ANNUAL TELECOMMUNICATIONS MONITORING REPORT 2009

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LIST OF DEFINED TERMS AND ABBREVIATIONS

B&K	Bill-and-Keep - A pricing scheme for the two-way interconnection of two networks under which the reciprocal call termination charge is zero - that is, each network agrees to terminate calls from the other network at no charge.
CDMA	Code Division Multiple Access – a US developed mobile phone standard. Originally second generation but upgraded to deliver third generation services to compatible handsets.
CPI	Consumer Price Index – an index used to measure inflation.
cpm	cents per minute
DSL	Digital subscriber line – method of transmitting high speed data and voice simultaneously over a copper phone line.
FTM	Fixed-to-mobile
GSM	Global System for Mobile communications – a widely used digital, second generation mobile phone standard.
IP	Internet Protocol – method that computers use to communicate over the internet
ISP	Internet Services Provider
ITU	International Telecommunication Union
MTAS	Mobile termination access services, which for the purposes of the Commission's recent MTAS investigation were mobile-to-mobile termination, fixed-to-mobile termination and termination of SMS messages.
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.
TCF	Telecommunications Carriers' Forum
SIM	Subscriber Identity Module – commonly known as a SIM card that contains a microchip that stores data that identifies the user, for use in GSM and compatible 3G mobile phones.
SMS	Short Message Service – commonly known as a text messaging, is a service for sending short messages between mobile devices.
STD	Standard Terms Determination – the terms on which a designated access or specified service must be supplied by access providers to all access seekers requesting the service.

Telecom	Telecom Corporation of New Zealand Limited and Telecom New Zealand Limited
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 – a regulated service giving wholesale access to Telecom's DSL full speed broadband service although a commercial variant with a slower speed is also available.
UBS	Unbundled Bitstream Service – a service no longer regulated that gives wholesale access to Telecom's DSL broadband service. When regulated, the service had its upstream speed limited to 128 kbps.
UCLL	Unbundled Copper Local Loop – wholesale access to the copper line connecting a phone user to the local exchange.
UMTS	Universal Mobile Telecommunications System (UMTS) – the 3G successor to the 2G GSM standard. The most common form of UMTS uses W-CDMA as the underlying air interface.
VoIP	Voice over Internet Protocol – a way of sending voice calls over a data connection like a broadband connection.
WCDMA	Wideband Code Division Multiple Access – a third generation mobile phone standard often provided as a progression from the GSM standard.

EXECUTIVE SUMMARY

This report presents the Commerce Commission's annual assessment of the state of New Zealand's telecommunications markets. As well as providing an overview of telecommunications markets in 2009, the report also assesses the progress that has been made since major amendments made to the Telecommunications Act in late 2006 came into effect.

The Indicators analysed for this annual report suggest that competition in telecommunications markets in New Zealand has increased between 2006 and 2009, with consumer choice and service quality improving while prices have fallen. Despite increased competition, a few large firms still have significant market shares. Markets remain concentrated when compared with other jurisdictions such as the United Kingdom and Australia.

The total telecommunications industry investment has continued to increase since 2006, whereas retail revenues have been declining. Investment is important for the replacement and upgrade of existing telecommunications networks, and in particular for the growth in data services, where additional capacity is required in order to facilitate increased quality and speeds.

Alternative providers of broadband services on Telecom's network have increased their market share from 24 per cent to 37 per cent in the last three years. Over the same period, broadband uptake has doubled and New Zealand has improved its position from 22 in 2006 to 18 in 2009 when compared with the 30 OECD countries. Uptake of broadband is now around the OECD average, and broadband speed, availability and quality have improved significantly.

In the mobile market the entry of a new network operator, 2degrees, has had an immediate impact in terms of consumer choice and competitive offerings. Although there is evidence that competition in the mobile market is increasing following the launch of 2degrees, mobile voice usage remains low by international standards. In addition, price and usage vary significantly depending on whether calls or text messages are sent to another subscriber on the same network or to a subscriber on a different mobile network. On the positive side, both Telecom and Vodafone have upgraded their networks for 3G capability, and a number of mobile virtual network operators have entered the market.

Key retail and wholesale market trends for fixed line and mobile services that have been observed in the 2006 to 2009 period are outlined in the following summary:

Key market trends and observations

- Increased total investment in telecommunications over time from $917 million in 2005/06 to $1.693 billion in 2008/09.
- Sustained growth of fixed broadband connections from 480,000 in 2005/06 to more than 1,000,000 by the end of 2009.
- Increasing broadband performance with most customers on full speed plans.
- Constant retail revenue across the telecommunications industry as a whole.
- Increasing revenue from fixed line monthly charges and decreasing revenue from fixed line calling.
- Decreasing revenues from mobile voice services and increasing revenues from mobile data services.
- Early signs of fixed-to-mobile substitution with total mobile call minutes growing strongly while fixed line voice minutes are decreasing.

INTRODUCTION

Purpose of this report

This report is released under section 9A of the Telecommunications Act 2001, which authorises the Commission to monitor telecommunications markets, and requires the Commission to make available reports, summaries, and information resulting from carrying out these functions. The Commission's sector monitoring functions include monitoring competition in, and the performance and development of telecommunications markets, as well as conducting inquiries, reviews, and studies relating to the telecommunications industry for the long-term benefit of end-users of telecommunications services in New Zealand.

This report is the Commission's third annual telecommunications market monitoring report, and looks at the state of telecommunications markets in New Zealand and developments that occurred largely during the 2009 calendar year. The report also looks at trends in telecommunications markets for the three year period since the 2006 amendments came into effect. The Commission issued a half year monitoring report on 12 November 2009.

Data sources

Since the publication of its first annual telecommunications market report in March 2008, the Commerce Commission has continued to collect primary statistical data from telecommunications operators in order to understand current trends in the New Zealand telecommunications markets and to inform the public and the industry[1].

The data contained in this report originates from various sources[2], but mainly from the results of the Commission's 2008/09 Telecommunications Industry Questionnaire. The data from the industry questionnaire is for the year ending 30 June 2009, but more recent industry data, including data as at 31 December 2009 and later, is also used where available.

The Commission would like to thank operators who have submitted data for this report and looks forward to their continued co-operation in the future. It is the Commission's intention to make ongoing improvements to enhance its processes for both data collection and analysis in future reports.

The Commission welcomes any comments or feedback on any aspect of the report, and would be particularly interested in suggestions that may improve the accuracy of information received, would make its collection easier or would increase its usefulness.

[1] http://comcom.govt.nz/IndustryRegulation/Telecommunications/MonitoringandReporting/DecisionsList.aspx
[2] Where publicly available data has been used, for example from annual financial reports, its sources are indicated accordingly.

OVERVIEW: MARKET AND REGULATORY FRAMEWORK

Background

The 2006 Amendments

The Telecommunications Amendment Act (No 2) 2006, passed into law on 18 December 2006, introduced new designated (regulated) services including the unbundled copper local loop and sub loop (UCLL and SLU) access services, their corresponding co-location and backhaul services, and unbundled bitstream access (UBA) services. UBA services include basic and enhanced variants, as well as the option to purchase with or without the PSTN service and a regulated backhaul service. The amendments to the Telecommunications Act 2001 also provided for enhanced monitoring, operational and accounting separation for Telecom as well as multilateral and industry-wide STD processes defining the terms and conditions under which the designated operator has to grant access to its facilities to other service providers.

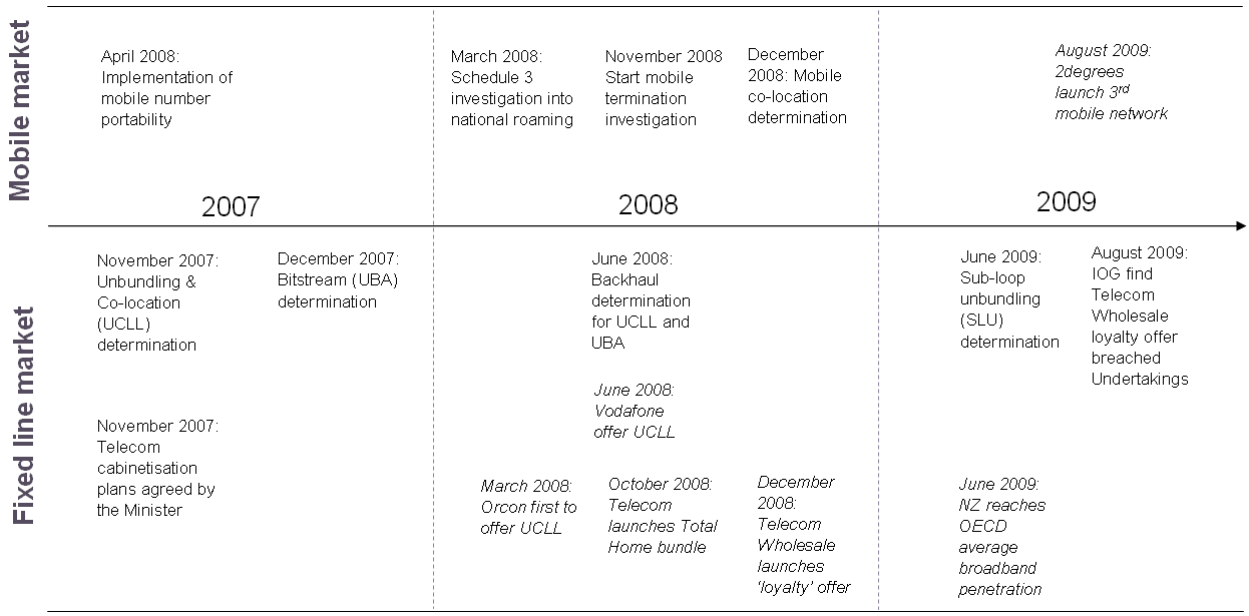
Access to additional wholesale services (UCLL and related services at cost and UBA at retail-minus based prices) was designed to promote competition in the downstream retail market for the long-term benefit of end-users. A particular focus of the 2006 reforms was to improve New Zealand's broadband performance and access to high speed broadband services. [3] The monitoring reports published by the Commission have a particular focus on the effects that access at the wholesale level is having on the downstream retail market.

Developments 2007 - 2009

Figure 1 provides an overview of regulatory and other relevant developments in both the mobile and the fixed line markets since the amendments to the Telecommunications Act came into force at the end of 2006.

[3] Minister of Communications and ICT media release of 13 December 2006

Figure 1: Overview of Regulatory and Market Developments



Source: Commerce Commission

Key market statistics[4]

Snapshot: Telecommunication industry in NZ	2005/06	2006/07	2007/08	2008/09
Fixed lines (mil)	1.85	1.85	1.88	1.87
Number of unbundled lines	0	0	3,000	37,000
Fixed line broadband connections per 100 population	11.6	16.3	19.8	22.8
Mobile connections (mil)	3.80	4.25	4.58	4.70
Active mobile connections per 100 population	92	102	108	109
Share mobile pre-paid (%)	68.2	67.8	67.6	66.1
Reported total retail revenue ($bn) [a]	4.92	4.9	4.88	4.74
Reported total wholesale revenue ($bn)[b]	-	-	-	1.3
Total fixed line revenues ($bn)	2.99	2.93	2.9	2.82
Telecom NZ share of fixed line revenues (%)	80	79	78	76
Mobile retail revenues ($bn)	1.93	1.97	1.98	1.92
Chargeable fixed voice call minutes (bn)	7.41	7.00	6.71	6.67
Non-chargeable fixed voice call minutes (bn)	-	-	5.31	4.67
Mobile voice call minutes (bn)	2.76	3.17	3.66	4.24
Average monthly household spend ($) [c]	-	*119*	-	-

[a] Other telecommunications revenue has been omitted from first three years in series and from fixed line revenue in 2008/09

[b] Reporting started in 2008/09

[c] Data published every three years; excludes expenditure on pay TV

Source: Commerce Commission

[4] The data is for the year to 30 June unless otherwise specified.

Key wholesale access services

UCLL and UBA/UBS services are an essential input for the provision of fixed broadband and voice services to retail customers.

UCLL enables operators to site their own equipment in the incumbent's local exchange, lease the local loop (the twisted copper pair from the exchange to the customer's premises) and, after connecting the local exchange to their own network, provide either DSL broadband or DSL broadband and fixed voice services. The unbundling operator provides both DSL broadband and voice services and the customer's relationship with the incumbent ceases.

Both UBS and Basic UBA allows service providers to offer own-branded Internet-grade Broadband services to home and small enterprise end-users, delivered over Digital Subscriber Line (DSL) access lines. In addition to that enhanced UBA offers a real-time channel dedicated for voice simultaneously with a second channel to deliver a best-effort internet service. There are several variants for both regulated UBA and UBS services, depending on the service offered[5].

Wholesale access services	2007	2008	2009
UCLL	0	26,000	47,000
UBS	202,143	255,899	277,159
Basic UBA	0	3,912	13,379
Enhanced UBA	0	25	456

As at 31 December 2009, 47,000 lines had been unbundled and used by alternative service providers to provide a retail service. This corresponds to 3.6 per cent of the incumbent's approximately 1.32 million urban copper access lines.

The majority of wholesale DSL services sold are UBS with a moderate uptake of UBA. As at December 2009, UBS services made up 95 per cent of the 290,994 wholesale bitstream access services, with only 13,835 basic and enhanced UBA services supplied. Access seekers have preferred to remain using the UBS services originally provided by Telecom prior to the 2006 amendments rather than transfer to the new regulated services. However, Telecom intends to grandfather UBS plans from 1 June 2010, and withdrawn those by March 2011[6], at which time all wholesale bitstream services will be UBA.

[5] More information can be found on Telecom Wholesale's website on http://www.telecomwholesale.co.nz/products

[6] http://www.telecomwholesale.co.nz/broadband_product_plan Telecom Wholesale note that under 'grandfathering' rules no new end-users may obtain the product, existing end-users can keep the instances of the product they have; and if any existing customer moves, the product will be withdrawn.

Investment in Telecommunications Markets

Key market trend:
Increased total investment in telecommunications over time

The total annual investments in telecommunications markets increased significantly from $917 million in 2005/06 to $1.693 billion in 2008/09. Telecom has the highest share of total investment, doubling it over three years to 2008/09 to reach $1.2 billion. This amounts to 71 per cent of total industry investment.

