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2007 Telecommunications Market Monitoring Report

31 March 2008

Annual report of the Commerce Commission's monitoring of competition in New Zealand telecommunications markets and the performance and development of those markets under section 9A of the Telecommunications Act 2001.

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LIST OF DEFINED TERMS AND ABBREVIATIONS

CPI	Consumer Price Index – an index used to measure inflation
cpm	cents per minute
DNS	Domain Name Server – translates human readable domain names into the machine-readable IP address
DSL	Digital subscriber line – method of transmitting high speed data and voice simultaneously over a copper phone line
GSM	Global System for Mobile communications – a widely used digital, second generation mobile phone standard.
HTTP	Hypertext Transfer Protocol – method of transferring files over the internet
IP	Internet Protocol – method that computers use to communicate over the internet
ISP	Internet Services Provider
ITU	International Telecommunication Union
UCLL	Unbundled Copper Local Loop – wholesale access to the copper line connecting a phone user to the local exchange
OECD	Organisation for Economic Co-operation and Development
PPP	Purchasing Power Parity – exchange rate designed to equalise standard of living differences between countries, and is therefore generally accepted as an appropriate conversion method for non-tradable goods and services.
SOHO	Small office/home office
TCF	Telecommunications Carriers' Forum
Telecom	Telecom Corporation of New Zealand Limited and Telecom New Zealand Limited
TRS	Telecommunications relay services – a translation service for hearing impaired users
TSO	Telecommunications service obligations – an obligation to supply certain telecommunications services to groups of end-users who may not otherwise be supplied on a commercial basis or at a price that is considered to be affordable
UBA	Unbundled bitstream access – wholesale access to Telecom's DSL service. The version of this service currently available is also known as UBS.
WCDMA	Wideband Code Division Multiple Access – a third generation mobile phone standard often provided as a progression from the GSM standard.

EXECUTIVE SUMMARY

1. 2007 was a year of great change for New Zealand telecommunications markets, following the passing of the Telecommunications Amendment Act (No 2) 2006 in December 2006, which made significant changes to the Commission's regulatory functions.

2. There were signs of increasing competition during 2007 in most of the telecommunications markets analysed, with average retail prices falling along with some publicly listed prices.

3. Mobile phone usage continues to increase with mobile connections rising by 12 percent to 4.25 million in the 2006/07 financial year and outwards mobile minutes increasing by 15 percent for the same period. By 31 December 2007, mobile penetration had increased further to reach 104 percent. However, average mobile calling per user remains relatively low by international standards.

4. The introduction of new calling plans has benefitted some mobile users, particularly through cheaper calls to selected users on the same network, but OECD benchmarking indicates others are still paying high prices by international standards.

5. There was considerable progress towards new entry in the mobile market, with NZ Communications (formerly Econet) starting to build its own infrastructure and signing a roaming agreement with Vodafone NZ. However, there was slow progress with mobile co-location. In addition, mobile-to-mobile termination rates for calls and texts appear to be above cost, which may hinder the development of competition in the mobile market.

6. While calling prices are reducing in the fixed line market, Telecom's standard residential plans did not rate well in OECD benchmarking and slipped in ranking over the year. This was largely due to the annual rise in the monthly line rental, and the relatively high cost of to fixed-to-mobile calls, which make up an estimated 44 percent of calling costs for both households and businesses.

7. The price of residential broadband services in New Zealand compares favourably to that in other similarly developed countries, with prices for low, medium and higher users all ranking in the top third of the plans surveyed.

8. The broadband market continued to grow strongly, and by September 2007 had passed an important milestone of broadband surpassing dial-up as the most common means of connecting with the internet. There is healthy competition in the broadband market as Telecom retails around 60 percent of all broadband connections. In the retail DSL market, Telecom's competitors' share of the growth in connections rose over the year to end at above 70 percent in the December quarter.

9. The Commission engaged Epitiro to measure the quality of broadband service in New Zealand. It is encouraging that Epitiro data shows that despite Telecom being the wholesale access provider for all the ISPs offering a DSL service, the backhaul and other services arranged by the ISP appear to make a significant difference to the quality of the broadband service delivered to the end-user.

10. Progress towards unbundling the local loop resulted in very competitive bundled broadband promotions appearing in the market in the latter half of 2007. The first unbundled lines became available in early 2008, and offered a lower total cost for a bundle of fixed line, national calling and broadband services on an ongoing basis.

11. Telecom has announced its cabinetisation plans which will reduce the number of lines in exchanges that can be accessed by Telecom's competitors. In response, the Commission is progressing sub loop unbundling, which will allow carriers to access lines that are fed directly from Telecom's distribution cabinets.

12. Well functioning and cost-based wholesale telecommunications markets are necessary to underpin competition in the retail markets. The Commission has some concerns with the high wholesale price of particular services, such as fixed-to-mobile termination, that are needed by retailers to offer a full bundle of telecommunications services to their customers. The Commission will therefore be closely watching developments in these markets.

13. In conclusion, the 2006 reforms are already having a positive effect on telecommunications markets and are likely to start to show further gains in 2008 with the implementation of local loop unbundling and enhanced bitstream access, and the entry of a third mobile network operator.

BACKGROUND

14. Major changes were made to the Commission's telecommunications regulatory functions by the Telecommunications Amendment Act (No 2) 2006 passed in December 2006. These changes included:
    - the introduction of new regulated services, including:
        - unbundled copper local loop (UCLL)
        - unbundled copper local loop co-location
        - unbundled copper local loop network backhaul
        - unbundled bitstream access
        - unbundled bitstream access backhaul
    - the introduction of a standard terms determination regime
    - provisions for the operational separation of Telecom
    - provisions for the accounting separation of Telecom.

15. In addition, a new provision, section 9A, was added that requires the Commission to monitor competition in telecommunications markets and the performance and development of telecommunications markets. The Commission is also required to make public relevant outputs of its monitoring activities.

16. This report, which is made under section 9A, is the Commission's first annual monitoring report, looking at the state of telecommunications markets in New Zealand and developments that occurred during the 2007 year. Prior to this report, the Commission has issued three, less comprehensive, quarterly monitoring reports.

17. The scope of the report is limited by the information the Commission is able to make public without disclosing commercially sensitive material. Much of the data reported is for the 2006/07 financial year, but more recent data is used where available.

THE YEAR IN REVIEW

18. There have been a number of developments during 2007 and early 2008 that have had an impact on telecommunications markets in New Zealand. Some of the more important developments are noted below:

January 2007

19. TelstraClear introduced its 'Big Back Yard' residential calling product to Auckland, allowing free regional calling between the Auckland, Pukekohe, Hibiscus Coast, Helensville, Warkworth and Great Barrier local calling areas.

20. To qualify for the Big Back Yard offer, households have to purchase their phone line through TelstraClear and sign up for a minimum of 12 months. TelstraClear introduced the Big Back Yard plan to other regions during the year.

March 2007

21. Telecom launched two new 'Talk it Up' residential plans that allow subscribers to make unlimited[1] national and international calls to selected destinations in return for a fixed monthly fee of $25 or $45, depending on the plan chosen.

22. Telecom increased all its residential line rental charges. The standard residential line rental was increased by the change in the CPI since the last annual increase, as allowed for by the Local Residential Telephone Service TSO (formerly the Kiwi Share). Line rentals in areas with infrastructure competition were increased by a lesser percentage.

23. Television NZ's new online service, TVNZ ondemand, went live. The service offers a mix of streamed clips and downloadable TV shows.

24. Telecom announced the sale of its Yellow Pages Group for $2.24 billion, which was completed by the end of April 2007.

April 2007

25. Number portability for fixed line numbers and mobile phone numbers was introduced.

26. Communications Minister David Cunliffe released the Government's consultation document on the operational separation of Telecom.

27. TelstraClear announced that it had decided to halt work on its proposed pilot wireless network in Tauranga.

28. Vodafone introduced two new fixed line toll packages for business users. For businesses using Vodafone mobiles, the package allows fixed-to-mobile calls to Vodafone mobiles at 15 cents per minute (cpm).

[1] There is a two hour limit per call and total limit of 6,000 minutes per month.

29. TelstraClear introduced ‘Bizline’ calling packages for business users that offer various levels of unlimited capped local and national calling in return for fixed monthly fees.

30. Economic Development Minister Trevor Mallard accepted commercial undertakings from Telecom and Vodafone to reduce mobile termination rates from 20 cpm to 12-14 cpm over five years and pass through the reductions to retail fixed-to-mobile prices.

June 2007

31. Kordia announced that it was acquiring ISP Orcon Internet Limited for $24.3 million.

32. Telecom announced it was going to build a $300 million GSM/WCDMA network which would be set up alongside Telecom's existing CDMA network, and start operating in late 2008.

July 2007

33. Vodafone announced that businesses could now get a fixed line from Vodafone.

34. TelstraClear increased its ‘InHome’ phone line rental (lines connected to its own residential network in Wellington and Christchurch) by $2.25 a month.

August 2007

35. Orcon made a limited offer of a free home line for 12 months for households purchasing its $79.95 a month 20GB broadband plan.

36. Vodafone made a limited offer of a free 1GB broadband plan for 12 months for households that switched their fixed line to Vodafone and purchased its $20 a month tolls package. The offer was later extended into early 2008.

37. Vodafone extended its BestMate option so subscribers can have up to three best mates to which they can make unlimited calls, texts and videos for $12 a month on a You Choose plan, or $18 a month on a SupaPrepay plan.

September 2007

38. Telecom reduced the cost of its fixed-to-mobile calls by an average of 3 cpm in line with the commitment in its commercial undertaking to pass through reductions in mobile termination rates.

39. Telecom offered a free mobile plan for 12 months for residential customers signing up to one of its Talk it Up calling plans for 12 months.

40. The Minister published his determination setting out operational separation requirements for Telecom.

November 2007

41. Vodafone announced the introduction of its new 'Vodafone at home' service which allows customers to keep their fixed line phone number but make calls from home by purchasing a 'box' for $99 that connects a normal fixed line handset to Vodafone's mobile network. The service costs $39.95 a month and free local and national calls to fixed line numbers, subject to a reasonable usage requirement. The service cannot provide a broadband connection.

42. TelstraClear started offering a mobile service to small and medium sized businesses through a new wholesale arrangement with Telecom. Mobile services will be offered to corporate and residential customers in 2008.

43. Telecom Wholesale and WorldxChange Communications agreed to a joint project that would deliver phone and broadband services over fibre optic cables connected directly to homes in new subdivisions. Services will be provided using WorldxChange's Xnet VFX digital voice over broadband service. The project will run as a pilot from around February 2008 to November 2008.

44. The Commission issued its final determination on unbundled local loop access, with the price in urban areas set at $19.84. A 15 month implementation plan commencing from the determination date was included as part of the determination, and will involve a soft launch at up to 15 exchanges during January to April 2008, and up to 15 further exchanges per quarter for the next year. It is expected that there will be up to 75 unbundled exchanges by April 2009.

45. Telecom announced its plans to roll out a next generation access network, spending $1.4 billion over the next four years to build 3,600 new cabinets connected by 2,500 km of new fibre optic cable.

December 2007

46. NZ Communications and Vodafone announced they had signed a deal to provide NZ Communications with national roaming services, enabling it to provide nationwide mobile services. A start up date of late 2008 was being targeted, depending on the progress made on detailed implementation plans.

47. National electricity retailer TrustPower announced that, after launching broadband and fixed-line offerings to its customers in Tauranga in September, it will be extending the offer to the rest of its 200,000 customer base in January 2008. TrustPower acquired Oamaru-based CallSouth in March after purchasing Bay of Plenty based tolls company Kinect in 2006.

48. The Commission issued its final determination on unbundled bitstream access for basic and enhanced services. Prices started at $27.44 for the basic UBA service when a conventional telephone service is still connected and $47.28 for the basic UBA service in urban exchanges when no conventional telephone service is connected, i.e. naked DSL. Equivalent prices for the enhanced services ranged from $33.06 and $52.90 for the 40 kbps service to $47.99 and $67.83 for the 180 kbps service.

49. The Basic UBA service is due to be delivered on 8 July 2008. The 40 kbps and 90 kbps Enhanced UBA services are due to be delivered on 23 September 2008.

50. The Commission recommended to the Minister of Communications that the price of mobile co-location should not be regulated, and the Minister agreed to the Commission's recommendation. The Commission then launched a standard terms development process to determine the non-price elements of co-location of a mobile operator's equipment on another operator's transmission site.

51. After receiving submissions on its draft separation plan, Telecom published its amended operational separation plan.

52. The Minister of Communications published an amending determination altering his determination that set out operational separation requirements for Telecom.

February 2008

53. The Minister declined to approve Telecom's amended separation plan and issued Telecom with a notice indicating the parts of the plan requiring amendment.

March 2008

54. Orcon became the first New Zealand telecommunications company to offer unbundled broadband and telephony services via Telecom access lines. The unbundled services are available to customers connected to five Auckland telephone exchanges - Glenfield, Browns Bay, Ellerslie, Mt Albert and Ponsonby. The cheapest package of broadband and phone services, which also includes free national calling and valued added services, costs $99.95 a month.

55. Telecom submitted a revised separation plan to the Minister, which he accepted.

INDUSTRY AGGREGATES

Retail Activities

56. Data has been collected on the retail telecommunications activities of NZ carriers for the 2005/06 and 2006/07 financial years.[2] The total retail telecommunications revenue of the surveyed carriers increased slightly from $5.34 billion to $5.37 billion.

57. Results for the main categories of fixed network retail revenue are shown in Figure 1. These show that all categories of calling services had a decline in revenue. Revenue from access and other fixed line services showed a small increase, as did revenue from data services. Internet access revenue declined for Telecom and increased for other carriers, but in total showed a small decrease. Total fixed network retail revenue decreased from $2.99 to $2.93 billion.

58. Mobile retail revenue increased from $1.93 billion to $1.97 billion.

59. In terms of volumes of calls, Telecom's local and national calling dropped significantly while fixed-to-mobile and international calling had small rises in volumes. It appears non-Telecom carriers managed to increase volumes for all call types.

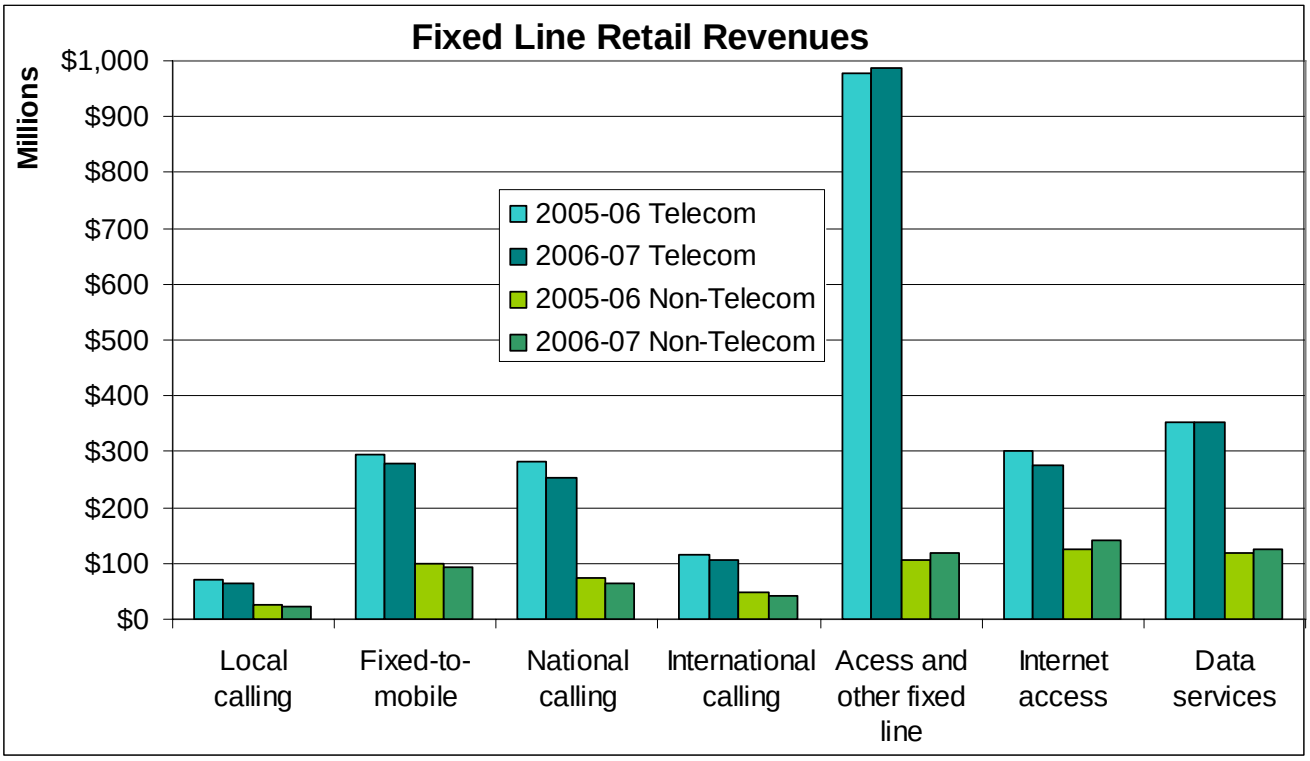
60. For confidentiality reasons, only an index of outwards mobile calling minutes can be produced. This shows mobile calling minutes for outwards calls increased by 15 percent.

61. The reported number of retail fixed telephone connections dropped marginally from 1.76 million to 1.75 million. By comparison, fixed telephone connections supplied using access infrastructure not owned by Telecom were very small in number, but grew strongly from around 67,000 in 2005/06 to 83,000 in 2006/07.

