis.

4.4.23 Further, even if the access seeker sought to rely on the fact that the Domestic Transmission Capacity Service is a declared service, the procedure of seeking access to a declared service can be time consuming and costly. Almost inevitably, an appropriate pricing regime is only delivered after an access dispute has been notified by the access seeker to the ACCC and the ACCC has arbitrated the dispute and given either an interim or final determination. For a new entrant, reliance on the access regime will generally require significant resources, given that lengthy arbitrations can be expected.

4.4.24 This level of uncertainty is not conducive to investment in new technologies for the delivery of broadband services in regional areas – including those which Telstra itself considers to be marginal.

4.4.25 However, the operational separation of Telstra provides an opportunity to improve the "granularity" of the services that are offered by Telstra under the access regime, provided that the Minister requires Telstra's operational separation plan to require a degree of transparency between Telstra Wholesale and Telstra Retail that will allow new entrants to choose to acquire services which Telstra provides to itself. As noted above, one way of achieving this would be to require Telstra to address this issue in the interconnection agreement between

Telstra Wholesale and Telstra Retail, and for that agreement to be made public.

4.4.26 As a practical example, consider Noosa Heads which has a population of about 10,000. If AUSTAR were to provision a broadband wireless access service in Noosa Heads, it would require backhaul services to the nearest State capital city, which in this case is Brisbane.

4.4.27 An example of a basic backhaul trunk (that Telstra provides to itself) is illustrated in Figure 2 below:

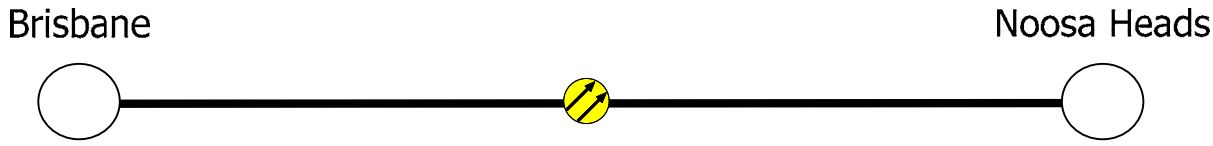

Figure 2 – basic backhaul trunk

4.4.28 Figure 2 shows the backhaul trunk between Brisbane and Noosa Heads. Telstra would use such a trunk for all of the services that it provides at Noosa Heads and this would typically be implemented as a fibre optic link. However, Telstra Wholesale does not provide such a trunk service to Telstra Retail on an aggregated basis. That is, it provides it as a series of separate services. These include:

(d) mobile;

(e) voice;

(f) internet; and

(g) data.

This separation is shown in Figure 3 which follows:

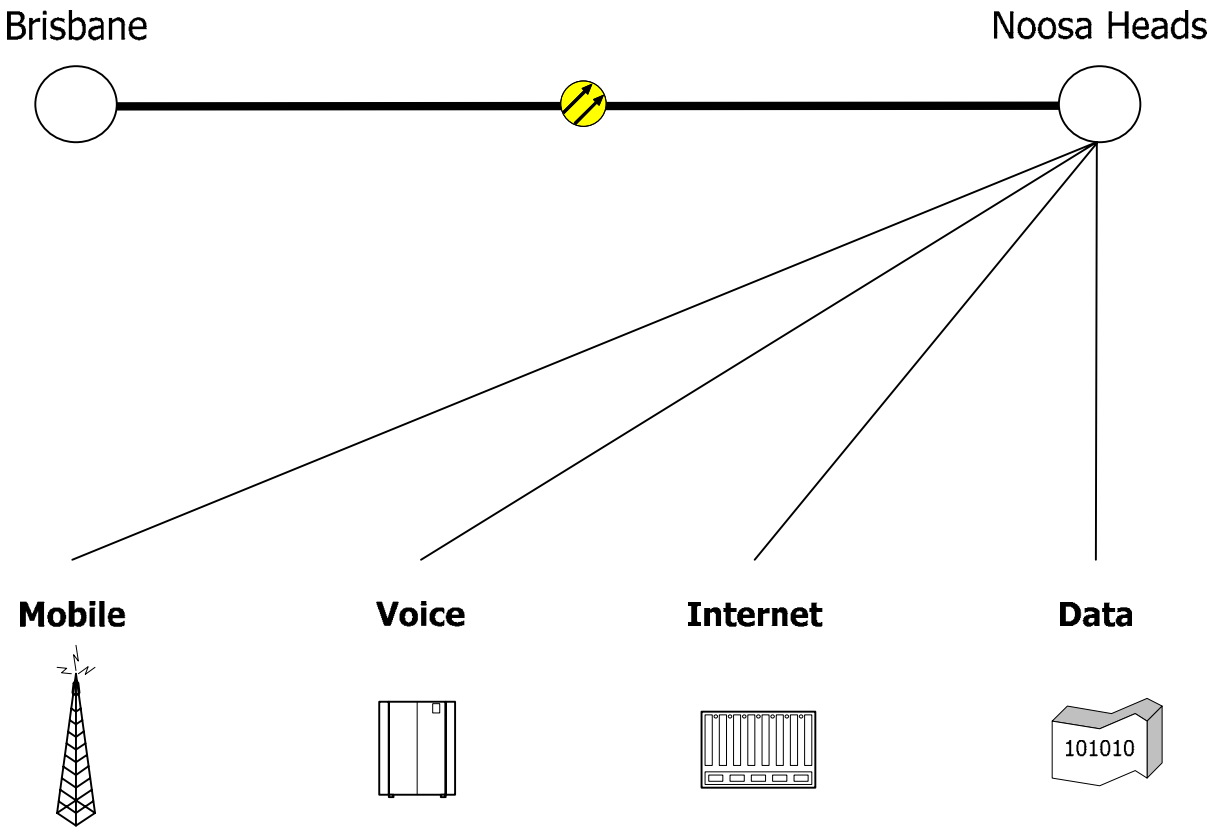

Figure 3 – Basic split of retail services

4.4.29 Even the degree of granularity illustrated in Figure 2 does not reflect the operations of Telstra Retail and Telstra Wholesale.

4.4.30 As set out in Figure 3, for each of mobile, voice, internet and data there are at least two divisions of types of service, which are handled by different aspects of Telstra's retail business.

4.4.31 AUSTAR proposes that Telstra's operational separation plan should require transparency of services and pricing down to the levels set out in Figure 4 (eg in the interconnection agreement between Telstra Wholesale and Telstra Retail). These services will have backhaul requirements, which are comparable to the requirements of new entrants attempting to provide broadband services (whether by wireless or otherwise) in regional centres. This will ensure Telstra provides the same granularity of service distinction to operators like AUSTAR that it provides to itself.

