



**Internet Society of New Zealand (Inc)**

Response to Ministry of Economic Development  
Discussion Document: *Telecommunications Service Obligation  
Regulatory Framework*

**17 October 2007**

**Public Version**

**(There is no confidential version)**

## **I. Introduction**

- 1.1. This submission is from InternetNZ, the Internet Society of New Zealand Inc, in response to the MED's "Telecommunications Service Obligations (TSO) Regulatory Framework: Discussion Document".
- 1.2. InternetNZ is a membership-based not-for-profit organisation. It has the management responsibility for the administration of the .nz domain name registry, a critical component of the Internet infrastructure in New Zealand.
- 1.3. Our mission is to protect and promote the Internet in New Zealand. We advocate the ongoing development of an open and uncaptureable Internet, available to all New Zealanders. The Society is non-partisan and is an advocate for Internet and related telecommunications, public and technical policy issues on behalf of the Internet Community in New Zealand – both users and the Industry as a whole.
- 1.4. We are not addressing all of the questions raised in the Discussion Document. In line with InternetNZ's objectives and mission, our focus is on the issue of broadband Internet (found in Question 9, and in particular sections 9c to 9g).
- 1.5. While the focus of these submissions is broadband, there are matters of wider application in relation to the TSO that InternetNZ raises.

## **2. Executive Summary**

- 2.1. For the purposes of this submission, our focus is on the need to deliver broadband Internet to all New Zealanders.
- 2.2. Ubiquitous broadband is essential both for the economic development of the country and to provide for efficient delivery of e-Government and modern social services such as healthcare and education. We believe the debate is about how best to deliver broadband, not whether to.
- 2.3. As illustrated by recent reports (such as work by the Hi-Growth Project/NZCID and the New Zealand Institute), broadband is key to New Zealand's economic future, as it is to sectors such as e-Government, social services (such as education and health) and the regions. 66% of New Zealand's exports come from rural agricultural, horticultural and forestry exports.
- 2.4. The stakes are high. For example, as to economic impacts, The New Zealand Institute's September 2007 report<sup>1</sup> predicts national economic benefits from broadband of at least \$2.7-\$4.4 Bn per year. The July 2007 Hi-Growth Project/NZCID report concludes that GDP growth, attributable to modest acceleration of the rate of broadband diffusion, at between \$2.7Bn-

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<sup>1</sup> The New Zealand Institute, *Defining a Broadband Aspiration: How much does Broadband matter and what does New Zealand need?* September 2007  
<http://www.nzinstitute.org/Images/uploads/Broadband%20aspiration%20Sept%202007.pdf>

\$6Bn up to 2020. That assessment does not take into account effects such as the negative impact on international competitiveness as other nations forge ahead with broadband diffusion.<sup>2</sup>

- 2.5. Recognising that it is difficult empirically to assess the benefits of broadband diffusion, there is still a considerable impact on the economy and upon social and welfare needs for New Zealanders.
- 2.6. There is so much at stake for New Zealand that careful analysis needs to be undertaken to optimise the policy settings. The TSO Discussion Document – in relation to broadband - is a relatively early and rudimentary part of that analysis. It does not enable conclusions to be drawn. Rather it points the way to further detailed analysis, discussion and consultation.
- 2.7. In this paper, we refer to USOs (Universal Service Obligations) in terms of something similar to the current TSO: that is, a universal service obligation on one or more providers, funded by either internal cross-subsidy<sup>3</sup> or by contribution, to the carrier/s that are meeting the universal service need, by other carriers.<sup>4</sup> We have clarified this point because USOs come in different shapes, forms and definitions.<sup>5</sup>
- 2.8. A broadband USO is but one of a number of potential responses to broadband diffusion challenges. The Discussion Paper makes an early start on analysis of broadband USOs. There is a lot more work to be done. There is so much at stake that a careful analysis of options should be undertaken, as is recommended by the OECD. There is only limited analysis and information in the Discussion Paper. There is a lack of other information (such as the extent to which there are commercially non-viable customers in relation to broadband).
- 2.9. Future TSO considerations need to recognise that the current TSO regime with regard to expansion of broadband services to rural and remote areas has become a disincentive for some new entrants and some niche players. Going forward a TSO or Broadband USO would need to achieve a balanced set of outcomes; on the one hand investment in new services and infrastructure, while on the other ensuring that the social policy objectives under the current TSO will be maintained.
- 2.10. Our approach is therefore more in the nature of raising issues for discussion and consideration, and to help inform a further consultation by the Ministry.
- 2.11. InternetNZ believes it is essential that in the future all New Zealanders have broadband Internet access. However, it is not possible to come to a concluded view as to whether there should be a broadband TSO/USO. We

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<sup>2</sup> The Hi-Growth Project and NZ Council for Infrastructure Development, Connecting ....to our Digital Future, July 2007; Appendix I pages 9 and 10. <http://www.nzcid.org.nz/downloads/Full%20Report.pdf>

<sup>3</sup> For example, by geographic averaging of pricing (which is the UK model although wider network benefits to BT there are said by Ofcom largely to offset the cost)

<sup>4</sup> That's the New Zealand TSO model.

<sup>5</sup> OECD, *Rethinking Universal Service for a Next Generation Network Environment*; April 2006.; pages 10 and

identify some of the issues to be considered in the next round of analysis and consultation. We also raise subsidy and other options for discussion purposes (again, the Discussion Paper is only at an early stage in the process).

- 2.12. As the paper is named as a TSO paper, it does not constitute adequate consultation on issues outside TSO. A number of key stakeholders will not have detected this call for submissions. That applies particularly to rural broadband and subsidies. It is appropriate for the Ministry to go to further consultation.
- 2.13. Of particular concern, when addressing broadband diffusion, is the growing issue of a rural broadband digital divide. We focus on this issue in these submissions, when dealing with Question 9c. There are already strong signs of a rural broadband divide opening up in New Zealand, which needs to be addressed.
- 2.14. The problem has been recognised by the Minister and it was intended to outline a rural broadband strategy in the last Budget. Many in the rural sector cannot access broadband at an affordable cost. While this is a separate stream of work, it overlaps with considerations such as the broadband USO option.
- 2.15. While InternetNZ considers that the decisions should be arrived at carefully, it is particularly concerned about the prospect of further delay, especially in relation to the rural sector.

