

## **Commerce Commission**

### **Decision No. 413**

Determination pursuant to the Commerce Act 1986 in the matter of an application for clearance of a business acquisition involving:

**VODAFONE MOBILE NZ LIMITED**

**and**

**2 GHZ SPECTRUM**

**The Commission:** M J Belgrave (Chair)  
M N Berry  
P R Rebstock

**Summary of Application:** The acquisition by Vodafone Mobile NZ Limited of Radio Frequency Spectrum management rights and licences in the 2GHz band being auctioned by the New Zealand Government.

**Determination:** Pursuant to section 66(3)(a) of the Commerce Act 1986, the Commission determines to give clearance for the proposed acquisition.

**Date of Determination:** 8 December 2000

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## THE PROPOSED ACQUISITION

1. Pursuant to section 66(1) of the Commerce Act 1986 (the Act), Vodafone Mobile NZ Limited (Vodafone) gave notice to the Commission on 15th November 2000 (the application), seeking clearance for the proposed acquisition by it, or any interconnected body corporate of it, of Radio Frequency spectrum management rights and licences comprising specifically of:
  - (a) up to [ ] MHz of management rights for 20 years in the radio frequency range 1920 – 1980 MHz (the 3G band), together with the corresponding natural management rights pair in the range 2110 – 2170 MHz (the 3G natural pair band);
  - (b) up to [ ] MHz of management rights for 20 years in the 1710 – 1880 MHz range (the 2G band).
  - (c) [ ] MHz of management rights for 20 years in the 2010 – 2025 MHz range (the TDD band)]; and
  - (d) where the incumbent licensee of spectrum covering whole or part of one or more lots of management rights referred to in (b) above is granted a licence of 1, 2, 3, or 5 years (an incumbency licence), a technically identical licence for 5 years less the period of the incumbency licence (intermediate licence) and/or a technically identical licence for 15 years commencing at the expiry of the intermediate licence (the beyond licence).

The application therefore covers all bands of spectrum currently forming part of the auction.

## THE PROCEDURES

2. The application was registered by the Commission on the 15<sup>th</sup> November 2000. Section 66(3) of the Act requires that the Commission, within 10 working days after the date of registration of the application, or such longer period agreed by the applicant, gives, or declines to give, a clearance for the acquisition. The tenth working day after the registration of the application was 29 November 2000. The Commission and Vodafone agreed to an extension of 7 working days, therefore requiring a decision by 8th December 2000.
3. On the 28<sup>th</sup> November Vodafone requested an amendment to paragraph 1.1(b) of the application. This section of the paragraph now requests clearance to acquire Radio Frequency spectrum comprising of:

[

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4. This request was accepted by the Commission and the assessment of this application is based upon that amendment.
5. Vodafone also requested confidentiality for certain information contained in the application. In accordance with section 100 of the Act, the Commission made a confidentiality order prohibiting the publication or communication of that information for a period of 20 working days from the date on which the Commission makes a final determination. When the confidentiality order expires, the provisions of the Official Information Act 1982 will apply to the information that was subject to the order.
6. The Commission's determination is based on an investigation conducted by its staff and their subsequent advice given to the Commission. In the course of their investigation, Commission staff have discussed the application with a number of parties. These parties included:
  - CLEAR
  - IHUG
  - Ministry of Economic Development
  - Telecom
  - TelstraSaturn
  - Vodafone
  - Walker Wireless; and
  - other spectrum auction bidders
7. During the course of its investigation of the application, the Commission received a submission from CLEAR in which it argued that it was inappropriate for the Commission to consider the application at this time. It also requested that the Commission convene a conference under section 69B of the Act to discuss the matters it has raised.
8. CLEAR has four main arguments:
  - the Commission cannot assess the competitive implications of the proposed acquisition until the auction has been completed and the successful bidders are known;

- Vodafone is not yet a “provisionally successful bidder” at the auction, and accordingly a clearance by the Commission at this time would not meet the rules of the auction;
  - The Government may make changes to the telecommunications’ regulatory regime following the report of the Ministerial Inquiry, and the Commission is not in a position to take these changes into account at this stage;
  - The Government is in the process of amending the Commerce Act, and it would not be appropriate for it to grant a clearance under the Act as it now stands if the acquisition is to take place after the changes in the Act have been put into effect.
9. The Commission did not agree that a conference is necessary in this case. Rather it considers that it has been able to investigate satisfactorily the relevant issues without a conference. The Commission has had extensive consultations about the application with the principal players in the industry, it has industry knowledge gained from previous cases before it, and it has considered various industry reports, such as that of the Ministerial Inquiry into Telecommunications.
10. The Commission also considers that it has been able to assess fully the potential of the acquisition to create dominance concerns without knowing the final outcome of the auction. Where there may be some doubt about the future shape of the relevant markets, the Commission has adopted a “worse-case” approach.
11. Finally, the Commission notes that it is obliged to consider the application in terms of the current legislation. It has no power to decline the consideration of an application because the Commerce Act may change in the future, or there might be future changes in other Acts or regulations. Whether the Commission’s clearance is sufficient to meet the rules of the auction is a matter for Vodafone and the Ministry of Economic Development to determine; it is not relevant to the Commission’s determination.