The following factors contributed to the increase in private telecommunications industry investment:

- Under Operational Separation Undertakings Telecom committed to upgrade its network[7] to be high speed capable by 2012. The network upgrade will be done by deploying street cabinets[8], shortening the copper local loop and replacing the feeder link with fibre (referred to as the 'cabinetisation' plan) to allow the delivery of higher speed services. According to Telecom, it will spend approximately $1.4 billion rolling out 3,600 new cabinets[9].
- Telecom launched its XT mobile network in May 2009. Telecom reports a total investment figure of $574 million over a two year period[10].
- Vodafone made investments to extend its 3G coverage to 97 per cent of the population (according to Vodafone[11]) just prior to Telecom's XT network launch in May 2009.
- The new mobile market entrant 2degrees launched New Zealand's third mobile network in August 2009. According to press releases, the total investment amounts up to $250 million[12].
- A number of access seekers including Orcon, Vodafone and TelstraClear invested in infrastructure in order to be able to provide telecommunications services using the unbundled copper loop (UCLL) service.
- Utilities and telecommunications wholesalers have invested in extending fibre backhaul and access networks.

In addition to the private investments summarised above, the government announced in 2009 that it would invest $1.5 billion to assist private investors with the rollout of an ultra-fast fibre access network. This is likely to have a significant impact both on investment activities in the future as well as on the market as a whole.

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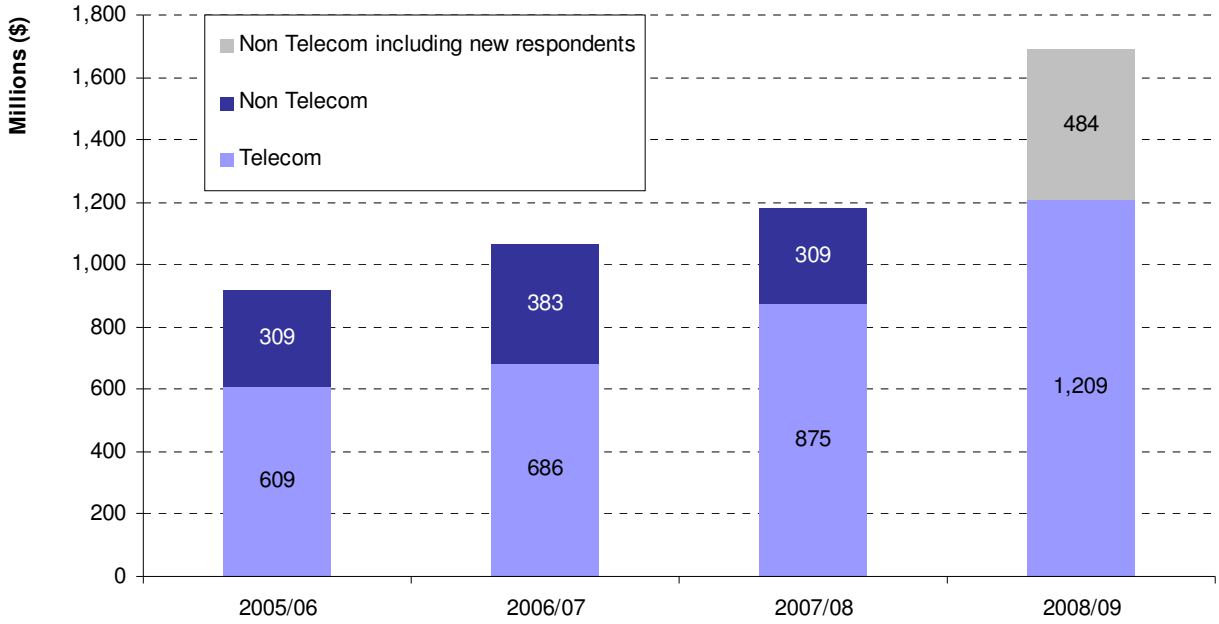
[7] Using ADSL2+/VDSL2 architectures to allow at least 80 per cent of the PSTN lines to deliver speeds of at least 10 Mbps.
[8] For more information about the network upgrade see: http://www.chorus.co.nz/enhancing-the-broadband-network
[9] http://www.nzherald.co.nz/telecommunications/news/article.cfm?c_id=93&objectid=10499187
[10] In a media release dated 27 April 2009, Telecom noted that it "is investing over $574 million in the new network over a two year period which reflects investment in the core network, retail stores and services, and extensive investment in fibre to ensure an unparalleled customer experience". See Telecom media release, World class 3G mobile network comes early, 27 April 2009.
[11] http://www.vodafone.co.nz/about/media-centre/2009-media-releases/3g-coverage-for-all-new-zealanders.jsp

Private investment initiatives

The annual investment by surveyed telecommunications providers has nearly doubled in the three years since the 2006 financial year, with Telecom being the largest investor.

The investment by a number of smaller telecommunications providers (including Kordia, Vector, FX Networks and 2degrees) were surveyed for the first time in 2009. Their combined investment amounted to $193 million in 2009 which resulted in a total non-Telecom investment of $484 million and total industry investment of approximately $1.693 billion.

Figure 2: Trend in Telecommunications Investment



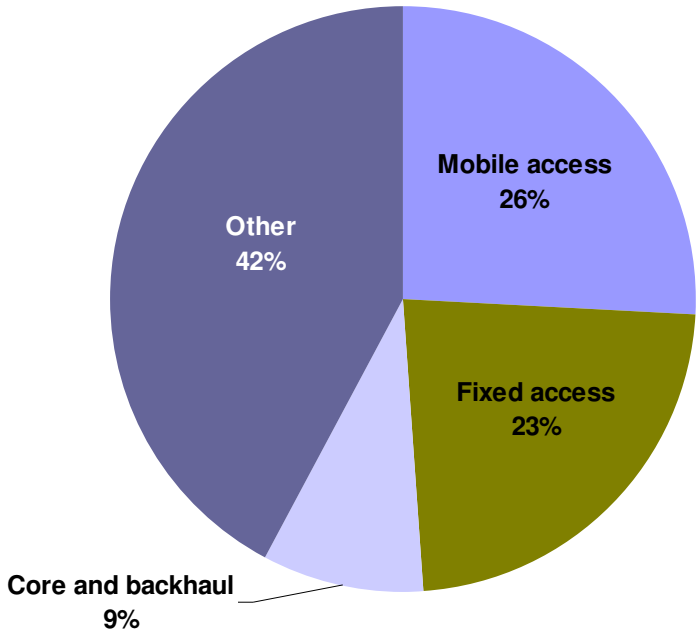
Source: Commerce Commission

In 2008/09 the Commission asked survey respondents to break down and separate the components of the telecommunications network where investments have been made (e.g. access, core, backhaul etc). However, a significant share of the investment was not readily attributable to a particular part of the network. For example, Telecom had a large amount of investment in IT systems, product development and operational separation that it chose to classify as 'Other telecommunications investment'.

The extent to which investments have been attributed to the physical network hierarchy is shown in Figure 3. Investment in mobile access appears to be slightly higher than in fixed access in 2008/09.

[12] http://www.2degreesmobile.co.nz/c/document_library/get_file?uuid=57f85444-cb00-4bbc-8c3d-a49cf924bf81&groupId=10128

Figure 3: Investment breakdown by network component 2008/09



Source: Commerce Commission

Public investment initiatives

In addition to the various private sector driven investments, the New Zealand government has announced its plans to accelerate the roll-out of ultra-fast broadband to 75 per cent of New Zealanders[13] over ten years. The first consultation document was published in March 2009.[14] According to the government's plan, the first six years will be focussing on priority broadband users such as businesses, schools and health services, as well as greenfield developments and certain tranches of residential areas. The government has committed to investing up to NZ$1.5 billion into fibre-to-the-home (FTTH) open access networks. It is expected that private sector investment will equal or exceed that of the government.

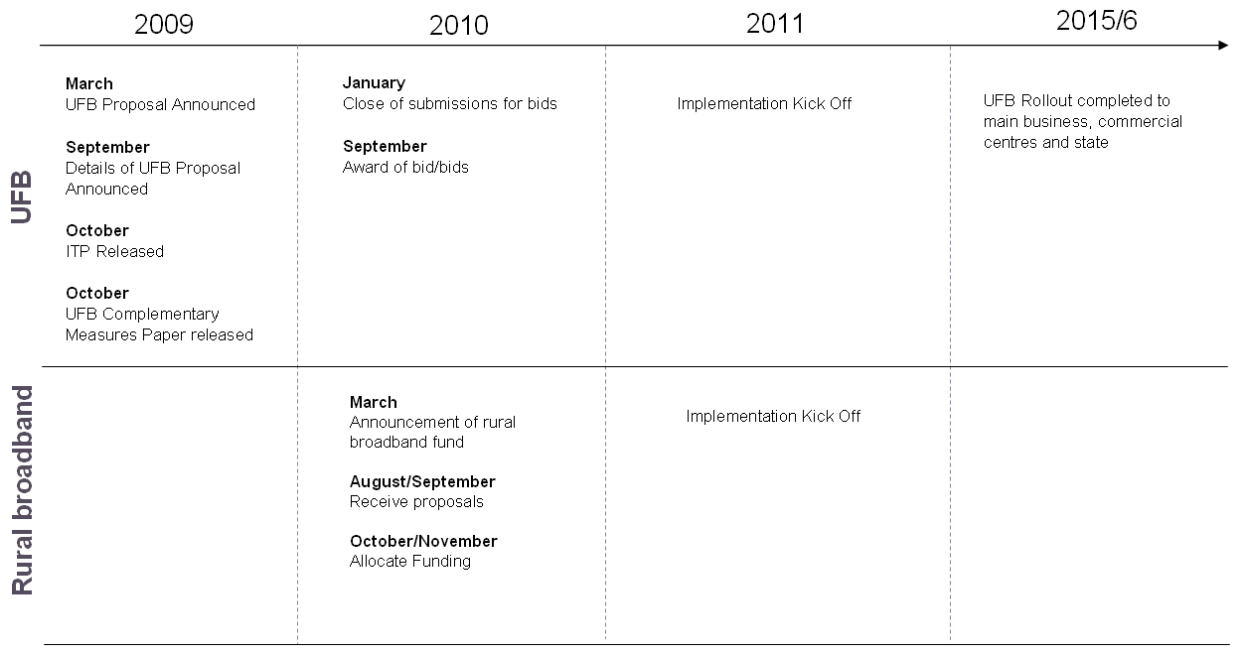
The government has finalised its plans for the roll out of high speed broadband in rural areas and the reform of the Telecommunications Service Obligations (TSO). As a result of this plan the government is committed to ensuring that 97 per cent of households will have access to broadband services of at least 5Mbps, with the remainder reaching at least 1Mbps. The rural broadband initiative is expected to cost around $300million.[15]

These investments are expected to have a significant effect on the telecommunications market in the long run. The Commission will closely monitor the outcomes and the affect on competition.

The following illustration provides an overview of the milestones to date and the expected timelines in terms of the implementation.

[13] http://www.med.govt.nz/templates/StandardSummary____38669.aspx
[14] http://www.med.govt.nz/upload/63958/Final-broadband-initiative-consultation-document.pdf
[15] http://www.med.govt.nz/templates/ContentTopicSummary____41997.aspx

Figure 4: Public Investment Initiatives for Broadband



Source: Commerce Commission

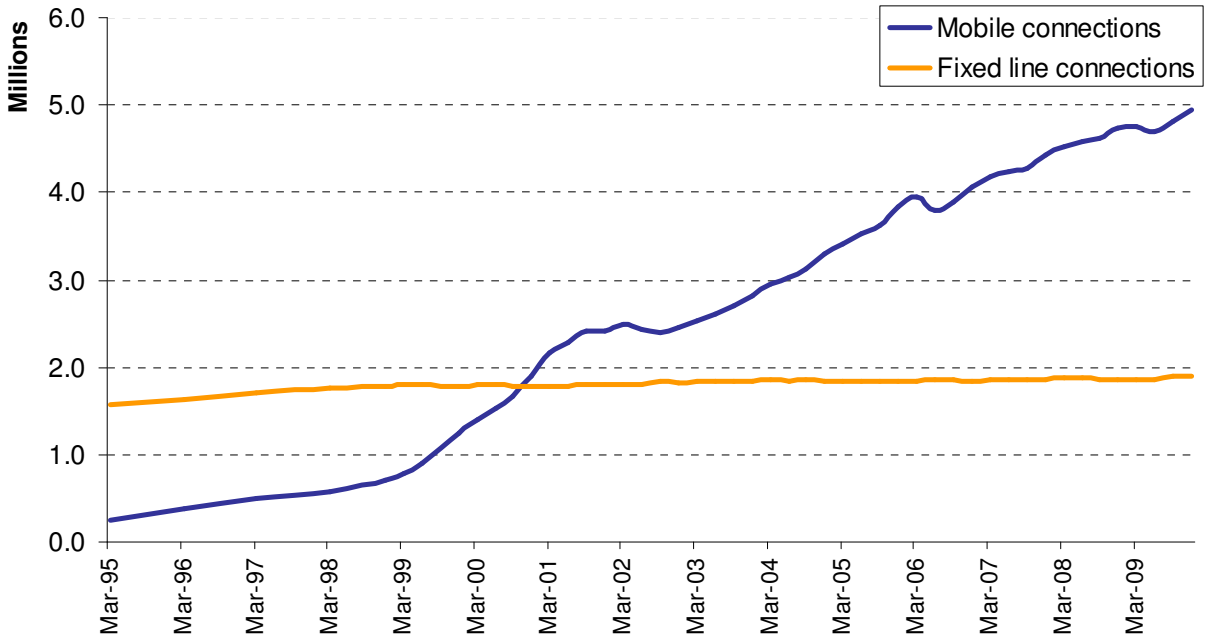
Subscriber numbers (fixed and mobile) and penetration

As at 31 December 2009 there were approximately 1.9 million fixed line connections and 4.9 million mobile connections[16]. The number of mobile phone connections continues to grow while fixed line connections have remained roughly constant over time. The number of mobile connections first exceeded the number of fixed connections in 2000, as can be seen in Figure 3.

As at 31 December 2009 there were 4.9 million active mobile connections across New Zealand's population of 4.32 million[17]. This equates to a penetration rate of 114 per cent which is roughly in line with reported penetration rates in other jurisdictions in 2009[18].

In the fixed line market there were 1.87 million connections as at 30 June 2009 with approximately 74 per cent being residential. This equates to 86 per cent of all households in New Zealand having a fixed line connection[19].