### **3. Recommendations:**

- 3.1. That Government has, as its objective, equitable broadband access for all citizens and businesses, wherever they are located;
- 3.2. That on the path to achieving that objective, the Ministry implements its suggested framework (with amendments suggested by InternetNZ), to assess broadband USO and other potential solutions;
- 3.3. That the Ministry then produces a further consultation paper, outlining options for achieving that objective (equitable broadband access for all citizens and businesses, wherever they are located);
- 3.4. That a rural broadband strategy including subsidy mechanisms is advanced via a separate consultation work stream, involving key stakeholders and coordinated in conjunction with Central Governments Digital Strategy Refresh Initiative.
- 3.5. That the Ministry support the TCF initiative to establish an industry working party with the view of achieving industry consensus on the future of the voice and dial-up TSO for report back no later than 6 months.

#### **4. TCF Discussions on Telephony**

- 4.1. InternetNZ understands that many of the telecommunication providers and the TCF will suggest that the TCF facilitates industry discussions on resolution of telephony and related TSO issues, and we understand this proposed process will exclude broadband TSO issues.
- 4.2. InternetNZ supports the TCF facilitating those discussions to seek as much consensus as possible on what should happen to the existing TSO given the changing environment. This resolution calls for substantial input from stakeholders (not just the suppliers) and from the Ministry.
- 4.3. While the initiative is welcomed, the TCF should be given a limited time period (say 4 to 6 months) to endeavour to achieve consensus among stakeholders. While there are some promising signs that the TCF is moving more quickly and proactively of recent times, the delays and inadequacies in the handling of number portability and mobile co-location (which benefited existing carriers) are too recent to permit anything other than tight timelines on this otherwise excellent initiative on the part of TCF and the carriers.

#### **5. Rural Broadband Workshop Outcomes**

- 5.1. On September 18, 2007, InternetNZ and Local Government New Zealand (LGNZ) ran a workshop on rural broadband and the TSO Discussion Document. This workshop had broad sector representation including industry, and regional and local authorities.
- 5.2. The outcomes of that meeting were consensus around the need for change in the TSO and a desire to ensure true broadband is available to all. It was noted that, with retirement of the PSTN looming, bitstream becomes the actual service that is being used for telephony.
- 5.3. Contestability was seen as key to TSO delivery, and at a regional level, in the expectation that there would be therefore more than one supplier able to bid. There was concern, however, at the potential overhead cost of managing such a process compared to the potential benefits.
- 5.4. InternetNZ's view is that the workshop was valuable in highlighting a number of the issues. However, it also highlighted the inadequacy of attempting to address the rural broadband issue in the context of the narrow TSO mechanism. A far broader exploration of the issues and consideration of a range of methods of ensuring ubiquitous broadband access is required.

#### **6. Stakeholder Consultation on Rural Broadband**

- 6.1. InternetNZ would welcome being part of, and leading if appropriate, a group of stakeholders with a particular interest in ubiquitous availability of broadband in rural and regional areas.

## Responses to Question 9 in the TSO Discussion Document

### 7.

**9a. Taking into account likely broadband user requirements in 3-5 years time, what do you consider will be the key broadband applications (e.g. email, web browsing etc) for businesses and households?**

- 7.1. In response to Question 9a, we will deal with some issues arising generally as to Broadband USOs and other mechanisms such as subsidies. This answer is also relevant to our other answers below.
- 7.2. While 9a is an appropriate question, it is rudimentary in the scale of the issues to be considered. More detailed questions, issues and necessary analysis are not raised in this Discussion Paper beyond introducing them at an introductory level.
- 7.3. The Discussion Paper itself appears to acknowledge this, in asking (at Question 9e) whether the framework for analysis (in the box at Para 241 of the Discussion Document) should be adopted. Settling on that framework is really the starting point.
- 7.4. For consideration of whether there should be a broadband USO and/or some other response such as subsidies, a detailed analysis is required.
- 7.5. As we note in the Executive Summary, there is a lot at stake. Moreover, there is a danger that the wrong policy settings will be achieved, leading to failure. As the OECD notes in its 2003 report on USO and Broadband<sup>6</sup>:
- "Governments are adopting both 'supply-side' as well as 'demand-side' policy initiatives to support broadband deployment. It is important that this be done in a coherent, consistent and cost-effective manner.
- The [OECD] paper proposes a systematic decision-making procedure for considering the need for broadband deployment support programmes. There are no quick, generally applicable, answers. A systematic approach to the broadband deployment and diffusion issue requires that the source of any problems be first identified and then specifically addressed with tailored cost-effective measures. Among these would be the use of universal service obligation as a possible policy instrument."
- 7.6. The approach in this earlier OECD paper, noted above, is the same as that in the 2006 OECD report referred to below, which in turn has been suggested by the Ministry. That is the suggested rules (*Rules for systematically considering whether broadband should be a USO*) noted in the box within

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<sup>6</sup> OECD, *Universal Service Obligations and Broadband*: January 2003; page 6

Paragraph 241 of the TSO Discussion Paper. With the following five additions, InternetNZ endorses the suggested USO rules:

**7.7. Addition to USO Rules A: Economic rationale:**

7.7.1. We would add that the analysis should include not only “social importance” considerations as a threshold issue in determining the approach.<sup>7</sup> This threshold question should extend to economic considerations as well, for that is material to USOs and other solutions such as subsidies: see the “*Economic Rationale*” overview by the OECD in its April 2006 report, *Rethinking Universal Service for a Next Generation Network Environment* (Para 2.1).

**7.8. Addition B: Nationwide economic implications:**

7.8.1. Similarly, the analysis should extend beyond social and economic disadvantages incurred only by those without access to broadband.<sup>8</sup> Limiting consideration of the issues to only those that are directly affected disregards network effects.

7.8.2. It also disregards the importance on the overall economy, caused by lack of broadband access for those that are disadvantaged. This issue is particularly acute in New Zealand: for example, as noted in the Executive Summary, 66% of New Zealand’s exports are based on rural agriculture, forestry and horticulture. These nationwide economic implications should be included in the analysis, and that is appropriate, as the “*Economic rationale*” referred to above, confirms.