## **THE PARTIES**

### **Vodafone Mobile New Zealand Limited (“Vodafone”)**

12. Vodafone is 100% owned by Vodafone Group Plc (previously called Vodafone AirTouch Plc) who are the owners and operators of numerous cellular networks internationally.
13. Vodafone’s sister company (Vodafone New Zealand Limited) owns and operates a mobile telephony network in New Zealand, which provides mobile telephony services and mobile telephony distribution services throughout New Zealand. Vodafone is the owner of radio spectrum management rights in the 900 MHz range, which are necessary to operate the current Global System for

Mobile Communications (GSM) service offered by Vodafone New Zealand Limited.

## **2 GHz Auction**

14. The management rights and licences which are the subject of the application are currently among the rights and licences being offered for auction by the Crown. The auction is being administered by the Radio Spectrum Management Group of the Ministry of Economic Development which is also the issuer and administrator of radio spectrum licences within New Zealand.
15. The Radio Spectrum Management Group also maintains a public register of spectrum rights and radio licences.
16. The management rights and licences which are the subject of the auction relate to frequencies which currently may be encumbered. In some instances the acquirer may need to reach an accommodation with an existing user of that part of the spectrum. All encumbrances relating to particular lots have been specified in the auction catalogue. In addition, the Crown does not guarantee that the lots in the auction are suitable for the purpose for which they are being acquired. Nevertheless, the Commission has been advised by the Ministry and others that it is likely that the lots on offer in the auction are likely to support a number of additional second generation mobile telephony networks and several third generation radio telephony networks.

## **INDUSTRY BACKGROUND**

### **Background to the NZ telecommunications environment**

17. Mobile communications have been available in New Zealand since the 1940s. In the beginning conventional (or private) mobile radio was the only option for mobile communications. This provided the simplest of services – open broadcast of voice services over a radio channel.
18. Since the early 1980s global mobile communications have been revolutionised by advancing technology. In 1982 paging services were introduced to New Zealand, followed in 1987 by the introduction of analogue cellular services using the US ‘AMPS’ cellular standard. Competition arrived with the introduction of competing GSM cellular services in 1993.
19. The most common application of wireless technology within New Zealand is for mobile phone use with two cellular network operators currently serving the market. In its early years, mobile communications were considered expensive and purely a business tool. However, the trend now is towards mass ownership of cellphones. It is estimated that mobile phone penetration now exceeds 40% of the total population with Telecom, New Zealand’s largest cellular operator serving more than 1 million mobile customers. Vodafone, the second largest cellular operator has in excess of 560,000 customers, equating to approximately 37% market share, measured by customer numbers.

20. Much of the cellular growth has occurred in the last two years, with pre-paid cellphones and text messaging proving extremely popular. Growth can also be attributed to active competition between the two operators and has resulted in an overall reduction in monthly access charges and innovative airtime pricing plans.
21. Industry forecasts predict cellphone penetration to have reached 80% by 2005.

### *Mobile telephony*

#### *First generation (1G) functionality*

22. At the time that mobile technology was introduced in the late 1980s, cellphones operated on Telecom's analogue network in the AMPS radio-frequency band. Basic telephony was all that was offered, and the cost of operation was significant. These cellular phones were considered to be the first generation (1G) of wireless technology.

#### *Second generation (2G / 2.5G) functionality*

23. BellSouth (later acquired by Vodafone) entered the cellular market using digital GSM technology. GSM has become a common standard internationally and has been adopted by many cellular operators. Digital cellular was arguably better suited to wireless data applications which were becoming increasingly common during the mid-1990s. During this time Telecom also acquired spectrum to introduce their digital cellular service known as D-AMPS and which provided an increase in capacity to support a growing number of users.
24. Digital networks, in addition to accommodating low-speed data applications, (typically up to 9.6 kilobits per second (kbps)) have also permitted functions such as caller identification, voice messaging and short text messaging. Internationally, this functionality is known as second generation (2G) wireless technology.
25. Expected developments include the proposed switch by Telecom from its AMPS/D-AMPS cellular system to a CDMA (Code Division Multiple Access) cellular network within the next few months. This standard will provide expanded capacity and improved functionality.
26. Technology developers have focussed on increasing data transmission speeds to achieve rates between 56kbps and 144kbps. Transmission speeds of this magnitude has resulted in what many in the industry refer to as "2½G" technology.
27. The other phenomenon occurring simultaneously in the telecommunications industry has been the growth in access to the Internet. The growing dependence on mobility presents global telecommunications technology



