

**COMMERCE ACT 1986: BUSINESS ACQUISITION
SECTION 66: NOTICE SEEKING CLEARANCE**

Date: 5 October 2005

The Registrar
Business Acquisitions and Authorisations
Commerce Commission
P O Box 2351
WELLINGTON

Pursuant to section 66(1) of the Commerce Act 1986 notice is hereby given seeking **clearance** of a proposed business acquisition.

PART I: TRANSACTION DETAILS

1. THE BUSINESS ACQUISITION

1.1 The business acquisition for which this clearance is sought is Telecom New Zealand Limited's ("**Telecom**") acquisition of the radio spectrum management rights known as MED radio frequency auction No 5 lot 01 WLL 06 (the "**Management Rights**"), which apply to the range of 3,459MHz to 3,466MHz and 3,559MHz to 3,566MHz.

1.2 Counties Power Limited ("**CPL**") is currently the registered holder of management right 191, which relates to frequencies in the range of 3,452MHz to 3,466MHz and management right 192, which relates to frequencies in the range 3,552MHz to 3,566MHz. Telecom has agreed to purchase the Management Rights subject to Commerce Commission ("**Commission**") clearance. The purchase would leave CPL with a 7MHz pair of spectrum in the 3.5GHz range which will be sufficient for it to continue to provide and expand its services.

1.3 The agreement is set out in a letter from Telecom, dated 16 September 2005, signed by CPL on 23 September 2005 ("**Letter of Agreement**"). A copy of the Letter of Agreement is attached as **Annex 1**.

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2. NOTICE GIVEN BY TELECOM

2.1 This notice is given by:

Telecom New Zealand Limited
PO Box 570
WELLINGTON

Telephone: 04 498 9467
Facsimile: 04 473 5926
Attention: David Knight, General Counsel New Zealand

2.2 All correspondence and notice in respect of the application should be directed in the first instance to:

Russell McVeagh
Mobil on the Park
157 Lambton Quay
PO Box 10-214
WELLINGTON

Telephone: 04 499 9555
Facsimile: 04 499 9556
Attention: David Clarke/Fionnghuala Cuncannon

Email: david.clarke@russellmcveagh.com /
fionnghuala.cuncannon@russellmcveagh.com

3. CONFIDENTIALITY

3.1 Confidentiality is sought in respect of all items deleted from the public copy of this application ("**confidential information**"). The items are either indicated in the non-public version in square brackets ("[]"), or contained in **Appendices 1 and 3**, the entire contents of which are confidential.

3.2 In respect of the confidential information, a confidentiality order is sought under section 100 of the Commerce Act 1986 ("**Act**"), and confidentiality is claimed under section 9(2)(b)(ii) of the Official Information Act 1982, on the grounds that the information is commercially sensitive and valuable information which is confidential to the participants, and disclosure of it is likely to give unfair advantage to competitors of the participants and/or unreasonably to prejudice the commercial position of the persons involved.

3.3 Telecom requests that it be notified of any request made to the Commission under the Official Information Act for release of the confidential information, and that the Commission seeks Telecom's views as to whether the information remains confidential and commercially sensitive, at the time responses to such requests are being considered.

4. DETAILS OF THE PARTICIPANTS

4.1 Telecom New Zealand Limited
PO Box 570
WELLINGTON

Telephone: 04 498 9467
Facsimile: 04 473 5926

Attention: David Knight, General Counsel New Zealand

4.2 Counties Power Limited
Private Bag 4
PUKEKOHE

Telephone: 09 238 9139
Facsimile: 09 238 5120
Attention: Paul Muir

4.3 All correspondence and notices in respect of the application should be directed in the first instance to:

Russell McVeagh
Mobil on the Park
157 Lambton Quay
PO Box 10-214
WELLINGTON

Telephone: 04 499 9555
Facsimile: 04 499 9556
Attention: David Clarke/Fionnghuala Cuncannon

Email: david.clarke@russellmcveagh.com
fionnghuala.cuncannon@russellmcveagh.com

5. INTERCONNECTED AND ASSOCIATED PARTIES

5.1 Telecom is a wholly owned subsidiary of Telecom Corporation of New Zealand Limited and a member of the Telecom Group of companies. Telecom Corporation of New Zealand Limited includes Telecom New Zealand Limited, Telecom Mobile Limited, Xtra Limited, and Telecom Directories Limited.

5.2 CPL, formerly the Franklin Electric Power Board, is owned by the community in the form of the Counties Power Consumer Trust.

6. BENEFICIAL CROSS-INTERESTS

6.1 The only interests which each participant or any of its interconnected bodies corporate has in another participant are the interests and entitlements of the participants as set out in the Letter of Agreement.

7. LINKS BETWEEN PARTICIPANTS

7.1 [] There are no other formal or informal links between either of the participants (including interconnected bodies corporate) other than as set out in the Letter of Agreement.

8. CROSS DIRECTORSHIPS

8.1 No directors of Telecom hold directorships in any other companies outside of the Telecom Group which are involved in the markets relevant to this application.

9. PARTICIPANTS' BUSINESS ACTIVITIES

- 9.1 Telecom and its interconnected bodies corporate are suppliers of telecommunication services in New Zealand and Australia. They provide a full range of telecommunication products and services including local, national and international telephone services, mobile services, data and internet services.
- 9.2 Telecom holds management rights in respect of 20MHz (and the corresponding natural pair) in the 800MHz band, which is used by Telecom for the delivery of its CDMA (mobile services). Telecom also holds management rights to 64MHz in the 2.3GHz band but these rights expire in 2010 and Cabinet has decided that incumbents will not be given the right to renew. Telecom also has 15MHz of paired 3G spectrum in the 2.1GHz band and 25MHz of paired 1800MHz spectrum. Telecom currently has no rights to spectrum in the 3.5GHz range.
- 9.3 CPL is a local electricity network owner in the Counties region. CPL's electricity network delivers electricity to approximately 25,000 customers in the Franklin area. CPL has also launched Wired Country to provide an open access broadband network. Its Wired Country business provides broadband access by fibre optic cable or via wireless transmission over the 3.5GHz frequency. It offers a wide range of services including internet, data, phone, fax and videoconferencing.
- 9.4 It deployed a POP (Point of Presence) at the Sky Tower in its first significant urban trial with a range of 20 to 30 km. Thirteen ISPs utilise Wired Country's wholesale services and each ISP can run any service over Wired Country's network, whether voice or video streaming. Wired Country connects all lines and hardware to each customer with an Etherport in the customer's premises forming a demarcation point for ISPs. Project PROBE has meant that services extend beyond the southern and northern extents of Auckland, from North Waikato up through most of the Rodney district. It offers services based on pure Ethernet, QoS-enabled networks with fast speeds including uplink for which 1Mbps is standard.
- 9.5 Wired Country has numerous access point deployments scheduled across the next few months with a focus on infilling to expand capacity and adding new sites as part of its Project PROBE commitment. Three major high-capacity sites are under construction in Auckland and another two large sites are being planned, with a number of smaller sites in the peripheries of Auckland in the pipeline.
- 9.6 It currently holds 14MHz of paired 3.5GHz spectrum. As outlined above, CPL is in the process of selling the Wired Country business to Compass.