**7.9. Addition C: Rules apply to other solutions such as subsidies:**

7.9.1. The model can be used to determine the most appropriate approach, or (more likely) combination of approaches, ranging from a USO to subsidies, etc.

**7.10. Addition D: Criteria for assessing funding mechanism:**

7.10.1. In this respect, there is an additional series of issues suggested by the OECD which should be adopted. These are “Criteria for assessing a funding mechanism.”<sup>9</sup>

**7.11. Addition E: Qualitative analysis:**

7.11.1. It is difficult to capture much of the information in empirical form. Quantifying costs and benefits is desirable where reasonably and pragmatically possible. However, there are too many factors that cannot reliably be quantified, to call for a detailed quantitative cost benefit analysis. Such an analysis could in fact be inherently unreliable and misleading.

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<sup>7</sup> Rule 1 in the list in Para 241

<sup>8</sup> Rule 6 in the list in Para 241

<sup>9</sup> Box 8 on page 50: OECD, *Rethinking Universal Service for a Next Generation Network Environment*; April 2006.

- 7.12. **Addressing the problem:** Before deciding what to do about broadband USO (and other options (such as subsidies), the rural broadband digital divide, etc), it is important to have a clear understanding of the problem that is to be addressed. Analysis needs to be comprehensive. That in turn requires consideration of issues such as likely uses of broadband, in particular by those who may be commercially non-viable customers **in relation to broadband services**. We emphasise this because there can be confusion. Those customers are unlikely to be identical to the customers who are currently commercially non-viable customers under the present PSTN-centric TSO.
- 7.13. **Time frame for review:** We return now to the specific question and the 3 to 5 year time frame. 3 to 5 years is a typical period that is used in competition and regulatory analysis, and there are difficulties in predicting even for that period let alone longer periods. However, the analysis needs to take account of longer time frames, particularly as potential infrastructure investors will have regard to the longer term. A broadband USO or some other intervention, for example, has the prospect of stranding assets, and also delaying investment decisions. Focus in the analysis on an unduly short time frame could dampen investment. It is investment which of course can lead to the generally preferred outcome: competition rather than a USO, subsidy or other solution wherever possible.
- 7.14. **Further consultation:** We conclude in this paper that the Ministry will need to go to consultation again, if only because consultation notice requirements have not been met. For more detail on this point, see the Appendix. However, there are significant other reasons to consult further. The need for comprehensive further analysis calls for further consultation anyway to get optimal outcomes.
- 7.15. **Which broadband customers are commercially non-viable?** A further reason to go to consultation again is that those being asked to submit (except perhaps Telecom) do not have sufficient information yet as to which customers would be non-viable in relation to broadband services. That is one reason why InternetNZ cannot conclude at this stage whether a broadband USO, and/or other solutions should be adopted.
- 7.16. We understand that some work is being done on obtaining this data, and we suggest that it is made available to stakeholders for comment (on a basis that preserves appropriate confidentiality if necessary). In this way, optimal outcomes are more likely.
- 7.17. InternetNZ would like to be able to submit on confidentiality issues if it is proposed that confidentiality requirements drive availability of only limited information to stakeholders. Experience shows that claimed need to protect information can be used by providers as a mechanism to gain inappropriate advantage, without justification. This may be a significant problem and lead to poor outcomes.

## 8.

**9b. To what extent do you consider that the market will meet the broadband needs of rural users (including availability and affordability) in the next five years?**

- 8.1. See the answer to 9a which applies generally to this question.
- 8.2. Clearly there are already considerable changes underway that should better meet the needs of many rural users. But there are challenges too, such as the prospect of de-averaged pricing for LLU and UBA, in contrast with the TSO price cap on voice telephony and dial-up Internet access.<sup>10</sup> There is considerable uncertainty and movement at present, which indicates that the decision as to whether or not to have a broadband USO should be analysed particularly carefully.
- 8.3. Those changes include:
  - 8.3.1. The potential effects of Operational Separation;
  - 8.3.2. NGN, which brings with it opportunities (and challenges particularly in the rural sector<sup>11</sup>);
  - 8.3.3. LLU and availability of “full-speed” clothed and naked DSL services;
  - 8.3.4. Three mobile networks moving toward roll-out of WCDMA 3G networks with their greater data capabilities (albeit constrained on current technology by possible contention issues at base stations);
  - 8.3.5. Improved backhaul (such as fibre builds to Gisborne and through Tekapo and Queenstown, to Invercargill);
  - 8.3.6. Freeing up of spectrum, regionally and nationally;
  - 8.3.7. Wireless applications. There is the prospect of WiMAX solutions following on from major implementations such as Sprint in the USA and as part of OPEL’s roll-out in the Connect Australia initiative (outlined in more detail in the Appendix below). WiMAX, if introduced, could have substantial impact on rural access and closing the rural broadband digital divide. As is well known, WiMAX has faced some hurdles and uncertainties, and thus implementation is likely to be particularly sensitive to regulatory decisions;
  - 8.3.8. Broadband Challenge initiatives;
  - 8.3.9. Satellite;

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<sup>10</sup> See however the analysis of the effect of USO price caps in OECD, *Rethinking Universal Service for a Next Generation Network Environment*; April 2006.

<sup>11</sup> In particular, there is a risk of reduced quality of service or even stranding of customers with NGN roll-out: see OECD *Rethinking Universal Service for a Next Generation Network Environment*; April 2006.; Page 27

8.3.10. The numerous smaller initiatives such as WIZwireless, Inspire Net; Nelson/Marlborough Broadband Initiative; Waitakere City, West Coast, Tuhoe, etc;

8.4. It is unlikely that all these changes will ensure affordable access to broadband to all rural customers and therefore some Government intervention will be needed.

## 9.

**9c. Do you consider there is a case for subsidy mechanisms to fund upgrading of rural broadband infrastructure, and if so, what mechanisms should or should not be considered, and why?**

9.1. We deal with this important issue at length in the Appendix below. We also refer to 9a above.

## 10.

**9d. What role do you think the TSO framework should have in accelerating the uptake of broadband access for New Zealand homes?**

10.1. See Question 9a above.

10.2. For the reasons noted when dealing with Question 9a above, this question should not be limited to “New Zealand homes”. Business is also critical.

10.3. There is not enough information yet to determine if the TSO should have a direct role as to broadband (in particular by extending the regime to introduce a broadband USO).