developers with the challenge to ‘converge’ these two technologies and deliver all the advantages of the Internet, or any data intensive application over wireless technology. 2G technology does not presently deliver sufficient bandwidth to permit high-speed wireless connection to the Internet. However, extensive trials have been conducted to integrate Internet access and mobile using existing 2½G technology.

#### *Third generation (3G) functionality*

28. The introduction of third generation wireless technology, now known as 3G, promises to integrate wireless and broadband applications incorporating voice, data and video. Global expectations are for the technology to offer high speed Internet access in a mobile environment. For example, current 2G mobile offers a data transfer rate of 9.6 kbps. This compares to most common data transfer speeds using a modem over the fixed line network of 56.6 kbps (excluding variants of Digital Subscriber Lines). “3G devices, by contrast, will transmit data at speeds between 144kbps and 2Mbps, about as fast as a cable modem or digital subscriber line”<sup>1</sup>.
29. Common international standards specified by the ITU for the operation of 3G technology may also permit cross-network roaming to currently incompatible networks. For example, GSM users (such as Vodafone customers) would be able to ‘roam’ to competing operator networks who deploy D-AMPS and CDMA technology (such as Telecom), and vice versa.

#### *Internet access and mobile technology*

30. There are an estimated 600,000 Internet accounts held by New Zealanders at the end of 1999, up from 315,000 a year earlier.
31. It is expected that much of the information appeal offered by the Internet will also prove popular with cellular customers. Many of the data-intensive applications of the Internet require increased bandwidth to prove feasible. However, many data applications can be delivered by the current 2G and 2½G technology.
32. The International Telecommunications Union (ITU) forecasts that 3G devices will:
 

“function as a phone, a computer, a television, a pager, a videoconferencing center, a newspaper, a diary and even a credit card. It will support not only voice communications but also real-time video and full-scale multimedia”.

#### *Future technology developments*

33. The date for introducing 3G technology is uncertain. The first country expected to implement 3G is Japan with an estimated launch date of late 2001. The Commission has been advised by industry participants that the introduction of 3G technology to New Zealand is some three years away.

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<sup>1</sup> *The Economic Impact of Third-Generation Wireless Technologies*, October 2000, A Report by the Council of Economic Advisers.

*Significance of convergence and impact on demand for spectrum*

34. Delivering 3G technology will require access to more radio-frequency spectrum in order to meet the demand for increased bandwidth. This requirement has initiated the spate of spectrum auctions occurring internationally<sup>2</sup>.
35. The following table forecasts the projected uptake of 3G technology in the coming decade.

<b>Forecasts for third generation mobile subscribers and revenues</b>			
	<b>1999</b>	<b>2005</b>	<b>2010</b>
<b>New Zealand</b>			
Mobile Subscribers (m)	0.9	1.8	2.3
3G Subscribers	0%	2%	71%
Mobile Revenue (\$M)	694	1,084	1,421
3G Revenue	0%	2%	72%

Source: Ovum

*Spectrum currently utilised*

36. The two current mobile network operators, Telecom and Vodafone, utilise spectrum in the 825 – 960 MHz range. The MED have verified that Vodafone currently hold approximately 15MHz of spectrum, together with the corresponding natural pair, (in the 900 – 960 range), used for the provision of their GSM mobile services. This spectrum is commonly known as TACS B & C.
37. Telecom hold approximately 20MHz of spectrum, together with the corresponding natural pair, in the range 825 – 890 MHz, and utilise this spectrum for the delivery of their first and second generation AMPS (analogue) and D-AMPS (digital) mobile services. Telecom's deployment of CDMA technology next year will also utilise this spectrum, commonly known as AMPS A & B.

**Auction of radio-frequency spectrum in the 2GHZ band (1710 – 2300MHz)**

*Background*

38. Access to radio spectrum is an essential requirement for the operation of any form of mobile or wireless communication service. This access may be achieved by acquiring management rights to a specified frequency range or by

<sup>2</sup> 3G spectrum allocations have already been completed in Japan, U.K. Germany, the Netherlands, Finland and Spain. The US have yet to make 3G spectrum available.

the receipt of licence to operate within a designated frequency. Management rights and licences are obtained from the Ministry of Economic Development.