62. Mobile phone connections grew by 12 percent from 3.80 million to 4.25 million in the survey period.

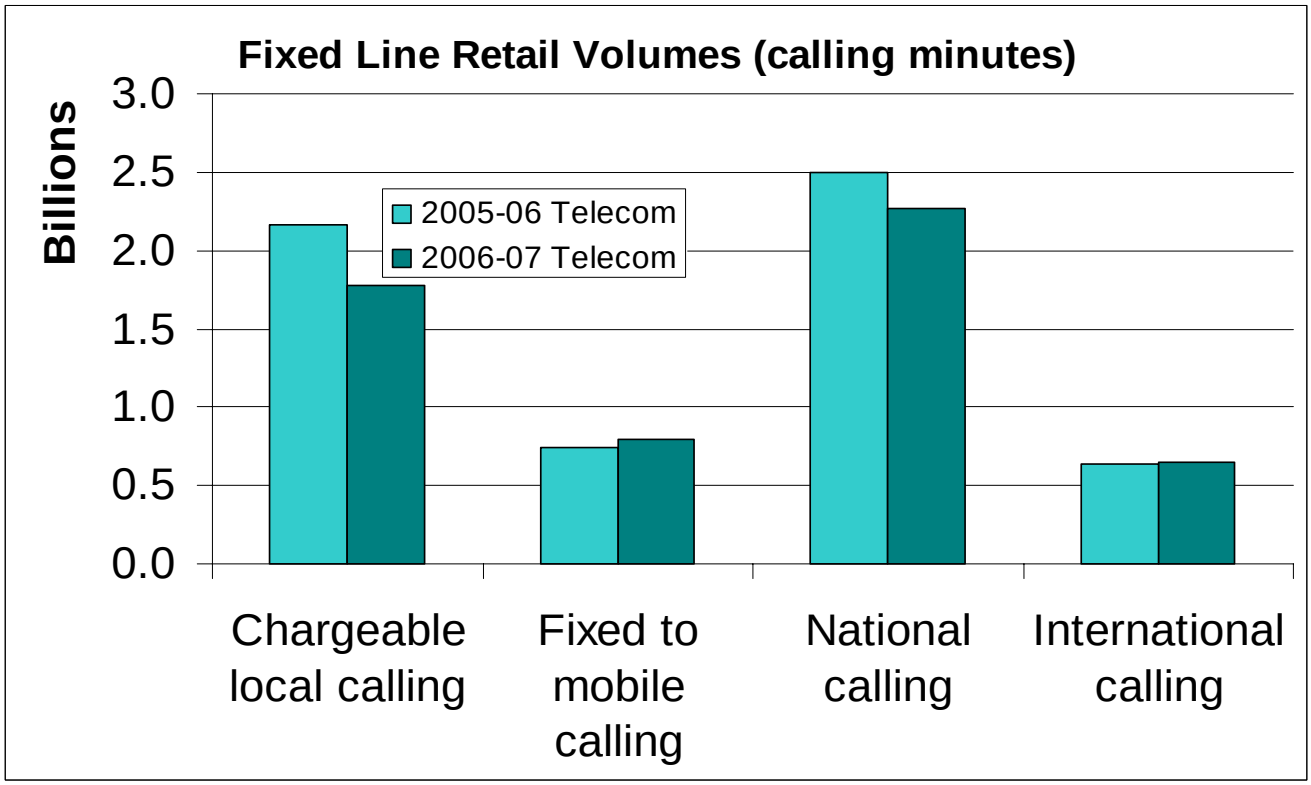
[2] The Commission used a questionnaire developed by a TCF working party to collect data from TCF members with retail businesses. All respondents apart from Telecom indicated that they wanted their individual responses kept confidential. Telecom's responses were already publicly available. Due to systems problems, TelstraClear was unable to report reliable calling volume data. The aggregated results of the questionnaire will be posted on the Commission's website shortly after the release of this report.

Figure 1: Aggregate Fixed Network Retail Revenues



Source: Commerce Commission

Figure 2: Telecom Retail Call Volumes



Source: Commerce Commission

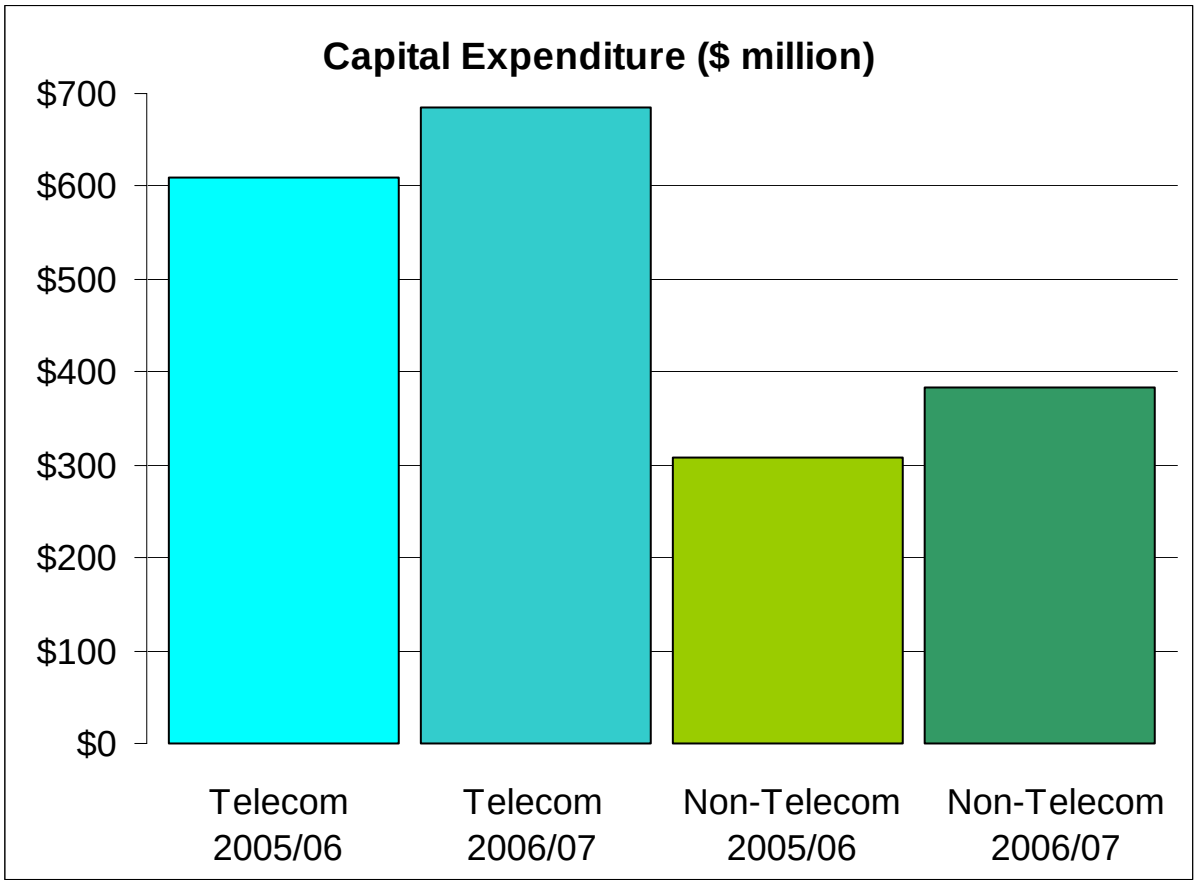
Investment

63. Surveyed retail carriers reported their capital expenditure, which totalled $918 million in 2005/06 and $1,069 million in 2006/07. Capital expenditure across the whole telecommunications industry is likely to be significantly higher than this because of investment by firms who were not surveyed because they are not TCF members, or are not retail carriers.

64. However, much of the reported investment, particularly in the case of Telecom, would not have added to the net stock of telecommunications infrastructure because it would have been spent on replacing existing capital assets at the end of their economic lives. For example, Telecom reported depreciation and amortisation totalling $529 million in 2005/06 and $570 million in 2006/07.

65. It can be seen from Figure 3 that total capital spending by non-Telecom carriers is significant, at roughly half of Telecom's, and increased at a faster rate than Telecom's for the period surveyed.

Figure 3: Industry Capital Expenditure



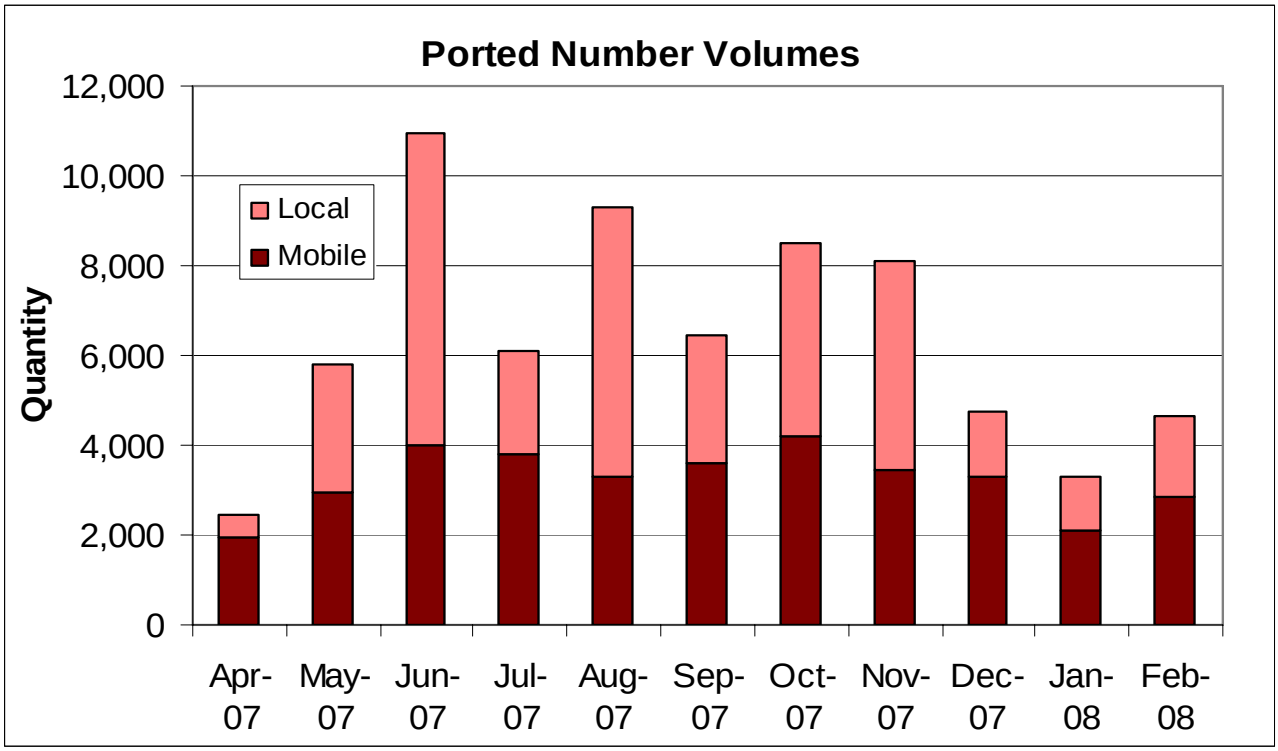
Source: Commerce Commission

Number Portability

66. Mobile and local (fixed line) number portability was introduced on 1 April 2007 as a result of a long-running project initiated by the TCF. However, Vodafone did not achieve full portability for prepay numbers and the Commission required Vodafone to have its number portability service fully capable of porting prepay numbers by 1 April 2008. Vodafone achieved this on 26 March 2008.

67. After reaching a high of nearly 11,000 in June, the quantity of numbers ported has fluctuated, as shown in Figure 4. In the mobile market, churn is likely to be hindered by the fact that customers currently have to change handsets to change providers.

Figure 4: Local and Mobile Ported Number Volumes



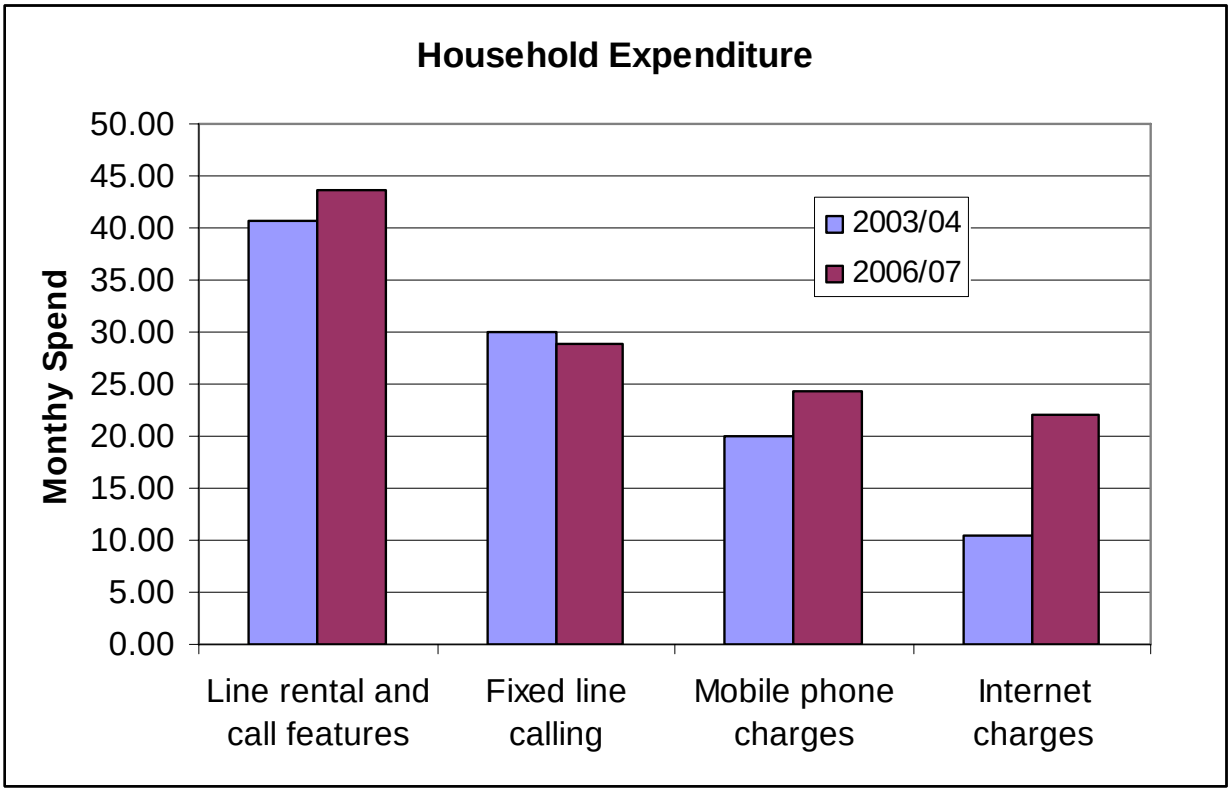
Source: TCF

HOUSEHOLD CONSUMPTION

68. Statistics NZ surveys household spending in its Household Expenditure Survey (HES) which is undertaken every three years. The components of telecommunications services expenditure have changed between 2004 and 2007, in part due to more bundling of services occurring, which makes exact comparisons difficult. However, the Commission has attempted to make approximate comparisons grouping expenditure into spending on line rental, fixed line calling, mobile phone services, and internet services.

69. In the 2006/07 year, households on average were spending 2.9 percent of their net expenditure ($119 a month) on telecommunications services (excluding pay TV). This increased from 2.7 percent ($104 a month) in the 2003/04 year.

Figure 5: Estimated Average Household Expenditure on Telecommunications Services



Source: Commerce Commission, Statistics NZ

70. The largest increase in monthly household spending on telecommunications services was spending on internet services, which is likely to have resulted from the larger proportion of households purchasing broadband services in 2007, and the fact that a broadband connection usually costs significantly more than the dial-up connection it replaces. By September 2007 dial-up had ceased to be the most common means of connecting to the internet.[3]

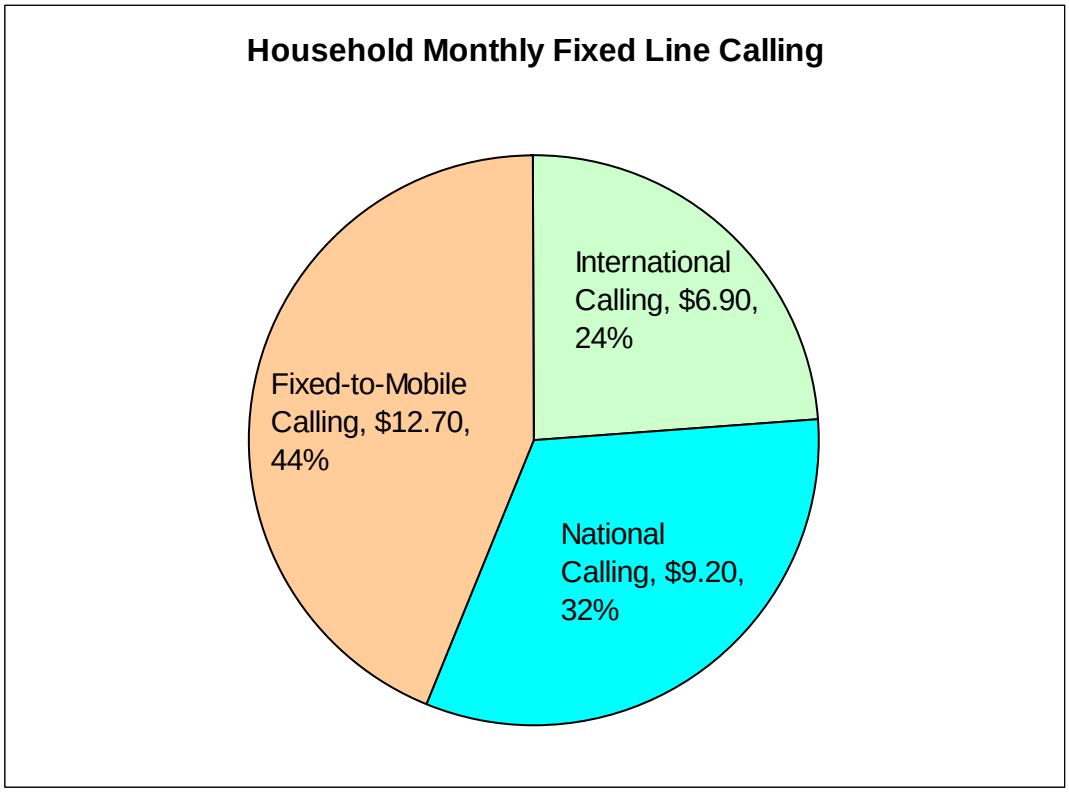
71. There has also been a significant increase in spending on mobile phone services. Much of this increase will have been caused by the increased number of mobile phones in use.