10.4. However the voice telephony and dial-up TSO is likely to have an indirect effect, particularly if the TSO is replaced by a USO that allows (a) contestability, and/or (b) supply to the current commercially non-viable customers by providers other than Telecom (such as by mobile operators, VoIP providers, etc).

10.5. In some instances, the effect is likely to expand broadband access. In others it may have a negative effect, particularly in the rural sector where the costs of implementing NGN are not economic for Telecom.<sup>12</sup>

10.6. The indirect effects arise from new technologies (and new services if there is contestability). For example, VoIP in place of PSTN generally brings with it

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<sup>12</sup> See, for an analysis of the potentially negative effects of the NGN on rural customers and the digital divide, OECD, *Rethinking Universal Service for a Next Generation Network Environment*; April 2006 Page 27

broadband capability. Therefore broadband service is more likely to occur even though broadband is not mandated under the TSO.

- 10.7. Another example is the effect of contestability in relation to voice telephony: mobile operators with WCDMA coverage will be able to provide broadband even though they are only required, for TSO/USO purposes, to provide narrow band voice and Internet access. It may be that the ability for a mobile operator to provide the TSO voice service within the current price cap can provide the commercial justification to roll out reasonably priced broadband as well.
- 10.8. In determining whether to have a Broadband USO, a key issue will be the structure of the model. We return to this below when dealing with contestability. However, experience shows so far that USOs can be complex to implement and can be gamed by incumbents. This problem may turn out to be so difficult to overcome that it is reason alone not to have a Broadband TSO.
- 10.9. Three examples illustrate the challenges:
- 10.9.1. In Australia a 2004 Government report on comparable circumstances concluded<sup>13</sup>:
- “The history to date suggests any new attempts to cost the USO in the Australian context would be difficult, costly and, on ACA estimates, would take a minimum of two years. Even then, any subsidy based on modelling results would risk being contested by one or more of the affected carriers, given the range of factors and the nature of the methodological issues involved.”*
- 10.9.2. The calculation of the TSO sum and the contribution to Telecom by other carriers has been expensive, drawn out and highly controversial, as demonstrated by the appeal to the Court by Vodafone against the latest TSO decision.
- 10.9.3. The problems are shown by the May 2007 report from Network Strategies prepared for the TSO Discussion Document, *Capital Investment in Telecom’s Rural Network*. Network Strategies conclude, at paragraph 5, that annual rural depreciation for the Telecom rural access network is \$50 to \$70 million but the annual spend on that network (for both growth and replacement) is only \$22M. Allowance for investment in its network is made in the calculation of the sum payable by other carriers to Telecom under the TSO. There is a strong inference that (a) Telecom is not investing adequately in its rural network and (b) other carriers are – in effect - paying Telecom for investment that is not being made.

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<sup>13</sup> This is quoted at page 24 in DCITA, Telecommunications Universal Service Obligations (USO) Review Issues Paper – September 2007. For further detail, see also page 18 in OECD, *Rethinking Universal Service for a Next Generation Network Environment*; April 2006

## 11.

### **9e. How are these rules above for considering a broadband USO relevant to New Zealand?**

- 11.1. See the answer to Question 9a.
- 11.2. The rules referred to are those noted in the answer to Question 9a (that is, the Rules in the box in Para 241 of the Discussion Document). As noted above, InternetNZ supports their use, with the five identified additions (Additions A to E). Together they provide a framework for determining the solution (or - more likely - the combination of solutions) to the challenges of insufficient broadband access, particularly in regional and rural areas. Those potential solutions extend beyond Broadband USO.
- 11.3. Those rules, with the five proposed additions, are a short summary of the more comprehensive analysis by OECD in its April 2006 paper, *Rethinking Universal Service for a Next Generation Network Environment*. InternetNZ recommends that this report is used by the Ministry in assisting it through the remaining stages of this review.
- 11.4. Government has a range of possible interventions such as a broadband USO, subsidies (of which there are variations such as voucher systems, solutions targeted at poorer citizens), provision of information to citizens, etc. There are both demand and supply side considerations and solutions. Additionally, Government (Central and Local) can coordinate and take steps to utilise infrastructure available to it (including public sector holdings in entities such as SOE's). On the demand side it can take a number of steps including demand aggregation (and SSC has such a project underway at present); leveraging off implementations such as the Government Shared Network, etc.
- 11.5. As noted above, there is too little information for stakeholders to be able to suggest concluded views. This submission therefore raises issues for consideration by the Ministry. For example, the Appendix sets out several examples of how the challenges have been met in other countries. The examples all illustrate that there is no single solution in each instance. Australia for example has adopted a suite of initiatives. It has reconfirmed recently that it will not use a broadband USO even though it has committed to give broadband access to all citizens wherever they are based. Instead, Australia:
  - 11.5.1. has entered a public-private initiative (jointly funded by Government and the OPEL JV) to roll out fibre, ADSL2+ and WiMAX infrastructure throughout Australia, to create a network that will foster competition and drop backhaul charges by at least 30%;

- 11.5.2. has a fund to pay for access for the 1% of the population who cannot otherwise access broadband (commercially or via the OPEL network);
- 11.5.3. has a broadband information service for citizens (informing citizens should be a key part of any strategy in this area);
- 11.5.4. has a fund to be spent on technology upgrades in the future.

## 12.

### **9f. Are there other factors that need to be considered for a Broadband TSO?**

- 12.1. See the answer to Questions 9a and 9e

## 13.

### **9g. Should for the TSO Provider for any broadband TSO be selected on a contestable basis?**

- 13.1. See the answer to Question 9a
- 13.2. As noted above, considerably more analysis is required before it is decided whether to have a broadband USO. Likewise, analysis is required before deciding whether to have contestability. However, it is likely that, where there are contestable customers, InternetNZ would support contestability. To do otherwise would be to further entrench Telecom's dominance.<sup>14</sup>
- 13.3. The method of contestability would require very careful design (and that may be so challenging that it is ultimately fatal to the prospect of having a broadband USO).
- 13.4. The question implies only one successful provider. That does not follow. With a technology-neutral approach, multiple providers can be universal service providers. This highlights one issue: while technology neutrality is desirable, different services have differing strengths and weaknesses. Quality of service is likely to emerge as a key issue.