39. Over the last decade there has been a tendency by the MED to convert commercial radio-communications spectrum users to the spectrum rights regime, usually by way of a public auction.

#### *Current Spectrum Auction*

40. The 2 GHz auction, which commenced in June 2000, involves the auction of various management rights and spectrum licences over spectrum in the band spanning the frequency range 1710 - 2300 MHz. This band is capable of supporting second generation (2G) and third generation (3G) United States Personal Communication Services (USPCS) mobile technologies. The auction confers management rights to the spectrum for a 20 year period although there is no obligation on the acquirer to utilise the spectrum acquired.

#### Spectrum Management rights

41. A management right may only be created by the Secretary of Commerce on behalf of the Crown. The right will either be disposed of to private interests, or retained, in which case, spectrum licences will be created and disposed of. The Radiocommunications Act also makes provision for a public register of spectrum rights and radio licences and an arbitration process for interference resolution<sup>3</sup>.
42. Management rights are not inherently use-specific and in essence establish a right to create spectrum licences within a specific frequency band for any purpose. However, spectrum licences and radio licences tend to be use-specific. They must also be described in technical parameters that enable adequate interference co-ordination.

#### Application for licence

43. Licence holders commonly use the frequency for a number of traditional applications such as point-to-point microwave links.
44. Part of the 2 GHz band spanning the range of frequencies from 1920 - 1980 MHz ('the 3G band') is capable of supporting developing mobile technologies. To ensure effective competition for the provision of 3G services, the Government has placed a cap restricting ownership to 15 MHz of 3G spectrum that any single party may acquire.
45. In addition to the cap placed on ownership of 3G band spectrum, the Government has established a pan-Maori Trust (the Trust). The Trust will be granted exclusive rights to purchase management rights to the 1965-1980 MHz block and its 2155-2170 MHz natural pair in the 3G band, at a 5% discount on the lowest 3G spectrum prices paid. There are no preconditions associated with this spectrum and it is expected that the Trust will enter a commercial

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<sup>3</sup> A Spectrum Allocation Strategy, - Discussion paper. Radio Spectrum Management Group, Ministry of Commerce, May 1998.

arrangement with a suitable telecommunications industry participant to utilise the management rights.

46. A cap also limits the ownership of spectrum in the TDD band to 5 MHz. No limitations on the acquisition of spectrum in the band 1710 – 1880 MHz ('the 2G band') exist.

#### *Auction Rules*

47. Listed below are some of the rules relating to the current spectrum auction:
- The limitation on the amount of spectrum that can be purchased applies to 'the 3G band' only and is restricted to a maximum of 15 MHz of management rights plus the natural pairs of any rights acquired in that band.
  - Any management rights purchased within the 3G band must be contiguous.
  - Once acquired, the successful acquirer of 3G spectrum may not sell or transfer their management rights to another spectrum owner within three years of acquisition.
  - Bidders will also be allowed to purchase a maximum of 5 MHz (unpaired) out of a total of 15 MHz across three lots. These management rights will be created in the band from 2010 - 2025 MHz ('the TDD band').
  - The cap will apply to the aggregate total spectrum in the relevant range held by individual parties and other parties associated with those parties. Accordingly, bidders will be required to disclose to the Secretary of Commerce associations with other bidders prior to the conclusion of the auction.
48. Radio spectrum transmissions are subject to the Radiocommunications Act 1989, which specifically permits the creation and registration of:
- A tradeable management right over any defined frequency band for a specified period, to a maximum of 20 years;
  - A tradeable spectrum licence by the owner of a management right for frequencies within the band covered by the management right;
  - A non-tradeable radio licence by the Ministry of Commerce where no management right exists.<sup>4</sup>

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<sup>4</sup> New Zealand Telecommunications 1987 – 2000. Information publication No. 7, Resources and Networks branch, Ministry of Economic Development, February 2000.