[3] Statistics New Zealand, *Internet Service Provider Survey: September 2007*

72. Not all households purchase all these telecommunications services, so those households that are consuming the services will spend more than the average expenditure shown. For example, a little under half of all households had broadband at the time of the survey, and the average monthly expenditure for those households purchasing broadband services is estimated to be around $40.

73. Of the average amount spent by each household on fixed line calling, the Commission has estimated the amount spent on each type of call.

Figure 6: Estimated Average Household Expenditure on Types of Fixed Line Calling



Source: Commerce Commission

74. It can be seen that the largest calling cost is for fixed-to-mobile calls. This is a consequence of the relatively high per-minute cost of such calls, rather than households spending more time making these calls.

75. For businesses, the average monthly spend on fixed line calling would be substantially higher than for households. Despite businesses having a significant extra spending component for local calls, which are not free for businesses as they are for most residential users, a similar proportion of spending on voice calls (around 44 percent) is still estimated to be spent on fixed-to-mobile calling.

ASSESSING THE COMPETITIVENESS OF RETAIL MARKETS

76. One guide to the competitiveness of retail markets is how retail prices are changing over time compared to costs, and how prices compare to those charged in similarly developed overseas countries.

77. In order to compare the retail cost of telecommunications services in different countries, the OECD has developed a series of standard consumption baskets reflecting different telecommunications end-user profiles. Details of nationally available plans are used to calculate the cheapest cost of filling each basket in each OECD country. This work is performed by Teligen and the underlying data is available on a subscription basis. Teligen surveys only Telecom and Vodafone in New Zealand when benchmarking fixed and mobile services, although the Commission has supplemented this at times to make more wide ranging comparisons.

78. The Commission has graphed how the top ranked New Zealand product for each basket rates against the best plans of other OECD countries. The results are indicative only and need to be interpreted with caution, as the baskets will differ from New Zealand customer profiles, and do not capture special or confidential deals. Rankings are performed using PPP exchange rates[4], and these rates change from quarter to quarter so that can influence the results.

79. Where possible, the Commission has also reviewed the average price of telecommunications services. Reductions in average prices will pick up any reductions in list prices as well as reductions in effective prices caused by consumers seeking better value by changing to, or making more use of, cheaper plans and deals.

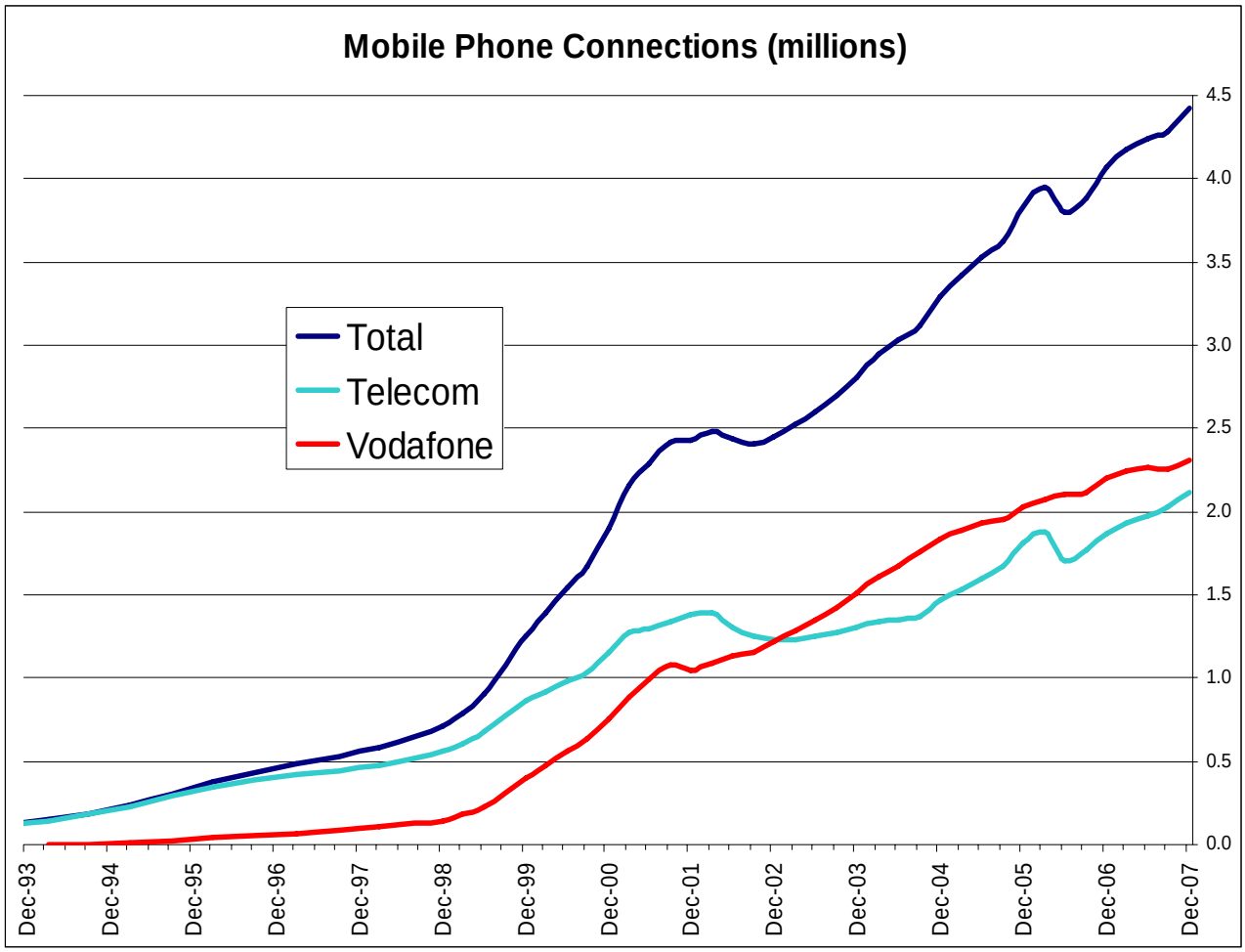
[4] PPP rates are designed to equalise standard of living differences between countries, and are therefore generally accepted as an appropriate conversion method for non-tradable goods and services.

MOBILE MARKET

80. There are a number of indicators that can be looked at to assess the competitiveness of the retail mobile telecommunications market in New Zealand, including the features of the market, such as the number of competitors and the technology used.

81. Mobile phone penetration in New Zealand was 104 percent with 4.42 million connections as at 31 December 2007 for a population of around 4.25 million people.[5] This does not mean every person in the country has a mobile phone as a large number of people have more than one mobile phone. For example, although the average number of mobile phones in use for the 2006 year was 3.93 million, only 2.56 million people (about two thirds) reported having personal access to a mobile phone.[6] On a household basis, access was 86 percent – up from 71 percent in 2004.

Figure 7: Growth in Mobile Phone Connections



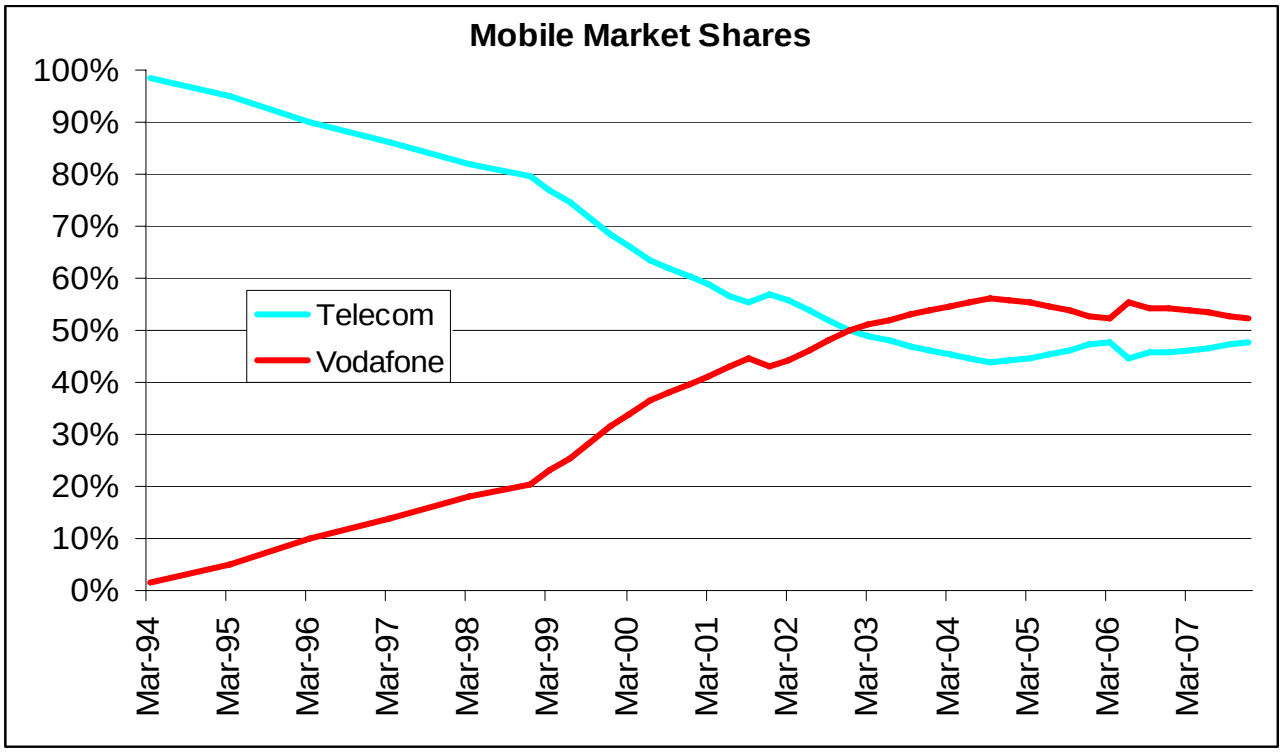
Source: Telecom, Vodafone

[5] Population estimated from extrapolating Statistics NZ figures.
[6] Household Use of Information and Communication Technology: 2006, Statistics NZ

82. New Zealand has for the last 15 years had two mobile network operators, Telecom and Vodafone. They have used different technologies so that customers have had to change handsets to change providers. However, Telecom has recently decided to build a new network, which will become operational in late 2008, using the more common GSM/WCDMA technology used by Vodafone.

83. Figure 8 shows how the market shares of Telecom and Vodafone in terms of customer connections have changed since BellSouth, which was later purchased by Vodafone, first entered the market in 1993. In recent years, the market share of Telecom has been just below 50 percent and Vodafone just above 50 percent.

Figure 8: Mobile Market Shares

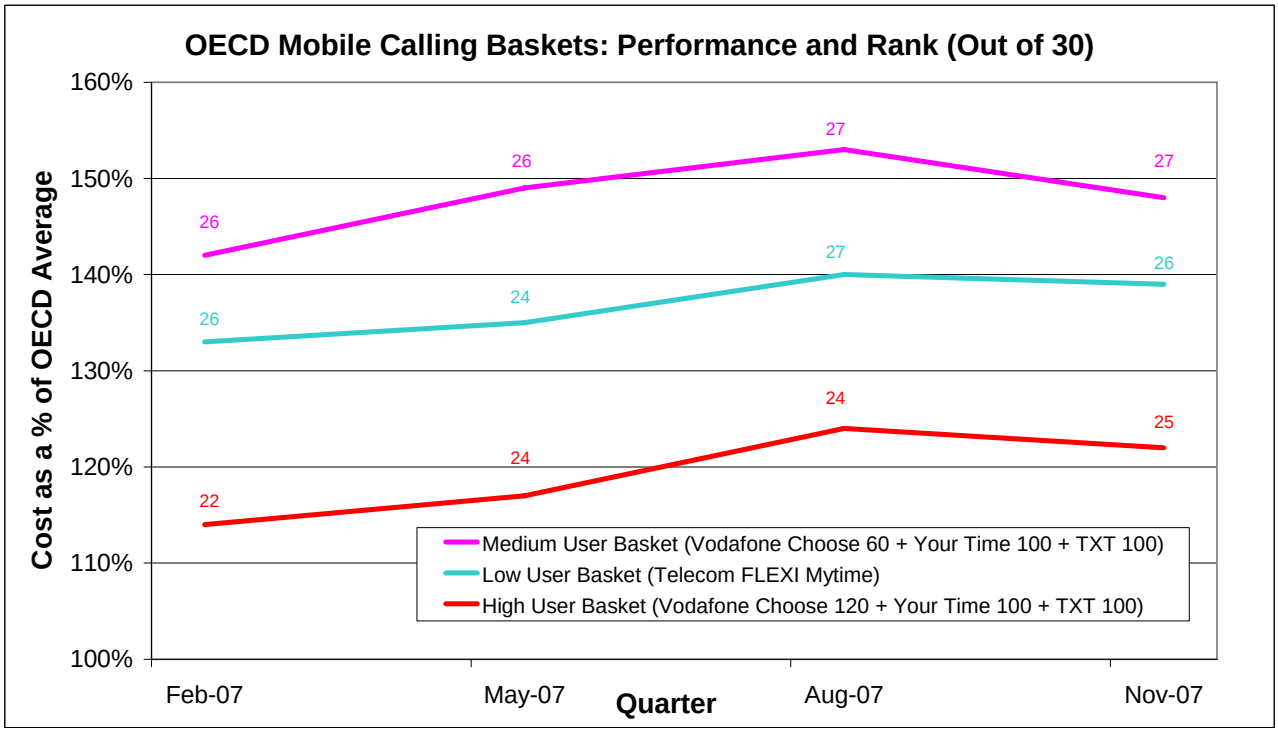


Source: Telecom, Vodafone

84. Another indicator of the competitiveness of the mobile market is New Zealand's rank against other countries in terms of cost, using the various OECD benchmarking baskets.

85. The results in Figure 9 below show that the New Zealand mobile calling plans surveyed for OECD benchmarking generally do not rate particularly well compared to plans surveyed in other OECD countries, regardless of the basket. The New Zealand plans shown have not changed in price over the past year, so their margin above the OECD average has tended to rise as cheaper plans have been introduced by some overseas providers. The amount by which New Zealand exceeds the OECD average is consistently lowest for the high-user basket and highest for the medium-user basket.

Figure 9: NZ Performance in OECD Mobile Calling Baskets



Source: Teligen T-Basket

86. In graphing how New Zealand mobile products have rated in the OECD mobile benchmarking process, the Commission has not used Vodafone's You Choose Base plans (details only available on the Vodafone website under 'Other On Account plans') because during the period under consideration these plans had a plethora of restrictive conditions that, in the Commission's view, made them unique to New Zealand and unlikely to have attracted a significant number of customers. The restrictions included a minimum three year contract, heavy early termination penalties, no international roaming, and no handset rebate – which is the usual incentive for signing up to restrictive plans. Vodafone has not been able to advise the Commission of any similar plans overseas.

87. Vodafone has recently eased the restrictions associated with the Base plans. The initial minimum three year term was reduced to two early in 2007. In December 2007 the international roaming restriction was removed and the early termination penalties significantly reduced to a more reasonable level. The Commission will, therefore, consider using the results of the Base plans in its monitoring for the 2008 year.

88. New mobile plans have emerged over the last few years offering better value for certain consumers by providing unlimited calling between one or several specified on-net (same network) mobile or fixed line numbers for a fixed monthly fee. The Best Mate option available with Vodafone plans, for example, allows unlimited communications with one other Vodafone mobile subscriber for six dollars a month. Such plans cannot be effectively benchmarked using the OECD benchmarking process as it does not allow different costs for calls to particular numbers. However, it appears that such plans have contributed to the decline in average mobile calling prices for Vodafone customers. See Figure 10 below.

89. Plans which offer a better deal for a minimum or fixed monthly spend are also used to sell SMS messages, commonly known as texts. Telecom pioneered cheap texts several years ago with its $10 cap for free additional texts up to a specified maximum, and Vodafone now has similar offers. In the past, such offers together with expensive voice calls, particularly for prepay customers, strongly encouraged texting.

90. The Commission has attempted to estimate from public data the approximate average voice revenue per minute of various international Vodafone operators and Telecom.[7] Vodafone's public data on mobile voice minutes counts both incoming and outgoing calls while Telecom's counts only outwards calls, so exact comparisons are difficult.[8] Vodafone Europe shown in Figure 10 is the average of estimates for Vodafone Germany, Italy, UK and Spain.

91. Since the minutes counted are both incoming and outgoing, and a significant portion of incoming minutes do not generate any revenue, the effective average price of outgoing calls is roughly one and a half to twice the voice revenue per minute shown.

92. The results in Figure 10 are indicative only, but it appears that until recently Vodafone NZ's average revenue per minute has been higher than Telecom's and other major European Vodafone operators, but is now about the same. Telecom's average revenue per minute may have been lower than Vodafone's in the past due to Telecom's pricing in the business market where mobile services are often bundled together with fixed line services and special deals are common. Such discounting is not picked up by the OECD benchmarking.

93. Vodafone's average revenue per minute may have been driven down over the last year by an increase in on-net calling, i.e. increased calling between Vodafone customers. On-net calling charges are usually less, often very significantly less, than for off-net calls. As described above, Vodafone has introduced several unlimited on-net calling options. It can be seen from Figure 11 that Vodafone's mobile calling volumes have been increasing while Telecom's have been static.