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<sup>14</sup> For further detail about contestability and design of the model, see OECD, *Rethinking Universal Service for a Next Generation Network Environment*; April 2006.

## APPENDIX: TSO Review - Rural Broadband Considerations

**Question 9c: Do you consider there is a case for subsidy mechanisms to fund upgrading of rural broadband infrastructure, and if so, what mechanisms should or should not be considered, and why?**

**Recommendation: That a rural broadband strategy including subsidy mechanisms is advanced via a separate consultation work stream, involving key stakeholders and coordinated in conjunction with Central Governments Digital Strategy Refresh Initiative**

### Introduction

In response to Question 9c above, posed in the MED Discussion Document: *Telecommunications Service Obligations Regulatory Framework*, this paper outlines the background issues in rural broadband before considering some approaches and initiatives that would be worthy of further discussion as part of an ongoing consultation process.

### Background

In January 2007 the Minister of Communications David Cunliffe announced the terms of reference for the review of the Kiwi Share contract. He stated publicly at the time that:

*“The Government is separately putting together a package to encourage investment in rural telecommunications, with an announcement likely to be included in this year's Budget.*

*And Mr Cunliffe hopes to extend the arrangement to provide for better broadband for rural customers”*<sup>15</sup>

InternetNZ is concerned that little or no progress has been made since that announcement, which seeks to address the particular issues facing the rural sector regarding the provision of broadband services.

Notwithstanding the lack of detailed analysis, the anecdotal evidence concerning issues related to broadband availability and service levels is widely recognised, undisputed and is reflected in Minister Cunliffe's recent statement of June 2007 to the Commerce Select Committee:

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<sup>15</sup> *The Dominion Post* 17 January 2007 - <http://www.stuff.co.nz/3931427a13.html>

*“Mr Cunliffe told Parliament's commerce select committee that he had become increasingly concerned about the state of telecommunications networks in rural areas since starting a review last year.*

*The complaints of people in the provinces about the poor state of telecommunications networks were legitimate and they had suffered from a "history of underinvestment" that the Government was now taking seriously, Mr Cunliffe said. "I don't think they are making it up. The more I hear, the more serious I think the problem is." <sup>16</sup>*

InternetNZ has been involved in many discussions and consultations in respect to broadband in past years and is particularly concerned that while urban broadband issues are being dealt with, rural issues remain under-recognised.

### **Issues**

Central Government has attempted in recent years to address the growing “broadband digital divide” in the rural sector. Project Probe and more recently the Broadband Challenge were both highly targeted funded interventions from Central Government aimed at stimulating investment in broadband infrastructure in the regions.

The results have been mixed. Probe can be described at best as a partial success, and it is too early to judge the full impact of the Broadband Challenge.<sup>17</sup>

Compounding rural broadband issues are recent decisions by the Commerce Commission that adopt, at draft report stage, “de-averaging” of urban and non-urban geographic areas in draft determinations for LLU, and UBA. This policy approach has raised fears in the regions that de-averaging could further institutionalise a rural broadband digital divide and has further underscored the need to identify some form of solution to the digital divide problem.

New Zealand will be unable to take full advantage of the economic, social and cultural benefits of broadband if a substantial portion of its population and businesses lacks broadband access at affordable prices, and misses out on the other benefits of a competitive broadband marketplace.

As the TSO Discussion Document notes, 66% of New Zealand’s total exports come from the rural agricultural, horticultural and forestry sectors.<sup>18</sup> The rural economy extends well beyond this (for example, into the tourism sector, which is a major part of the economy).

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<sup>16</sup> *The Dominion Post* 18 June 2007 - <http://www.stuff.co.nz/4097567a28.html>

<sup>17</sup> See The Hi-Growth Project and NZ Council for Infrastructure Development, *Connecting ...to our Digital Future*, July 2007; Para 5.1

<sup>18</sup> Para 222

Additionally, as the Discussion Document observes, “Because of New Zealand’s high dependence on its rural sector for economic growth and productivity improvements, the benefits from broadband use in rural New Zealand could potentially be very significant.”<sup>19</sup>

It will be important to undertake a careful cost benefit analysis to establish the appropriate policy settings to meet these challenges.

InternetNZ therefore submits that Central Government needs to urgently consider what kinds of policy, regulatory and financial incentives are needed to accelerate the uptake of broadband network and service offerings in New Zealand’s rural sector.

### **TSO Consultation Process**

InternetNZ fully recognises that considerations concerning the future of the TSO/USO will ultimately have a direct impact on any rural broadband strategy. They are interrelated. However, rural broadband issues are wider than the terms of reference for the TSO review and consequently need to be carved out from the current consultation process and treated as a separate but parallel (yet coordinated) process.

There needs to be proper consultation with key stakeholders. The TSO Discussion Document is not the basis for adequate consultation. As noted in this submission, more information is needed to enable proper and comprehensive consultation.

In any event, many of the stakeholders will not respond to the TSO Discussion Document as it is stated to be, in its title, only about the TSO and not about broader rural broadband strategy considerations. Focus on the latter is buried in the detail. In particular, stakeholders that are not telecommunication providers may not even read the Discussion Document, as TSO raises complex issues that are not understood by many, including many in the telecommunications sector.

As the Discussion Document itself points out, it “...is written primarily for industry stakeholders who are familiar with the basic regulatory and technology concepts applicable for the telecommunications sector in New Zealand”<sup>20</sup>.

Many stakeholders will not be aware of the consultation on critical areas such as the issues raised in Question 9c. This means that the TSO Discussion Document does not meet minimum consultation requirements, beyond issues directly pertaining to the TSO. The Ministry must go back to consultation at least on the non-TSO issues (it should do so also on the TSO issues as well).

However, The Ministry can do further consultation, with the benefit of more detailed analysis of the issues having been done. For this reason, we set out some initial views and options for discussion purposes.

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<sup>19</sup> Para 223

<sup>20</sup> Para 41

## **Rural Broadband Infrastructure Subsidy Mechanism(s)**

A rural broadband strategy needs to incorporate the following policy objectives:

- Improvement in rural broadband infrastructure and regional telecommunications investment.
- Equitable access to broadband and telecommunications services.
- Increased benefits to rural consumers in terms of pricing, service innovation and service quality of telecommunications services.