49. The specifics of the current 2GHz spectrum auction have been defined by the Ministry of Economic Development in summary as:
- (i) a total of 41 management right lots available within four frequency ranges;
  - (ii) a total of 995 licence lots suitable for fixed service operation;
  - (iii) a total of 988 spectrum licences will be created but will not be available in this auction;
  - (iv) unless purchased in the auction or in trading subsequent to the auction, licence lots may provide an encumbrance to successful management right lot bidders;
  - (v) the technical description of the spectrum licences and licence lots result in licences overlapping up to five management right lots;
  - (vi) a total of 50 licences are to be created and retained by the Crown to manage the overlap of apparatus licences from Crown managed bands adjacent to the management right lots.
50. Given New Zealand's low population density and current level of cellular penetration, the desire to acquire spectrum is not driven by current capacity constraints. The motivation to acquire spectrum is being driven by an increase in the use of broadband applications which demand high speed.
51. Many 3G spectrum bidders have expressed their interest in acquiring spectrum as insurance given the unpredictability of the development of the technology. Network operators, both current and potential, are unwilling to limit their future options and consider the acquisition of spectrum as mandatory.
52. The ITU has designated the frequency ranges in which these 3G technologies are to reside. Rather than '3G spectrum' the ITU refers to the official name of International Mobile Telecommunications 2000 or IMT2000.

## **MARKET DEFINITION**

### **Introduction**

53. The purpose of defining a market is to provide a framework within which the competition implications of a business acquisition can be analysed. The relevant markets are those in which competition may be affected by the acquisition being considered, and in which the application of section 47(1) of the Act can be examined.
54. Section 3(1A) of the Act provides that:
- “... the term ‘market’ is a reference to a market in New Zealand for goods or services as well as other goods or services that, as a matter of fact and commercial common sense, are substitutable for them.”

55. Relevant principles relating to market definition are set out in *Telecom v Commerce Commission*<sup>5</sup> (“the AMPS A case”) and in the *Business Acquisitions Guidelines*<sup>6</sup>. A brief outline of the principles follows.
56. Markets are typically defined in relation to three dimensions: namely, product type, geographical extent, and functional level. A market encompasses products that are close substitutes in the eyes of buyers, and excludes all other products. The boundaries of the product and geographical markets are identified by considering the extent to which buyers are able to substitute other products, or across geographical regions, when they are given the incentive to do so by a change in the relative prices of the products concerned. A market is the smallest area of product and geographic space in which all such substitution possibilities are encompassed. It is in this space that a hypothetical, profit-maximising, monopoly supplier of the defined product could exert market power, because buyers, facing a rise in price, would have no close substitutes to which to turn.
57. A properly defined market includes products which are regarded by buyers or sellers as being not too different (the product dimension), and not too far away (the geographic dimension), and are therefore products over which the hypothetical monopolist would need to exercise control in order for it to be able to exert market power. A market defined in these terms is one within which a hypothetical monopolist would be in a position to impose, at the least, a “small yet significant and non-transitory increase in price” (“*ssnip*”), assuming that other terms of sale remain unchanged.
58. Markets are also defined by functional level (the functional dimension). Typically, production, distribution, and sale occur through a series of stages, with markets intervening between suppliers at one vertical stage and buyers at the next. Hence the functional market level affected by the application has to be determined as part of the market definition. For example, that between manufacturers and wholesalers might be called the manufacturing market while that between wholesalers and retailers is usually known as the wholesaling market.

### Identifying Relevant Markets

59. To identify the markets relevant to the application, it is necessary to consider the business activities undertaken by the merging firms and to assess whether, post-acquisition, dominance would, or would be likely to, result or be strengthened.
60. Thus the relevant market or markets should be defined so as best to expose the competitive forces at play. As stated in the AMPs A case:

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<sup>5</sup> *Telecom Corporation of New Zealand Ltd v Commerce Commission* (1991) 4 TCLR 473.

<sup>6</sup> Commerce Commission, *Business Acquisitions Guidelines*, 1999.

“The boundaries {of the market} should be drawn by reference to the conduct at issue, the terms of the relevant section or section, and the policy of the statute. Some judgment is required, bearing in mind that “market” is an instrumental concept designed to clarify the sources and potential effects of market power that may be possessed by an enterprise.”

### **The View of the Applicant**

61. In the application Vodafone has stated that it considers that the relevant product and geographic market is the provision of mobile telephony services on a national basis, and that the relevant functional markets are the wholesale supply of those services and the retail sale of those services. It considers that these markets are consistent with a number of previous decisions of both the Commerce Commission and the Courts. It notes the practice of the Commission and the Courts to place fixed telephone services and mobile telephone services in separate product markets.