94. Despite the average revenue per minute of New Zealand mobile operators now being approximately the same as Vodafone's major European operators, it still appears from the OECD benchmarking results that lower spending/non-business mobile users pay relatively high charges by OECD standards. Such users may not easily be able to get better value for money by shopping around as can be done in the fixed line market (see next section). Exceptions may be if lower spending/non-business users communicate mostly with several other on-net subscribers, or communicate mostly by text, and choose plans which maximise their value for that kind of user profile.

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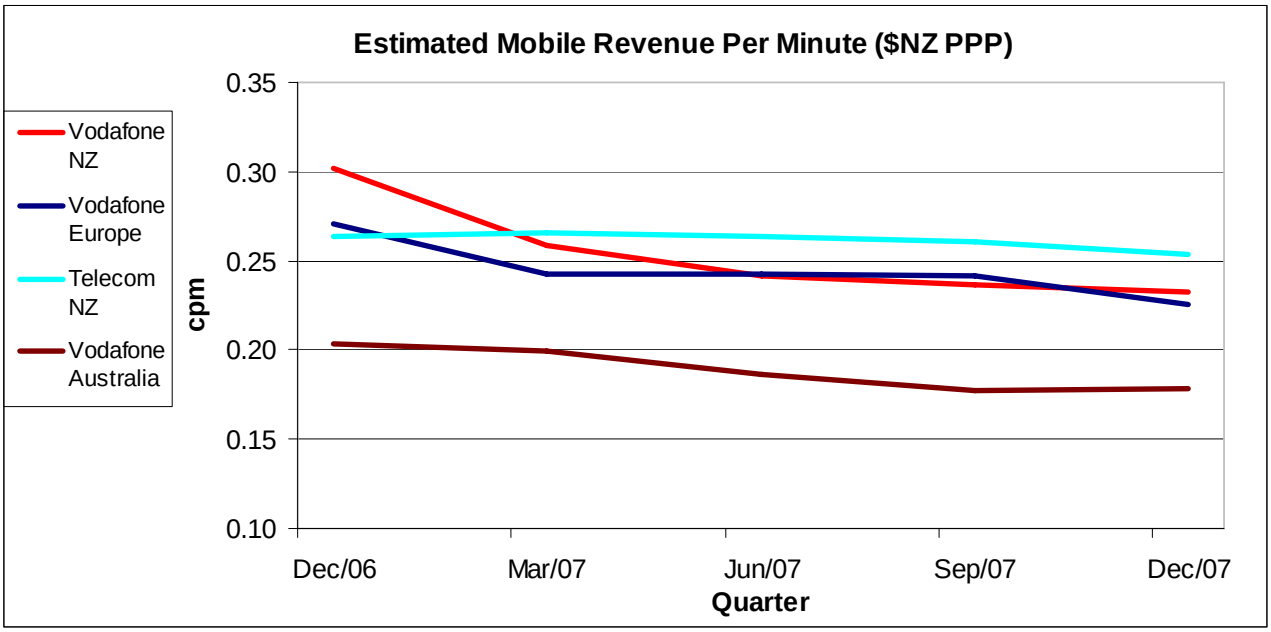
[7] Revenue per minute is taken from the assumed percentage of the ARPU obtained from voice traffic. Telecom's non-voice revenue percentage was 29 percent as at December 2006 and since Vodafone NZ has a greater number of higher spending pre-pay customers, its non-voice percentage was assumed to be significantly higher at around 38 percent and rising in line with the UK non-voice percentage. Australia is assumed to have the same non-voice percentage as the UK

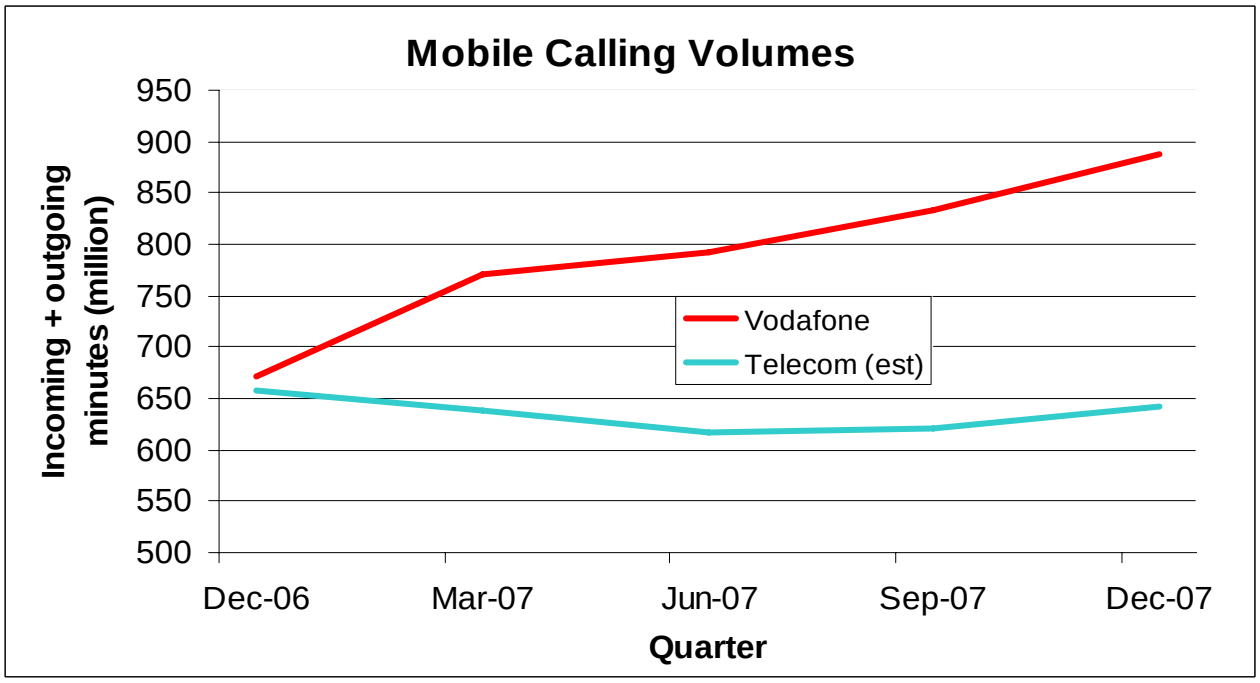
[8] Given New Zealand's high mobile phone penetration and the relatively expensive cost of fixed-to-mobile calls, it is possible that there are somewhat more outbound calls from mobile networks than inbound for Telecom Mobile. Dr Rob Albon from the ACCC estimated, based on the ACCC's *Market Indicator* report, Telstra's *Annual Report* and estimates of market share, that for Telstra's mobile network in Australia the ratio of inbound to outbound calls is 0.78, and the Commission has used the Telstra figure to estimate Telecom's volume of inbound calls in order to compare it with Vodafone.

Figure 10: Estimated Mobile Revenue per Minute for Vodafone Operators and Telecom



Source: Commerce Commission

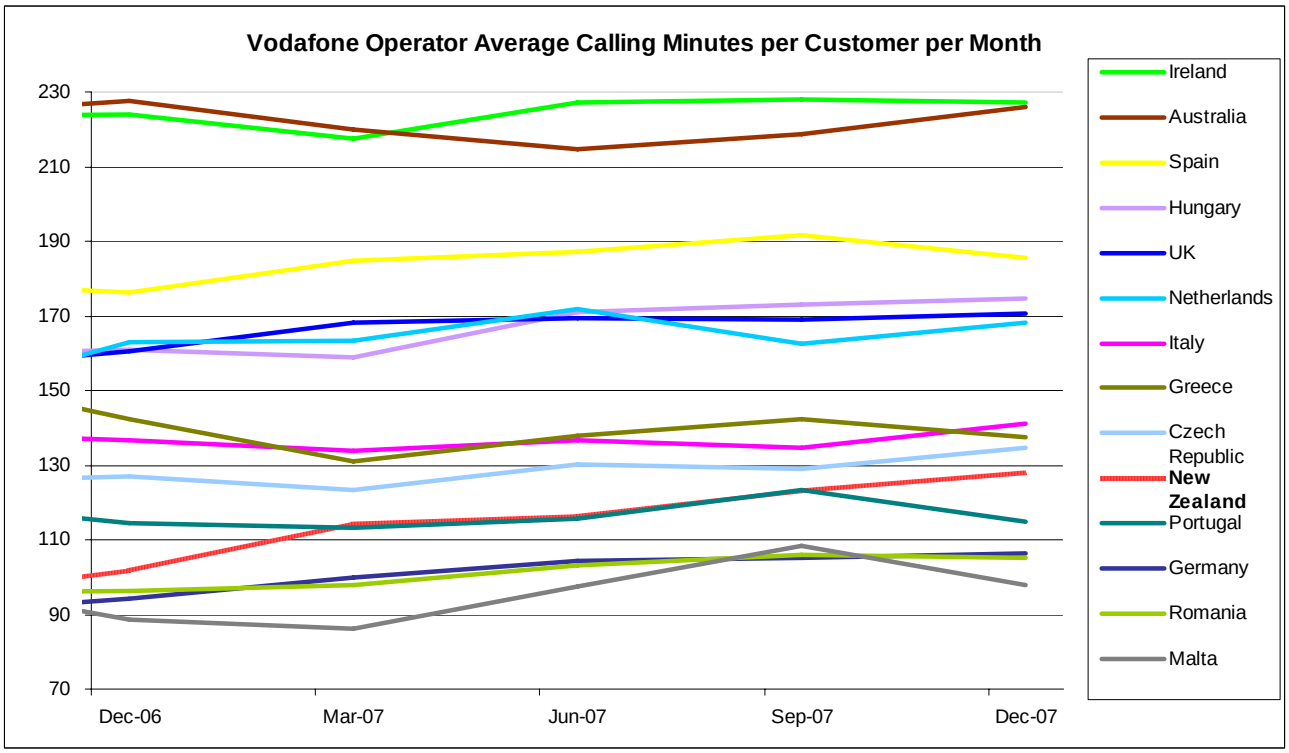
Figure 11: Mobile Calling Volumes for Vodafone and Telecom



Source: Commerce Commission, Vodafone

95. Figure 12 shows that Vodafone NZ's average calling minutes per customer per month are still relatively low compared to other Vodafone operators.

Figure 12: Average Calling Minutes per Customer per Month for Vodafone Operators



Source: Vodafone

96. The development of mobile offers that require higher fixed spending by lower spending users is not unexpected, as mobile network operators want to offer better value to users in a way that minimises their loss of revenue from lowering their effective per minute or per text prices.

97. It is logical for mobile network operators to encourage their customers to make on-net calls and on-net texts by making the price of such calls and texts significantly cheaper than off-net communication. Such pricing makes it less likely that the customers will change to another network and may work to reduce the operator's interconnection costs.

98. However, a significant differential between on-net and off-net calls is likely to be sustainable only if mobile-to-mobile termination rates for calls between networks are significantly above cost. If termination rates were close to cost, then competing networks could offer similarly low rates for both on-net and off-net calls.

99. High mobile termination rates are therefore a particular concern for new entrants, who have no established community of users, because they find it difficult to attract customers from existing networks which offer low on-net rates. New entrants need to be able to offer similarly low off-net rates, which high termination rates make uneconomic, to entice new customers.

100. The current mobile-to-mobile termination rate for voice calls has not been disclosed but past practice has been to set it at the same level as the fixed-to-mobile termination rate, which is currently 17 cpm. Vodafone stated last year that the interconnection rate for SMS was 9.5 cents per text.

101. The ACCC in November last year issued its final report on mobile termination pricing[9] which recommended a mobile termination price applying for the period 1 July 2007 to 31 December 2008 of 9 cpm (NZ 9.5 cpm[10]). Cost modelling work carried out for the ACCC by WIK suggested that the termination cost for an efficient operator operating in Australia would be in the range of 6.1 to 6.6 cpm (NZ 6.5 to 7.0 cpm). This result is largely consistent with forward looking mobile termination cost estimates derived in recent mobile cost modelling work undertaken for Ofcom in the UK.[11]

102. The original WIK mobile cost modelling work estimated that the cost of terminating a text message was between 0.03 and 0.04 cents.[12] French regulator, ARCEP, also modelled the cost of the SMS termination service. This cost decreased over time, and for the year 2008 was estimated to be between 0.56 and 0.71 eurocents per text message, depending on the technology and cost assumptions used.[13]

Conclusion

103. The Commission considers the fact that there are only two mobile networks operating in New Zealand and each uses different technology (so users generally have to buy a new handset to change networks) limits the intensity of competition in the mobile market.

104. The introduction of new calling plans has benefitted some users (particularly through on-net pricing), but OECD benchmarking indicates others are still paying high prices by international standards. Average calling minutes per user are also still relatively low by international standards.

105. The entry of a third operator into the market and Telecom's building of a new network using GSM/WCDMA technology should help to increase competition for the benefit of end-users. However, if mobile-to-mobile termination rates for both voice calls and text messages are set significantly above cost, this would reduce the ability of a new entrant to compete effectively in the market. The Commission will therefore be paying close attention to this issue in 2008, and also the progress in mobile co-location.

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[9] *MTAS Pricing Principles Determination 1 July 2007 to 31 December 2008*, Australian Competition & Consumer Commission, November 2007.

[10] All exchange rate conversions in the report are calculated using a PPP exchange rate. The Commission notes that this differs from the methodology employed in its schedule 3 investigation into amending the roaming service, where a 10 year average exchange rate was used.

[11] Ofcom set 3G benchmark cost, excluding spectrum, at around 3 ppm by 2008/09 in Figure A13.1, *Mobile Call Termination Statement*, Ofcom, March 2007.

[12] *Mobile Termination Cost Model for Australia*, wik-Consult, January 2007.

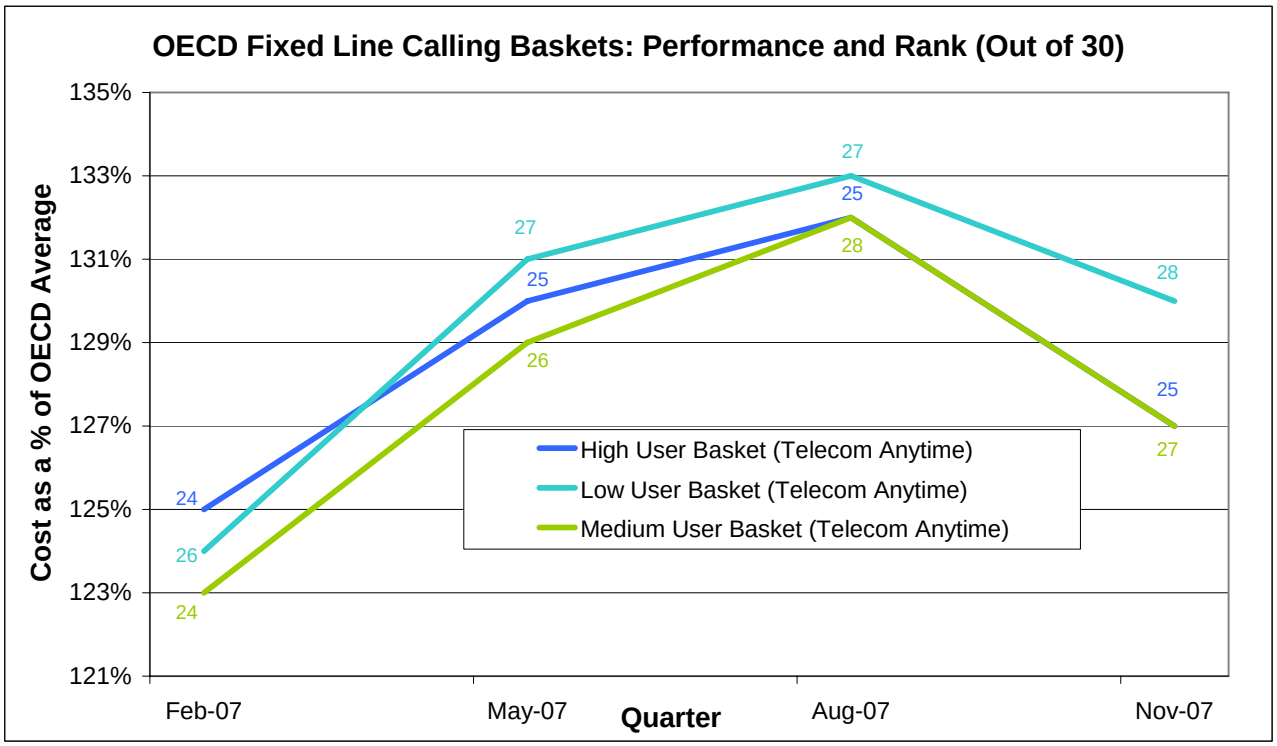
[13] *Schedule 3 Investigation into Amending the Roaming Service Final Report*, Commerce Commission, March 2008, p45.

FIXED LINE VOICE MARKET

106. Figure 13 shows the basket cost of New Zealand residential fixed line voice products surveyed for OECD benchmarking was between 23 and 33 percent above the OECD average, and attracted rankings of between 24 and 28 out of 30 (30 being the most expensive product).

107. The $NZ cost of the New Zealand products surveyed rose marginally early in the 2007 year, when Telecom raised its residential line rentals, and then fell a little in the last quarter, when Telecom reduced the price of its fixed-to-mobile calls. The baskets are sensitive to the price of fixed-to-mobile calls, which remains high for residential users.