10. REASONS FOR THE PROPOSAL

- 10.1 Telecom requires the Management Rights in order to be able to access the new technologies that are being developed and will be introduced over the next few years.
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- 10.2 Telecom considers it prudent to obtain rights to spectra in which technical developments are being made and which several other parties (including Telecom's most significant competitors) hold. Telecom recognises it takes a risk in doing so in that future technical developments may render the 3.5GHz spectrum less valuable and/or useful than predicted (eg the development of IEEE 802.20 which is currently in the process of being approved and which will provide fully mobile broadband access operating at frequencies

below 3.5GHz; or the proliferation of WiMax technology in the alternative 2.5GHz or 5.8GHz frequencies at which it is also designed to operate).

PART II: IDENTIFICATION OF MARKETS AFFECTED

11. HORIZONTAL AGGREGATION

Market definition

Introduction

11.1 This proposal involves the acquisition by Telecom of enabling infrastructure in the form of spectrum management rights. The 3.5GHz spectrum provides infrastructure enabling holders to provide services utilising technology developed for use at that frequency. The acquisition does not involve aggregation of existing businesses. It involves the acquisition by Telecom of the potential to use future technology to provide services. The 7MHz paired spectrum will provide Telecom with the opportunity to compete effectively in an area which it predicts will become increasingly relevant as technology develops.

11.2 The current management rights in relation to the 3.5GHz spectrum are held as follows:

Cr 7	Cr 7	TCL 21	V 7	CPL 14	BCL 21	Cr 7	Cr 7	TCL 21	V 7	CPL 14	BCL 21
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Cr Crown
TCL TelstraClear
V Vodafone
CPL Counties Power Limited
BCL Broadcast Communications Limited

11.3 As can be seen Telecom does not currently hold any management rights in relation to 3.5GHz spectrum. Nor does it hold any licence rights in relation to 3.5GHz spectrum. Following the acquisition of the Management Rights Telecom would hold management rights in relation to only 7MHz of paired 3.5GHz spectrum out of a total of 77MHz. Significant blocks of spectrum (21MHz in each case) are held by BCL and TelstraClear who have both announced the intention to test the developing 3.5GHz technology. Another significant competitor to Telecom in the form of Vodafone holds the management rights to a further paired block of 7MHz. CPL (or the purchaser of its Wired Country business) holds management rights to a paired block of 7 MHz and licences to the Crown's retained block are currently being auctioned (148 geographically specific licences of paired spectrum are being offered across New Zealand including in urban areas).

11.4 As a result Telecom will hold less than 10% of the relevant management rights while more than 50% of the management rights to the 3.5GHz spectrum will be held by two significantly resourced and motivated network operators. Competition in the use of 3.5GHz spectrum will come primarily from BCL and TelstraClear given their resources and the extent of their spectrum rights. Vodafone can also use its resources to make significant use of its 3.5GHz block. CPL's block and the licences issued under the current Crown auction will provide yet further competition.

11.5 Competition utilising the new technologies being developed in the 3.5GHz spectrum will be enhanced if Telecom is able to compete in that area compared to any other third party acquiring the spectrum block. Telecom has the resources and expertise to deploy and utilise the technology being developed for use in the 3.5GHz spectrum more effectively than an alternative smaller third party that might purchase the Management Rights.

11.6 In the context of other enabling infrastructure, Telecom's acquisition of the Management Rights will have a negligible impact given the extent and number of other participants:

ALTERNATIVE ENABLING INFRASTRUCTURE OPERATORS			
PROVIDER	TYPE OF INFRASTRUCTURE	GEOGRAPHIC COVERAGE OF SPECTRUM RIGHTS	MARKET PRESENCE
BCL	<ul style="list-style-type: none"> Wireless Holds management rights to the spectrum in the 2.1-2.3GHz, 3.5GHz and 26GHz bands 	National	National
CaféNET	<ul style="list-style-type: none"> Wireless Utilises unlicensed spectrum in the 2.4GHz and 5.8GHz bands 	National	Wellington, Palmerston North, Nelson, Auckland and Hawkes Bay
Citylink	<ul style="list-style-type: none"> Wired and wireless Utilises unlicensed spectrum in the 2.4GHz and 5.8GHz bands 	National	Auckland and Wellington CBDs
Compass Communications	<ul style="list-style-type: none"> Wireless Utilises unlicensed spectrum in the 2.4GHz and 5.8GHz bands 	National	Whangarei, Auckland, Tauranga, Hamilton, Palmerston North, Rotorua, Christchurch and Queenstown.
NZWireless	<ul style="list-style-type: none"> Wireless Utilises unlicensed spectrum in the 2.4GHz and 5.8GHz bands 	National	Auckland and Wellington
Reach Wireless	<ul style="list-style-type: none"> Wireless Utilises unlicensed spectrum in the 2.4GHz band 	National	North Island, Christchurch and Queenstown
Telecom	<ul style="list-style-type: none"> Wired, mobile, and wireless Holds management rights and utilises unlicensed spectrum 	National	National
TelstraClear	<ul style="list-style-type: none"> Wireless and wired Holds management rights in the 1800MHz, 2.1 GHz, 3.5GHz and 26 GHz bands. 	National	National
Vector	<ul style="list-style-type: none"> Wired 	N/A	Auckland and Wellington CBDs
Vodafone	<ul style="list-style-type: none"> Wireless and mobile Holds management rights in the 900MHz, 1800MHz, 2.1GHz, 3.5 GHz and 26 GHz bands 	National	National
Wired Country	<ul style="list-style-type: none"> Wireless and wired After the sale to Telecom, will continue to hold 7MHz of paired 3.5GHz spectrum. 	National	Auckland, Warkworth, Hamilton
Woosh	<ul style="list-style-type: none"> Wireless Holds management rights to the spectrum in the range 2053MHz to 2082MHz and in the 2.3 GHz band. 	National	Southland, Otago, Queenstown, Canterbury, Wellington, Taranaki, Hamilton, Auckland, Northland

- 11.7 As can be seen the acquisition by Telecom of a paired block of only 7MHz of 3.5GHz spectrum will result in an insignificant change in the ownership of enabling infrastructure compared to an independent third party acquiring the Management Rights.