### **The Markets Relevant to the Current Application**

62. The assets for which Vodafone is seeking a clearance to acquire are management rights to parts of the radio frequency spectrum. It is envisaged by all spoken to that the assets will be of greatest value when used as carriers of mobile telephony services. Those currently bidding for the assets all appear to have the intention of utilising them for telephony services, although there is no requirement that they be used for any particular purpose.
63. In previous telephony-related decisions in New Zealand, the Commission and the Courts have found that there are separate product markets for fixed telephone services and for mobile telephone services. While it is recognised that there is substitutability between fixed and mobile services, the price and functionality of the two services were seen as quite different. While the differences might narrow with new technology, the Commission considers that at this time it remains appropriate to continue to place the two services in separate markets.
64. The difficulty faced when assessing relevant markets in this instance arises from the uncertainty about the potential offered by the spectrum. In particular the type of functions which third generation technology may be able to provide remains a matter of some conjecture. It has been stated that:

“Today’s wireless devices are designed to transmit voice and brief text messages and cannot handle digital multi-media and other high bandwidth Internet content. 3G devices provide high-speed mobile connections to the Internet and other communications networks, giving users full access to the rich and commercial possibilities of the information superhighway”<sup>7</sup>.

65. The Ministerial Inquiry noted (at page 75 of its report):

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<sup>7</sup> *The Economic Impact of Third-Generation Wireless Technologies*, October 2000, A Report by the Council of Economic Advisers.

“Mobile data transmission capability is leading to the development of a host of value-added services and is expected to provide a major source of revenue for mobile operators in the future. It is anticipated that mobile phones or other similar devices will become a means of accessing a wide array of information and services. For example, it is expected that mobile phones will be able to serve as ‘electronic wallets’, enabling cash transactions to take place in a secure environment by means of a smart card inserted into the device. Mobile devices will also enable provision of services triggered by the geographic location of the user. The market for enhanced mobile data services is currently in its infancy but is expected to grow very rapidly. Finally 2½G services are expected to bring the concept of the ‘wireless local loop’ closer to fruition as they provide functionality closer to that of the fixed-wire network than 1G and 2G networks.”

66. The cost of providing 3G functions, whatever they may ultimately turn out to be, and the extent to which consumers will regard them as being clearly superior or different to the functions which could be offered using 2G or 2½G networks remain to be seen.
67. The Commission accepts that it may ultimately conclude that 3G services are not sufficiently distinctive from existing mobile telephony services to place them in a discrete market. However, at this time and in respect of the current application, the Commission considers that it is appropriate for it to take a conservative approach. It recognises that if no market dominance concerns arise in respect of the narrowest product market - that for 3G mobile telephony services - none are likely to arise in respect of broader product markets.
68. Accordingly the Commission has assessed the competitive implications of the proposed acquisition in two product markets; that for the provision of mobile telephony services and that for the provision of third generation mobile telephony services. Both these markets are national in scope.

## **THE MARKET FOR THE PROVISION OF MOBILE TELEPHONY SERVICES**

### **Introduction**

69. There are currently two cellular network operators in New Zealand, namely Telecom and Vodafone. Both networks now have a near national coverage (covering around 96%<sup>8</sup> of the population).
70. Vodafone operates a digital GSM network which it acquired from BellSouth in August 1998. BellSouth had commenced the service in July 1993 in Auckland, and expanded to Wellington in late 1994. Vodafone is in the process of upgrading its GSM network to GPRS with a view to improving its ability to provide high-speed data transmission. As noted by the Ministerial Inquiry into Telecommunications, high-speed data networks of this kind are often referred to as 2½G networks because they offer high-speed Internet

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<sup>8</sup> *Telecommunications and Information Highways in New Zealand – 2001*, Paul Buddle Communication.



access, but do not yet provide the broadband access needed for data-rich applications such as is envisaged will be a feature of 3G telephony.

71. Telecom commenced its service in 1987 and now operates a combined analogue AMPS (1G) and digital AMPS (second generation – 2G) network. Telecom has stated that it expects to launch its CDMA network (a 2½G network) commercially in May 2001. It is expected to have the same geographic coverage as Telecom’s existing network on launch date.

### **Views of Other Telephony Service Providers**

72. The Commission has consulted the major current and potential mobile telephony service providers, including Telecom, Clear and TelstraSaturn during its investigation of the current application. In brief, neither Telecom nor TelstraSaturn considered the proposed acquisition of spectrum by Vodafone raised substantial competition concerns. Clear has stated that the acquisition would strengthen Vodafone’s existing dominant position which, Clear maintained, arises from its unique ability to offer a seamless trans-Tasman service, the impossibility of replication of the network and services particularly if existing operators secure further spectrum, and the current oligopolistic market structure.

### **Current Competition**

73. The applicant has stated that the estimated market shares, based on the number of connections, as at 30 June 2000 were:

Telecom	63.6%
Vodafone	36.4%

These market shares are broadly in line with other estimates of market shares seen by the Commission.