Key issues to be examined should include:

- Detailed examination of the nature and extent of the broadband reach problem
- Investigation of potential technological solutions for the reach issue
- Analysis of the options for operators or Government to resolve the issue
- Provision of a recommendation (and model) for the best approach to the reach issue.

In addition, a rural broadband strategy should address the “5 As” - Access + Applications + Affordability + Accessibility + Assistance = Adoption.

The mistake of stimulating investment in broadband infrastructure without any consideration for demand side strategies is well documented in countries elsewhere.

## **Rural Broadband Strategy Matrix**

A rural broadband strategy needs to consider the following strategies

- Leveraging Central Government procurement of telecommunication services
- Demand Aggregation
- Demand Creation
- Rural Broadband Infrastructure Investment Fund
- GIS Broadband Mapping
- Direct Subsidy
- Broadband USO
- Role of Kordia
- Public-Private Pro-Market Approach

## **Rural Broadband Policy Options**

New Zealand is certainly not alone in facing issues around rural broadband, and is in an advantageous position of being able to consider a number of initiatives and models in use elsewhere. Paragraph 235 of the Discussion Document highlights some of the funding assistance programmes and strategies employed by other countries that address the lack of broadband investment in rural and non viable commercial areas.

Also of note is the Network Strategies' April 2006 report to MED<sup>21</sup>. Annex A in that

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<sup>21</sup> *The broadband divide: Achieving a competitive international ranking*  
<http://www.med.govt.nz/upload/36790/broadband-divide.pdf>

report lists provincial broadband initiatives in Canada as additional examples. This shows that at the regional level, not just at the Federal Government level, Governments elsewhere are seeking to stimulate broadband investment in rural and under-served areas.

Here we consider some of the approaches in summary form, followed by more detail of particular examples cited:

### **Procurement**

The Canadian NetWork BC initiative leverages Government procurement of telecommunication services to extend the reach and affordability of broadband services to rural and remote regions.

In New Zealand the GSN initiative provides the springboard that could provide a similar outcome in New Zealand, particularly with regards to regional backhaul issues as GSN expands its reach beyond the major centres.

### **Demand Aggregation**

Demand aggregation is a strategy common to all rural broadband initiatives but can only be successful if implemented with fully resourced demand creation strategy driven by a “bottom up” approach.

### **Demand Creation**

Both NetWork BC and US initiative ConnectKentucky adopt a “whole of community” approach - a fundamental success factor.

The demand creation side of the ConnectKentucky broadband initiative is led by local e-leadership teams on a county by county basis, employing a self-assessment community benchmarking tool designed to determine the readiness of a town, city, county, or region to undertake broadband deployment. Key outputs are a technology roadmap and action plan for each county.

### **Rural Broadband Infrastructure Investment Fund**

BRAND in Canada is typical of funding interventions employed by many national and state/provincial governments worldwide to encourage investment in regional or community broadband access networks

New Zealand’s Broadband Challenge, which provided limited seed funding for urban open access networks and remote and underserved communities, could be utilised to further investment in broadband rural and underserved communities.

### **GIS Broadband Mapping**

ConnectKentucky represents a benchmark for use of GIS to drive both investment and demand in rural and underserved communities where broadband service providers could not previously justify investment. The key success factor was the ability to convert data into market intelligence. Note “collecting data is the hard part, and the mapping is quick.”

The recently established Central Government Broadband Demand Mapping Project, while much more modest in scope, could be expanded to encompass a wider range of data sets.

### **Direct Subsidy**

Cost benefits of direct subsidy vs. cross subsidy options for non viable commercial “black spots“ need to be carefully considered for remote and underserved areas as part of a rural broadband strategy

The Australian Broadband Guarantee Subsidy is an example of a direct subsidy. Note that it is highly targeted and relatively simple to administer.

### **International Rural Broadband Initiatives**

Outlined below are examples of overseas models that together illustrate a range of strategic initiatives that need to be considered in order to successfully address rural broadband investment issues. All are exemplars. As we note above, the intention of this submission is to provoke analysis and discussion, rather than to provide fully crafted solutions.

#### **Example 1: Government Procurement, Demand Aggregation, Demand Creation**

Canada: NetWork BC- Connecting Communities

Sources:

<http://www.network.gov.bc.ca>

<http://about.telus.com/digitaldivide/>

NetWork BC - Connecting Communities is described as a digital divide initiative by the British Columbia provincial government. It is designed to leverage the purchase of telecommunications services by the public sector, to bring services to rural and remote communities.

Telecommunications vendors that wish to sell telecommunications services to the provincial government are required to include solutions for under-served communities.

In April 2005, the BC provincial government announced the Connecting Communities Agreement (CCA) with the incumbent telecommunications provider TELUS. Under the Connecting Communities Agreement, open network access would be brought to rural and remote communities.

The Connecting Communities Agreement committed TELUS to the provision of affordable high speed Internet-based services to 119 out of the 151 un-served communities in British Columbia, by 31 December, 2006.

In March 2005, two primary agreements were reached between the parties, the Master Competitive Services Agreement and the Connecting Communities Agreement.

The first of these agreements (the Master Competitive Services Agreement) specified the services that the Provincial Government and the broader public service would buy from TELUS. This agreement, however, applied only to non-tariffed services where prices are not regulated. This resulted in the consolidation of approximately 340 existing TELUS contracts with the public sector into one master agreement covering all the participating bodies.

This was achieved by agreeing to a streamlined and simplified set of services (reduced from 900 to approximately 90). It resulted in a fifteen per cent savings on telecommunications costs (Canadian \$54 million over four years) for both the Government and the broader public sector.

The Master Competitive Services Agreement also extended to 31 December, 2008 the telecommunications contracts for those non-tariffed services provided by TELUS.

As part of that new agreement, TELUS signed the Connecting Communities Agreement to bring high speed Internet into the communities.

A community engagement strategy has been developed by NetWork BC. Network BC staff are available to work with TELUS and community champions to make sure that communities are ready to benefit from broadband when it arrives in their community.

In addition, Network BC works with two community-based organizations, the [BC Community Connectivity Co-operative](#) (BC3) and the [First Nations Technology Council](#) (FNTC), to provide a limited number of \$20,000 grants to communities to aid them with last-mile costs.