Previous determinations of the Commission

- 11.8 The Commission has not previously specifically considered the markets relating to 3.5GHz spectrum, however, the current and predicted future use of 3.5GHz spectrum provides an indication that two markets previously specified by the Commission should be considered, namely:
- (a) the market for the provision of wholesale broadband access; and
 - (b) the market for the provision of third generation mobile telephony services.

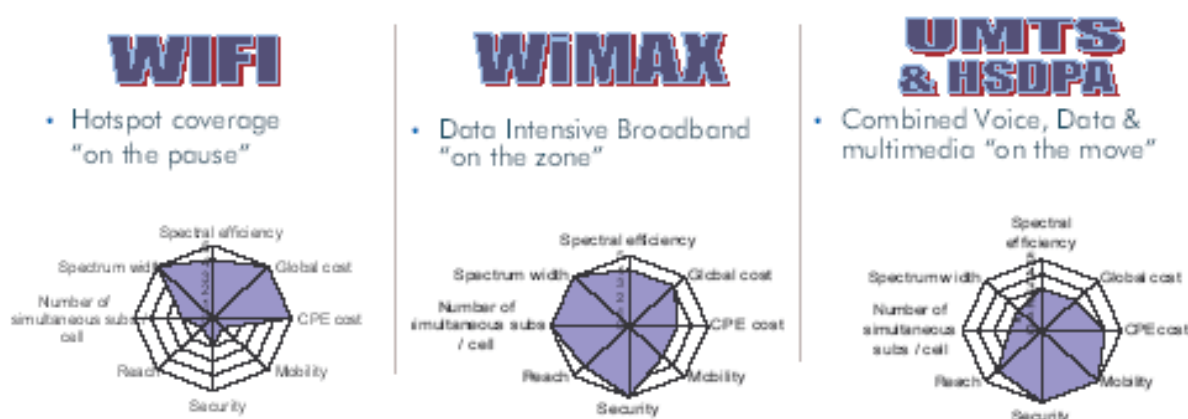
Current use of 3.5GHz spectrum

- 11.9 The current main use for the 3.5GHz spectrum is, as was expected when originally auctioned in 2002, as fixed wireless broadband access. BCL is the most significant provider of such services with its EXTEND wireless broadband package that is offered purely as a wholesale offering to carriers. Resellers of that service include Telecom, Compass, ICONZ, and Inspirenet. TelstraClear is also utilising its 3.5GHz spectrum to provide broadband access as an extension to its fixed network. Counties Power, through its Wired Country business, also utilises the 3.5GHz spectrum for this purpose.

Future use of 3.5GHz spectrum

- 11.10 The primary future uses of 3.5GHz spectrum are driven out of the development of WiMax standards currently being approved by the WiMax Forum (an organisation established in mid 2001 as a worldwide industry association which seeks to promote and certify the compatibility and interoperability of broadband wireless access equipment). WiMax is a standards-based technology which enables the delivery of wireless broadband access which in phase one can operate in the 3.5 and 5.8GHz bands. We understand that consideration is also being given to the 2.5GHz band. While the 2.5GHz, 3.5GHz and 5.8GHz can all be used for WiMax, the 3.5GHz is the only band which has private rights and therefore the only one where capacity and performance can be managed to a carrier-grade level. In addition, but of particular importance to the New Zealand environment, is the need to follow international developments. The technology required will only be available cost effectively where there is sufficient scale. Due to the size of the New Zealand market this requires adopting internationally acceptable standards. In addition, utilising the 3.5GHz band will be globally compatible allowing internet visitors to New Zealand, and New Zealanders travelling overseas, to use their personal equipment to access broadband services. WiMax will allow connectivity without the need for direct line of sight with a base station and will allow high bandwidth applications to run across long distances. It is anticipated that WiMax technology will be able to provide broadband access at sustainable speeds of up to 10Mbps peaking at 70Mbps. WiMax will therefore improve the performance of fixed broadband access and will be particularly useful in rural areas where distances are too large for DSL and cable to be provided cost effectively. In effect, WiMax will enhance the services already provided by BCL, TelstraClear, and Counties Power.
- 11.11 WiMax will also provide for portability and a degree mobility within urban centres. However, the 802.16e standard which would allow for mobility has not yet been certified. In addition the 802.20 standard (which will operate at frequencies below 3.5GHz) is also under development and is intended to provide full mobile broadband access. Unlike WiMax, which relies on a limited number of base stations in the metropolitan area, 802.20 is a more cell-like option that is designed for high speed mobility. Initially, at least, WiMax will, in urban areas, provide access to nomadic users, being those users

who wish to utilise their laptop when stationary but in a variety of locations. In this respect, use of the 3.5GHz spectrum will compete with current WiFi offerings and broadband access via third generation mobile offerings. In addition, Woosh Wireless's current broadband wireless offering also has the ability to offer a portable broadband access solution. However, the characteristics of WiMax mean that WiFi and third generation mobile technology are unlikely to be direct competitors. WiFi is significantly more restricted geographically than WiMax (100m compared to kilometres for WiMax) and WiFi uses public spectrum and therefore cannot be managed to the same quality as WiMax. The peak rate for mobile will be significantly lower than for WiMax (current mobile offerings permitting at best 1Mbps sustainable bandwidth) and the premium for mobility (both of which will continue for the foreseeable future) means 3G mobile and WiMax will not be close competitors. These differences can be seen in the following diagram:



Product dimension

- 11.12 The definition of product dimension of relevant affected markets begins with an examination of the products offered by each of the parties to the acquisition. Both demand-side and supply-side factors determine market boundaries: a market includes products that are close substitutes in buyers' eyes on the demand-side, and suppliers who produce, or are able easily to substitute to produce, those products on the supply-side.
- 11.13 As outlined above, the current use of 3.5GHz spectrum is in the area of fixed wireless broadband access. There are many alternative broadband access networks available on the demand-side. This indicates that 3.5GHz spectrum is currently supplied in the wider market for wholesale broadband access.
- 11.14 In the future however, 3.5GHz spectrum is likely to be able to be utilised to operate superior broadband access networks (as outlined at paragraphs 11.10 to 11.11 above). The differentiating feature of WiMax technology is that WiMax will allow for high capacity portability and, subsequently, it is anticipated that the technology may provide a degree of mobility in relation to broadband access. These features may mean that a separate, more narrow, product market may evolve, consisting solely of WiMax broadband access networks.
- 11.15 Telecom considers that it is prudent to examine both of these affected markets for the purposes of examining the competitive effects of this application. This would be consistent with the approach taken by the Commission in Telecom New Zealand Limited/2GHz Spectrum (Decision 423, 13 March 2001). In that Decision, the Commission considered it would be appropriate to take a conservative approach and

consider 3G mobile telephony networks in a narrow product market. This was based on the potential for 3G mobile services to be superior to those offered over 2G or 2.5G networks (Telecom New Zealand Limited/2GHz Spectrum (Decision 423, 13 March 2001), paragraphs 52-54). Products in the 3.5GHz frequency will similarly have distinct features comparable to 3G mobile and WiFi services.

11.16 Each product market is discussed in more detail below.

The market for the provision of fixed wired and wireless broadband access networks to New Zealand telecommunications firms

11.17 Considering current utilisation of 3.5GHz spectrum, TelstraClear, BCL, and CPL (through its Wired Country business) are deploying broadband access networks that utilise the 3.5GHz band.

11.18 Telecom understands TelstraClear is utilising some of its 3.5GHz spectrum to provide wireless broadband access networks in a significant number of locations across New Zealand, including Auckland, Hamilton, Nelson, Dunedin, Rotorua, Palmerston North, and Napier. TelstraClear has an agreement with Alvarion, a wireless broadband equipment manufacturer. TelstraClear has branded its Alvarion network build "Wireless Local Loop" and is utilising the network to provide data transmission and DSL-like broadband internet access solutions.

11.19 BCL, as detailed earlier in this application, is the most significant provider of fixed wireless broadband solutions. It utilises 3.5GHz spectrum to provide its BCL EXTEND broadband product, which is a purely wholesale product. Resellers include Telecom, Compass, ICONZ, and Inspirenet. It is targeted at rural areas of New Zealand.

11.20 Wired Country operates wired and 3.5GHz fixed wireless broadband networks in Auckland, Hamilton, and Rodney (coverage table attached as **Annex 2**).

11.21 There are several alternative broadband access technologies which are close demand-side substitutes to the current 3.5GHz fixed wireless broadband networks. These include DSL technology operated over copper networks, fibre-optic cables, co-axial cable, fixed wireless technology operated over other radio spectra, and satellite technology. Carriers deploying these technologies are:

- (a) Telecom's wired DSL network;
- (b) Telecom's commercial and regulated wholesale broadband access products (for example, UBS);
- (c) TelstraClear's wired fibre-optic and co-axial cable broadband networks;
- (d) Fibrebased networks such as those of CityLink, United Networks, and Vector;
- (e) BCL and Counties Power wireless networks utilising 3.5GHz spectrum; and
- (f) Woosh Wireless's wireless network utilising 2.2GHz spectrum and TD-CDMA technology;
- (g) Compass Communications and Inspire Net's wireless networks utilising 5.8 GHz spectrum and TDD DSSS radio technology; and
- (h) Thai-based Shin Satellite's nationwide network, provided in conjunction with ISPs Bay City (a rural specialist) and ICONZ (Auckland based).

- 11.22 When considering the wholesale level of the product market, it is important to consider whether the products supplied at the retail level of the market are competing against each other. As the Commission pointed out in the UBS determination, if retail products supplied downstream are competitive substitutes, indirect substitution will constrain any attempted "SSNIP" at the wholesale level of the market.
- 11.23 Telecom submitted in the UBS proceedings that products offered over these networks are priced at very comparable points whether wireless or wired. The Commission has accepted in the draft UBS determination that the downstream broadband products were close demand-side substitutes and hence wired and fixed wireless broadband access networks are also supplied in the same product market at the wholesale functional level of the market.
- 11.24 This is evidenced by BCL's plans to trial a WiMax network in the next few months. ComputerWorld quotes BCL as saying that the company is ready to launch both base standards and CPE once the WiMax standard is ratified.¹ The WiMax network will be able to provide voice, data, video conferencing and other forms of traffic.
- 11.25 Therefore, at a product level, Telecom considers that broadband access networks utilising 3.5GHz spectrum are supplied in the market for the provision of fixed wired and wireless broadband access networks to NZ telecommunications firms.

The market for the provision of WiMax broadband access to telecommunications firms

- 11.26 As noted above, it is anticipated that WiMax technology will be able to provide broadband access at sustainable speeds of up to 10Mbps. This development in wireless data transmission capability may lead to the development of a host of value-added services such as mobile video-conferencing.
- 11.27 The cost of providing WiMax functions, and the extent to which consumers will regard them as being clearly superior or different to the functions which can be offered utilising current wireless and fixed broadband access technologies remains to be seen.
- 11.28 The set up costs of a WiMax network could decline dramatically, as predicted by Peter Nowak in the NZ Herald ("Wireless Wave Rolls In", 16 September 2005). The speed and capacity could also far outstrip any existing broadband access network. WiMax will also provide for portable broadband access and ultimately, a degree of mobile broadband wireless access (see paragraph 11.14 above).
- 11.29 All these factors could combine to lead to a strong customer preference for portable, high speed broadband access that no existing broadband access technology, or only mobile broadband technology, can match.
- 11.30 Current potential broadband access substitutes are:
- (a) WiFi access (currently offered in some urban centres by Telecom, CaféNET, and Reach);
 - (b) Woosh Wireless's wireless network utilising 2.2GHz spectrum and TD-CDMA technology; and
 - (c) 3G mobile technology (though currently with capacity limitations which may be alleviated by future technological developments eg Vodafone's HSDPA).
- 11.31 However all roaming/mobile broadband access networks have significant capacity and/or cost limitations when compared to possible future evolutions of WiMax.