Figure 5: Mobile Connections versus Fixed Line Connections



Source: Commerce Commission (2009)

[16] Measured as number of connections active within the previous 6 months
[17] Source: www.stats.govt.nz
[18] UK : 126% ; Sweden : 123% ; France : 96%; Australia: 110%
[19] According to Statistics New Zealand there are 1.61 million households in NZ (or 2.67 people per household)

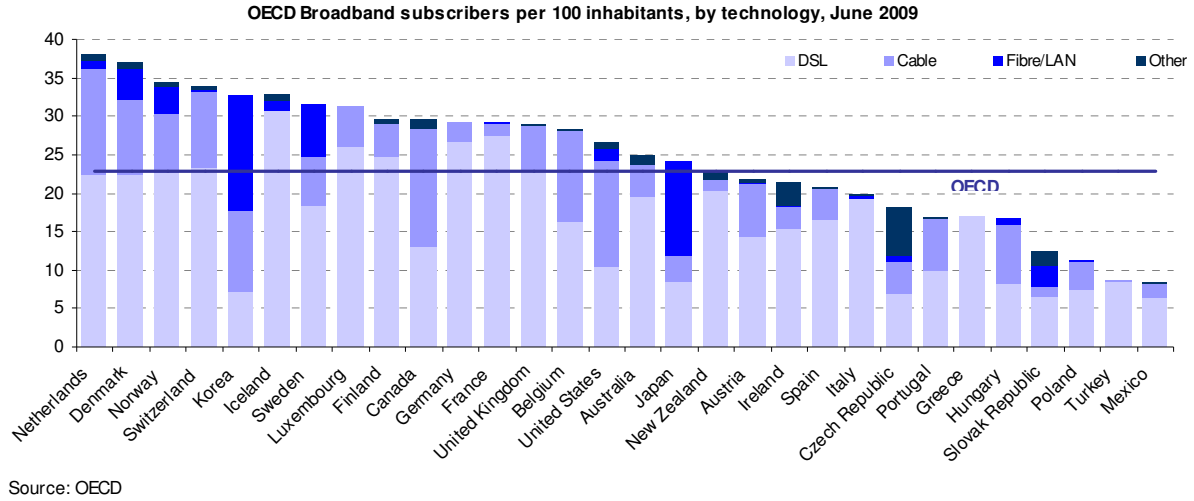
Developments in the broadband market

Key market trend:
Sustained growth and increasing performance of broadband connections

Since amendments were made to the Telecommunications Act in 2006 the total number of fixed line broadband subscribers has increased from 480,000 in 2005/06 to 1 million in 2008/09. New Zealand's OECD broadband penetration ranking increased from 22nd to 18th out of a total of 30 countries over this period.

- Dial-up service (2005/06: 869,000; 2008/09: 374,000) has rapidly been replaced by DSL broadband (2005/06: 320,000; 2008/09: 927,000).
- Demand for the regulated UCLL service, which allows access seekers to can offer their own telephone and DSL broadband service, has increased from 3,000 lines in June 2008 to 47,000 in December 2009 (from a total of 1.32 million urban lines).
- Mobile broadband has been gaining popularity in recent years due to the deployment of higher-speed data technologies and devices able to be used for bandwidth-intensive applications as well as data cards for PCs/laptops. However, New Zealand is still only in the early stages in mobile broadband take-up.
- Data from Akamai[20] on fixed broadband speeds suggests that the relative performance of New Zealand's average broadband speed has gradually increased over time. Consumers are being migrated to higher speed services with nearly all Telecom retail customers now on full speed broadband plans.

New Zealand's OECD broadband penetration ranking improved from 22nd in December 2006 to 18th by June 2009 and equaled the OECD average of 22.8 subscribers per 100 inhabitants.

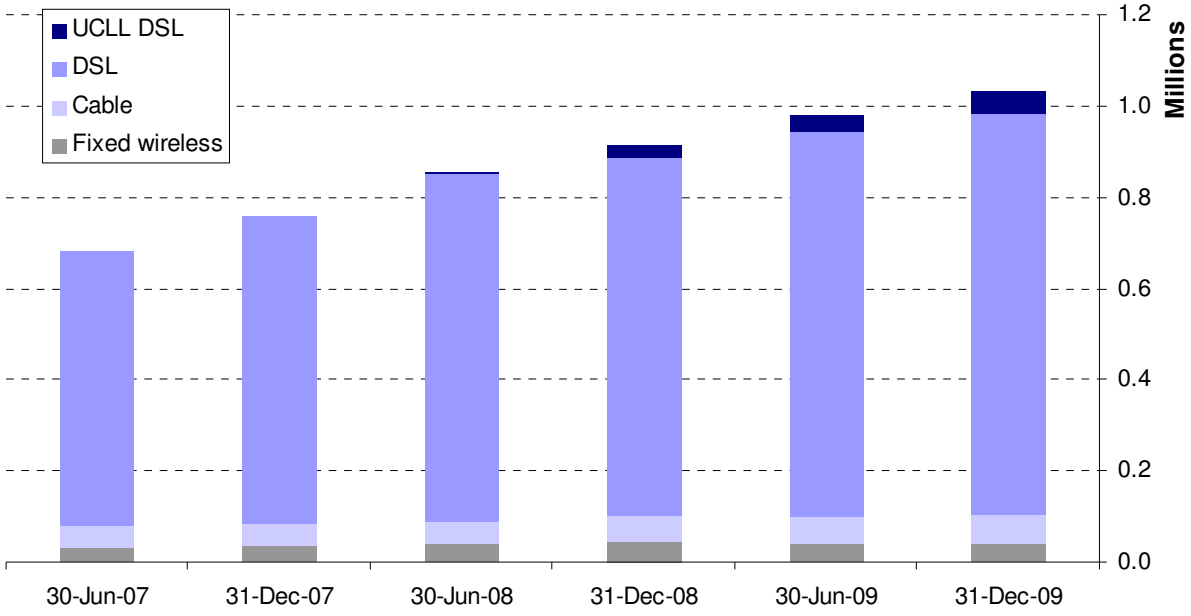


Source: OECD

[20] Akamai is an independent provider of web-based information. More information can be found on http://www.akamai.com/index.html

Total fixed broadband connections of all technologies increased from 684,500 as at 30 June 2007 to 1.03 million by 31 December 2009 as shown in Figure 6. DSL is the dominating broadband access technology used in 90 per cent of fixed broadband connections.

Figure 6: Fixed Broadband Connections by Technology



Source: Commerce Commission

Revenues from telecommunications services

Key market trend:
Total revenues across the telecommunications industry remain constant

Surveyed retail revenues across the telecommunications industry have slightly decreased since 2005/06 averaging approximately $4.8 billion. Total telecommunications revenue is estimated to be approximately $5.5 billion in 2008/09[21].

While total revenues remain roughly constant, contributions to the total have some diverging underlying trends which include:

- Decreasing revenues from voice calling.
- Increasing fixed charges for providing a fixed line.
- Decreasing total revenues from fixed line services.
- Increasing revenues from mobile services.
- Decreasing revenues from business data services.
- Increasing revenues from broadband and internet access
- Decreasing revenues from all voice services.
- Increasing revenues from all data services.

Total retail fixed line and mobile revenues

Surveyed total retail revenues from fixed line and mobile telecommunication services[22] have slightly decreased from $4.92 billion in 2005/06 to $4.74 billion in 2008/09. In the last year to 2008/09 the reduction of retail revenues was 2.8 per cent from $4.88 to $4.74 billion.

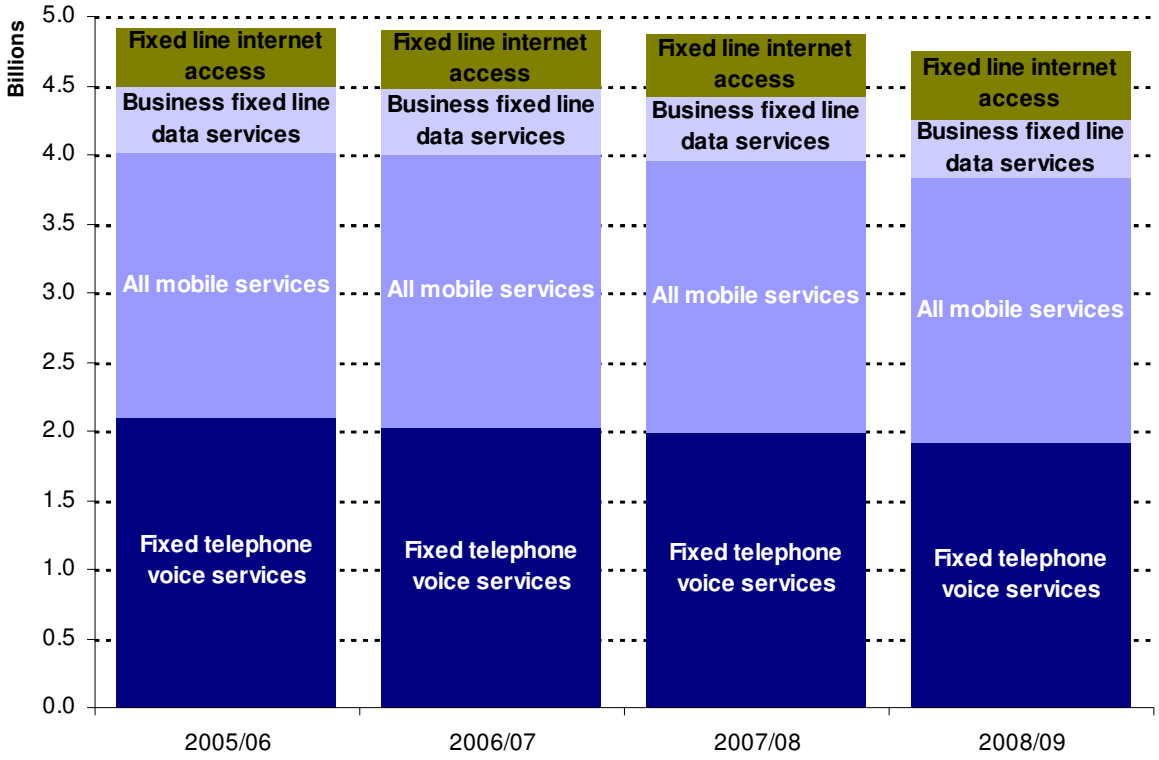
The retail revenue from fixed telephone services has shown a gradual decline over time. From 2005/06 to 2008/09 the decline was approximately 3 per cent with a reduction of 3.6 per cent from 2007/08 to 2008/09.

Mobile retail revenues increased between 2005/06 and 2007/08 but fell back to 2005/06 levels in 2008/09. It is likely that the drop in the last year can partly be explained by the economic downturn.[23]

[21] Adding wholesale revenue to retail revenue ($4.7 billion retail revenue plus $1.3 billion wholesale revenue) will overstate total revenue generated by the telecommunications industry because wholesale services are an input used by retailers to generate retail sales.
[22] Retail revenues from surveyed providers exclude 'Other telecommunications services revenue' for 2005/06 to 2007/08 and other revenue from fixed line revenue in 2008/09. Wholesale revenue was reported for the first time in 2008/09 and retail revenue of prior years may have inadvertently contained some wholesale revenue.
[23] It appears likely some wholesale revenue was wrongly classified as retail revenue in earlier years, inflating revenue for those years.

The revenue from fixed line internet access (which is mostly a residential and small business service) has grown significantly by 7.9 per cent from 2007/08 to 2008/09, while revenue from fixed line business data services has declined by 8.1 per cent over the same period.

Figure 7: Total Retail Telecommunications Revenues by Service from 2006-2009



Source: Commerce Commission (2009)

Total fixed line and mobile revenues 2008/09

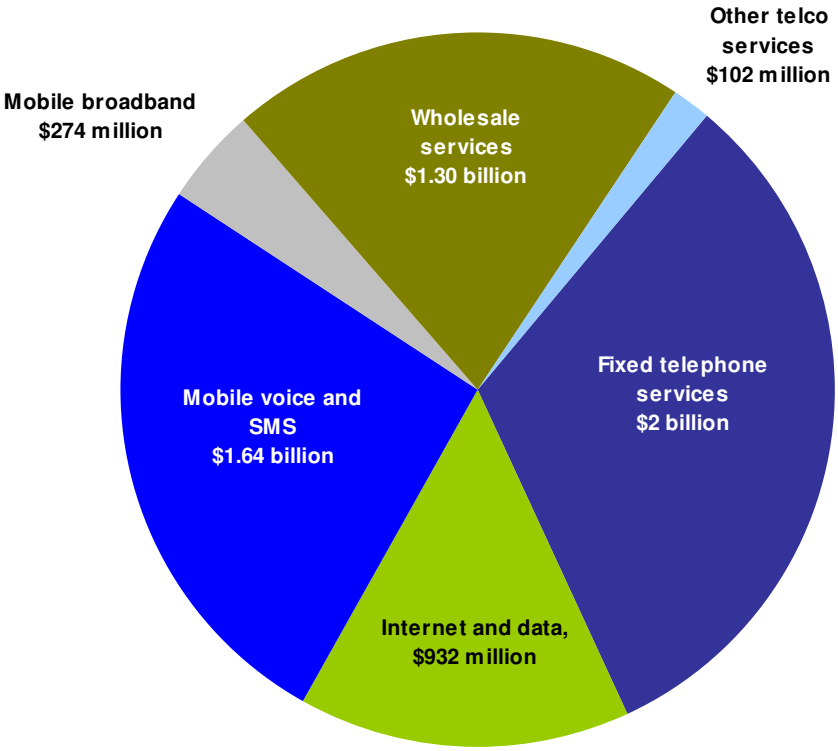
The total fixed line and mobile telecommunications revenue generated in New Zealand in 2008/09 was estimated to be approximately $5.5 billion[21].

The different components of total surveyed telecommunications revenue for 2008/09 are shown by service type in Figure 8.

Total wholesale fixed line and mobile revenues 2008/09

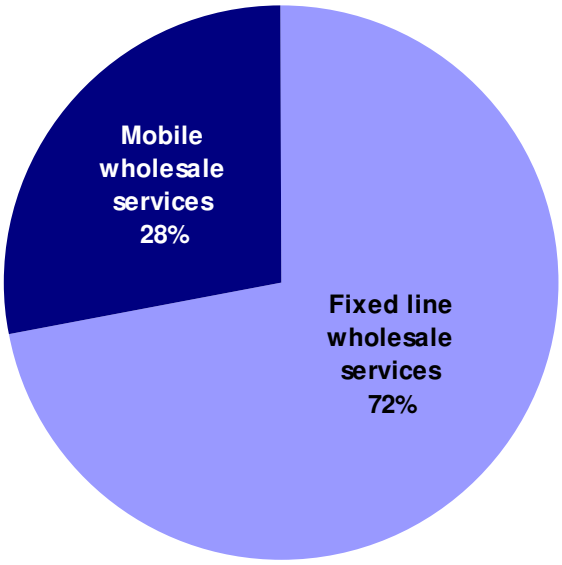
Surveyed total wholesale revenue was $1.3 billion for 2008/09, which was the first year wholesale figures were collected. Wholesaling is more popular in the fixed line market with 72 per cent of wholesale revenue coming from fixed line services as can be seen in Figure 9.