CCA agreement highlights include:

- No additional cost to taxpayers. Minimum 10MB service to telephone exchanges in each of BC's 337 communities
- Provision of affordable high-speed access, for unserved communities, to open network access points in 151 previously unconnected BC communities
- For the smallest of communities, a "utility pricing" model that allows last-mile providers to access a 10Mb connection out of their community at a very cost effective, per-user rate.
- TELUS has agreed to a non-compete clause in unserved communities until December 2008.

## **Example 2: Demand Aggregation, Demand Creation**

USA: ConnectKentucky

Sources:

<http://www.connectkentucky.org>

<http://www.cetfund.org/docs/register/CETF%20Strategic%20Action%20Plan.pdf>

“The most impressive increases in broadband adoption have been achieved by ConnectKentucky. ConnectKentucky was launched by the Governor with support from the industry to organize a systematic process to identify prospective users and aggregate demand to drive infrastructure deployment.

ConnectKentucky maps the existence of technology county by county and then mobilizes eCommunity Leadership Teams to identify opportunities for demand in specific sectors (business, local government, education, healthcare, libraries, tourism, community organizations, and agriculture) to attract broadband providers to compete for customers. It operates with a staff of about 30 people on a budget of [US]\$1.5-\$2.5 million annually funded by industry memberships on a steering committee. As a result, Kentucky has led the nation in growth of both broadband availability and adoption”

ConnectKentucky is working community by community, provider by provider to ensure:

1. Broadband availability for all Kentuckians, businesses and local governments;
2. Dramatically improved usage (adoption) of computers and the Internet;
3. Meaningful online applications for local government, businesses, educators, etc;
4. Establishment of local technology leadership teams in every county promoting technology growth for: local government, business and industry, education, healthcare, agriculture, libraries, tourism, and community-based organizations.
5. ConnectKentucky works closely and frequently with teams of leaders in each of its 120 counties.

In a state of a little over 4 million people, ConnectKentucky takes a grass-roots bottom-up approach, not top-down.

### Public-Private Pro-Market Approach

The State of Kentucky and private sector collaborated with ConnectKentucky — this is a public/private partnership with a comprehensive approach to addressing both the supply and demand side of the equation for enhanced broadband access, and adoption across the State.

ConnectKentucky operates on an annual budget ranging from US\$1.5 - \$2.2 million, with core funding from the State Government. It has a staff of 30 people, partnering with private broadband service providers as well as local leaders in each county.

ConnectKentucky utilises an innovative model to sustain its steering committee. The steering committee members, which are telecommunication providers, pay an annual fee of \$20,000. In return, these members contribute to the policy direction of the organisation, receive marketing exposure, and are provided with government lobbying support.

ConnectKentucky is well on its way to meeting its goal of 100% broadband access for all Kentucky households by 2007. It has increased broadband availability in the state by 45% since 2004.

### GIS Broadband Mapping

The organisation's activities include GIS mapping of broadband access (including access provided via carriers, most cable companies, municipal wireless projects, and other wireless projects); community benchmarking of broadband access and uses; refurbishment and donation of government computers; and high-level research. This GIS mapping serves two purposes:

The first is to ensure that state agencies, local government, and local economic development organisations are working together to make strategic decisions about regulation and technology investment.

The second is to bring those areas of Kentucky with inadequate broadband access up to par so they can compete with the rest of the world via the Internet

GIS mapping is used to identify broadband gaps by building a comprehensive GIS-based inventory of existing broadband infrastructure and service availability.

The maps were the result of a collaborative effort between the broadband providers in the state and are further developed through state-wide surveys and concerted outreach efforts.

ConnectKentucky has collected and combined economic data; census data; water, sewer, and road expansion data and details about any other development with broadband access, provided by the telecommunications industry (including local telephone companies, cable, and wireless providers).

This approach has brought large providers like BellSouth together with rural development advocates and state and local units of government. This enables very detailed GIS mapping that includes each individual cell tower, detailed market data, and other demographic and infrastructure information that helps companies better provide broadband and take advantage of existing infrastructure.

The market intelligence provided on the multi-layered maps has helped broadband service providers to create a business case for broadband deployment in areas where they previously there was too much uncertainty and too little information to justify the investment.

As a result, access and use have increased dramatically in the state since the formation of ConnectKentucky. This approach leverages corporation and foundation dollars and is far less expensive than paying directly for infrastructure.

#### Demand Creation

ConnectKentucky sponsored a live interview survey of more than 10,000 state residents (approximately 90 people in each of the 120 counties) to develop an understanding of which people are likely to subscribe and why.

The demand creation side of ConnectKentucky is led by the e-leadership team. In each county, ConnectKentucky has established an e-community leadership team comprised of nine sectors, such as health care, schools, libraries, etc.

As a team, they go through a gap analysis. ConnectKentucky helps identify where their specific sector stands in the technological arena. ConnectKentucky then leads them through a best practices visioning process to identify where they would like to be technologically in two years.

Finally, a ConnectKentucky team returns and shows each sector how to reach their goals. Each county and each sector in Kentucky has their own unique plan on how to reach their broadband goals. Doing this at the local level is critical because "solutions are as local as the problem".

#### **Example 3: Rural Broadband Infrastructure Investment Fund**

Canada: BRAND - Broadband For Rural and Northern Development Program

Sources:

<http://broadband.gc.ca/pub/program/bbindex.html>

The Broadband for Rural and Northern Development (BRAND) Pilot Program is a federal Industry Canada initiative to connect rural and Northern residents to high-speed Internet.

BRAND funds community-based initiatives to deploy broadband networks under private sector leadership in communities unlikely to be served by market forces alone. It was launched in September 2002 and has received funding to carry out its mandate until March 2005.

BRAND has the following objectives:

- to demonstrate and validate the benefits of broadband in unleashing the full innovative potential of communities across Canada;
- to provide funding to unserved communities;
- to prepare business plans that detail the need for broadband services in their communities;
- to provide funding to unserved communities to help them implement broadband services that will address the needs of these communities in the

- areas of job creation, education, health, economic development and governance;
- to create opportunities for learning by sharing best practices among communities;
- to create new business opportunities, domestically and globally, for Canadian information and communication technology (ICT) companies.

Eligible communities receive a 2 stage financial assistance.