¹ "BCL comes to town", Computerworld, 11 April 2005.

- 11.32 This may mean that WiMax broadband access technologies will have no close demand-side substitutes. Given these uncertainties, Telecom considers that an appropriate conservative approach to the competition analysis would be to consider a narrow future market for the provision of WiMax broadband access networks to telecommunications firms in New Zealand.

Functional Dimension

- 11.33 It is always appropriate to analyse upstream levels of affected markets with reference to the competitive dynamics at the retail level of those markets. However, in this case, the functional level directly affected by this acquisition is the wholesale level. The state of competition can be assessed fully by considering the wholesale level of the affected broadband access markets.

Geographic Dimension

- 11.34 In the context of the wholesale fixed wired and wireless broadband access market use, Telecom considers that the relevant geographic market dimension is metropolitan and non metropolitan. There are a proliferation of wireless and wired broadband access networks in metropolitan areas of NZ, and competition downstream is mainly focused in these areas.
- 11.35 Telecom considers that a national geographic dimension is appropriate for any future WiMax broadband access market. Management rights to the 3.5GHz spectrum are national in coverage. While the 3.5GHz spectrum used as a fixed access product will be primarily focused on rural areas as is currently the case, WiMax technology could potentially be deployed nationally in a very cost-effective manner.

Market definition conclusion

- 11.36 In conclusion, Telecom considers that the relevant markets within which to assess the acquisition are:
- (a) the metropolitan and non-metropolitan wholesale market for the provision of fixed wired and wireless broadband access; and
 - (b) the national market for the provision of WiMax broadband access.
- 11.37 Telecom defines these markets for the purposes of this application. However, as the Commission has previously acknowledged in relation to 3G services, future technology developments may impact upon relevant market definitions. Telecom's assessment of the markets in relation to this application are therefore without prejudice to any views it may take in the future as circumstances change.

12. PRODUCT DIFFERENTIATION

- 12.1 These markets are characterised by competition based on product differentiation, as well as price. At the retail level of the market customers can choose between broadband offerings that are based on differences in:
- (a) speed (both up and downstream);
 - (b) data allowances; and
 - (c) portable or fixed.

13. DIFFERENTIATION CHARACTERISTICS

Wholesale fixed wired and wireless broadband access markets

- 13.1 As indicated earlier in this application, Telecom (and the Commission in UBS Determination) considers that customers find fixed wired and wireless broadband access products to be close substitutes.
- 13.2 There is no immediate aggregation of market share at either the wholesale or retail levels of the broadband access markets due to Telecom's proposed acquisition of 3.5 GHz spectrum. Telecom is proposing solely to buy the management rights of unused spectrum from CPL. The acquisition of spectrum is merely a raw asset that, by itself, will not change the competition dynamics of the affected markets.
- 13.3 Any use of the spectrum to build a fixed wireless broadband network may result in Telecom increasing its market share - but not from acquiring this spectrum. Increases in market share would only result in the same way as for any other holder of 3.5GHz rights, that is from Telecom investing in the cost of new network build and other associated market entry costs, plus managing to compete successfully to gain customers from incumbent broadband access firms (including Telecom's own fixed broadband access network).

WiMax broadband access market

- 13.4 There is no immediate aggregation of market share in relation to the WiMax broadband access market. However, Telecom not gaining the management rights to this spectrum would prevent it from being able to enter this market in the future. This is commented upon further in Part III of this application.

14. VERTICAL INTEGRATION

- 14.1 There is already significant vertical integration between the functional levels of the economic markets affected by this application.
- 14.2 Broadband access networks are generally built by telecommunications firms for self-supply. For example, Telecom owns its broadband access networks as well as supplying downstream to itself. Most other firms do the same, due to the strong efficiency rationale driving vertical integration in this market.
- 14.3 Some separation of the wholesale levels of the market occur through:
- (a) Telecom engaging in commercial and regulated wholesale of broadband access products to other telecommunications competitors; and
 - (b) Other broadband access firms selling broadband access products to Internet Service Providers (such as BCL supplying ISPs).
- 14.4 Telecom notes there will be no immediate change in its degree of vertical integration as a result of its proposed acquisition of spectrum. It is yet to make any decisions on building a broadband access network utilising 3.5GHz spectrum.
- 14.5 Telecom does not consider that a network build using 3.5GHz spectrum would change its current level of vertical integration to such an extent that the degree of competition in downstream markets would be affected.

15. PREVIOUS ACQUISITIONS

- 15.1 Neither Telecom nor CPL (as far as Telecom is aware) has been involved in acquisitions as applicant or target, notified to the Commission in the last three years relating to any markets material to this application.
- 15.2 Telecom is a party to the Commission's determinations under the Telecommunications Act 2001.
- 15.3 Neither Telecom nor CPL (as far as Telecom is aware) has undertaken any other acquisition of assets of a business or shares in any markets material to the Commission's present investigation in the last three years. Telecom purchased Computerland and Gen-i in 2004.

PART III: CONSTRAINTS ON MARKET POWER BY EXISTING COMPETITION

16. EXISTING COMPETITORS

Competitors

16.1 Competitors in the relevant markets include:

- (a) Airnet;
- (b) BCL (already trialling WiMax);
- (c) CaféNET;
- (d) Citylink;
- (e) Compass Communications;
- (f) CPL;
- (g) NZWireless;
- (h) Reach;
- (i) Successful Crown Bidders;
- (j) TelstraClear;
- (k) Vector;
- (l) Vodafone;
- (m) Wired Country;
- (n) Woosh; and
- (o) other geographically specific competitors (for names and geographic distribution see Access Coverage map attached at **Annex 3**).

BCL

16.2 Broadcast Communications Limited ("**BCL**") is a New Zealand registered company, wholly owned by Transmission Holdings Limited. Transmission Holdings Limited is an Auckland-based company. BCL is a wholesale wireless communications network operator which provides customised engineering and network solutions to broadcasters, telecommunications providers, network operators, and utilities. BCL offers a range of broadband products, through its EXTEND network, that can take voice, data and fast internet to parts of New Zealand that have not been able to access comparable products before.