Figure 8: 2008/09 Total Telecommunications Revenues (retail and wholesale) by Service



Source: Commerce Commission (2009)

Figure 9: 2008/09 Wholesale Revenues

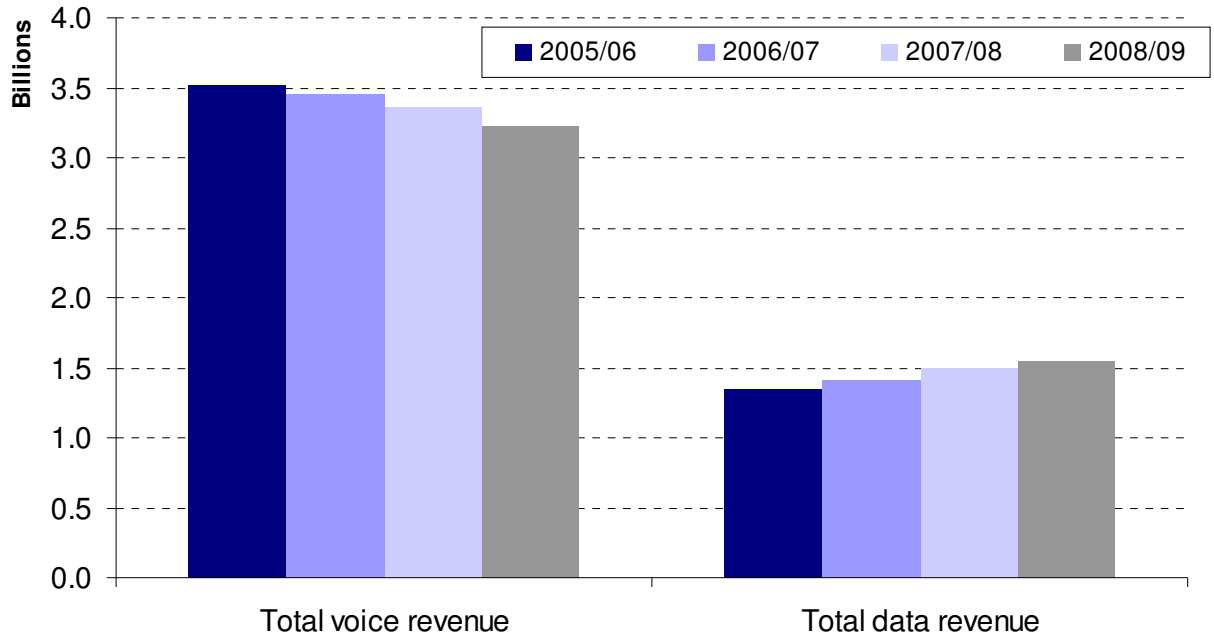


Source: Commerce Commission

Total retail fixed line and mobile revenues

Across the telecommunications industry as a whole, voice revenue has been falling while data/internet access revenue has been rising, as shown in Figure 10. For 2008/09 it is estimated there was $3.5 billion of revenue from voice services and $1.5 billion from data/internet access.

Figure 10: Total Retail Revenue by Voice and Data (fixed and mobile)



Source: Commerce Commission

Total retail call minutes from mobile and fixed voice services

Key market trend:
Early signs of fixed-to-mobile substitution

The proportion of mobile minutes relative to total fixed-line minutes has steadily increased since 2005/06. In 2008/09, mobile minutes accounted for approximately 27 per cent of total voice minutes.

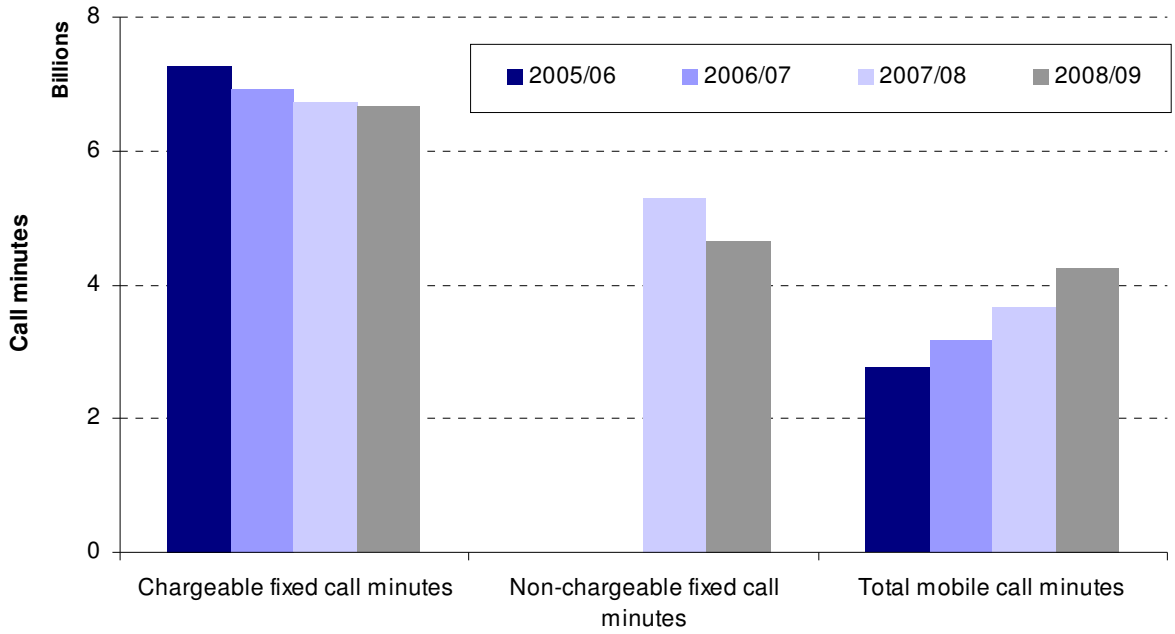
Fixed-to-mobile traffic substitution appears to be occurring, with end-users talking more on mobile phones and less on fixed-line phones. The Commission expects this trend to continue, and possibly become more significant in coming years. The current low base of mobile calling minutes indicates that there is considerable scope for mobile voice usage to increase.

Total outgoing call minutes for the 2008/09 year (including the non-chargeable minutes of fixed line customers) were 15.6 billion compared to 15.7 billion minutes in 2007/08. Total mobile call minutes have been increasing while fixed line call minutes have been decreasing, as can be seen from Figure 11.

While the proportion of voice call minutes made on mobile phones has been increasing, in 2008/2009 they still only comprise 27 percent of all call minutes, despite there being two-and-a-half times more mobile connections than fixed-line connections. This compares with 44.5 per cent of calls being made on mobile phones in the UK in the 2008[24] year and 53 percent in Ireland for the quarter ending 30 June 2009[25].

[24] http://www.ofcom.org.uk/research/cm/cmr09/CMRMain_4.pdf, p224
[25] http://www.comreg.ie/_fileupload/publications/ComReg0971.pdf, p6

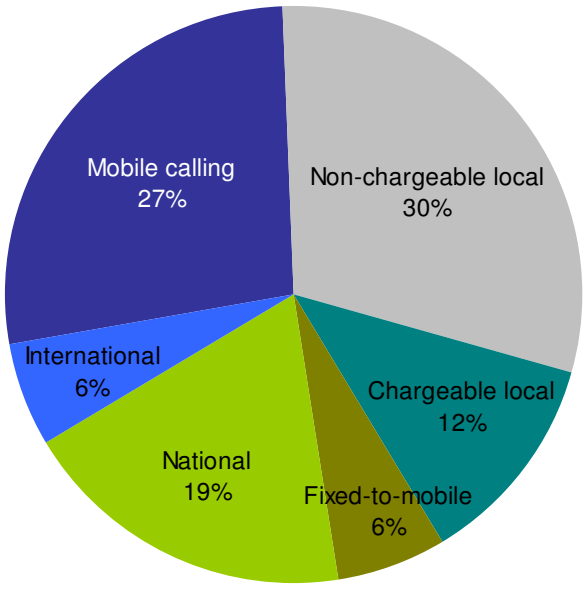
Figure 11: Mobile versus Fixed Line Retail Call Minutes



Source: Telecom, Commerce Commission

Figure 12 shows the breakdown of calling volume by call type for 2008/09. Non-chargeable local calls still generate the largest amount of call minutes, at 30 per cent of all voice calls, ahead of total mobile voice calls. Fixed-to-mobile voice calling minutes make up 6 per cent of all calls, which is the same percentage as international calls.

Figure 12: 2008/09 Calling Volume by Call Type



Source: Commerce Commission

FIXED LINE MARKET

Introduction

Telecom has a ubiquitous fixed line network in New Zealand and is the dominant player in this market, supplying a significant proportion of retail and wholesale fixed line services. TelstraClear has a competing access network in Wellington and Christchurch, and there are five smaller providers of retail fixed line services, (Vodafone, Slingshot/CallPlus, Compass, Orcon and WorldxChange) owning some core infrastructure.

Overview of regulatory developments

Since 2006 the Commission has made a number of determinations in the wholesale market (alongside other regulatory decisions) with the intention of facilitating increased competition in the affected downstream retail markets. The Commission's work in the wholesale fixed line market since late 2006 includes:

- Final unbundling (UCLL) determination issued in November 2007 with urban price of $19.84 per line per month.
- Final bitstream (UBA) determination issued in December 2007 with a price of $27.44 per line per month for basic service and $47.28 for naked DSL (no voice PSTN service on line) in urban areas.
- Final determination on backhaul for UCLL and UBA issued in June 2008.
- Final unbundled sub-loop determination issued in June 2009 with urban price of $11.99 per line per month. Charges for sub-loop backhaul and cabinet co-location also apply, making the combined cost approximately 26 per cent higher than corresponding UCLL charges.
- Telecom was found by the Independent Oversight Group (IOG) in August 2009 to have breached its separation undertakings with its wholesale loyalty offer designed to dissuade wholesale customers from taking up the UCLL service. The Commission is considering taking legal action against Telecom.

In addition, Telecom has been subject to Operational Separation and Accounting Separation provisions since the end of 2006. Under Operational Separation, Telecom is obliged to operate its access, wholesale and retail services groups separately. Accounting Separation requires Telecom to disclose regulatory accounts with financial information on each of its service groups as if they were separate companies.

Market overview

Telecom remains the dominant player in the fixed line market and supplies the majority of retail and wholesale fixed line services to end customers in New Zealand. Other retail providers include TelstraClear, Vodafone, Slingshot/CallPlus, Compass, Orcon and WorldxChange. In addition, there are a number of wholesale network providers such as Vector, FX Networks, Kordia, CityLink, Northpower and Unison.

Key market trends in the fixed line market

- Constant subscriber numbers.
- Increasing investment overall and entry of utility providers.
- Increased access revenues.
- Decreasing voice calling revenues.
- Increased uptake of wholesale access services.
- Substitution from dial up to broadband.

The number of active fixed telephone lines has remained more or less stable over the last four years at approximately 1.9 million. Total fixed retail revenues for 2008/09 were $3.02 billion.

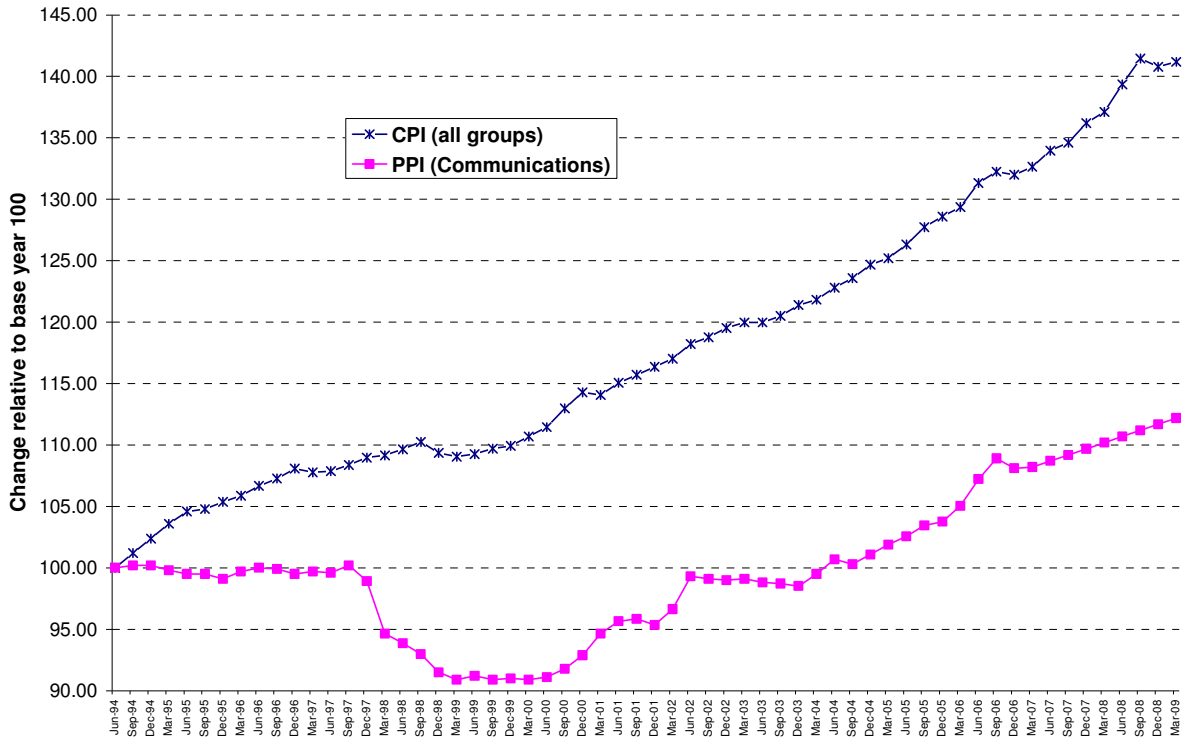
Under the TSO provisions (formerly the Kiwi Share) Telecom has been allowed to raise its monthly residential line rental at approximately the rate of inflation. Other retail providers have usually followed Telecom's lead. As a result, revenues from line rental and other telephony services[26], excluding voice calling revenues, have risen over the last three years from $1.08 billion to $1.23 billion (in nominal terms), while voice calling revenues have fallen from $1.01 billion to $771 million as shown in Figure 14.