74. The past two years have seen a significant eroding of Telecom’s market share, particularly since Vodafone took over from BellSouth. In March 1998, for instance, BellSouth had less than a 20% market share by number of connections.
75. The Commission notes that despite its greatly improved market share, Vodafone remains significantly behind Telecom in its market share.
76. It is possible that Vodafone has some advantages when competing with Telecom, including in respect of “roaming”. Roaming refers to the ability for mobile users to make or receive calls on other service providers’ cellular networks when those users are outside the coverage area of their own service provider’s network. The Ministerial Inquiry noted that New Zealanders are frequent users of international roaming services when they travel overseas, but domestic roaming is not currently feasible because the two existing mobile networks operated by Telecom and Vodafone use incompatible technology. However, Vodafone customers can take advantage of roaming in Australia and

elsewhere where there are compatible networks, while Telecom customers can readily do so in fewer instances. The introduction of Telecom's CDMA service next year is expected to greatly reduce Vodafone's advantage in this respect.

77. The Commission considers, therefore, that Vodafone's ability to provide the seamless service (in CLEAR's terms) that comes from roaming does not give Vodafone significant market power apart from, possibly, in the short-term (i.e. less than one year). The Commission also considers that any such market power would be unaffected by the proposed acquisition.

### **New Entry**

78. In the 1991 Court decision in the AMPS-A case, the Court noted that there are formidable barriers to entry to the mobile telephone services market. It cited the availability of spectrum rights as an absolute barrier (at that time there were only three vehicles for entry to the market – AMPS-A and the two TACS frequency bands), access to the PSTN and possibly access to distribution.
79. As noted above, a significant amount of additional suitable spectrum rights is now being offered, while interconnect agreements between telecommunications companies and Telecom covering access to the PSTN are a common feature of the industry. Further, the distribution market has changed significantly since 1991, and the Commission concluded in its Decision 325 (Telecom/Cellnet of 15 May 1998) that Telecom was not currently dominant in the market for the distribution of cellular services in New Zealand.
80. The applicant cites Decision 325 as stating in respect of the distribution of mobile telephony services that the key to entry into the market is the agreement with a cellular network operator for the use of its network. The Commission notes, however, it is not the distribution market that is of particular relevance to the current application. Rather, it is the provision of mobile telephony services.
81. Key to new entry is access to appropriate spectrum and the establishment of a network of cells. While the latter is likely to require a substantial capital outlay by any firm seeking to enter on a reasonable scale, it has not deterred two networks being established to date (Telecom and Vodafone). Other major telecommunications companies with a substantial existing presence in New Zealand have expressed an interest in establishing new cellular networks. TelstraSaturn and CLEAR Communications are bidders for both 2G and 3G spectrum.
82. The proposed acquisition would make a difference to the potential for new entry to occur in this market by removing part of the spectrum band considered suitable for supporting a new network from potential competitors to Vodafone. Vodafone has sought a clearance to acquire up to [ ] MHz of management rights for 20 years in the 2G band. There is a total of 75 MHz being offered in the auction in this band. Thus [ ] MHz, or [ ]% of the 2G

band on offer will be available to potential competitors of Vodafone.

83. A new entrant seeking to establish a national 2G network would be likely to require 10 or 15 MHz. Thus if Vodafone was successful in acquiring rights to [ ] MHz, there would be sufficient spectrum remaining available to support [ ] national networks.

### **Conclusion on Dominance in the Market for the Provision of Mobile Telephony Services**

84. The Commission does not consider that Vodafone is currently dominant in the market. It faces effective competition from Telecom throughout the country. It has a smaller market share than Telecom, and while it may be able to offer some services (such as roaming) more comprehensively than Telecom can at present, it is not certain that this will give it a long-term competitive advantage.
85. The proposed acquisition would not, in itself, result in any market aggregation. It would however remove from potential new entrants to the market [ ] MHz of spectrum which could be utilised for 2G services. However additional spectrum, sufficient for [ ] 2G networks, will remain available to other firms.
86. Having regard to the factors outlined above, the Commission is satisfied that the proposed acquisition would not result, or would not be likely to result, in Vodafone acquiring or strengthening a dominant position in the market for the provision of mobile telephony services.

## **THE MARKET FOR THE PROVISION OF THIRD GENERATION MOBILE TELEPHONY SERVICES**

### **Introduction**

87. At present there are no providers of third generation services as such in New Zealand, although it is recognised that it is likely that these services will encompass services currently being supplied within the 2G and 2½G categories. As discussed in the market definition section above, the extent to which 3G will be likely to offer a clearly different range of services is uncertain at this time. The Commission has taken a conservative approach in placing 3G services in a discrete market, while recognising that, to some extent at least, other services will place some competitive constraint on 3G operators.