16.3 BCL provides access to 600,000 user sites in Northland, South Auckland, Franklin, Waikato, Bay of Plenty, Manawatu, Wairarapa, Taranaki, Canterbury, Otago and Southland. BCL's telecommunications network services are available to all retail service providers on a non-exclusive basis.

- 16.4 BCL's EXTEND wholesale services are currently retailed by Telecom, Compass, ICONZ, and Inspire Net. BCL's broadband access solutions deliver secure data and voice services over a large range from a single base station.
- 16.5 The access technology used to deliver this service is provided in conjunction with Airspan Networks Inc. Airspan's technology is based on a proprietary CDMA design, which is predominantly used for fixed wireless access. In terms of its network, BCL's services are capable of reaching 99.8% of New Zealanders. It is able to achieve this through its 400 transmission sites throughout the country.
- 16.6 BCL owns spectrum in a number of bands including 2.1-2.3GHz, 3.5GHz and 25GHz. Airspan provides the base station and customer equipment technology that powers BCL's EXTEND network. Airspan has unveiled a 802.16e base station and customer equipment ready for WiMax certification testing which is scheduled to commence in mid 2005. Airspan is one of the founding members of the WiMax forum, which is currently defining the 802.16e standard.
- 16.7 BCL announced in April 2005 that it is to trial WiMax, targeting urban centres.

Citylink

- 16.8 Citylink Limited ("**Citylink**") is a New Zealand company incorporated in 1995 and has a number of shareholders including Pronet Limited, Logical Networks Limited and Actrix Multimedia Limited. Growing from an initiative of the Wellington City Council to deploy an advanced low-cost communications network to give local businesses and government enterprises a competitive advantage, it has a strong government service penetration.
- 16.9 Citylink has an extensive single-mode fibre-optic network within Wellington's CBD and a new network within Auckland's core CBD. The Wellington network extends to approximately 400 buildings in the CBD as well as branching into suburban areas. Citylink focuses on providing high-speed broadband access, and enterprises and government departments (of which 60% are currently on the Citylink network) can access hundreds of services from the one Citylink connection on a charging structure that is generally regarded as more competitive than other carriers. Citylink offers a 4Mbps symmetrical service in Wellington retailing from several ISPs.
- 16.10 Citylink also provides the CaféNET service offering laptop and PDA users WiFi wireless connections to the Internet across the CBD. Citylink also operates the key New Zealand Internet Exchange peering facilities in Wellington and Auckland.

Compass Communications Limited

- 16.11 Compass Communications ("**Compass**") provides Internet services throughout New Zealand. It provides wireless Internet access at 256Kbps from 10 POPs in Auckland, Christchurch, Hamilton, Tauranga, Palmerston North, Queenstown, Rotorua and Whangarei.

- 16.12 []

NZWireless

- 16.13 NZWireless Limited ("**NZWireless**") is a New Zealand company owned by Christopher Aspros, Tottenham Investments Limited and Dustin Connor. It offers business, residential, city and custom broadband services. NZWireless has developed its own infrastructure, including wireless 5.8GHz sites and backhaul largely based on its own technology. It leverages embedded Linux on ITX boards made on industry WiFi

standards. It leverages fibre down to Wellington, although it is aiming to have a wireless multi-hop haul between Auckland and Wellington. Within Wellington itself, NZWireless uses the Citylink network. The wireless product that NZWireless offers is called GASP. GASP currently covers most of Wellington, with new access points being created all the time. Its wireless speeds range from 256Kbps to 3Mbps with no cap limits currently in place.

Reach Wireless

- 16.14 Reach Wireless ("**Reach**") Reach is a privately-held New Zealand-owned company which was launched in May 2003. It has 140 WiFi hotspots in New Zealand, and interconnection agreements with partners including T-Systems and iPass. These agreements allow Reach to open its hotspots to clients of these international roaming partners. Reach also has a downtown wireless network of 20, 4-radio nodes over 12 city sites covering 12 city blocks. Reach's wireless backhaul and data speeds are up to 2Mbps, and its low-latency, QoS-enabled network is capable of supporting mobile VoIP with roaming, indoors and outdoors in a limited coverage area.

TelstraClear

- 16.15 TelstraClear Limited is registered in New Zealand and is wholly owned by Telstra New Zealand Holdings Ltd. Telstra New Zealand Holdings Ltd is wholly owned by Telstra Holdings Pty Limited, an Australian-based company. TelstraClear provides broadband technology to deliver voice, high-speed data, mobile wireless, and internet services, as well as cable television to businesses and private residential consumers.
- 16.16 In July 2004, TelstraClear revealed that it is using the 3.5GHz bands that it successfully obtained at auction for data tails as alternatives to Telecom supplied circuits. It has been deploying wireless data tails with Siemens for example in Rotorua and Auckland. The wireless links use a version of the IEEE 802.16 protocol and are upgradeable to the Intel-sponsored WiMax. The cost of the wireless links are comparable to fixed network costs. The service is not intended to serve residential customers.

Vector Communications (Formerly Tangent Limited)

- 16.17 Vector Communications ("**VC**") is a subsidiary of Vector, one of the largest managers of network infrastructure in New Zealand. VC was formed from the wholesale communications provided Tangent Limited in 2001.
- 16.18 Leveraging off the network infrastructure and operating expertise of the power lines component of Vector and laying fibre in its electricity duct, VC can expand its Auckland CBD network at much lower costs than a competitor. As well as fibre-optic networks in Auckland and Wellington, it has fibre connectivity between these cities and to over a thousand buildings around Auckland.
- 16.19 Since April 2005 VC has been offering a new product aimed at small to medium-sized businesses in the Auckland CBD, which has a 2Mbps download speed and 1Mbps upload with unlimited national traffic.

Vodafone

- 16.20 Vodafone New Zealand Limited ("**Vodafone**") is incorporated in New Zealand and is wholly owned by Vodafone International Holdings B.V. Vodafone International Holdings B.V is based in the Netherlands. Vodafone focuses exclusively on mobile communications and it has more than 1000 mobile phone sites around New Zealand. Its mobile services include text and pxt messaging, voice and data roaming, caller ID, and wireless internet.