In its discussion paper on TSO reform, the Ministry of Economic Development identified that Telecom is allowed to raise its standard residential telephone line rental at the same rate as the Consumer Price Index (CPI) while its costs are likely to be going up at a similar rate to the Producer Price Index (PPI) for the communications services industry. The PPI for this particular industry has in recent years generally risen at a slower rate than the CPI so a wedge between the two has opened up over time as shown in Figure 13, which covers the period June 1994 to March 2009. Because other telecommunications providers have to lease telephone lines off Telecom at a small discount to Telecom's steadily rising retail price, they cannot materially undercut Telecom on simple line rental unless they use different infrastructure, or use UCLL.

Revenue from business data services has fallen slightly from $471 million in 2005/6 to $427 million in 2008/09 while revenue from internet access, including broadband services, has increased from $426 million to $485 million. These results are also shown in Figure 14.

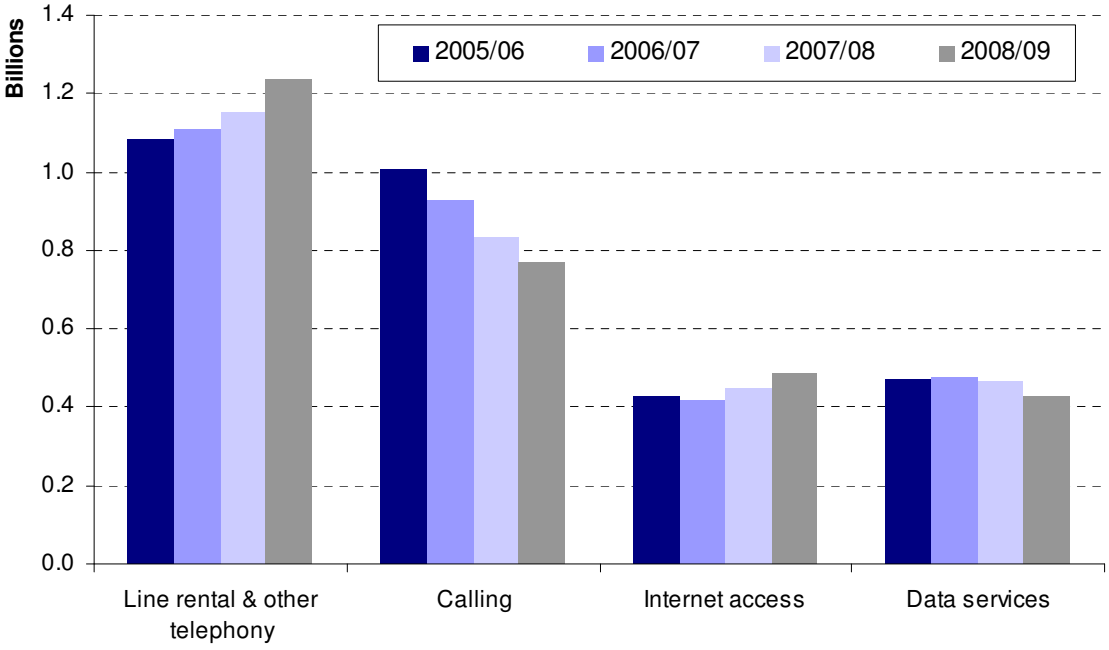
[26] This includes valued added services like caller ID and voice mail as well as connection charges.

Figure 13: Relative Change of CPI and PPI (Communications)



Source: MED

Figure 14: Fixed Line Retail Revenues



Source: Commerce Commission

Fixed line wholesale revenue for the 2008/09 year was $936 million, which was 31 per cent of retail revenues.

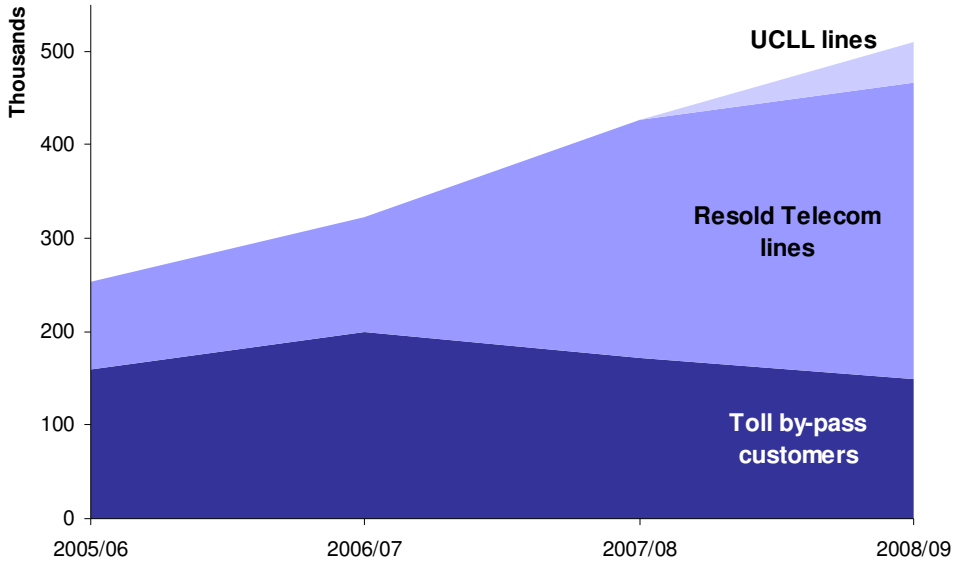
Fixed Line Voice

Fixed line voice revenues (including line rental and other telephony services) have shown little change over the last four years, with increasing line rental and other telephony services revenues offsetting declines in calling revenues as shown in Figure 14. In 2008/2009 voice service revenues totalled $2 billion.

While revenues have been static, the retail fixed line market has become less concentrated since 2006 as the market share of other retailers has increased. There are a variety of ways in which retailers can compete with Telecom to provide a voice service. For example, they can provide a tolls service only, or they can purchase a line from and Telecom and resell that as well to provide a complete telephone voice service. Increasingly, retail services are offered as part of a bundle, including a broadband service. Consumers served via UCLL will, in addition to their broadband service, generally be provided with either a conventional voice service or a voice over internet protocol (VoIP) service that uses the broadband connection.

As shown in Figure 15, the number of consumers purchasing only a toll service (known as toll by-pass) from a non-Telecom retailer has been dropping, while the number purchasing a phone line combined with tolls has been increasing. In total, the number of consumers receiving a voice service utilising the Telecom network, but sold by a retailer other than Telecom, has doubled in the last three years from 255,000 as at 30 June 2006 to 510,000 as at 30 June 2009.[27] This compares with total Telecom lines in service of around 1.8 million.

Figure 15: Telecom Network Voice Services Sold by Non-Telecom Retailer

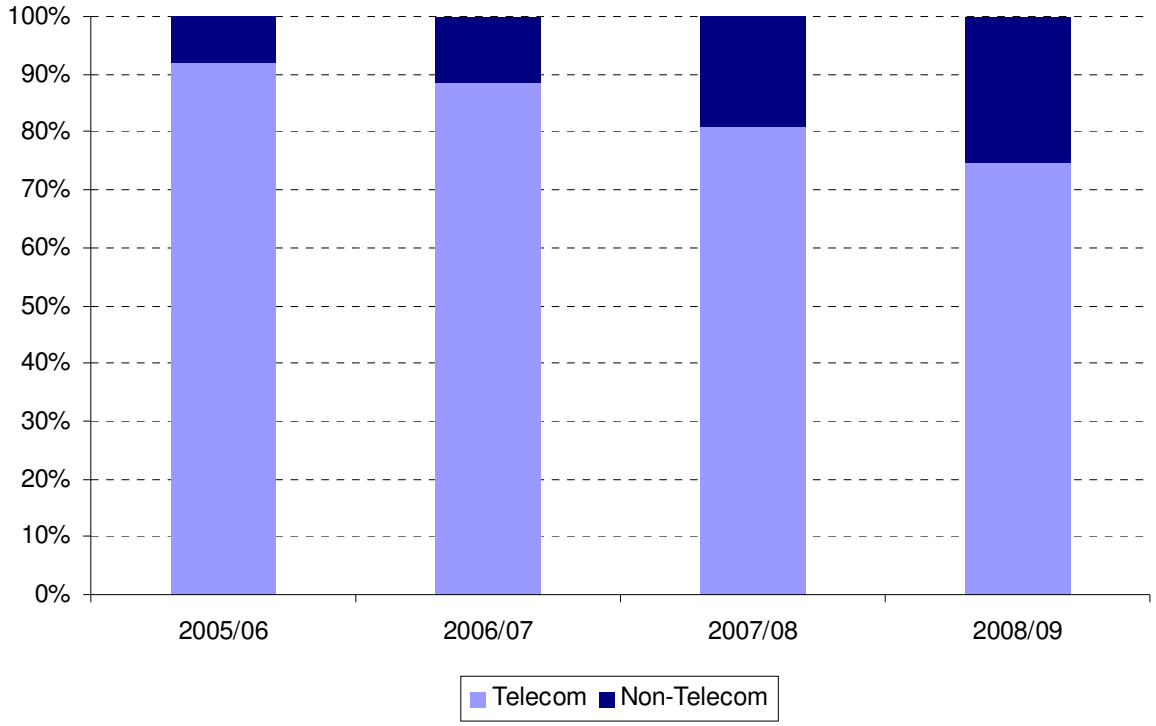


Source: Commerce Commission

[27] It is assumed that all customers purchasing a UCLL service are purchasing a voice service in addition to broadband. Toll by-pass figures for earlier years have been restated to correct a reporting error.

The share of other retailers in fixed line voice connections has increased from 8 per cent in 2005/06 to 25 per cent in 2008/09, as shown in Figure 16.

Figure 16: Share of Retail Fixed Line Voice Connections



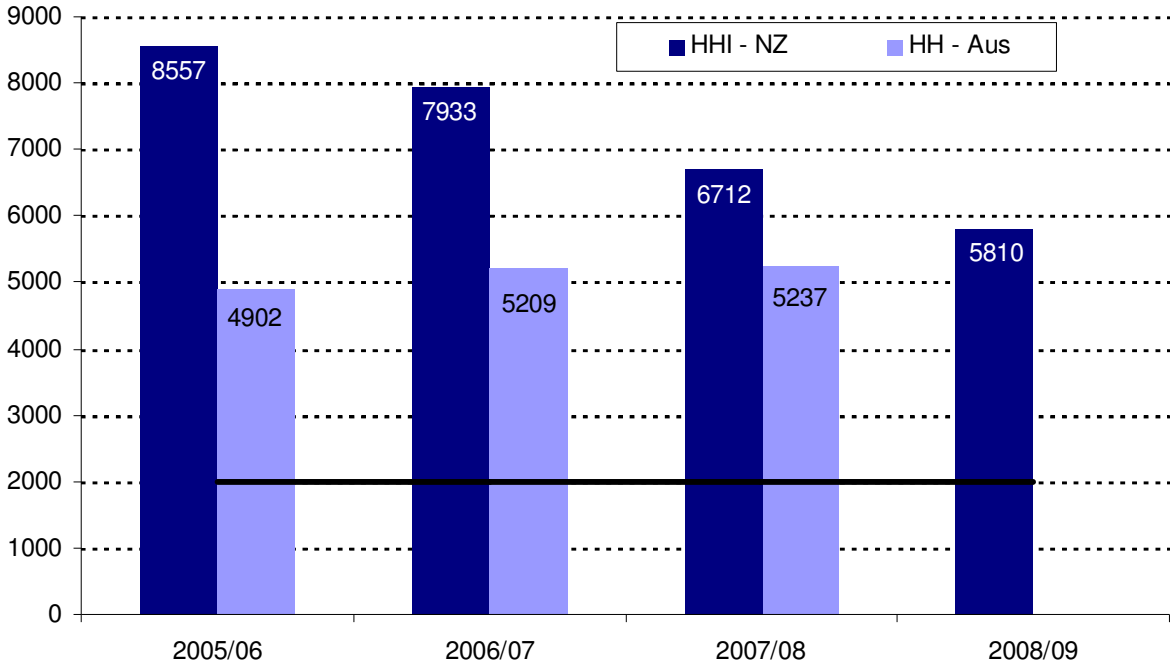
Source: Commerce Commission

However, market concentration, as measured by the Herfindahl-Hirschman Index (HHI) still remains high. The Commission has used surveyed retail voice line market shares for the last four financial years to calculate the HHI, a commonly accepted measure of market concentration.[28] The results are plotted in Figure 17 and show the HHI has declined from 8557 in 2005/06, to 5810 in 2008/09.

The equivalent HHI for Australia's PSTN service for 2007/08 was 5237 after rising from 4902 in 2005/06.[29] The ACCC considered a score of above 2,000 to indicate potential competition concerns and this threshold is also shown on Figure 17.