Criteria:

- they had to respond to identified community needs;
- the private sector had to play an active role in the development and implementation of business plans;
- business plans had to provide third-party open access to broadband networks and services;
- business plans had to be implemented through a competitive, technologically neutral bidding process;
- the plan for deploying broadband networks and services had to be sustainable and scalable.

In the first phase, interested communities receive seed funding up to \$30,000 or 50 percent of project costs in order to assist “community champions” in the development of a business plan. Community champions are typically not-for-profit organisations that act as sponsors on behalf of eligible communities.

In the second phase, community champions submit business plans that serve as the funding application. Successful applicants are eligible for funding up to 50 percent of the project.

\$4.2 million has been invested to date for the development of business plans for a total of 154 projects, representing approximately 2,285 communities that received up to \$30,000 each.

In terms of implementation, 63 projects, representing approximately 900 communities, have been selected for deployment of broadband services to their communities, for a total investment of \$80 million.

Canadian policy recognizes that broadband demand aggregation across the public and private sectors in rural communities is necessary to develop the economies of scale that lead to “more viable business cases”.

The Canadian government has invested C\$105 million in rural and northern communities, leveraging twice this amount in matching investments from the Provinces, private sector and the Federal Strategic Infrastructure Fund.

#### **Example 4: Direct Subsidy**

Australia: Australian Broadband Guarantee Subsidy and the “Australia Connected” initiative

Sources:

[http://www.dcita.gov.au/communications\\_for\\_consumers/funding\\_programs\\_and\\_support/australian\\_broadband\\_guarantee\\_-\\_for\\_consumers](http://www.dcita.gov.au/communications_for_consumers/funding_programs_and_support/australian_broadband_guarantee_-_for_consumers)

[http://www.dcita.gov.au/data/assets/pdf\\_file/70001/Fact\\_Sheet\\_ABG.pdf](http://www.dcita.gov.au/data/assets/pdf_file/70001/Fact_Sheet_ABG.pdf).

The Australian Broadband Guarantee is a targeted \$162.5 million Government program that commenced in April 2007 and offers registered providers a subsidy of up to \$2750 per premises to provide either a land-based or satellite-based broadband service for those Australians living in the most remote or difficult-to-reach areas.

This is an example of a suite of responses designed to ensure that 100% of Australians get broadband access. It is also a recent example of where a Government has elected to use a range of targeted solutions instead of a USO, in relation to broadband.

The Australian Broadband Guarantee is designed to fill in any broadband black spots across Australia (in respect of the 1% of the population that won't otherwise have access after the recently announced national network is completed).

Any Australian principal residence or small business that is unable to access a metro-comparable broadband service<sup>22</sup> is eligible to receive a subsidised service under the Australian Broadband Guarantee.

The Australian Broadband Guarantee is part of a suite of solutions (called the “Australia Connected” initiative) implemented by the Australian Federal Government to achieve broadband access for 100% of Australians wherever they live<sup>23</sup>. This initiative includes a competitive grants process to deliver a new, national, high speed and wholesale broadband network.

This led to the awarding of the contract on a public/private initiative basis, to the OPEL network (a JV between Optus and Elders). The contribution from Government to this network is around A\$950M. OPEL is also committing over A\$900M to the project. The network (with minimum 12 Mb/s speeds) is a mixture of backhaul and local fibre, WiMAX (there will be 1361 base stations), ADSL2+ and satellite. The entire network, including backhaul, will be open access, aimed at

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<sup>22</sup> a minimum 512/128kbps data speed, 1GB per month data usage and a total cost, over three years, including installation and connection fees of \$2,500 GST inclusive

<sup>23</sup> For an overview of the initiative, see the 27 June 2007 speech by the Minister for Communications, Information Technology and the Arts, “Australia Connected” Broadband for all Australians ([http://www.minister.dcita.gov.au/media/speeches/broadband\\_for\\_all\\_australians](http://www.minister.dcita.gov.au/media/speeches/broadband_for_all_australians)).

providing a boost to competitive regional broadband service providers, with a committed drop in price of 30% below existing backhaul charges.

The Australian Broadband Guarantee provides a safety net, to allow broadband access, such as by satellite, for the 1% of the population that won't get service after the new network is operational.

Further, Government has established a Regional Telecommunications Independent Review Committee to undertake reviews of the adequacy of telecommunication services in rural and regional Australia. That committee has just commenced its first consultation to gauge adequacy of services.<sup>24</sup>

A review of the Universal Services Obligation in Australia commenced, by way of an issues paper put out for consultation by DCITA, in September 2007<sup>25</sup>.

Significantly, the addition of a broadband USO is not up for review, on the basis that:

- the targeted initiatives, noted above, achieve Universal Service;
- the conclusions from an earlier review (the 2002 Regional Telecommunications (Estens) Inquiry, that there should not be a broadband USO, remained applicable.

As the Issues paper notes. The combined initiatives noted above "...reflects the key findings and recommendations of the 2002 ...Estens Report. The Estens Report recommended the Australian Government use targeted funding, rather than the USO, to improve services such as broadband and mobile telephony in regional, rural and remote Australia. In the context of these advanced services, experience has shown targeted programs to be generally preferable on efficiency, equity and transparency grounds."<sup>26</sup>

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<sup>24</sup>[http://www.rtirc.gov.au/home/media\\_releases/call\\_for\\_submissions\\_on\\_the\\_adequacy\\_of\\_telecommunications\\_services\\_in\\_regional\\_rural\\_and\\_remote\\_australia](http://www.rtirc.gov.au/home/media_releases/call_for_submissions_on_the_adequacy_of_telecommunications_services_in_regional_rural_and_remote_australia)

<sup>25</sup> Telecommunications Universal Service Obligation (USO) Review Issues Paper  
[http://www.dcita.gov.au/communications\\_for\\_consumers/telephone\\_services/fixed\\_telephone\\_services/industry\\_issues\\_policies\\_and\\_legislation/the\\_universal\\_service\\_obligation\\_uso/universal\\_service\\_obligation\\_review](http://www.dcita.gov.au/communications_for_consumers/telephone_services/fixed_telephone_services/industry_issues_policies_and_legislation/the_universal_service_obligation_uso/universal_service_obligation_review)

<sup>26</sup> DCITA USO Issues Paper at page 6