- 16.21 Vodafone is planning to trial high speed downlink packet access ("**HSDPA**"), the so called 3.5G technology that will replace W-CDMA. HSPDA is expected to deliver a peak wireless download speed of 1.6Mbit/s, increasing to 7Mbit/s over time. Telecom understands that only one other Vodafone company internationally will be testing the technology and that it has not been decided whether the trial will be a straight technical trial or a commercial trial. Vodafone is currently spending up to \$400 million on its 3G network. Upgrading to HSPDA will not require a full network replacement. It will only require a software upgrade for existing W-CDMA network operators.

Woosh

- 16.22 Woosh Wireless Limited ("**Woosh Wireless**") was incorporated in 1999. Woosh Wireless has multiple shareholders, the largest being Kuwait Finance House (Bahrain) B.S.C (C), which is based in Bahrain, Clarity Partners LP, which is based in the US, Todd Wireless Limited, Walter Wireless Limited, and Norwood Investments Ltd. There are a number of smaller shareholders.
- 16.23 Woosh Wireless owns management rights for spectrum in the 2053MHz to 2082MHz range. This is not a general licence band. Woosh Wireless offers a portable, high-speed, and wireless internet service. It achieves this through the portable Woosh modem or, for laptop users, the Woosh PC Card. The Woosh modem and PC Card use a TDD part of the UMTS standard known as TD-CDMA. Despite the unavailability of WiMax at this stage, Woosh Wireless has shown, through its deployment of TD-CDMA technology, that affordable, high-speed wireless broadband service is a reality. TD-CDMA complies with the worldwide 3G Partnership Project universal telecommunications systems time division duplexing standard.
- 16.24 TD-CDMA can operate in multiple frequency bands such as 2.5GHz and 3.4GHz. As compared with WiMax, TD-CDMA has broader cell coverage meaning that operators can serve the same area with fewer base stations and thus reduce their initial capital expenditure.

Near Entrants

Wholesale fixed wired and wireless broadband access market

- 16.25 Telecom does not consider that any significant near-entrant will have been removed from this market as a result of its proposal to acquire the unused 3.5 GHz spectrum from CPL. TelstraClear, BCL, Vodafone and Wired Country all have already built networks or have the ability to expand existing networks utilising their management rights to 3.5 GHz spectrum. This situation does not change as a result of Telecom's proposed acquisition.

WiMax broadband access market

- 16.26 No firms are currently providing WiMax, however any holder of 3.5MHz spectrum could do so, namely:
- (a) BCL;
 - (b) TelstraClear;
 - (c) Vodafone;
 - (d) CPL []; and
 - (e) Holders of PROBE licences.

- 16.27 In contrast to assessing the relevance of the near-entrant constraints on the wholesale market for fixed wired and wireless broadband, the question of near-entry is more crucial to the assessment of the state of future competition in any future narrow WiMax broadband access market that may evolve.
- 16.28 All future entrants to this market must have access to the raw input of 3.5 GHz spectrum. This will enable them to build WiMax broadband access networks. TelstraClear, Vodafone, BCL and CPL all currently own management rights to blocks of this spectrum, meaning these firms are all "near-entrants".
- 16.29 BCL, at least, is rapidly moving from "near-entrant" to entrant status. As detailed above, BCL is planning to trial a WiMax network in the next few months. Computerworld quotes BCL as saying the company is ready to launch both base standards and CPE once the WiMax standard is ratified.² The WiMax network will be able to provide voice, data, video conferencing and other forms of traffic. BCL is initially planning to trial its WiMax network in the Auckland metropolitan area.
- 16.30 Telecom's proposed acquisition of 3.5GHz management rights will increase the competitive constraints upon BCL and any other entrants in any narrow future WiMax broadband market. Telecom will be seen by firms in this market as a potential competitive threat if it is able to acquire 7MHz of 3.5GHz spectrum through its proposed transaction with CPL. The competitive constraint is likely to be significantly greater than if another smaller, less resourced, firm was to acquire the Management Rights. This is because Telecom has the resources and skills to invest in entry costs, and product and technology development (as do the other main holders of 3.5GHz management rights). The successful applicants in the current auction for Crown retained 3.5GHz spectrum will require smaller investments as their licences will be geographically limited but they will provide competition in each geographic area.
- 16.31 As with any emerging market, competition through innovation is often a key benefit for customers. The rate of innovation is likely to be increased if Telecom can be an entrant, or even near-entrant, to this market. Future generations of WiMax technology may bring truly mobile cost-effective broadband access. However, as with any new technology, this will require firms in the market to invest in necessary technology upgrades when they become available. The probability of firms committing the necessary capital increases by adding another large innovative firm, such as Telecom, to this market.

17. CONDITIONS OF EXPANSION

- 17.1 The conditions of expansion are access to spectrum (either management or licence rights) and availability of necessary technology, which will be available from a number of international providers.
- 17.2 As set out in response to question 16 above at paragraph 16.25 any of the holders of 3.5GHz spectrum could supply WiMax.
- 17.3 For current holders of 3.5GHz spectrum the business decision to supply WiMax will depend on the cost of the required technology.
- 17.4 The time for supply is dependent on international developments, which are equally applicable to all participants.

² "BCL comes to town", Computerworld, 11 April 2005.

18. COMPETITIVE CONSTRAINT ON MERGED BUSINESS

- 18.1 Telecom's operations would be constrained by any of the holders of the 3.5GHz spectrum. It is notable that a number of them (BCL, TelstraClear, and Vodafone) have considerable experience and resources in the telecommunications industry.

19. CONSTRAINT BY EXISTING COMPETITORS

- 19.1 There will not be an increase in concentration in any of the affected markets as a result of this acquisition.

20. CO-ORDINATED MARKET POWER

- 20.1 Telecom considers that the markets have a number of characteristics which would impede co-ordination effects post-acquisition, including:

- (a) the level of differentiation between products;
- (b) the number of competitors;
- (c) presence of firms with significant unused capacity; and
- (d) market structure.

Differentiated products

- 20.2 The market is characterised by differentiated products and therefore it is more difficult for participants to tacitly agree on a price. Such behaviour is further constrained by different cost structures for the main participants.

Presence of competitors

- 20.3 Telecom will merely hold 7MHz of 77MHz. There are numerous competitors on both national and regional fronts including well resourced and experienced participants.