[28] The HHI is calculated by squaring the market share of each market participant that has a material number of subscribers and adding these together. The maximum possible score is 10,000. The analysis of the HHI indicator in this report does not necessarily indicate that the Commission will use it for measuring competition in any other area.
[29] Australian Competition and Consumer Commission, *Telecommunications Competitive Safeguards for 2007-08*, 2009

Figure 17: Retail Voice Market HHI Index



Source: Commerce Commission

Consumption trends

Fixed line calling minutes have been falling overall, but the trends differ between call types. Figure 18[30] illustrates that there has been a marked fall in local calling. Chargeable local calls (local calls by business customers) have fallen from 2.6 billion minutes in 2005/06 to 1.9 billion minutes in 2008/09 (-27%). Data on non-chargeable local calls (local calls by residential customers) has only been collected for the last two financial years, but over that period has shown a significant decline, of 11.4 per cent, from 5.3 billion to 4.7 billion minutes. MED understood non-chargeable local calls to be as high as 11 billion minutes (700 minutes per month per residential subscriber) back in 2001.[31]

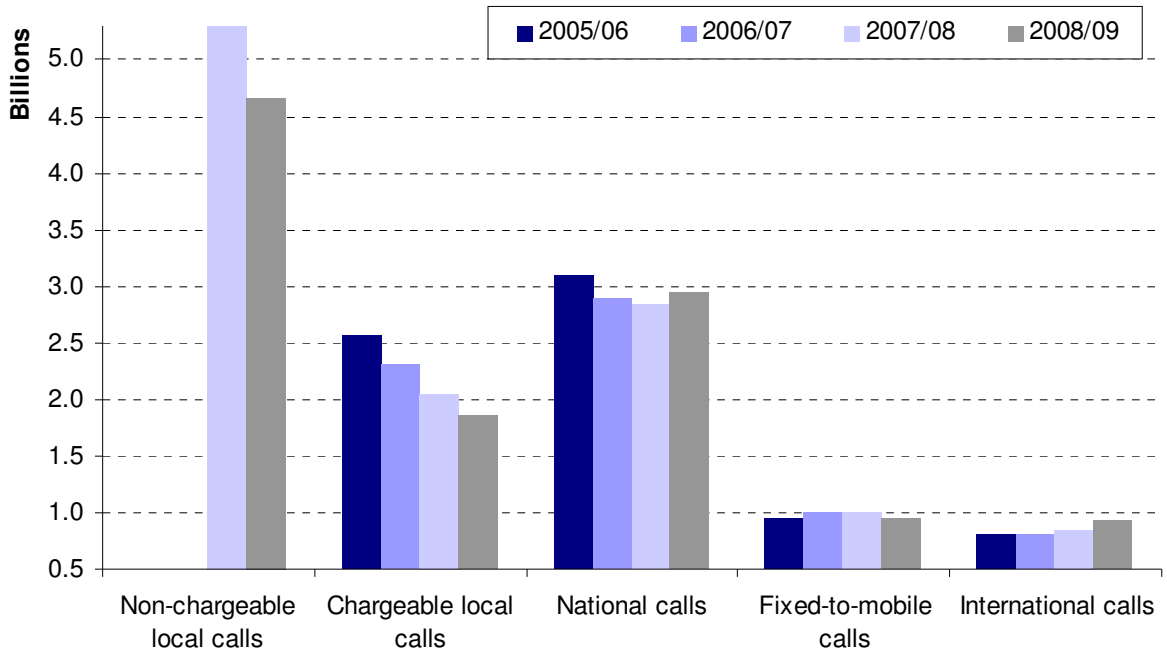
The decline in local calling is likely to be a consequence of the increased use of email, texting and mobile calling as alternative means of communication. The decline in chargeable business local calls may partly be explained by the substitution of traditional PSTN voice services with IP-based voice solutions (or Voice over IP). The surveyed calling minutes do not capture voice calls that are routed solely over a data network or the internet (VoIP calls) rather than a conventional dedicated voice network. Businesses appear to be implementing VoIP systems that allow them to use data networks for voice calls. The most well known way of making a voice call over the internet is to use Skype[32]. Skype is now the largest provider of cross border communications in the world. In

[30] In calculating aggregates, call minute data for TelstraClear has been estimated for 2005/06 and 2006/07.
[31] http://www.med.govt.nz/templates/MultipageDocumentPage____4851.aspx
[32] http://www.skype.com

2009 it was estimated that Skype's on-net international traffic (calls between two Skype users) grew 63 percent to 54 billion minutes out of total international phone traffic of 406 billion minutes.[33]

In spite of the increase in the use of VoIP for international traffic, conventional international calls have risen from 806 to 922 million minutes per year over the last three years (+14.4%). National calls have stayed at approximately 3 billion minutes per year, and fixed-to-mobile calls at approximately 1 billion minutes per year.

Figure 18: Fixed Line Retail Call Minutes

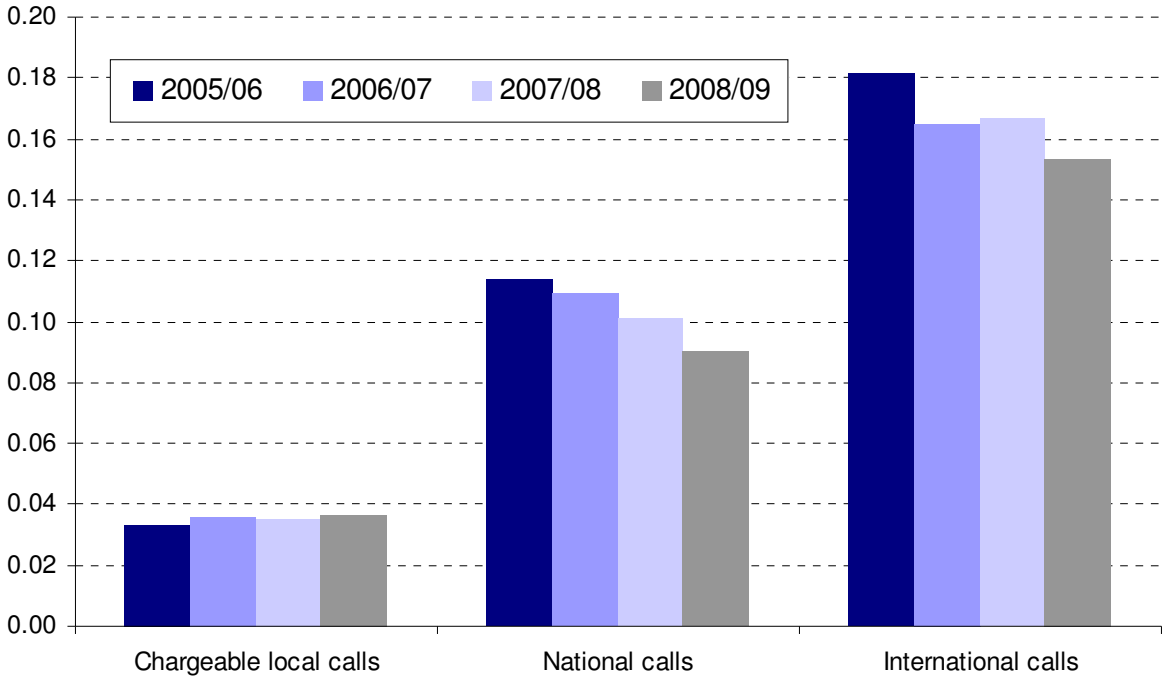


Source: Commerce Commission

The average retail charges for fixed line voice calls have generally been declining over the last three years. Figure 19 shows the change in average retail price for local, national and international calls. The largest drop occurred in the price of fixed-to-mobile calls, with the average retail price dropping from nearly 40 cents per minute to a little over 31 cents per minute as shown in Figure 20.

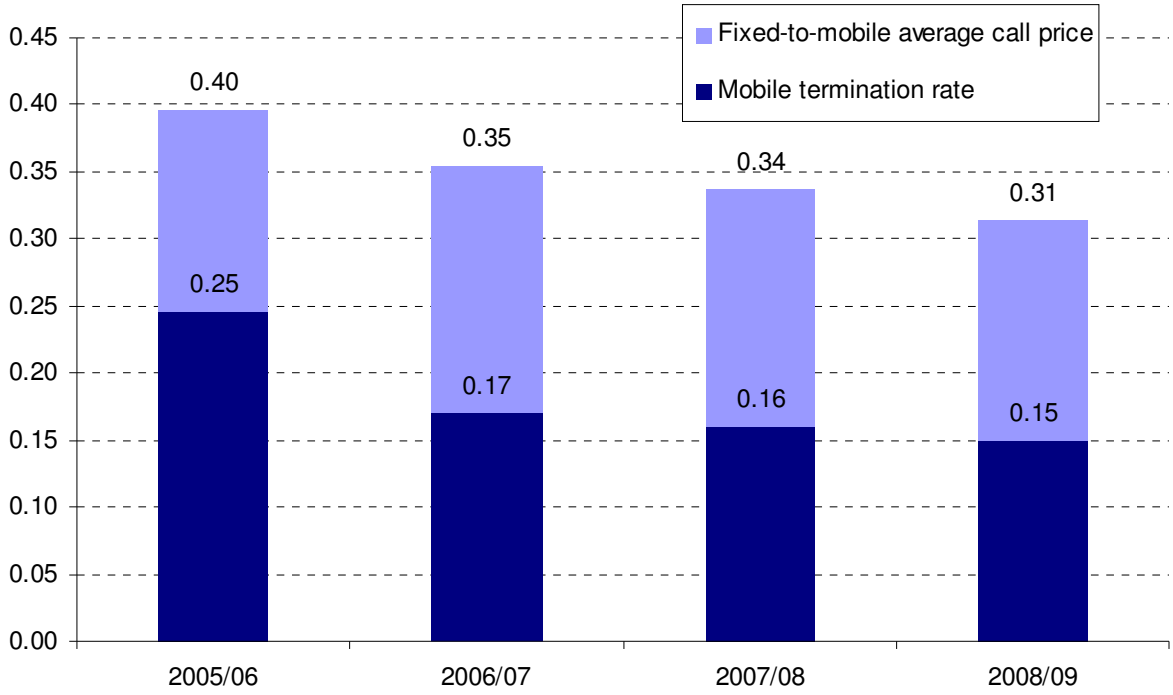
[33] http://www.telegeography.com/cu/article.php?article_id=31718&email=html

Figure 19: Average Fixed Line Retail Calling Prices



Source: Commerce Commission

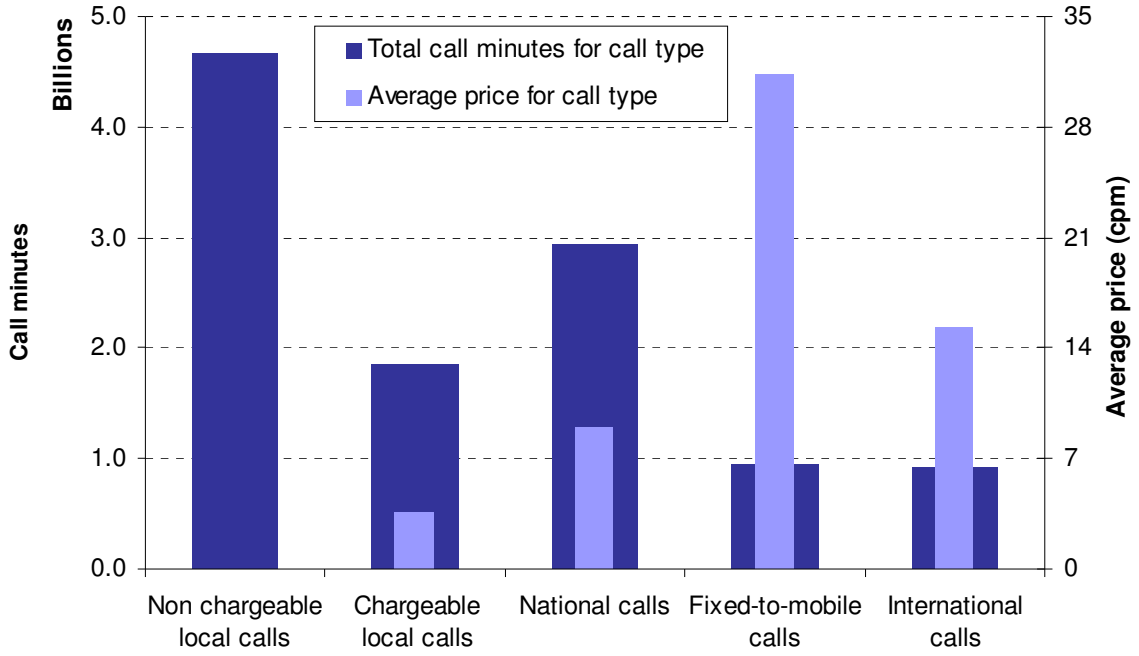
Figure 20: Average Fixed-to-Mobile Retail Calling Price and Mobile Termination Rate



Source: Commerce Commission

The data comparing retail price with call minutes for the different call types shows that, as expected, consumers tend to 'use' more call minutes when calling is cheaper as can be seen in Figure 21.

Figure 21: Average Retail Price vs Total Call Minutes



Source: Commerce Commission

With an increase in bundled offers, it is likely that the calculation of per minute costs for voice calls will become increasingly difficult, as many bundles offer a fixed price for a large bucket of call minutes.

Wholesale market for fixed line services

Completing a (fixed line or mobile) call from a customer of operator A to another customer on network B generally requires three input services; Origination, Transit and Termination. The most relevant service in the wholesale market is termination, where operator A pays a fee for the termination of the voice call if the destination is network B. It is generally accepted that there is a positive relationship between the wholesale termination charge and the retail price. In other words, it is likely that the higher a wholesale termination charge is, the higher the retail price would be, as the termination charge is an essential component of a retail call price (as described above). Figure 20 provides support for this proposition, showing, in addition to the average retail price, the average wholesale termination rate for 2005/06 and the wholesale termination rate in force as at 30 June in each subsequent year under the deeds of Telecom and Vodafone.

The price of terminating a local fixed line voice call on another fixed line network in New Zealand has remained at one cent per minute since early 2006 after Telecom and TelstraClear reached a commercial agreement following an initial determination by the Commission. There are bill and

keep arrangements[34] for local calls terminating within a local interconnect calling area (retailers with their own core network may also have to purchase a transit service to transport national calls to their destination).

The price of terminating a fixed line voice call on a mobile network is significantly higher than terminating it on a fixed network. Since May 2007 this price has been governed by deeds between Telecom and Vodafone and the Crown. On 1 April 2009 the wholesale price decreased from 16 to 15 cents per minute (excluding GST and based on minute plus second billing) and Telecom and Vodafone passed this decrease on to end customers in their retail fixed-to-mobile calling tariffs. The average wholesale price for mobile termination in the 2005/06 year was around 24.5 cents per minute so the wholesale price has dropped by 9.5 cents per minute since 2005/06 while the average retail price has dropped by 8.3 cents per minute. This implies a pass-through rate of 87 per cent.

The discount from the retail price at which Telecom provides (or resells) residential lines and other residential services to other operators has remained at five per cent since early 2006, following commercial agreement between Telecom and TelstraClear, while for business lines and services the discount has remained at 18 per cent.

In contrast to the retail minus discount mechanism explained above, UCLL (discussed in the next section) is provided to access seekers (retailers) at a cost based price that is calculated by benchmarking against overseas cost-based charges.

These different pricing mechanisms reflect the 'ladder of investment' philosophy that underpins the 2006 amendments and explained in the relevant Cabinet paper. [35]

The wholesale access regime has allowed Telecom's retail competitors to sell services to an increasing number of consumers via the Telecom network, helping to increase competition at the retail level.

Fixed Line Data/Broadband

A major objective of the 2006 reforms was to improve New Zealand's broadband performance and access to high speed broadband services. This was to be achieved by making new wholesale broadband services available, and allowing Telecom's retail competitors access to Telecom's copper local loop through unbundling.