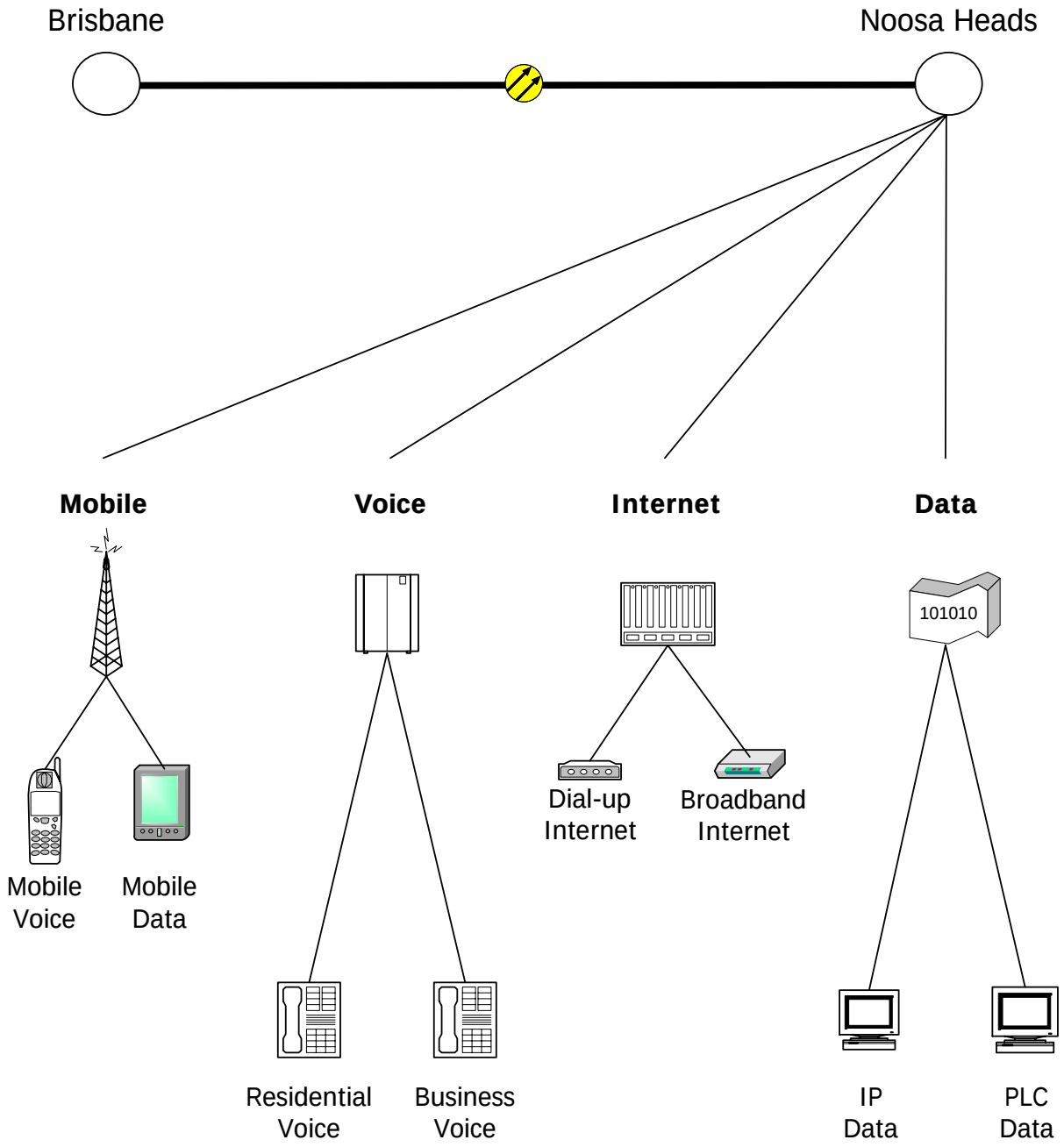

Figure 4 – Granular split of backhaul services provided Telstra Wholesale to Telstra Retail

4.4.32 Further, AUSTAR takes the view that transparency down to the levels in Figure 3 will actually reduce costs both for Telstra and for new entrants.

4.4.33 To elaborate, rather than going through the arduous and expensive process of arbitration of access disputes, new entrants wishing to provide innovative broadband services in regional areas will have certainty by being able to acquire services from a catalogue which has a range of options, one of which is likely to fit their needs from time to time.

4.4.34 Further, a granular catalogue of services will provide the ability for new entrants to "scale" as more and more customers are added to their network.

4.4.35 This approach would greatly assist AUSTAR and other access seekers to request the appropriate service, and to make commercial decisions based on comparisons of charges for the various backhaul services that are available. In turn, this would promote the provision of competitive and efficient broadband services in regional Australia.

4.4.36 AUSTAR's proposal for this level of granularity is not wireless broadband specific. It could potentially benefit all. For example, DSLAMs are an alternative technology used by many competitors to Telstra (and Telstra itself). A new entrant wishing to deploy DSLAMs in Telstra exchange buildings would have the same backhaul issues.

4.4.37 AUSTAR's proposal will provide a mechanism for new entrants and access seekers to acquire access to the services that they need in order to provide competitive consumer access to broadband solutions without any cost imposition upon Telstra, and without giving competitors any unfair competitive advantage on Telstra in the retail market. Telstra will still have the economies of scope and scale in the retail market to compete with new entrants such as AUSTAR. Telstra will also be making a fair commercial return on a wholesale basis – assuming that the wholesale price is based on a sound and fair pricing principle that is cost based (such as TSLRIC+).

4.4.38 In conclusion, AUSTAR emphasises that it is extremely important that Telstra's operational separation plan be required to address the transparency of pricing issues discussed above. AUSTAR is also concerned that Telstra's operational separation plan promote: transparency (eg particularly in relation to the pricing and service options available); and confidentiality (eg Telstra not publishing information that reveals confidential commercial information about its wholesale customers, nor being required to do so) in accordance with the new Part 8 of Schedule 1 of the Telecommunications Act.

4.4.39 AUSTAR has assumed that Questions 22 to 24 (as extracted above) are not directed to the issue of whether providers of broadband infrastructure (that is partially publicly funded) should be required to provide access to those facilities. If DoCITA's intention was that those Questions are so directed, AUSTAR would seek an opportunity to make separate submissions about that issue.

LINKS TO OTHER INITIATIVES

QUESTION 25 - What other program activities should be taken into consideration in determining Clever Network program eligibility and entitlement?

4.4.40 AUSTAR has no further comments to make in terms of determining Clever Network program eligibility and entitlement.

EMBEDDING AND UNDERTAKING PROGRAM EVALUATION

QUESTION 26 - Having regard to the possible diversity of the activities under Clever Networks, what strategies can/should be considered?

4.4.41 AUSTAR has no further comments to make in terms of Clever Network program evaluation.

AUSTAR United Communications Limited
18 January 2006