Figure 13: NZ Performance in OECD Fixed Line Residential Baskets

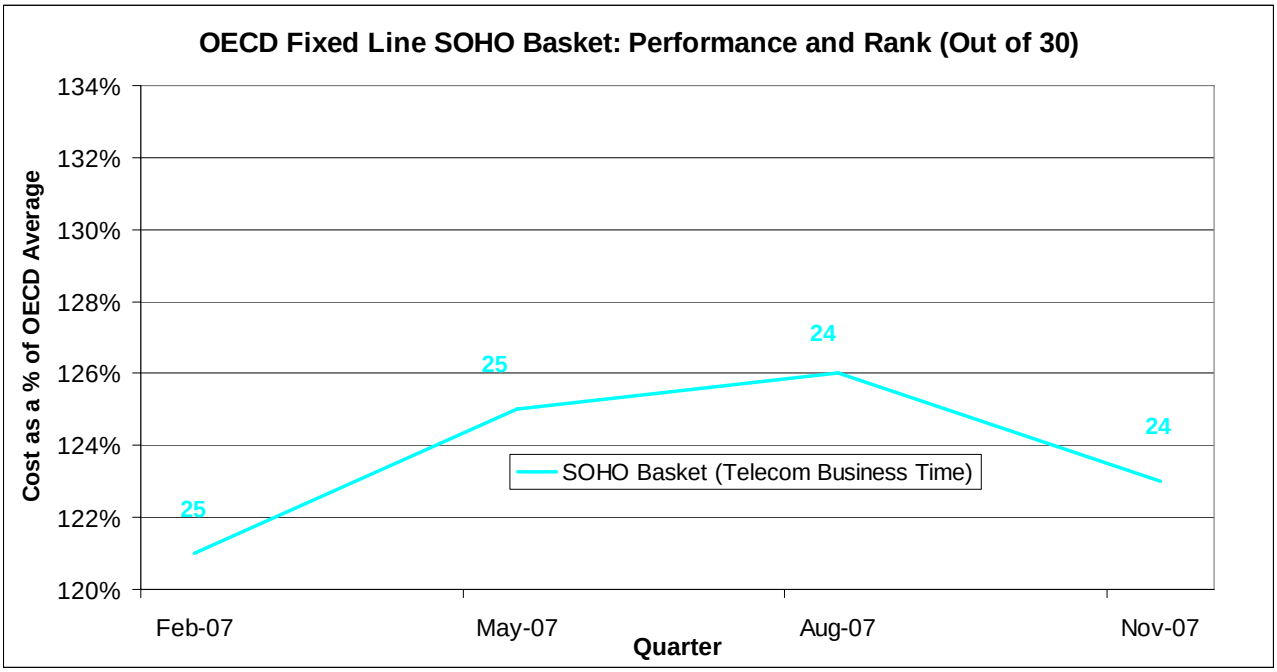


Source: Teligen T-Basket

108. Benchmarking business telecommunications costs is more difficult than benchmarking residential costs because businesses are more likely to be offered discounts and services with confidential prices. The Commission has reported the OECD's SOHO (small office/home office) basket results only, which are less likely to be subject to these problems.

109. New Zealand's performance in the SOHO basket, as shown in Figure 14, was a little better than the other fixed line baskets. The cost of the SOHO basket was unchanged for the first three quarters and dropped marginally in the final quarter because of the reduction in the price of fixed-to-mobile calls.

Figure 14: NZ Performance in Fixed Line SOHO Basket



Source: Teligen T-Basket

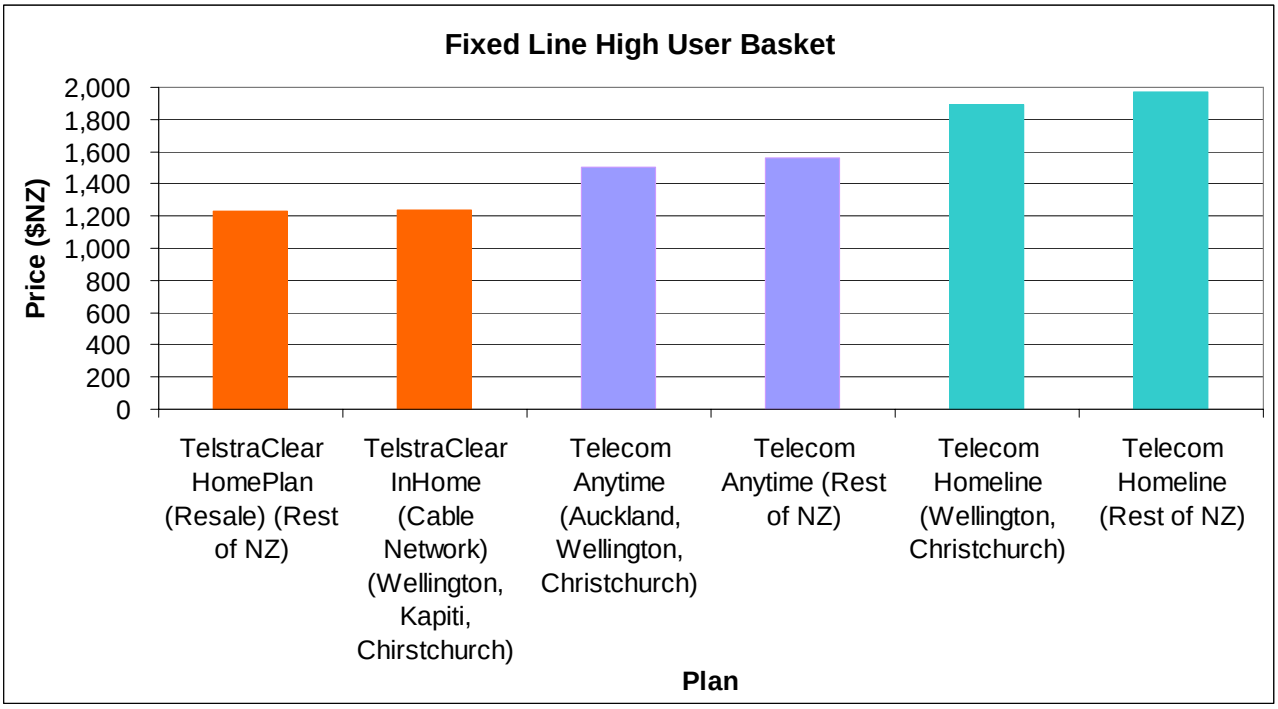
Fixed Line Competition

110. In the fixed line market in New Zealand, alternative providers do offer substantially cheaper products than Telecom, but they aren't surveyed by Teligen (who usually survey only well known national carriers). On the other hand, if Telecom's default Homeline plan is used for OECD benchmarking, the resulting cost is significantly higher than the often cheaper Anytime plan used by Teligen (which Telecom customers have to opt in to).

111. To get a wider perspective, the Commission has put TelstraClear's and Telecom's standard fixed line residential plans into the OECD calling baskets. The TelstraClear plan's cost advantage over the Telecom plans increases the more consumers spend. The results in $NZ from putting the products mentioned in the fixed line residential higher-user basket for November 2007 can be seen in Figure 15.

112. Nearly all the fixed line operators have introduced new plans that are structured to get a higher fixed monthly fee from customers while reducing the unit price for the services consumed. These plans typically offer cheaper or 'free' toll calling in return for an additional fixed monthly payment or a 12 month commitment to the provider. TelstraClear's Big Back Yard extends the free calling area in various urban areas. Telecom's 'Talk It Up' plans have variations for 'free' calling to a neighbouring area, free calling to anywhere in New Zealand and Australia and a large amount of calling to ten commonly called overseas countries. However, there is a risk that consumers have to spend above average on toll calls on a regular basis to save money. The Telecom plans mentioned do not rate well if they are put into the OECD calling baskets, which assume all calls have a relatively short duration.

Figure 15: Comparing NZ Plans Using Fixed Line Residential High User Basket – Nov 2007



Source: Teligen T-Basket, Commerce Commission

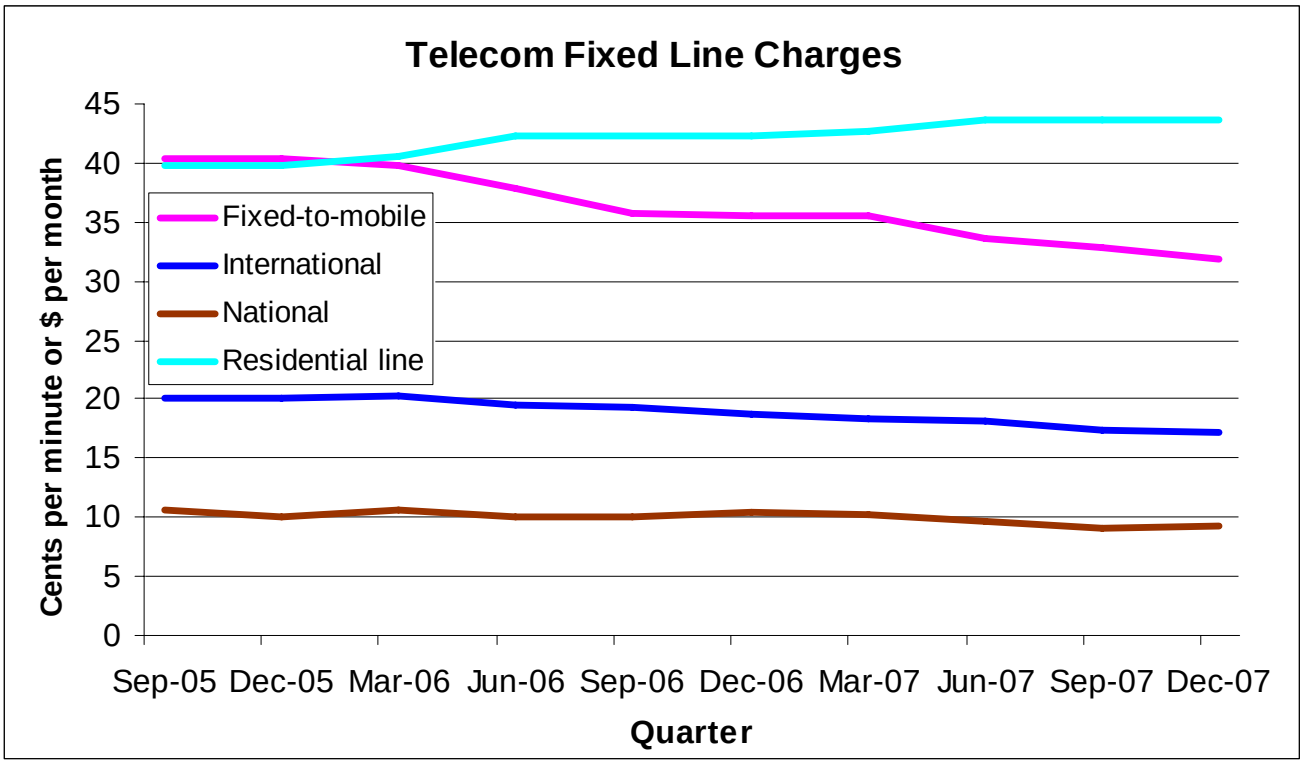
113. There is evidence that the new plans offering unlimited calling are contributing to lowering average fixed line calling prices. Figure 16 shows how Telecom's average calling prices have dropped over the last two years in comparison to its standard residential line rental. The Commission does not have enough data to reliably show wider industry pricing trends, but it does appear that most other carriers have reduced their average calling prices at least as fast as Telecom.

114. Telecom's fixed line interconnection charges have been stable, which suggests that retail margins for at least national calls have been falling.

115. For the fixed component of fixed line spending, the monthly line rental, Telecom has continued to increase its standard residential line rental each year by the amount of the CPI increase as it is allowed to under the TSO Deed. The standard line rental is cheaper in Wellington and Christchurch where TelstraClear has alternative infrastructure, although line rentals charged by both Telecom and TelstraClear have risen in these cities too. Telecom effectively offers cheaper line rental in Auckland if customers request the Anytime package, which has a lower total cost than the standard line rental in Auckland only.

116. Very recently, the first unbundled services have become available for subscribers connected to five Auckland exchanges. Orcon is offering a package including broadband at unconstrained speeds with 10 GB of data, line rental, free national calls and value added services for $99.95 a month, which is a significant discount on purchasing similar products from Telecom.

Figure 16: Telecom Average Fixed Line Charges



Source: Telecom

Fixed-to-mobile calling

117. The average price of fixed-to-mobile calling has had a reasonably significant fall, and the volume of calls has increased marginally. Telecom's average price decrease is not, however, closely matched to the stepped reductions in the underlying mobile termination rate. The latest reduction in the mobile termination rate from around 20 cpm to 17 cpm, resulting from the commercial undertakings by Telecom and Vodafone, did not occur until 1 May 2007, and the consequential reductions in Telecom's listed retail fixed-to-mobile prices did not occur until 1 September 2007.

118. In addition, the continuing fall in Telecom's average retail fixed-to-mobile prices has not been reflected in Telecom's publicly listed prices, which largely stayed the same until September 2007. This suggests that the average price is likely to have been driven downwards by falls in confidential business prices and other bundled pricing packages discussed further below.

119. The Commission notes that the falling cost of terminating fixed-to-mobile calls has corresponded with static or falling mobile-to-mobile calling prices (see later section) and static or falling handset prices. Handset subsidies have not been a feature of the New Zealand market, at least for GSM/WCDMA phones which are able to be marketed by parallel importers. This indicates there is little evidence of a 'waterbed effect' where mobile operators seek to recoup revenue lost from falling mobile termination prices by reducing handset subsidies and/or raising mobile calling prices.

Non-traditional fixed line calling

120. A product that many consumers are using to obtain cheap fixed line calling is prepaid fixed line calling cards. The Commission notes that calling cards are widely used and offer very competitive calling rates.

121. Another type of product that offers cheap calls is VoIP services. The use of such technology was once reserved for the technically inclined early adopters, but VoIP is now becoming easier to use, more reliable and offering better quality of service. The Commission has limited data on such usage but understands carriers offering VoIP services are seeing strong growth in its usage. According to Statistics NZ, 31 percent of government agencies were using VoIP services as at August 2006.[14]

Conclusion

122. In the fixed line voice market, calling prices are reducing and margins appear to be shrinking, suggesting that this segment of the telecommunications market is gradually becoming more competitive. However, New Zealand generally ranks poorly in the OECD benchmarking (based on standard Telecom plans) with high line rental and fixed-to-mobile calling charges largely responsible, and these rankings have worsened over the year. This means consumers remaining on standard plans are unlikely to be getting good value.

123. Monthly line rentals continue to increase for most residential subscribers, with some relief provided from bundled deals offered to those with a reasonable toll spend. The lack of cheaper alternatives to the standard line rental price is not surprising, given the lack of infrastructure competition in most areas.

124. The implementation of local loop unbundling, offering the ability for retailers to buy lines at a cost-based price, will put downward pressure on the fixed component of monthly bills for fixed line customers who purchase a bundle of voice and broadband services. This is demonstrated by the competitive pricing of the first unbundled services appearing in the market.

[14] *Government Use of Communication and Information Technology: 2006*, Statistics NZ, 24 April 2007.

BROADBAND MARKET

125. Most broadband connections in New Zealand are provided over a standard copper telephone line using DSL technology. The Commission reports the number of these connections each quarter.

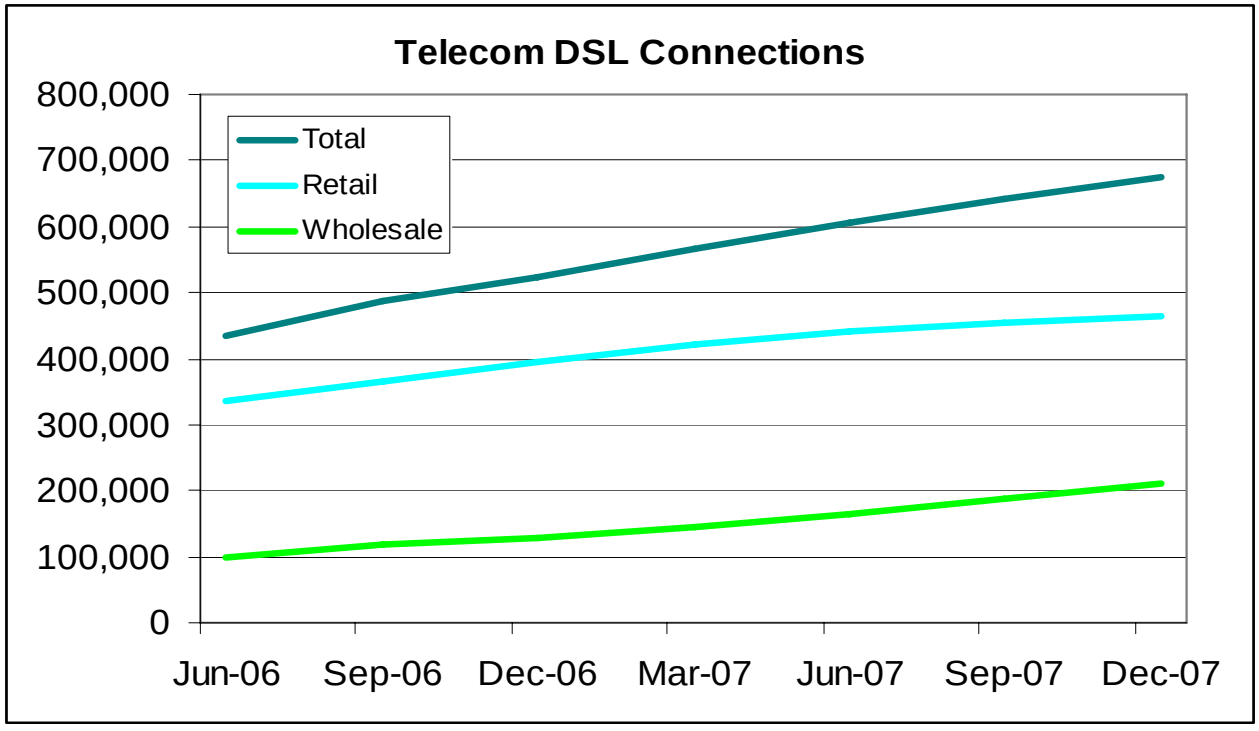
126. Some broadband connections are supplied via co-axial cable, fixed wireless technologies and satellite. The Commission reports the number of these non-DSL broadband connections every six months.

127. The total number of broadband connections supplied by all technologies has continued to grow strongly, with total connections as at 31 December 2007 standing at just over 757,000. Telecom is the retailer for around 60 percent of these connections.