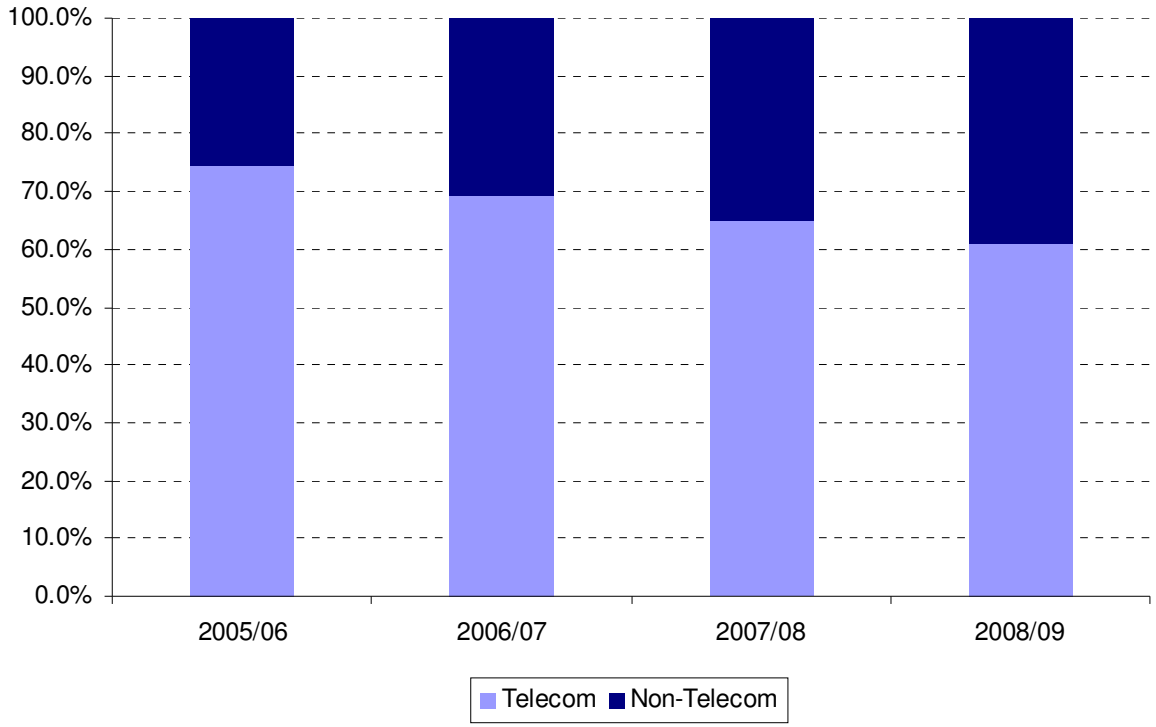
Fixed line data services include internet access and business data services such as leased lines used to link up computer systems. Internet access is generally provided via a dial-up analogue service or increasingly through a digital subscriber line (DSL) broadband service, which is sold to both residential customers and small businesses. Broadband internet access can also be provided via TelstraClear's co-axial cable network that is also used to deliver pay TV in much of Wellington and Christchurch. A small amount of broadband internet access is provided via fixed wireless services and fibre optic cable to the premise services.

[34] Defined by the OECD as "A pricing scheme for the two-way interconnection of two networks under which the reciprocal call termination charge is zero - that is, each network agrees to terminate calls from the other network at no charge."
[35] http://www.beehive.govt.nz/sites/all/files/Cabinet%20paper%20and%20minute.pdf

In total, data services generated $912 million in 2008/09, and made up 30 per cent of fixed line revenues. As was shown in Figure 14, revenue from internet access has generally been rising steadily, while revenue from business data services has generally been falling by a similar amount. As a result, overall data revenues have remained flat.

The retail fixed line broadband market is less concentrated than the retail fixed line voice market and, as in the fixed line voice market, the concentration has decreased over the past four years. Competing retailers' share of retail broadband fixed line connections has increased from 26 per cent in 2005/06 to 39 per cent in 2008/09 as shown in Figure 22.

Figure 22: Share of Retail Fixed Line Broadband Connections

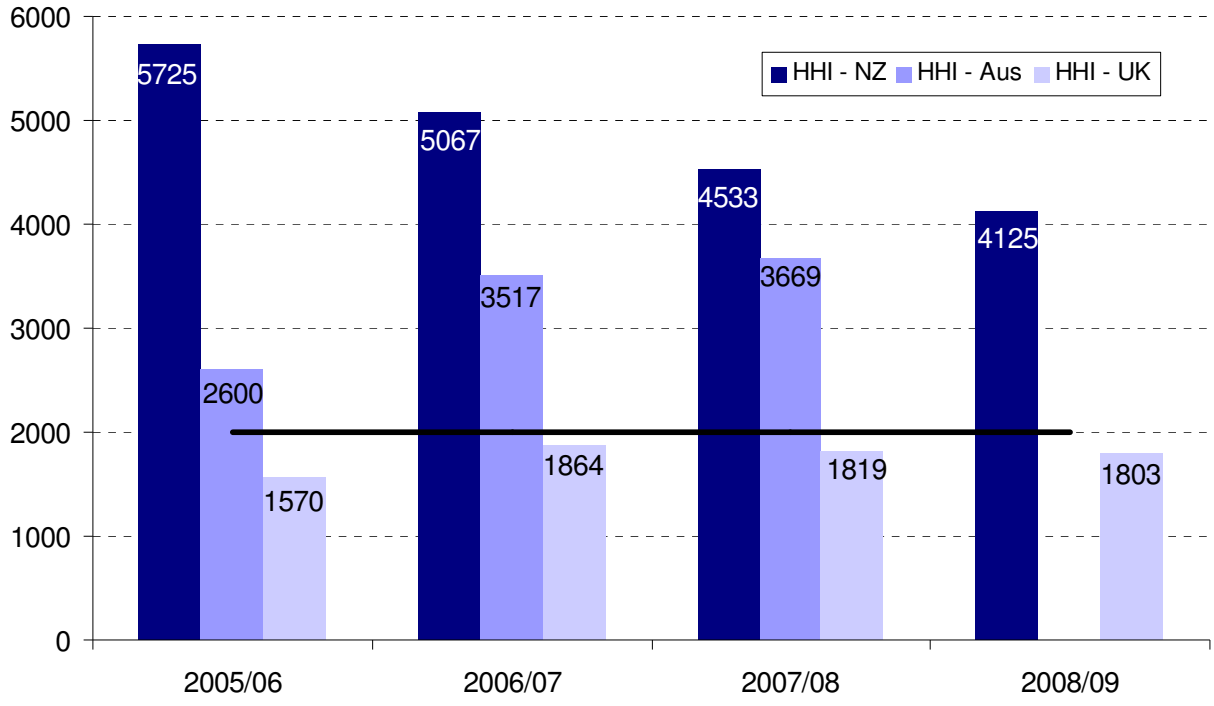


Source: Commerce Commission

The HHI index dropped from 5,725 in 2005/2006 to 4,125 in 2008/09 as shown in Figure 23. In Australia the retail fixed line broadband service HHI score for 2007/08 was 3,669.[36] However, in contrast to the New Zealand market where the HHI has been decreasing, in Australia, the HHI of the fixed line broadband market has increased from 2,500 in 2005/2006. The HHI score for the UK has also been calculated by the Commission from market share data.

[36] ACCC, *ACCC Telecommunications Reports 2007-08*: *Telecommunications Competitive Safeguards fro 2007/2008*, available at: http://www.accc.gov.au/content/item.phtml?itemId=877087&nodeId=685c33e98ae9b709d3b520de9378387b&fn=ACCC%20telecommunications%20reports%202007%E2%80%9308.pdf

Figure 23: Retail Fixed Line Broadband Market HHI Index

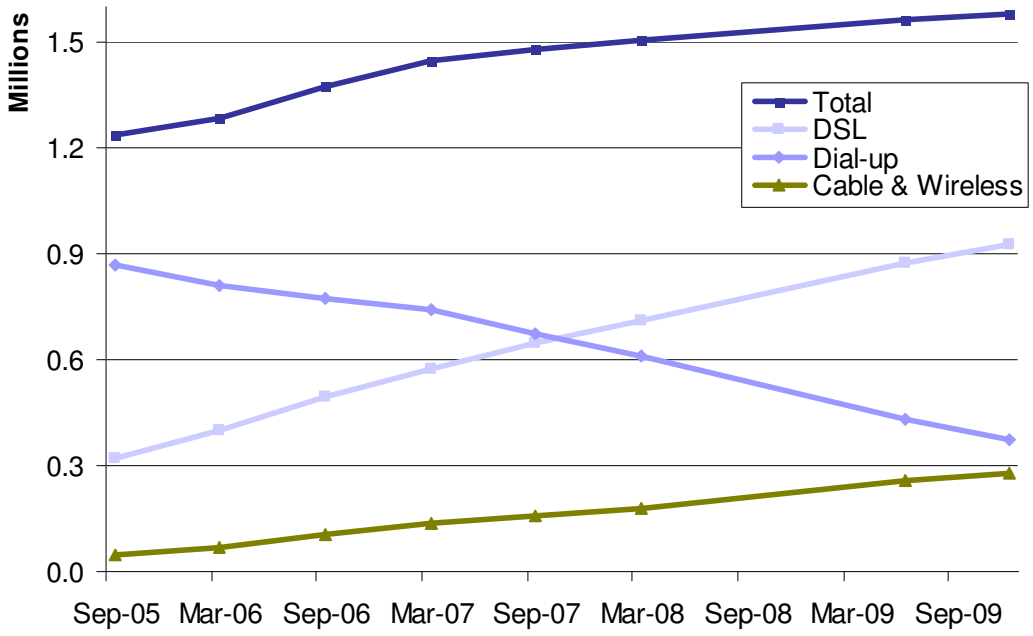


Source: Commerce Commission

Since 2005/2006 there has been significant migration of internet subscribers from dial-up to broadband as shown in Figure 24. [37] Total DSL customers in September 2009 were nearly triple those at September 2005. The cable and wireless broadband connections shown in Figure 24 are all those supplied via co-axial cable, fixed wireless technologies, cellular networks and satellite. These were estimated by the Commission to total 280,000 as at 31 December 2009.

[37] The December 2009 figures have been estimated by the Commission except for the DSL results. Dial-up subscribers and therefore total subscribers are somewhat overstated as some ISPs surveyed had difficulty in excluding dial-up subscribers who were not active because the dial-up connection provided was only a back-up to a broadband connection. Cable and wireless figures were estimated for March 2006.

Figure 24: Retail Internet Subscriber Connections



Source: Statistics New Zealand, Commerce Commission

In December 2006, New Zealand's broadband penetration ranked 22nd out of 30 countries in the OECD and was unchanged from 22nd in previous year. By December 2008 this ranking had improved to 18th, surpassing Austria, Italy, Spain and Portugal. The latest OECD statistics on the total number of broadband connections (excluding mobile broadband) in New Zealand per head of population are for 30 June 2009.[38] The OECD estimates that there are 22.8 broadband subscribers per 100 inhabitants in New Zealand, equal to the OECD average. While in the June 2009 figures New Zealand maintained the ranking of 18th in the OECD, it was the first time New Zealand's broadband penetration was high enough to equal the OECD average.

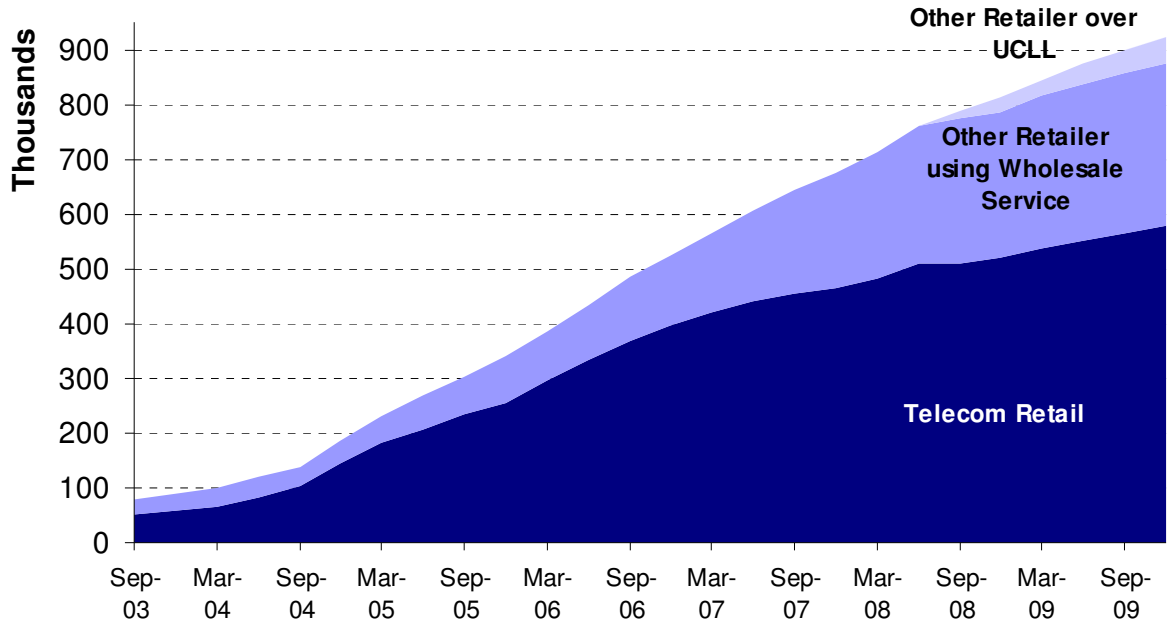
DSL-Based Broadband Services

As shown by the retail internet subscriber numbers in Figure 24, the supply of broadband services in New Zealand has predominantly been through the use of DSL technologies. Telecom supplies the bulk of both the retail and wholesale DSL-based services.

Figure 25 illustrates the growth in Telecom's retail and wholesale DSL connections since late 2003. As at 31 December 2009 there were 921,000 DSL connections on Telecom's network, with 296,000, around a third, being wholesale connections provided to competing retailers. This compares with a total of 522,000 DSL connections and 127,000 wholesale connections, or around a quarter, as at 31 December 2006. Further, as at 31 December 2009, competing retailers' market share of the DSL retail market was 37 per cent compared to 24 per cent as at 31 December 2006.