### **Competition Analysis**

88. As no market aggregation arises in this market, the Commission's principal concern has been whether the proposed acquisition would be likely to prevent competition from evolving from future 3G service providers.

89. The proposed acquisition would result in Vodafone acquiring [ ] MHz of management rights for 20 years in the 3G band. This would allow it to develop a national 3G network.
90. There would remain an additional [ ] MHz of the band available in the auction for other potential 3G operators. This would be sufficient for [ ]. The New Zealand Herald has reported on 30 November 2000 that several potential 3G operators are considering limiting their acquisitions to 10 MHz. The article quotes a CLEAR Communications' spokesman as saying his understanding was that a network could be built with just 10 MHz. The Managing Director of a Sydney-based firm is quoted as saying:

“You can build with 10 MHz. Its not ideal but you can do it.”

This bidding strategy has been confirmed by the Ministry of Economic Development.

91. The Commission recognises that an additional 15 MHz of the 3G band has been set aside for development by a pan-Maori trust, and this can be expected to be utilised for 3G services if, as anticipated, this proves the highest value use of that part of the spectrum. Further, the Commission notes that it may be possible to use other parts of the spectrum to provide 3G services. In particular those parts currently used for 2G services may be used for 3G services, while the TDD band (2010-2025MHz) provide some potential to enhance the geographic range of 3G services based on other parts of the spectrum. As part of the current application, Vodafone has sought clearance to acquire [ ] MHz (of the 15 MHz on offer in the auction) of the TDD band.
92. Other firms currently bidding for lots in the 3G band include Telecom, TelstraSaturn and CLEAR Communications. To establish a new 3G network involves substantial capital costs and requires interconnect agreements with owners of other networks (fixed and mobile). The lack of number portability would lessen the ability to attract customers from incumbent operators. Nevertheless the firms bidding in the auction are substantial entities who are likely to have the resources and expertise to construct a 3G network should it offer an economic return. The Commission notes however that the existing 2G operators, Telecom and Vodafone are likely to face a lower capital cost of entry by being able to utilise their existing cell sites.

### **Conclusion on Dominance in the Market for the Provision of Third Generation Mobile Telephony Services**

93. The proposed acquisition does not result in any aggregation in this market. Third generation services are not currently being provided and the necessary technology is still being developed.
94. If the proposed acquisition proceeds, Vodafone will have one of the key ingredients to provide third generation services on a national scale, being the rights to spectrum capable of carrying the service. However that does not foreclose other firms from also providing third generation services. [ ]

MHz in the 3G band will remain available to other bidders in the auction, and this amount of spectrum is capable of carrying [ ] national 3G networks. In addition, 15 MHz of 3G spectrum has been set aside for development by a pan-Maori trust, while it is possible that other parts of the spectrum could also be used for 3G services.

95. Having regard to the factors outlined above, the Commission is satisfied that the proposed acquisition would not result, or would not be likely to result, in Vodafone acquiring or strengthening a dominant position in the market for the provision of third generation mobile telephony services.

## **OVERALL CONCLUSION**

96. The Commission has considered the impact of the proposed acquisition in the following markets:

- the market for the provision of mobile telephony services; and
- the market for the provision of third generation mobile telephony services.

97. Having regard to the factors set out in section 3(9) of the Commerce Act, and all other relevant factors, the Commission is satisfied that the proposed acquisition would not result, or would not be likely to result, in any person acquiring or strengthening a dominant position in a market.

## **DETERMINATION ON NOTICE OF CLEARANCE**

98. Accordingly, pursuant to section 66(3)(a) of the Commerce Act 1986, the Commission determines to give clearance to Vodafone Mobile NZ Limited, or any interconnected body corporate of it to acquire:
- (a) up to [ ] MHz of management rights for 20 years in the radio frequency range 1920 – 1980 MHz (the 3G band), together with the corresponding natural management rights pair in the range 2110 – 2170 MHz (the 3G natural pair band)];
  - (b) up to [ ] MHz of management rights for 20 years in the 1710 – 1880 MHz range (the 2G band), together with the corresponding natural management rights pair in that range].
  - (c) [ ] MHz of management rights for 20 years in the 2010 – 2025 MHz range (the TDD band)]; and

- (d) where the incumbent licensee of spectrum covering whole or part of one or more lots of management rights referred to in (b) above is granted a licence of 1, 2, 3, or 5 years (an incumbency licence), a technically identical licence for 5 years less the period of the incumbency licence (intermediate licence) and/or a technically identical licence for 15 years commencing at the expiry of the intermediate licence (the beyond licence).

Dated this 8<sup>th</sup> day of December 2000

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M J Belgrave  
Chair