128. Although the number of Telecom's retail DSL customers also continues to grow as shown by Figure 17, Telecom's share of the growth in the retail DSL market has declined markedly since June 2006, and the share taken by its competitors has similarly increased, as shown by Figure 18. The decline in market share could be caused by Telecom signing up a smaller share of new customers and/or Telecom losing existing customers to its competitors.

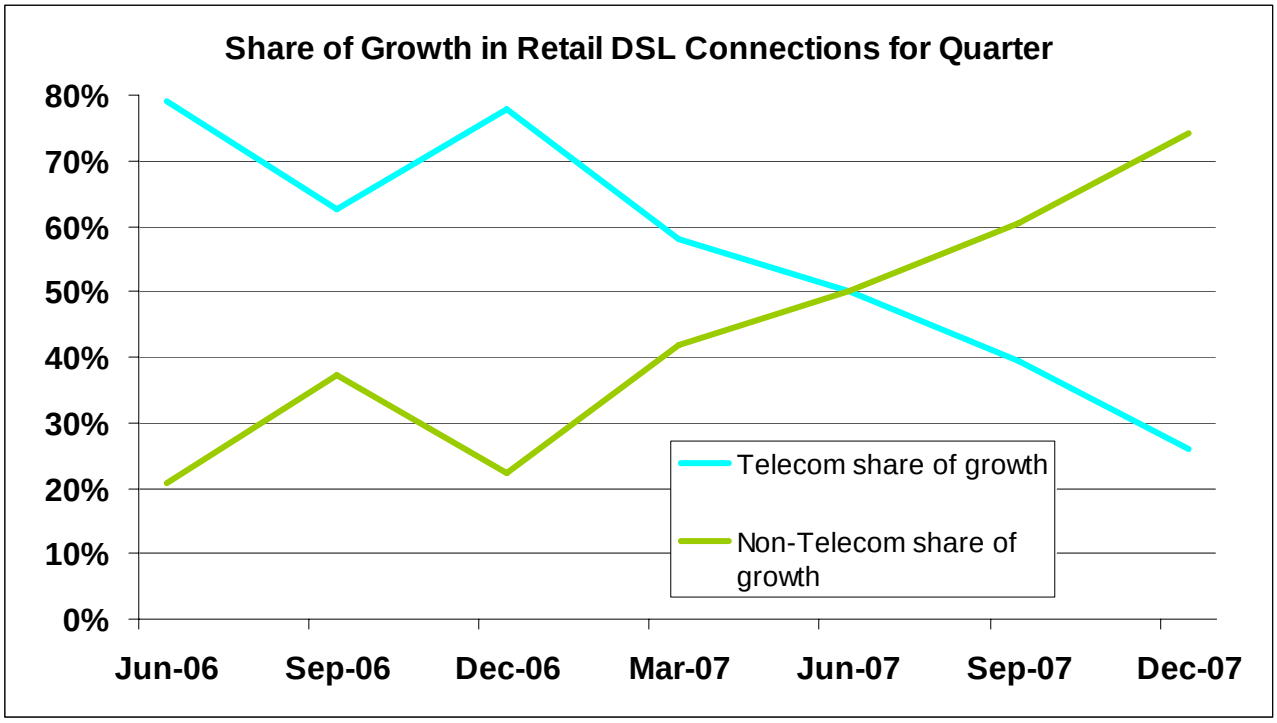
129. The Commission has not counted broadband connections supplied by way of mobile data cards as these are often a secondary connection, and are not counted by the OECD in its statistics.

Figure 17: Telecom DSL Connections



Source: Telecom

Figure 18: Share of Growth in Retail DSL Connections



Source: Telecom

Table 1: Total Broadband Connections

Total broadband connections	**31 December 2007**		**30 June 2007**	
DSL	674,000	89.0%	605,000	88.5%
Cable	48,087	6.4%	47,900	6.9%
Fixed Wireless	35,045	4.6%	31,600	4.6%
Total	757,132	100.0%	683,500	100.0%

Source: Commerce Commission, Telecom

130. The latest statistics comparing the total number of broadband connections in New Zealand with the rest of the OECD are for 30 June 2007.[15] The OECD estimated there to be 16.5 broadband subscribers per 100 population in New Zealand (88 percent of the OECD average) to give New Zealand a rank of 20 out of 30 in the OECD.

131. The 31 December 2007 broadband figures shown in Table 1 raise New Zealand's broadband penetration to about 18 broadband subscribers per 100 of population.

[15] http://www.oecd.org/document/60/0,3343,en_2649_33703_39574076_1_1_1_1,00.html

Broadband pricing

132. Teligen has recently developed a broadband price benchmarking software package referred to as T-Connect. T-Connect incorporates six consumption baskets reflecting different end-user profiles. Details of publicly available plans are used to calculate the cheapest cost of filling each basket in each of the 30 European countries covered by the EU, plus five additional Commission-specified countries (Australia, New Zealand, Japan, Canada, and the USA).[16]

133. In performing its broadband price benchmarking, the Commission has utilised T-Connect to model three basic end-user profiles. The characteristics of each profile are outlined in Table 2.

Table 2: Broadband End-User Profiles

User Type	Usage Basket	Minimum downstream speed[17]
Low User	Basket 1 (1GB per month)	No minimum
Medium User	Basket 4 (5GB per month)	2Mbps
High User	Basket 6 (20GB per month)	4Mbps

134. T-Connect has been used to calculate the cheapest plan for each country, for each of the three end-user profiles.[18] Figure 19 to Figure 21 indicate how New Zealand products rank against the best plans of other countries. The results are indicative only and need to be interpreted with caution as broadband benchmarking is problematic for a number of reasons.

135. Specifically, broadband benchmarking is difficult because different products offer varying levels of service in terms of speed, usage volume, and additional benefits such as web space and e-mail accounts. This makes it difficult to be able to determine at a glance which product is most cost efficient.

136. In addition, in some cases the plan selected for a country has a significantly higher data cap and/or significantly faster connection speed than required by the Commission specified end-user profiles. This may lead to inflated rankings for these countries, because the true value of the plans is not captured in the benchmarking process.

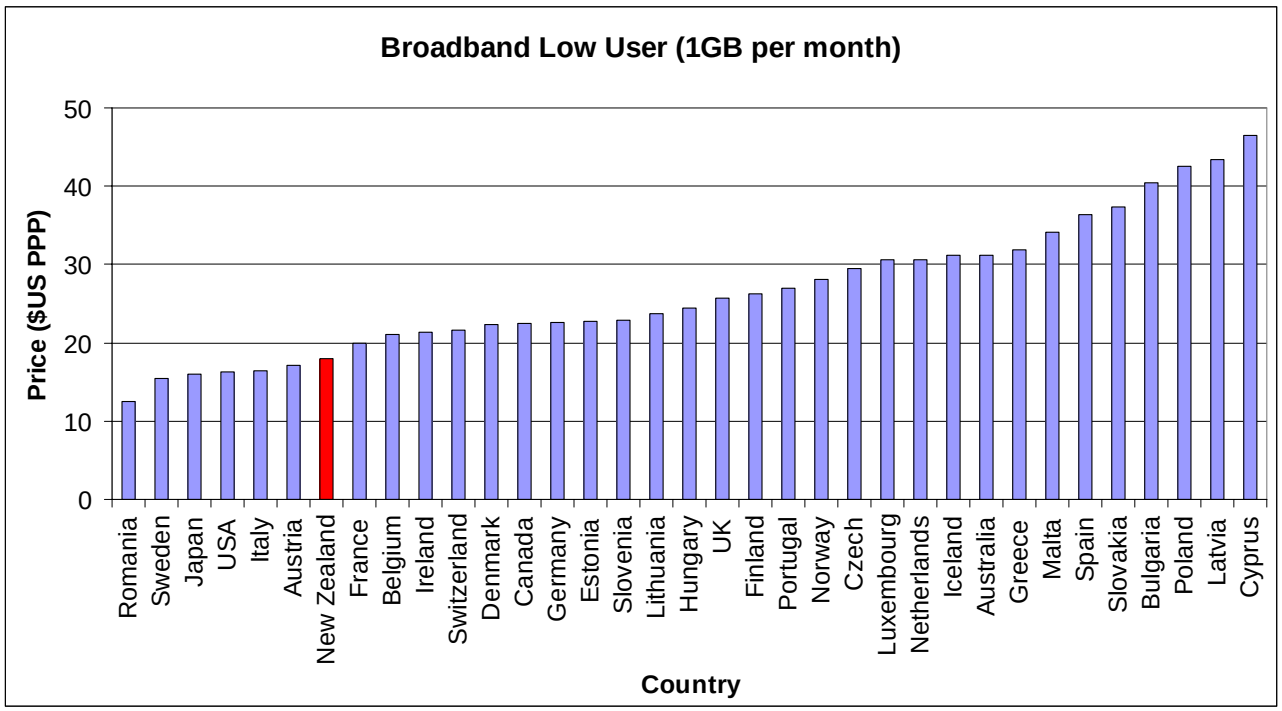
137. Bundled discounts are an additional complication when performing broadband price benchmarking. Discounts are often given to customers who purchase both their home phone and broadband services from the same provider. For example, Telecom New Zealand's broadband plans cost an additional $10 per month if the customer does not purchase landline calling services through Telecom.[19]

[16] Unlike Teligen's "T-Basket", T-Connect does not have price and service information for providers in all 30 OECD countries, so OECD rankings are not available.
[17] Compliance with the downstream speed requirement is assessed based on the maximum speeds listed for each plan. Actual speeds may be differ from speeds listed for a number of reasons, such as distance from the local telephone exchange.
[18] T-Connect only includes plans for a maximum of two providers for each country.
[19] See footnote at https://www.telecom.co.nz/broadband/select/1,10627,205836-204473,00.html

138. The Commission notes that, when listing monthly broadband rental prices in T-Connect, Teligen have assumed that the customer is taking a phone line and calling service from the same provider.[20] However, as Teligen note, there are a multitude of different pricing structures for these services, and consistency across countries can be difficult to ensure.[21]

139. Currently, most customers purchase their landline calling and broadband services from the same provider. Therefore, the Commission considers that it is not unreasonable to include 'bundled' discounts, such as those offered by Telecom New Zealand, when benchmarking broadband prices, so long as a consistent approach is applied across countries.

Figure 19: Broadband Low User Rankings[22] [23]



Source: Teligen T-Connect

140. The Commission considers that Basket 1, with a data cap of 1GB per month, represents relatively low usage plans. In benchmarking the low user profile, the Commission has catered for "entry level" plans and, consequently, has not imposed any minimum speed requirements.

141. New Zealand is ranked seventh out of the 35 countries included by Teligen. The plan selected by T-Connect as the cheapest for New Zealand is TelstraClear's PDQ Launch 1G[24], at a price of $18.04 USD/PPP (NZ$29.70) and 68% of the average.

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[20] E-mail from Teligen (Halvor Sannaes) to the Commerce Commission (Matthew Bailey), *T-Connect Bespoke for Commerce Commission*, 19 February 2008

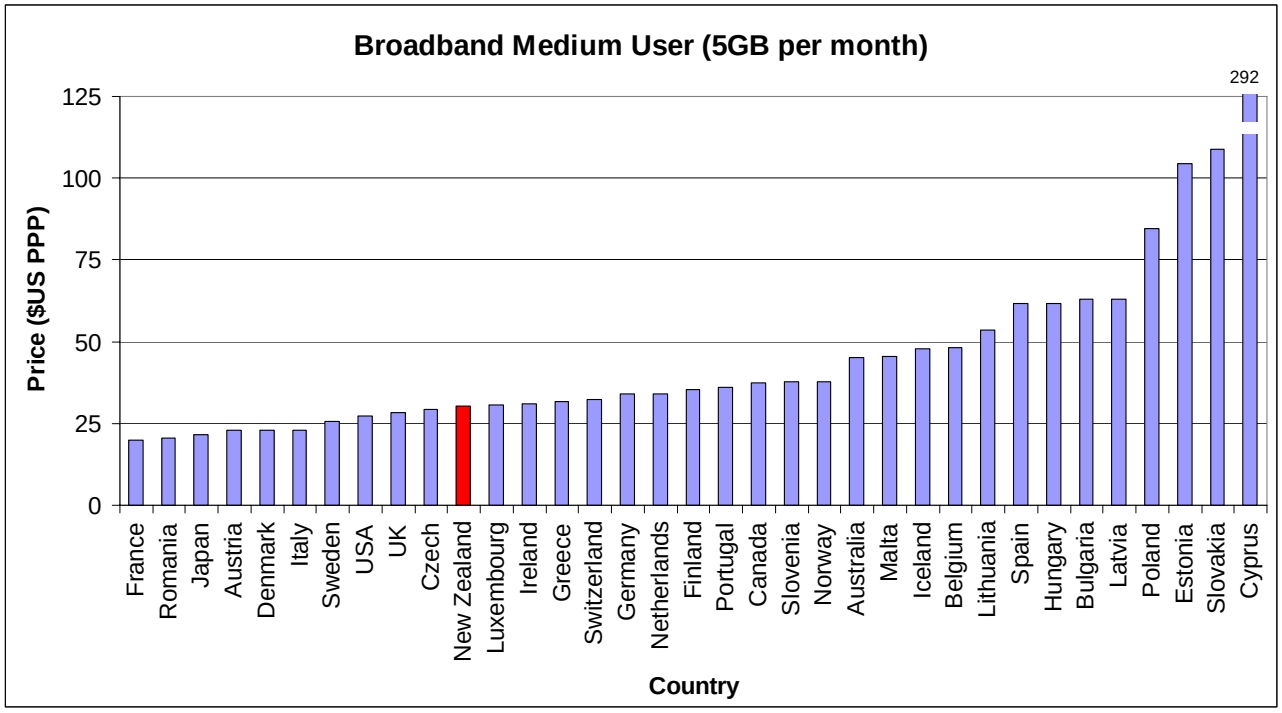
[21] ibid

[22] Many broadband plans are structured so that they have a fixed monthly price and, if the data cap is exceeded, the connection speed is reduced for the remainder of the billing period (for example, for the Telecom Go, Go Express, Explorer, and Adventure plans, the connection is reduced to dial-up speeds). To help alleviate potential inconsistencies, for plans such as these if the data cap is insufficient for the usage volume, the Commission has selected the next cheapest plan for that country. The same applies for the Medium and High User Rankings.

[23] For consistency, the Commission has reduced the price of the plan selected for Australia, Optus MyHome Classic, by A$10 to allow for a bundled discount.

142. The Commission notes that the majority of the plans selected by T-Connect for the low user profile have downstream speeds of 1Mbps or less. In the case of New Zealand, the maximum downstream speed for TelstraClear's PDQ Launch is limited to 256kbps.

Figure 20: Broadband Medium User Rankings[25]

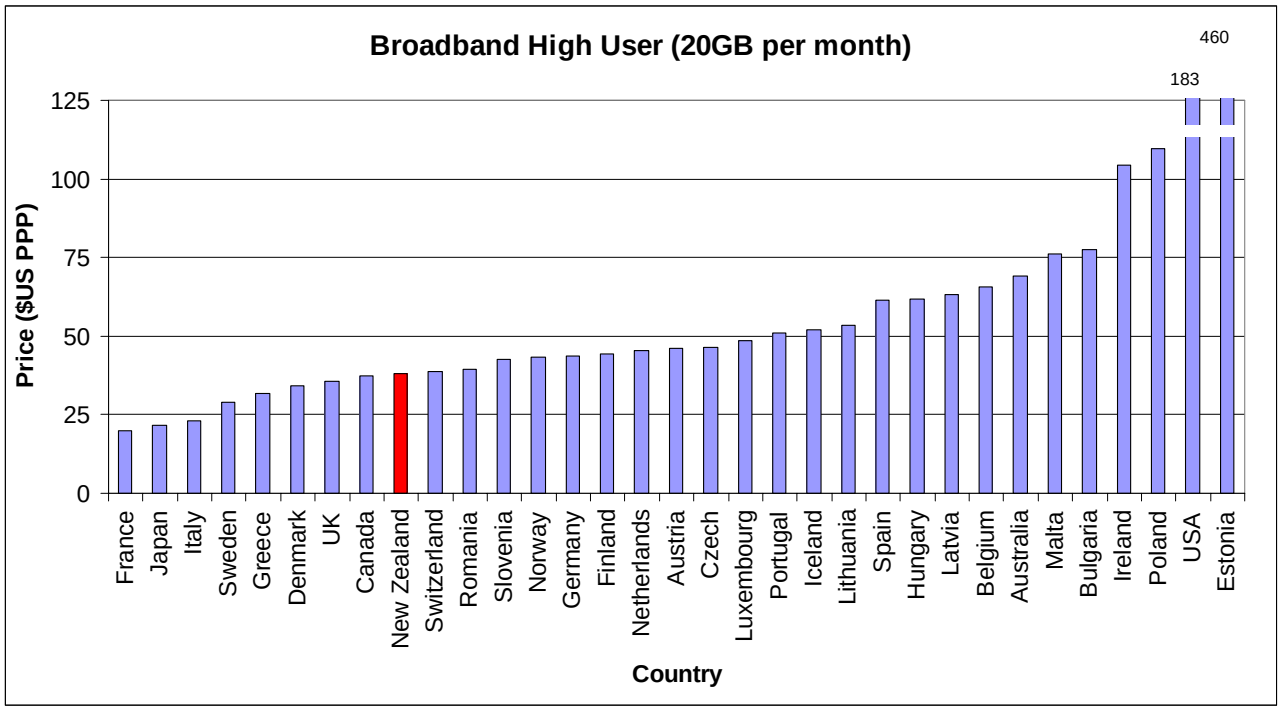


Source: Teligen T-Connect

143. The Commission has modelled the medium user profile with a usage volume of 5GB per month, and a minimum downstream speed of 2Mbps. For plans meeting these characteristics, New Zealand's ranking is11th out of the 35 countries. The plan selected for New Zealand is Telecom Explorer, at a price of $30.34 USD/PPP (NZ$49.95) and 72% of the average.[26]

[24] Only Telecom and TelstraClear ADSL plans have been included by Teligen in the T-Connect benchmarking software.
[25] For consistency, the Commission has reduced the price of the plan selected for Australia, Optus MyHome Freedom, by A$10 to allow for a bundled discount.
[26] Cyprus has been omitted from the calculation of the average for the medium user profile because the Commission considers this to be an outlier.

