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19 August 2016

7Telecommunications Review Team
Communications Policy
Ministry of Business, Innovation &
Employment
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WELLINGTON 6140

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Dear Sir/Madam,

Submission on Telecommunications Act Review: Options Paper

Venture Southland thanks the Ministry of Business, Innovation and Employment for the opportunity to submit on the Telecommunications Act Review: Options Paper.

Venture Southland has long recognised that telecommunications are important to the economic and social well-being of our province. To this end, since 2000 Venture Southland has actively been involved with a number of regionally significant telecommunications projects and has already undertaken a successful rural broadband deployment project which has enabled some 96% of our population by dwelling to access fast, affordable broadband Internet service. Our submission has been prepared in light of the considerable experience we have gained in undertaking the Southland Whole of Community Broadband Project, assisting various parties participating in the Rural Broadband Initiative and ensuring that some of our communities have benefitted from the Vodafone Community Cellsite scheme.

Venture Southland's legal status

Venture Southland is a formal legal entity as a Joint Committee of Councils under Schedule 7, Section 30 of the Local Government Act 2002 as a Local Authority.

Venture Southland was formally constituted on 9 June 2001 by way of a Heads of Agreement signed and executed under seal by the Invercargill City Council, the Southland District Council and the Gore District Council.

Submission

This submission should be read in conjunction with our previous work:

A Proposal for Whole of Community Telecommunications in Southland, Registration of Interest – Support for the provision of Integrated Telecommunications Solution in the Southland Region under the RBI2, UFB2 and MBSF Funds of July 2015

Regulating Communications for the Future – The Telecommunications act 2001 Review of 27th October 2015

Southland Digital Strategy 2015

Southland Registration of Interest – Support, Expansion of UFB, RBI programmes and Mobile Black Spot Fund, July 2015.

Venture Southland’s views are shaped by our own experience in requesting fibre-optic cable service under the RBI, anecdotal experiences conveyed to us by staff and ratepayers seeking service under UFB, and our own involvement in the telecommunications field as both an observer and as an active submitter to the RBI2, UFB2 and Mobile Blackspot Fund processes.

Our submission deals with only some of the review directly, but the principles we support are clear.

General Matters

Venture Southland has prepared digital strategies for Southland in 2008 and 2015, and our view since 2002, when we published *Blazing a Trail to the Information Highway* that set out a practical roadmap for broadband telecommunications in rural areas, remains unchanged. We strongly assert that the starting point for any telecommunications policy should be to support the following tenets:

- Ubiquitous service, i.e. all households and users can access service.
- Universal service, i.e. the same level of service is available for the same price everywhere
- Affordable service, i.e. all households should be able to easily afford service

The role of any telecommunications policy is to ensure that these tenets are enabled efficiently. This review neglects to directly address these objectives.

For our 2015 *Digital Strategy*, we analysed the developments in telecommunications and came to conclude that New Zealand could only become a modern, connected and effective place to work and live if, over the next 15 years, the following technology goals were adopted:

- Fibre everywhere, i.e. all businesses and dwellings were provided with fibre-optic access,
- 4G LTE everywhere, i.e. all populated areas have access to 4G LTE mobile service.

We noted that 5G is still in its infancy and at any rate will only affect built-up areas, and that LTE technology has made the conceptual leap from 3G, which was a voice network that carried data, to a data network that carries voice. We also noted that as customer penetration for fixed-line telephony continues to drop, the copper network, too, is becoming to predominantly support voice over data service. We do not see how this review has adequately addressed these goals.

In all our work, we have consistently rejected the conventional wisdom that rural telecommunications is uneconomic. It can be economic. We were reliably informed by the Woosh Wireless CEO that their operation in Southland was “the jewel in their crown”, and he lamented that the company had not concentrated on providing profitable rural services instead of trying to maintain presence in the cities, which set their downfall. Regardless, the conventional wisdom prevails and the telcos generally are reluctant to take rural requirements seriously.

Worse, policy development has been derailed by this view. The most insidious metric promulgated by telecommunications network providers is to use “whole of country” statistics instead of regional statistics when advertising their networks. By case in point, when it first started operations, Vodafone would claim to service “90% of New Zealanders”, although only providing service to the large cities.