Unused capacity

- 20.4 Competitors, most notably BCL and TelstraClear, will have unused spectrum. Due to the relationship between the amount of spectrum used and the infrastructure required to provide services, participants with larger blocks of spectrum will have an advantage in that less infrastructure will be required to provide the same level of service.

Market structure

- 20.5 There will continue to be a diversity of market participants including both large and small competitors.

21. CO-ORDINATED BEHAVIOUR

- 21.1 The differentiation of costs and number of competitors would make monitoring and enforcement difficult.

- 21.2 Telecom is not aware of any price co-ordination in either market, nor of any factors present in either market, which might suggest any price co-ordination, price matching or price following by market participants.

- 21.3 The features currently present in the market, which make co-ordination unlikely (set out at paragraph 20.1 above), will not be reduced as a result of the acquisition. Rather, they will continue to contribute to a competitive market. In fact given the competition between Vodafone, TelstraClear and Telecom in other markets the conditions for co-ordination are significantly ameliorated by Telecom's entry.

PART IV: CONDITIONS OF ENTRY

22. CONDITIONS OF ENTRY

- 22.1 The only condition of entry which is limited is the availability of spectrum. Any other telecommunications provider could provide WiMax on acquisition of 3.5GHz spectrum.
- 22.2 Subsequent to the acquisition of spectrum, timing would be determined by the availability of the required technology.
- 22.3 Within the markets there are significant constraints. De novo entry is one of those constraints but it is not as significant as the constraint of current participants.

PART V: OTHER POTENTIAL CONSTRAINTS

23. CONSTRAINTS ON MARKET POWER BY THE CONDUCT OF SUPPLIERS

- 23.1 As the relevant standards are not yet ratified the supply dynamics are as yet unknown, however, it is likely that the manufacturers of WiMax technology will have countervailing power, especially in the New Zealand market, as they are likely to be international companies with significant market power.

24. CONSTRAINTS ON MARKET POWER BY THE CONDUCT OF ACQUIRERS

- 24.1 The availability of a number of different suppliers will ensure that consumers (at both the wholesale and retail levels) have countervailing power.

THIS NOTICE is given by Telecom New Zealand Limited.

I, David Knight, am authorised to make this application on Telecom New Zealand Limited's behalf.

I hereby confirm that:

- (a) All information specified by the Commission has been supplied;
- (b) All information known to the applicant which is relevant to the consideration of this application has been supplied;
- (c) All information supplied is correct as at the date of this application.

I undertake to advise the Commission immediately of any material change in circumstances to the application.

Dated 5 October 2005



David Knight
General Counsel, Telecom New Zealand

I am a director/officer of the company and am duly authorised to make this application/notice.

ANNEX 1

Letter of Agreement

ANNEX 2

Wired Country Broadband Coverage Areas

Site	Availability Date	Address	Coverage Area
Pukekohe Hill	Available Now	Pukekohe Hill	Pukekohe area
Kaipara Road (Red Hill)	Available Now	Red Hill	Papakura
Maxted Road	Available Now	Maxted Road	Ramarama
Taurangaruru	Available Now	Taurangaruru Road	Taurangaruru, Waiuku
Waikato Hospital	Available Now	Corner of Pembroke Street and SH1	
Sky Tower	Available Now	Sky City Tower	
Pollok Wharf	Available Now	Close to the coast, 485 Pollok Wharf Road, Pollok	Grahams Beach, Matakawua, Pollok, Kohekohe, Waiuku, Glenbrook Beach, Clarks Beach, Glenbrook, Patumahoe, Waiau Pa, Te Hihi
Albany Heights	Available Now	Top of the hill north of the old Albany township	Top of the hill north of the old Albany township, south over the Massey University. The old township is not covered. Other areas around the transmitter are possible but the high level of tree coverage obscures many other customers.
Dairy Flat	Available Now	Cnr Blake Lane and Austin Road, Dairy Flat	Central Orewa, Silverdale, West Puawai Bay, Dairy Flat, Coatsville, Kaihatea Flat Road, Wainui
Orewa	Available Now	The Nautilus building in Orewa	Orewa, Red Beach, Silverdale, North coast of Whangaparaoa Peninsula
Moir Hill	Available Now	Warkworth	Very patchy but includes the area; Kaipara, Warkworth, Hills to west of Woodcocks and west of Mahurangi West.
Leigh	Available Now	72 Rodney Road, RD5, Warkworth	Leigh, Pakiri, Point Wells, Omaha, Snells Beach, Algies Bay
Henderson	mid September 2005 (North west sector available now)	Near Waikamete Cemetery Water Reservoir	Henderson, Te Atatu Peninsula, Pt Chevalier, Westmere, Grey Lynn, Morningside, Mt Roskill, Blockhouse Bay, New Lynn, Avondale, Glen Eden, Oratia, Waiatarua, Henderson Valley, Pukematekeo, Massey, Lincoln
Mt Albert	Available Now	Hort Research Building (old DSIR building) 120 Mt Albert Road	Grey Lynn, West of One Tree Hill, Mt Albert, West of Mt Eden, Mt Roskill, some parts of Te Atatu North and a small area in Titirangi

Site	Availability Date	Address	Coverage Area
Otahuhu	Available Now	Radio Mast in the Transpower Substation	Otahuhu, Otara, Papatoetoe, East Tamaki, Pakuranga, Howick, Manukau City Centre, Manurewa, Weymouth, Airport, Mangere, Onehunga, One Tree Hill, Ellerslie, Mt Wellington, Panmure, Glen Innes
Clevedon	Available Now	171 McGregor Road, Clevedon	Clevedon, east of Ardmore airport and east Alfriston and Hunua northern slopes. Ararimu around the northern slopes of Gelling/Ararimu intersection. Very little coverage to the east and west of the site.
Pokeno	Available now	Behind Pokeno near the Cell Site masts	Pokeno, Tuakau, Eastern slope of Pukekohe Hill, Kellyville, Mercer, Meremere, Mangatawhiri, Island Block Road, Whangamarino, Onewhero
Klondyke	Available Now	Top of the hill with the other radio masts, Klondyke Road, Onewhero	Waiuku, Pukeoware, South of Pukekohe hill, Tuakau, Onewhero, Pukekawa, Aka Aka, Port Waikato, Otua

ANNEX 3
Access Coverage Map