Figure 21: Broadband High User Rankings[27]



Source: Teligen T-Connect

144. In benchmarking the high user profile, the Commission has utilised Basket 6, which incorporates a usage volume of 20GB per month. In addition, the Commission has specified a minimum downstream speed requirement of 4Mbps.

145. For the high user profile, New Zealand is ranked 9th out of 33 countries.[28] The plan selected for New Zealand is TelstraClear's PDQ Turbo 10G, at a price of $38.05 USD/PPP (NZ$62.65) and 76% of the average.[29] It should be noted that the upstream speed constraint for this plan of 128kbps is, in general, significantly lower than comparable plans from other countries. If TelstraClear PDQ Max 10G, which allows the maximum possible upstream speed, is selected instead, New Zealand's ranking drops to 12th.

146. In summary, the Commission acknowledges that there are a number of significant difficulties associated with broadband price benchmarking, but considers there is still value to be gained from the benchmarking exercise.

147. New Zealand's broadband plans appear to be priced competitively when compared with those of similarly developed overseas countries. New Zealand prices are consistently below the average, with New Zealand ranked in the top third for each of the three end-user profiles modelled by the Commission.

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[27] The Commission notes that Verizon is the only provider listed in T-Connect for the USA. For Verizon, the only plan meeting the downstream speed requirement for the high user profile is a 7.1 Mbps downstream /768 kbps upstream business plan with no data cap. Therefore, the Commission considers that the ranking for the USA may be unfairly overstated.

[28] There are no plans listed for Cyprus or Slovakia meeting the characteristics of the high user profile.

[29] Estonia and the USA have been omitted from the calculation of the average for the high user profile because the Commission considers these to be outliers.

Broadband quality

148. Quality is an important broadband issue as download speeds and response times for the services accessed via a broadband connection can vary greatly and bear little relation to the theoretical maximums. Consumers therefore have little way of knowing what the quality of service will be like when contemplating purchasing a broadband service.

149. These factors mean that price alone is not a particularly useful comparator when comparing either different broadband plans within New Zealand or New Zealand broadband plans compared to those on offer overseas.

150. Currently there is very little publicly available data on broadband quality either for New Zealand or for other countries. The Commission is working to remedy the situation in New Zealand with its engagement of Epitiro to collect objective data on the quality of broadband services being provided to end-users. This will enable the Commission to publish quarterly summaries of broadband performance.

151. For this report, the Commission is able to draw on the data collected by Epitiro in the three months to 31 December 2007 from its first three, inner city, test sites located in Auckland, Wellington and Christchurch. The results are for the premium residential plan for each provider in those locations so may not reflect the provider's relative performance with other broadband plans or its performance in other locations. The results are shown in Appendix 1 to this report.

152. The results indicate that although Telecom is the wholesaler access provider for all the ISPs offering DSL broadband services, the backhaul and other services arranged by the ISPs mean the ISPs are able to provide a premium broadband product that is better performing than Telecom's in some respects. For example, of the ISPs tested, Xtra had the slowest non-cached HTTP download speed, longest ping time and longest DNS time, but on the up side had the equal lowest packet loss percentage.

153. The Commission and Epitiro have been consulting with interested parties on how the test results will be processed and presented in future monitoring reports.

154. Epitiro have just completed commissioning a further two test sites in each of the original three cities as well as one in Hamilton and Dunedin, making a total of 11 test sites. The results from these test sites will be included in the Commission's summary of broadband performance for the March quarter.

155. In addition, Epitiro will shortly be making publicly available a free product, ISPosure, which end-users can download to their PCs to allow them to run the various broadband performance tests. The results of the tests, in addition to being provided to the end-user, will be fed back to Epitiro and used to supplement the other test data provided to the Commission. This will allow assessment of broadband performance in locations outside the main centres.

156. Finally, there is a third Epitiro product, Datalite, which will assist in the collection of information on broadband performance. This product, once deployed, will show the impact that consumer premises equipment (CPE) has on end-user experience. This will provide a

clearer view of the actual service performance delivered by ISPs and assist end-users to improve their broadband performance.

Conclusion

157. The price of residential broadband services in New Zealand appears to be lower than the average of other similarly developed countries. The fact that broadband service is usually bundled with other services does make price comparisons difficult, and in future the Commission may compare complete bundles of fixed line and broadband services.

158. The broadband market is growing strongly and exhibiting clear signs of competition, with Telecom retailing around 60 percent of total broadband connections. Telecom's competitors' share of the growth in retail DSL connections rose over the year to end at above 70 percent in the December quarter.

159. It is encouraging that Epitiro data shows that despite Telecom being the wholesale access provider for all the ISPs offering a DSL service, the backhaul and other services arranged by the ISP appears to make a significant difference to the quality of the broadband service delivered to the end-user.

WHOLESALE MARKETS

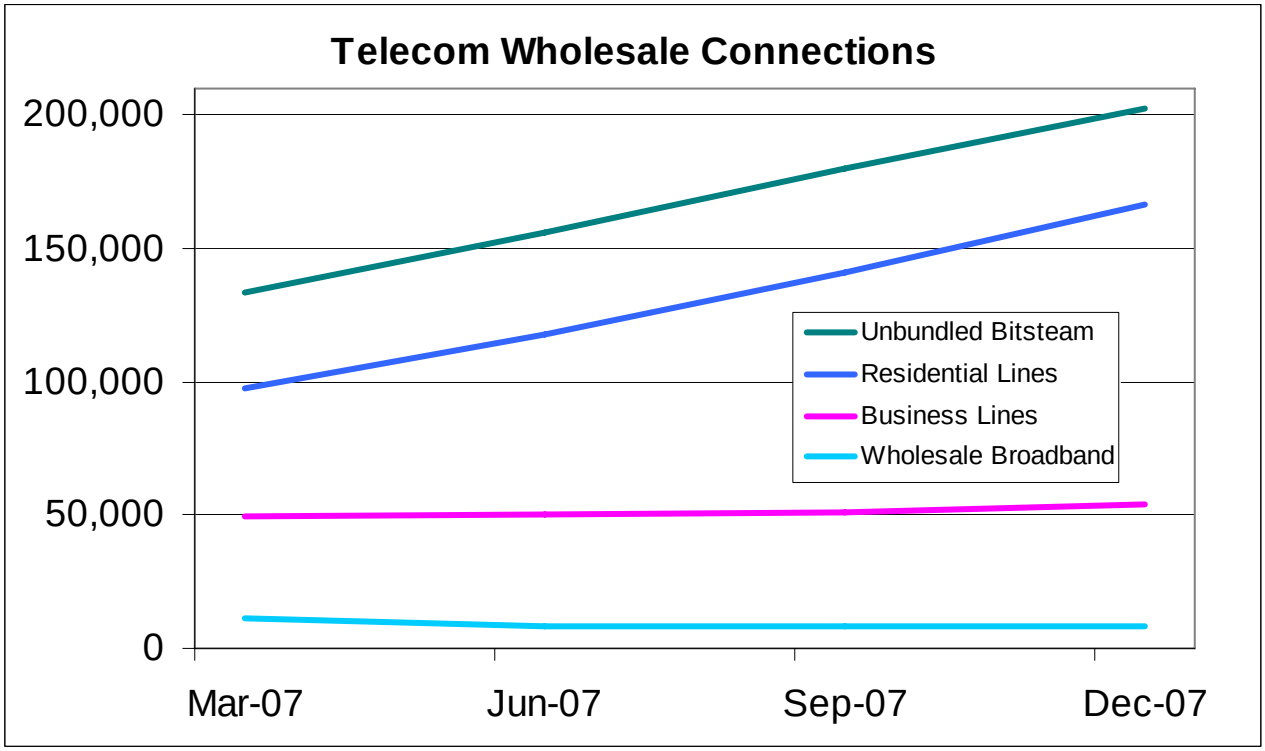
160. Activity in wholesale markets tends to be concentrated on a small number of products that have a relatively large number of customers. Telecom as the former incumbent owning the vast majority of the country's telecommunications infrastructure is the predominant wholesaler.

161. The Telecom wholesale product with the largest number of end-users is residential Unbundled Bitstream Service (UBS), as can be seen from Figure 22, with Telecom wholesaling a relatively high proportion of its broadband DSL connections. UBS connections now make up around one third of total DSL connections and are growing at a faster rate than Telecom's retail DSL connections.

162. Following not too far behind in total number is wholesaled residential lines, which have also been growing strongly. The number of wholesaled business lines is also significant.

163. The only other wholesale products sold in significant numbers are Wholesale Broadband Service (WBS), Unbundled Partial Circuits (UPC) and ISDN Basic Access.

Figure 22: Telecom Wholesale Connections



Source: Telecom

164. It is apparent that some providers have been retailing some broadband products at a loss, particularly bundled broadband promotions offered in the latter half of 2007. Such action was

taken to retain or grow customer numbers in anticipation of local loop unbundling, which has just started to make Telecom lines available at a cost-based price.[30]

165. As has been discussed above, New Zealand's retail prices for broadband products are lower than average, while prices for traditional fixed line voice services are higher. The launch of local loop unbundling will allow retailers to develop their own infrastructure to offer more differentiated services while giving them scope to lower the price for bundles of services including broadband, line rental and voice calling. The beginning of this trend can be seen in the competitive packages of unbundled services launched by Orcon.

166. While the wholesale market for broadband services looks very healthy with strong growth, much of this is likely to be in anticipation of local loop unbundling and other regulatory changes giving retailers the opportunity to earn higher margins. Developments over the next few years will show how sustainable this growth has been. It is possible that UBS and wholesale residential line connections will level off, or even fall, as some of these are converted to unbundled local loop connections.

167. Telecom's has announced its cabinetisation plans which will reduce the number of lines in exchanges that can be accessed by Telecom's competitors. In response, the Commission is progressing sub loop unbundling, which will allow carriers to access lines that are fed directly from Telecom's distribution cabinets.

168. One calling service that carriers without their own mobile network may struggle to earn a return on, particularly in the business markets, is fixed-to-mobile calling. Despite recent reductions, the wholesale rate for fixed-to-mobile calls is still considerably above cost. The current mobile termination rate is 17 cpm and under the commercial undertaking will drop to between 12 cpm (for Telecom) and 14 cpm (for Vodafone) by the year ending 31 March 2012. As mentioned above, cost modelling work carried out for the ACCC suggested that the cost for an efficient operator operating in Australia would be in the range of 6.1 to 6.6 cpm (NZ 6.5 to 7.0 cpm).

169. Both Telecom and Vodafone are offering packages to businesses that price fixed-to-mobile calls at close to or below the wholesale cost. This suggests that integrated fixed and mobile operators enjoy a significant premium on the termination of mobile traffic that is not available to other carriers. As discussed above, fixed-to-mobile calling is the largest calling cost of both households and businesses. Volumes are also slowly growing, unlike most other types of voice traffic.

170. Offering attractive fixed-to-mobile pricing appears to be a way of gaining or at least retaining market share, particularly in the business market. The Commission will be concerned if it becomes apparent that non-integrated operators cannot compete effectively because of their inability to offer competitively priced fixed-to-mobile calling.

171. Both Telecom and Vodafone entered into agreements to offer wholesale mobile services to other carriers in 2007. This was expected to be an area of growth in 2008 and to lead to more bundling of mobile services with fixed line services. However, none of the carriers who

[30] Jenny Keown, Orcon to Match Telecom Fixed Line, *The New Zealand Herald*, 23 January 2007

entered into agreements with Vodafone have yet launched a retail mobile service, and it is unclear when they will.

Conclusion

172. The Commission considers well functioning and cost-based wholesale telecommunications markets are necessary to underpin competition in the retail markets. If there is to be sustained competition in the retail markets, retailers need to be able earn appropriate margins.

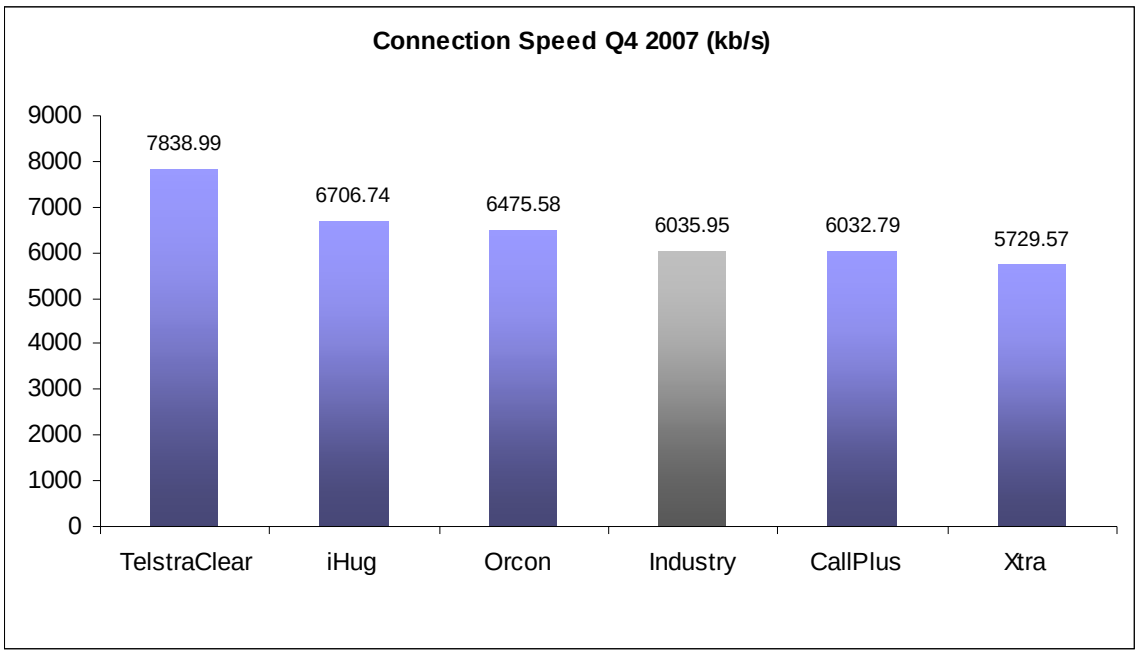
173. The Commission has some concerns with the high wholesale price of particular services, such as fixed-to-mobile termination, that are needed by retailers to offer a full bundle of telecommunications services. The Commission will be watching closely to see how these wholesale markets develop.

APPENDIX 1 – BROADBAND QUALITY TESTING RESULTS

1. The results shown in this appendix are average measures for the three months to 31 December 2007 for each ISP's premium residential broadband DSL plan delivered to an inner city location in Auckland, Wellington and Christchurch. The results are, therefore, not necessarily indicative of the performance of other plans offered by the ISP or the ISP's broadband performance in other locations.

2. The first test is connection speed, which is one measure of the speed of the broadband service supplied to the customer. Line connect speed is the connection speed reported by the modem after connection to the ISP has been initiated. It represents an upper limit on the customer experience. Sustained data rates are often slower than the connect speed.