The use of national averages to determine infrastructure is flawed for gauging extent of service or network coverage that includes large city-based populations will always mask rural neglect. In fact, setting any goal for coverage based on population cover is flawed. The objective to have 90% of the population enjoying access to service providing peaks speeds of 50 Mbps, means that some 9,300 people in Southland will not enjoy this service if the 90% service objective is averaged over Southland. However, because of the UFB1 and likely UFB2 rollout plans, everyone in Invercargill, Gore, Matakura, Winton, Riverton and Te Anau will have fibre-optic service by 2025, leaving those 9,300 people without 50 Mbps service to be spread over the remaining 28,000 rural dwellers in the remainder of Southland. In other words, only 2/3 of rural dwellers will have 50 Mbps service. Under a national averaging model, nearly all of Southland's 28,000 rural population could miss out.

Metcalf and others show that the utility of communications network increase by the square of the population connected. While 90% coverage for a network may sound impressive, in fact its utility is only 81% of potential.

We assert that:

- Rural telecommunications can be profitable if undertaken by knowledgeable and competent engineers and managers
- With suitable incentive, it is possible to deploy fibre-optic cable to all dwellings in New Zealand, noting that in Southland New Zealand Post Office and then Telecom New Zealand undertook works programme running from 1979 to 1990 that resulted in individual underground copper pair service to every Southland dwelling and business
- Measuring network coverage must be undertaken on a regional scale as any national scale metric will always conflate the rural deficiencies
- Enforcing roaming across rural cellular service providers would solve the current impasse that hinders rural cellular service expansion.

We are critical of previous efforts that have chosen expediency over practical conditions in Southland to improve broadband performance. RBI effectively funded Vodafone to overbuild most of the Woosh Wireless 3G network that had been providing 1Mbps service to some 85% of Southland (and nearly all customers out of range of the Chorus network) with a 5Mbps service and so ruined its business, leading to Woosh Wireless' demise in July.

Comments on Executive Summary

The review's ambit, as set out in the Executive Summary, is too restricted to be useful and deals only with network copper and fibre-optic network providers and even then, on the whole, implicitly attempts only to address market failure associated with the Chorus UFB rollout. To be blunt, this review is best regarded as an investigation to best regulate Chorus.

It is extremely unfortunate that this review is not customer focussed. If it were, the diagram in the Executive Summary on p6 would have had another box above "Promotes competition for the long-term benefit of end-users. Where there is no effective competition, promotes outcomes consistent with outcomes in competitive markets". The superior box would establish the *raison d'être* for telecommunications networks and list some aspirational goals, such as "Universal, ubiquitous and affordable broadband service to all New Zealanders". In passing and with all due respect, "outcomes consistent with outcomes in competitive markets" is too vague to be useful and is easily able to have any good intention reversed: poor service in rural areas would indeed be a "consistent outcome"!

Question 4. Telecommunications Commissioner's Role

We agree that the role of the Telecommunications Commissioner should be reviewed after 2020, but we also seek that the role be reviewed fully now. What is desperately needed is an advocate for the general public, who can ensure that all telecommunications-not just fixed line service-are fairly made available. Customers, most of whom have no technological understanding, have little idea of what sort of service they can expect let alone receiving.

A significant impediment to competitive services being offered is where incumbents assert that their network is operating satisfactorily when it is not, and putting the onus on interconnect providers and customers to prove that their own equipment and network. This has the capacity to provide non-market barriers to competing network operators, and needs to come under the ambit of the Commissioner also.

We have not been in a position to gauge the quality of service for fibre-optic cable services, but from time to time it is brought to our notice that RBI wireless service is not providing any serviceable speeds at some cellsites. We are not well positioned to confirm the assertions made to us, though as they come from installers we expect that there is likely to be truth in them. Our own calculations based on fundamental physics and Shannon's Law (relating to b/Hz) tell us that 700 MHz 4G LTE RBI wireless cannot provide good service for large congruent populations. The Commissioner needs to be able to take an independent and comprehensive view of proposals, and understand their limitations.

