

## 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>1</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>1</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>2</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>3</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>4</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>2</sup> *The Dominion Post* 18 June 2007 - <http://www.stuff.co.nz/4097567a28.html>

<sup>3</sup> See The Hi-Growth Project and NZ Council for Infrastructure Development, *Connecting ....to our Digital Future*, July 2007; Para 5.1

<sup>4</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>5</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>6</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).

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<sup>5</sup> Para 223

<sup>6</sup> Para 41

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.

### **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>7</sup>. Annex A in that 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.

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<sup>7</sup> *The broadband divide: Achieving a competitive international ranking*  
<http://www.med.govt.nz/upload/36790/broadband-divide.pdf>

### **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 I: 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>8</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

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<sup>8</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

Government to achieve broadband access for 100% of Australians wherever they live<sup>9</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 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>10</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>11</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,

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<sup>9</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)).

<sup>10</sup>[http://www.rtic.gov.au/home/media\\_releases/call\\_for\\_submissions\\_on\\_the\\_adequacy\\_of\\_telecommunications\\_services\\_in\\_regional\\_rural\\_and\\_remote\\_australia](http://www.rtic.gov.au/home/media_releases/call_for_submissions_on_the_adequacy_of_telecommunications_services_in_regional_rural_and_remote_australia)

<sup>11</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)

experience has shown targeted programs to be generally preferable on efficiency, equity and transparency grounds.”<sup>12</sup>

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<sup>12</sup> DCITA USO Issues Paper at page 6