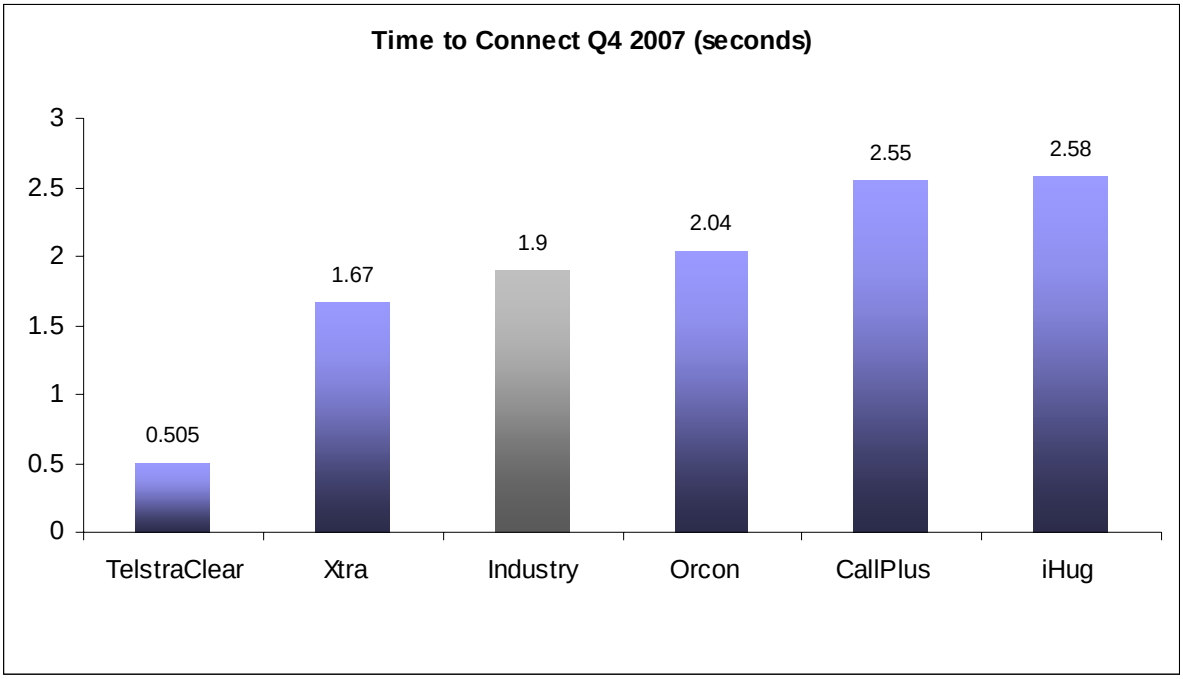
Figure 23: NZ ISP's Connection Speeds



Source: Epitiro

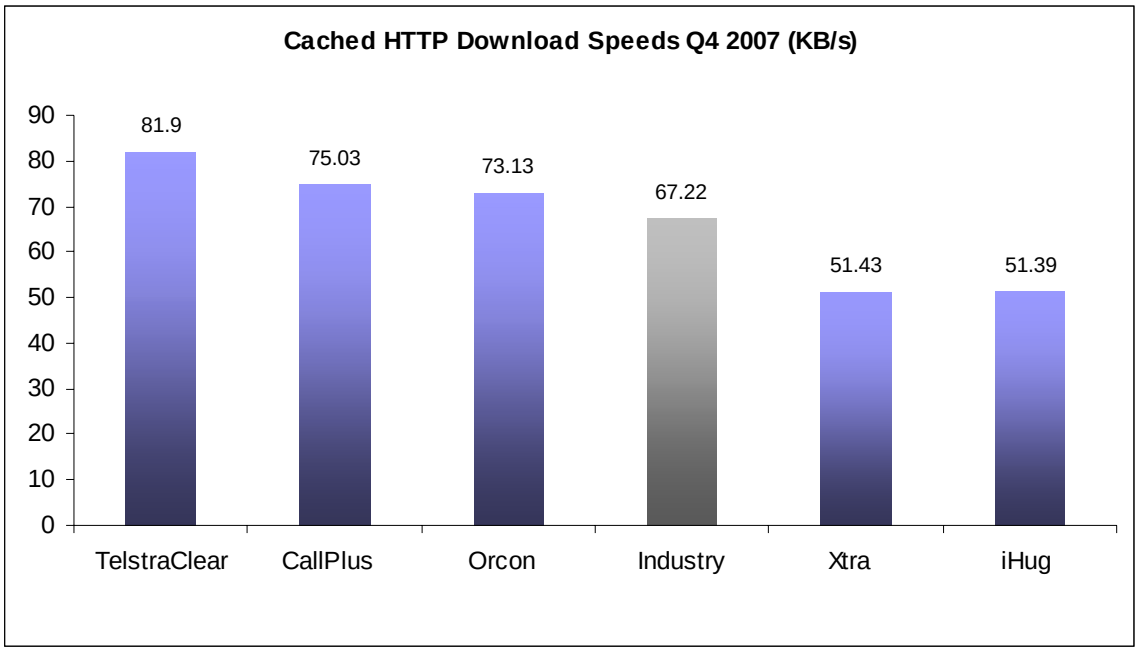
3. The second test is time to connect. An ISP has to recognise a broadband modem and allow it to connect to the ISP network. The time to connect measure is the average time that it takes for a modem to be recognised and connected after it is turned on and available to connect. This involves measuring a number of stages, including modem answer, address assignment and authentification. The results are shown in Figure 24.

Figure 24: NZ ISP's Time to Connect



Source: Epitiro

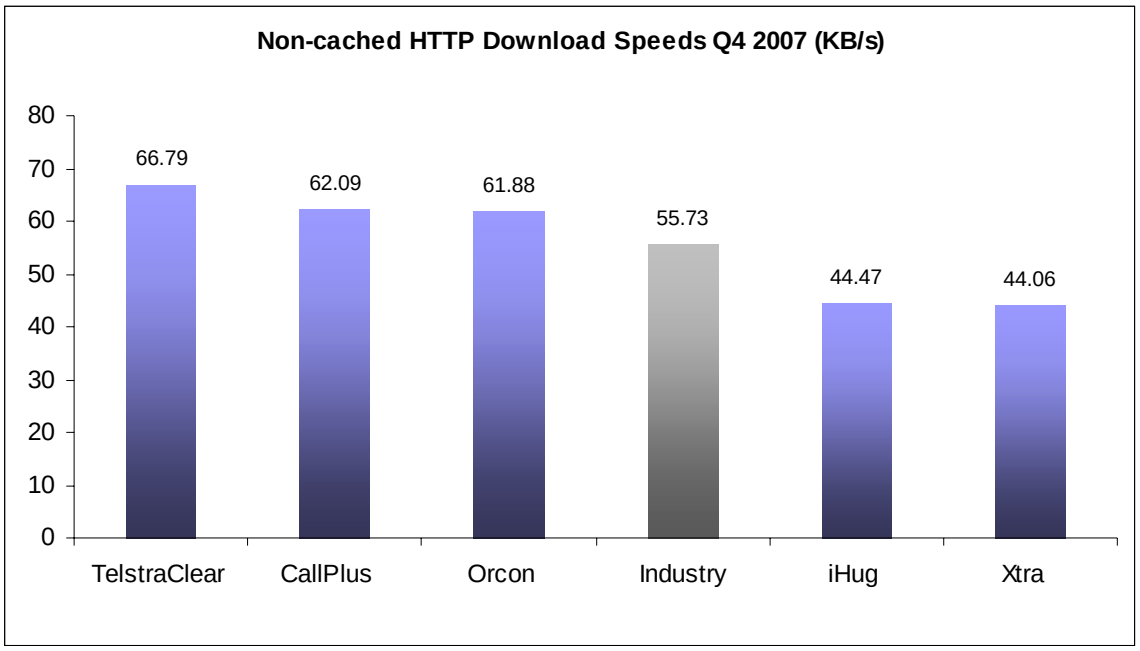
Figure 25: NZ ISP's Cached HTTP Download Speeds



Source: Epitiro

4. Web pages are stored on servers that are often located in foreign countries. Content fetched by users may be cached by being held on a NZ based server. The Cached HTTP download speed test indicates how quickly an ISP may be able to distribute content over the New Zealand portion of their network by testing how fast specific webpages are downloaded.

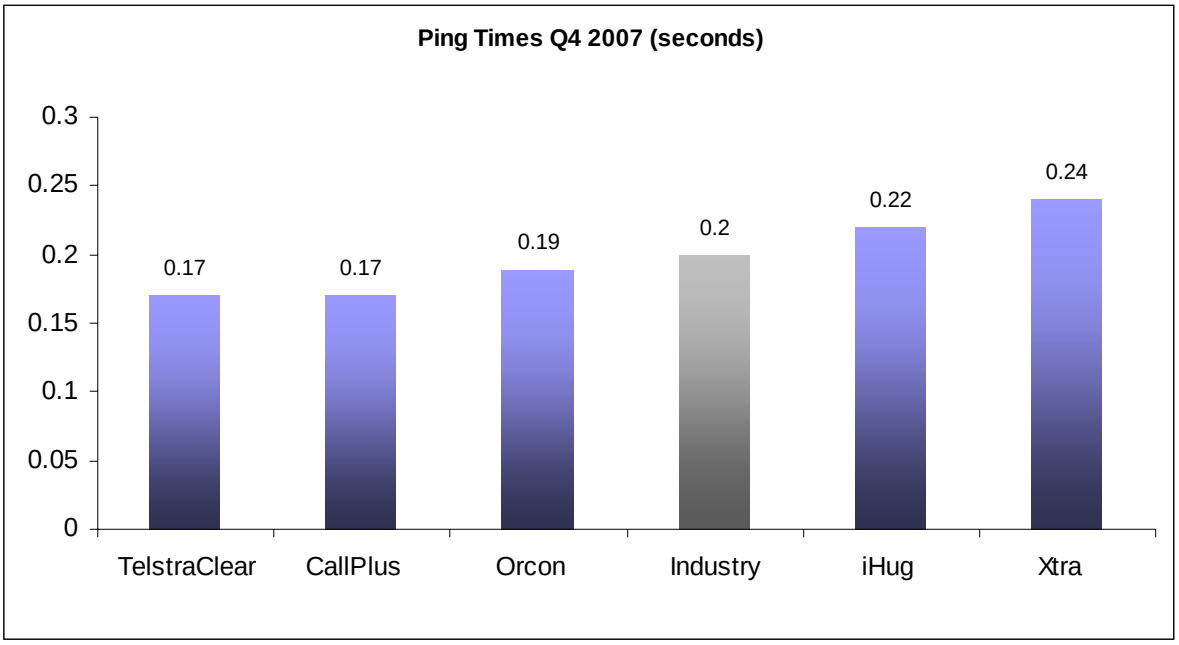
Figure 26: NZ ISP's Non-cached HTTP Download Speeds



Source: Epitiro

5. The non-cached HTTP download speed test ensures that the webpage request bypasses any caches present in the network, and so goes all the way back to the original website, making use of international bandwidth where necessary. This download speed test therefore provides an estimate of the user experience in downloading web pages from foreign locations. Short times equate to a better experience.

Figure 27: NZ ISP's Ping Times

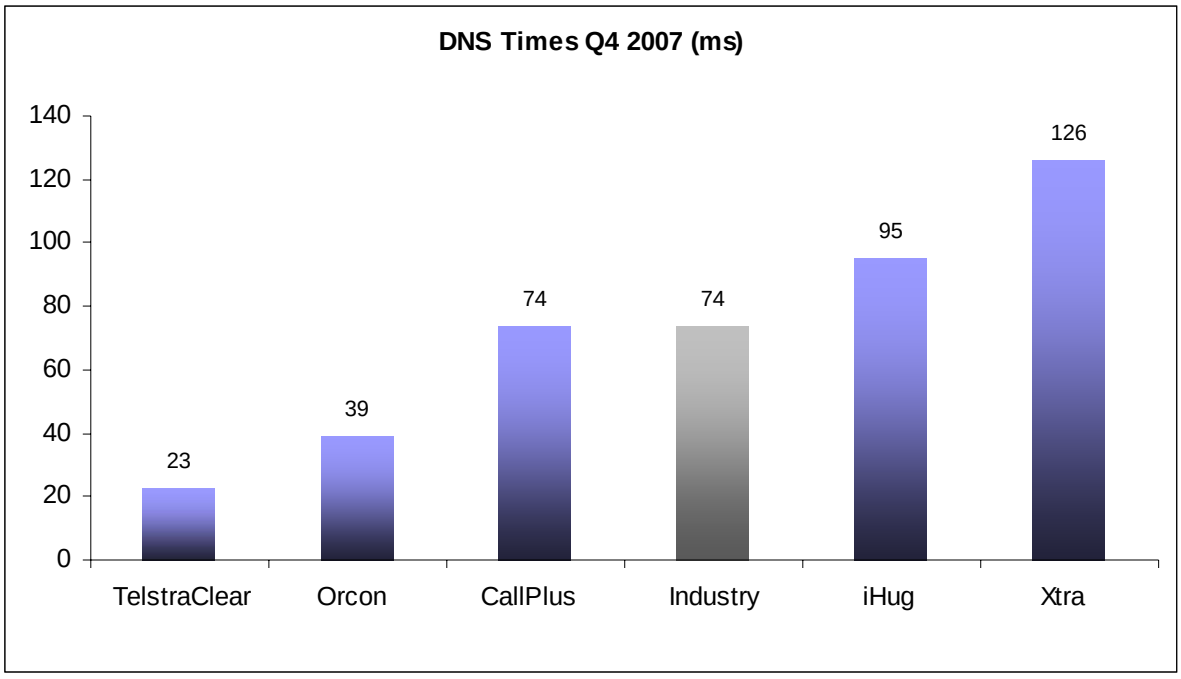


Source: Epitiro

6. A ‘ping’ is the time taken for a terminal on the internet to send a request to a remote server and for that server to respond with an acknowledgement. The ping time test is a measure of how quickly the ISP’s network can respond to a request, so is also known as a measure of latency. Shorter ping times are better.

7. A Domain Name Server (DNS) provides a service akin to a phone directory. A DNS takes a human readable addresses, e.g. www.comcom.govt.nz and it converts the address to a form that is meaningful to the internet. The quicker this happens, the more promptly the internet will respond to a click on a hyperlink. In technical terms, the DNS time test records the time taken to resolve a fully qualified domain name to a corresponding IP address.

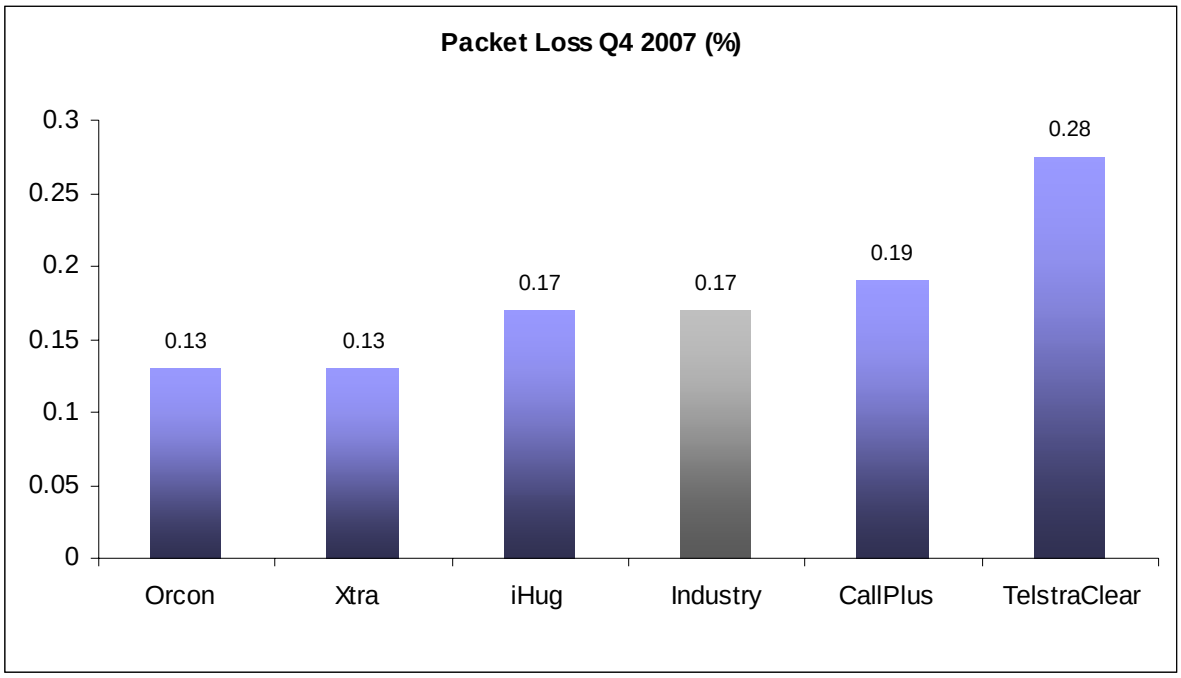
Figure 28: NZ ISP’s DNS Times



Source: Epitiro

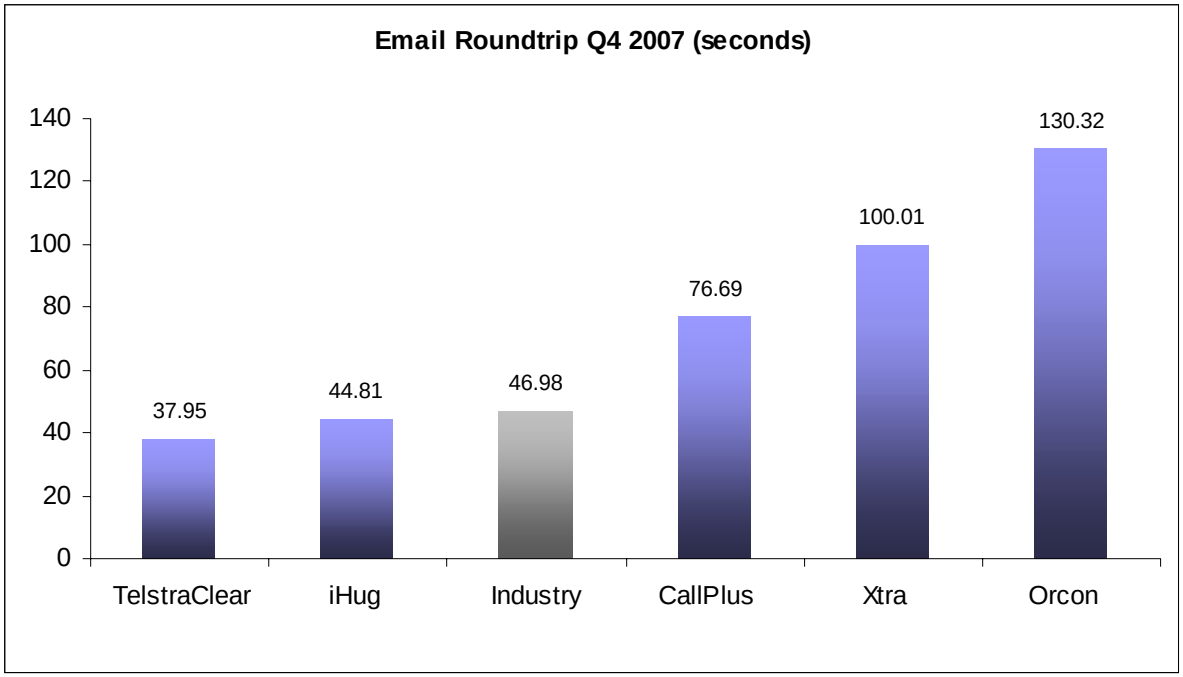
8. The internet transmits information as a string of packets. These packets are sent to a destination perhaps via different paths. One of the hazards they face is that they may be lost, and if they are lost then they have to be resent, resulting in a delay in the transmitted material becoming visible to the user. Packets get lost if a network is busy. A lower rate of lost packets is better. The packet loss percentage test records the average package loss percentage experienced during individual tests and an overall packet loss test. The results for this test are shown in Figure 29.

Figure 29: NZ ISP's Packet Loss Percentage



Source: Epitiro

Figure 30: NZ ISP's Email Roundtrip Times



Source: Epitiro

9. Email is sent over the internet using the ISP's mail servers. If these servers are busy then they may take a longer time to send a message. The Email roundtrip time test measures the time that it takes for an email to be handled by the server. A shorter time is better.