Question 5. Regulator Asset Base

What this review fails to address is the monopoly power of cable network providers and their intransigence. We give two cases in point where a Telecommunications Commissioner and solid regulation would have made useful contributions:

1. Lochiel Satellite Ground Station

In 2015 we established a small but critical satellite ground station at the back of the Lochiel Community Hall, south of Winton for Spire Global. One of the reasons for choosing this site was because RBI cable passed directly in front of the hall to the adjacent Lochiel Primary School. Through an ISP, Chorus advised that it would cost \$15,000 to connect to the RBI cable. Our generous estimate was for \$700 for materials and maybe \$1,200 for labour and machinery hire to dig some 4 metres for the cable to our duct pipe, jointing and cable-pull-through. We declined the Chorus offer and engaged another contractor to dig 250 metres of trench through the school playground and connect us to the cable termination at the school and connected there. This cost a total of \$4,600, less than 1/3 of the Chorus price.

2. Awarua Satellite Ground Station

For the last 5 years we have been trying to get fibre-optic cable connected to Awarua Satellite Ground Station, where we host three (in part competing) international space agencies and operators, with more under negotiation. There are two problems. Chorus' price is outrageous: the first price offered was \$500,000 via a circuitous route, and when we pointed out that it would be shorter and easier to direct-bury cables along an unformed paper road for 3.4 km, a revised price of \$126,000 was provided through our ISP, who undertook to not mark-up the Chorus work. This seemed high and so we sought prices from qualified local contractors (including jointers and cable layers) and received quotes totalling \$54,000. Chorus refused to consider our offer of contractors and, when we offered to do the work ourselves, refused to consider connecting our proposed supplied cable or use our ducts for them to pull or blow their own cable. We have agreed reluctantly for Chorus to do the work for a revised \$94,000, more than twice a reasonable cost. The second problem is that Chorus will charge the \$94,000 installation cost on the first-in customer at Awarua Satellite Ground Station and the subsequent two (competing) customers will only need to pay around \$2,000 each to connect. This puts us in an invidious position and we have had to negotiate on two continents to sort out a sensible solution.

Nowhere in this review are these sorts of matters addressed, yet the extortionist pricing from Chorus has essentially knee-capped any benefits to be had from RBI. It is imperative that any model investigated in this review is thoroughly tested with real-life examples rather than abstracted conjecture.

Because of Chorus monopoly pricing, an independent fibre-optic cable network using redundant gas mains pipes has provided dark-fibre service around parts of Invercargill. It has proved to be economically viable. We can see no reason why independent co-operative telecommunications fibre-optic cable network providers could not be economic in rural Southland. It would seem that these networks would fall completely outside of the Telecommunications Act.

Conversely, we recently we have been privy to claims of predatory pricing by Chorus when it comes to laying fibre-optic cable in new subdivisions by competitors. We have not been able to establish the veracity of these claims, but it would seem that the Chorus rules of refusing to use third party ducts or cable and refusing to interconnect on public land would certainly allow Chorus to erect non-market barriers to competition.

Question 8 Legislative Guidance

Our preference is for Option 2. The Commission decides on the appropriate methodology, although with a caveat that the legislation enabling this allows for the Minister to give her views to the Commission. It is important that the Minister is able to express her views to influence economic activity for the best outcome for all New Zealanders and not just network providers

16. Non-standard installations

The argument for charging customers for ‘non-standard’ (and by implication, uneconomic) connections takes a utility network (where only the person connected benefits) approach to a communications network problem: in a communications network the person being connected benefits, but so do all the other existing users who can also benefit by being able to communicate with the new connection. Metcalfe’s Law directly addresses this and there is many papers in learned literature that will point to a more considered approach.

The review is silent on how the new connection gets charged and how betterment should be applied. The Awarua Satellite Ground Station example above regarding Question 5 shows the impediment to economic development when this matter is not adequately dealt with.

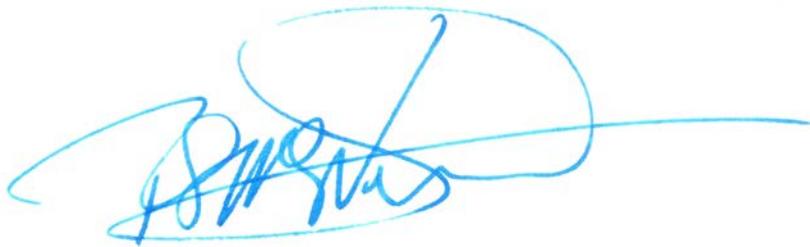
We would be happy to discuss our submission further.

Contact for further information

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Yours faithfully

A handwritten signature in blue ink, appearing to read 'Robin McNeill', with a large, stylized flourish above it.

Robin McNeill
Enterprise Project Manager