[38] http://www.oecd.org/dataoecd/21/35/39574709.xls

Figure 25: DSL Retail and Wholesale Connections



Source: Telecom

The wholesale DSL-based services supplied to access seekers by Telecom have evolved over time, from a resale service based on Telecom's retail DSL broadband service, to an unbundled bitstream service (UBS) with three speed variants — full speed[39] downstream and full speed upstream (FS/FS), full speed downstream with 128 kbps upstream (FS/128),[40] and 256 kbps downstream with 128 kbps upstream (256/128). In 2008, Telecom was requested to provide a regulated FS/FS bitstream access product with slightly different technical specifications to access seekers — the UBA service. This regulated access service not only had a basic internet grade variant, but also three levels of enhanced versions of the service. These allowed for some level of packet prioritisation so that access seekers could supply services such as real-time PSTN-equivalent retail VOIP services and fax services.

However, at present, the majority of access seekers continue to use UBS services from the incumbent to provide their own broadband and voice services. There has been little demand for either the basic or enhanced UBA services introduced by the 2006 amendments. The Commission believes there are a number of reasons for this. First, broadband retailers had already invested in infrastructure to provide the UBS service. Continuing to use UBS is likely to be more economic in the meantime, as a move to the UBA service will require further investment. A number of service providers are waiting for Telecom to release new support systems (referred to as future-mode-of-operation systems, or FMO) before making their own investment in internal software systems. FMO systems promise to offer a number of improvements to the customer-service experience, including

[39] Full speed means the speed is not throttled so is governed by the generation of DSL technology available at the exchange or cabinet, typically ADSL2+ (theoretical maximum 24 Mbps) or ADSL1 (theoretical maximum 8 Mbps), and contention and congestion deeper in the network.

[40] The FS/128 product was the variant of the service regulated in 2005, and it effectively limits the downstream speed to approximately 4 Mbps

fewer repairs, right-first-time ordering, and higher order approval rates. In order to take advantage of these customer service improvements, broadband retailers will need to update their own systems. As at the date of this report, Telecom is seeking from the Minister a variation of its undertakings to further delay (Variation Request #3) the introduction of these system improvements until at least July of 2011.

Further, UBS is able to provide reasonable quality 'voice over the internet' services, so there has been no compelling reason to transition to UBA. As at December 2009, UBS made up 95 per cent of the 290,994 wholesale bitstream access services, and only 13,835 UBA services were supplied. Of these, only 3 per cent were enhanced UBA.

Telecom has indicated that UBS plans are being grandfathered from 1 June 2010 (i.e., UBS will not be supplied to new customers from that date) and will be withdrawn by March 2011.[41] This will result in a complete transition from UBS to UBA by access seekers by March 2011. Telecom Wholesale will offer a commercial service 256/128 UBA service to allow retailers to continue to offer a 'budget' broadband service.

Since the beginning of 2008, in addition to the wholesale DSL-based services, access seekers have also been allowed direct access to the copper access network — i.e. Telecom's UCLL service. The UCLL service provides access to the copper line between an aggregation point or exchange and the customer premise, and is supplied by Telecom's access unit "Chorus". By purchasing the UCLL service and investing in equipment co-located in Telecom exchanges, access seekers can offer their own telephone and DSL-based broadband services to retail customers.

The advantage for an access seeker acquiring the local loop service rather than a bitstream access service is twofold. First, while access seekers incur a higher cost from having to undertake investment in equipment, provided they have enough customers, this higher cost is more than offset by the lower monthly charge they pay for local loop access compared to bitstream access.

In addition to the potential decrease in the cost of supplying services, the use of the local loop overseas has typically provided access seekers with the ability to supply enhanced and differentiated DSL broadband service to offer higher bandwidth to end users in the downstream retail broadband market. As an example, in the UK access to UCLL has provided end users with new and innovative services such as Internet Protocol TV (IPTV).[42]

In New Zealand, the number of unbundled lines grew from 3,000 as at 30 June 2008 to 47,000 as at 31 December 2009, as shown in Figure 26. The number of unbundled exchanges grew from 25 to 76 over the same period. After strong growth in the second half of 2008 to reach 26,000, growth in UCLL connections slowed with 21,000 being added for the whole of 2009. An increase in growth is expected in 2010 with TelstraClear starting to transition many of its customers to the UCLL service in late 2009.

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[41] http://www.telecomwholesale.co.nz/broadband_product_plan Telecom Wholesale note that under "grandfathering" rules: No new end-users may obtain the product; Existing end-users can keep the instances of the product they have; and if any existing customer moves the product will be withdrawn.

[42] Ofcom, *Future Broadband: Policy Approach to Next Generation Access*, September 2007, page 50, available at http://www.ofcom.org.uk/consult/condocs/nga/future_broadband_nga.pdf, noted that in London, VNL (Homechoice) used the UCLL to offer Internet Protocol TV (IPTV) in 2003, yet British Telecom (BT) only developed a similar IPTV service a few years later.

The 47,000 copper access lines unbundled after 18 months made up 3.6 per cent of the approximately 1.32 million lines in urban areas.

The growth of unbundled lines in New Zealand after 18 months appears to better than international experience. For example, unbundling in the UK was first mandated in 2000 but it took until November 2006 for the number of unbundled lines to reach one million from a total of 33 million lines (3 per cent). The total did, however, reach 6.5 million by February 2010 (20 per cent). In Germany 7.8 million lines out of 20.9 million (37 per cent) had been unbundled as at 2008 but unbundling was mandated in 1996. In Australia, unbundling was mandated in 1999 and the ACCC noted that as at December 2008 there were 1.1 million unbundled lines and line sharing services in operation, and that of the 5069 Australian exchange service areas, there were at least 537 exchanges in which Telstra faced DSL competition from at least one other ISP that had equipment in the exchange.[43] In the light of international developments it can be expected that the number of unbundled lines in New Zealand will further increase. In addition to TelstraClear starting to unbundle in late 2009, Slingshot/CallPlus and Compass have both announced plans to unbundle exchanges in 2010.

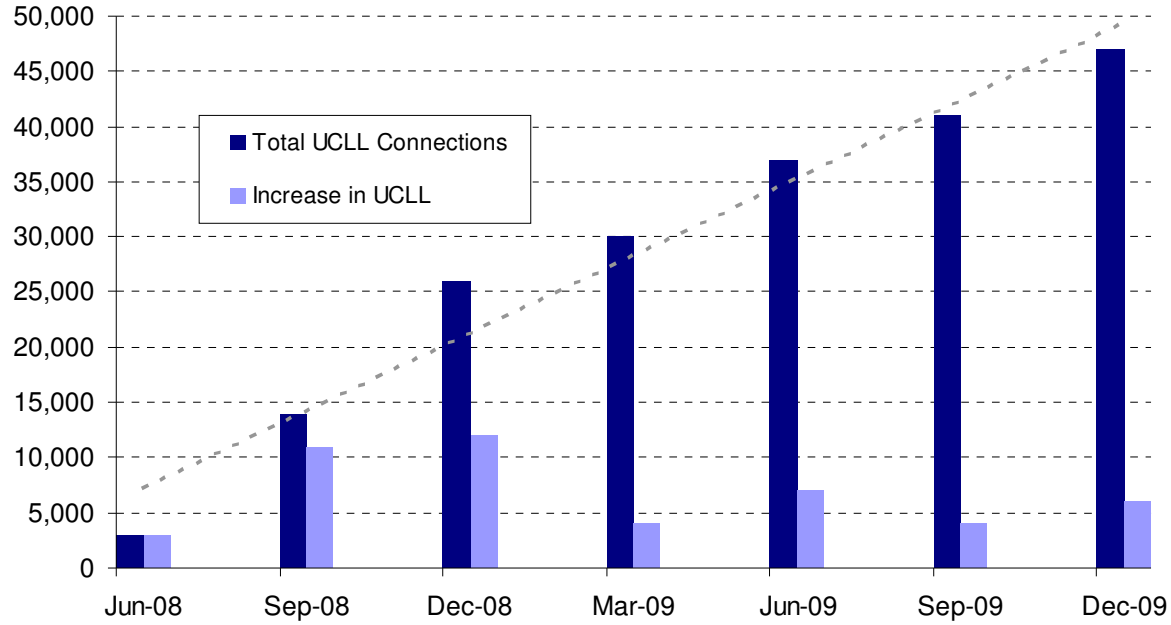
A number of factors are likely to have caused the slowdown in UCLL growth in New Zealand during 2009. These include the completion of the planned unbundling of exchanges in Auckland in late 2008, and the uptake of Telecom's wholesale loyalty offers during the first half of 2009. The loyalty offers, now discontinued, gave discounted wholesale prices to retailers sourcing 90 per cent of their services from Telecom Wholesale, discouraging the purchase of UCLL services from Chorus.

During the second half of 2009, the uncertainty access seekers might have around Chorus' fibre-to-the-node build and the proposed investment by Government in the fibre access network, which both have the potential to strand UCLL-based investments, may have delayed investment plans. Nevertheless, it is clear from the TelstraClear launch, and the Slingshot/CallPlus and Compass announcements that access seekers are see UCLL as a viable strategy to grow their business.

Exchanges unbundled in 2009 have largely been outside Auckland, primarily for TelstraClear which did not launch retail services using unbundled lines until October 2009.

[43] ACCC, *ACCC Telecommunications Reports 2007-08*: *Telecommunications Competitive Safeguards fro 2007/2008*, p 21.

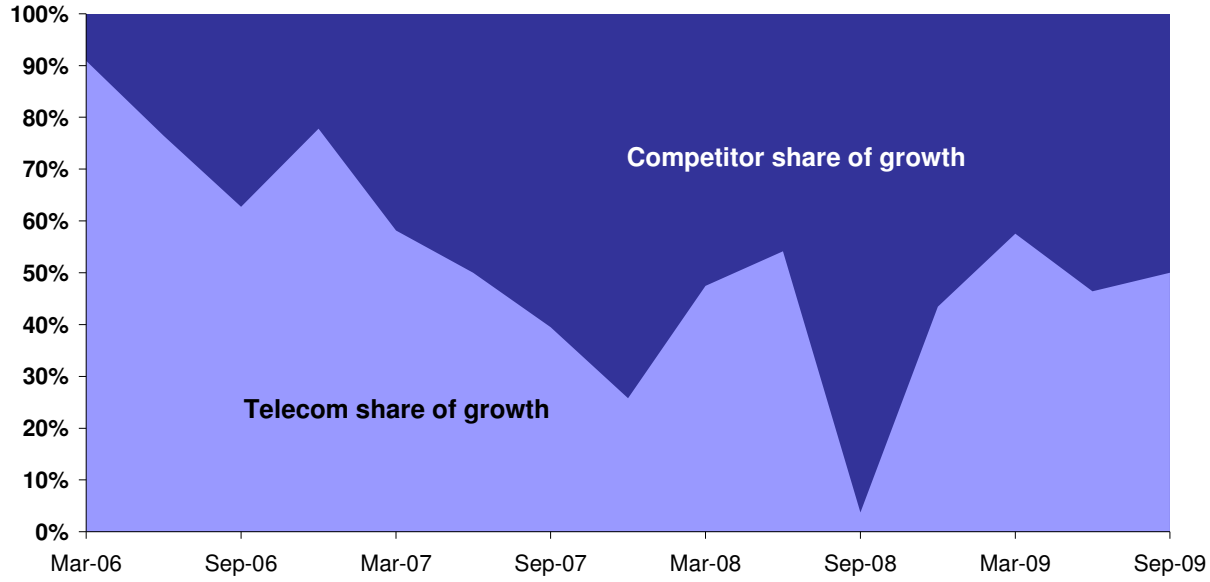
Figure 26: Growth in UCLL Connections



Source: Telecom

Figure 27 shows competing retailers share of the quarterly net growth in retail DSL connections since early 2006. Their net share of the growth tended to increase, with marked fluctuations, until September 2008 when Telecom's share started increasing. Telecom Retail's net share of broadband growth appears to be returning to close to Telecom's overall share of the market of around 60 per cent.

Figure 27: Share of Growth in Retail DSL Connections



Source: Telecom

Broadband performance

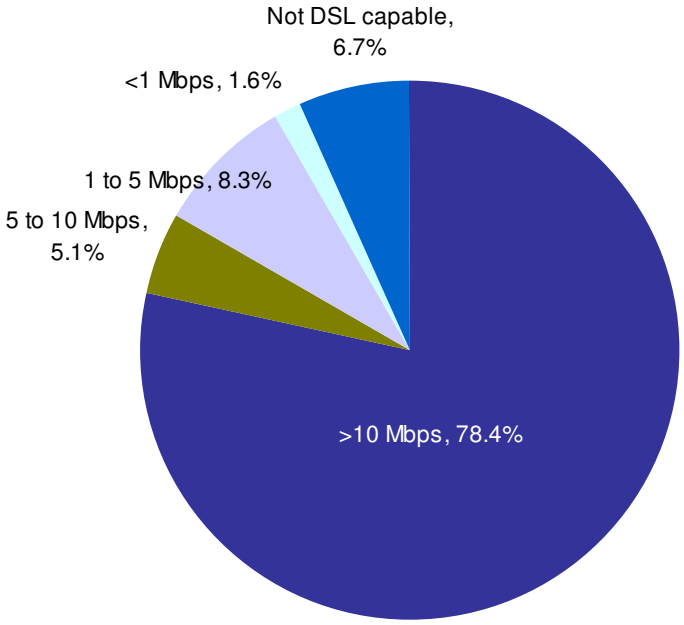
A particular objective of the 2006 reforms was to improve New Zealand's broadband performance and access to high speed broadband services. [44]

Investment in cabinets, backhaul and recent upgrades to the infrastructure used to deliver DSL broadband means that more subscribers are able to access DSL services at higher broadband speeds. Telecom has committed Chorus to providing broadband connections capable of speeds of between 10 and 20 Mbps to 80 per cent of its customers by the end of 2011. This involves rolling out 3,600 new cabinets and 2,500 km of new fibre by the end of 2011.

The Commission prepares a separate report on broadband quality which measures such things as web browsing speeds and variability in performance. The performance measures have improved over the last two years. The Commission's broadband quality report for the six months to 31 December 2009 will be released shortly after the release of this report.

By December 2009, Chorus had rolled out 1,426 new cabinets. As at 31 January 2010, 93 per cent of Chorus lines were capable of delivering DSL broadband services. If an ADSL2+ DSLAM was deployed, 78 per cent Chorus lines could supply DSL at speeds of 10 to 20 Mbps as measured to the local exchange or cabinet. The potential speeds of all Chorus lines are shown in Figure 28. The actual speeds for retail broadband plans can, however, vary significantly depending on technical constraints (e.g. the generation of DSLAM, backhaul arrangements, and the degree of contention deeper in the network), and the level of consumer demand for higher speed plans.

Figure 28: Potential DSL Broadband Speed of Chorus Access Lines



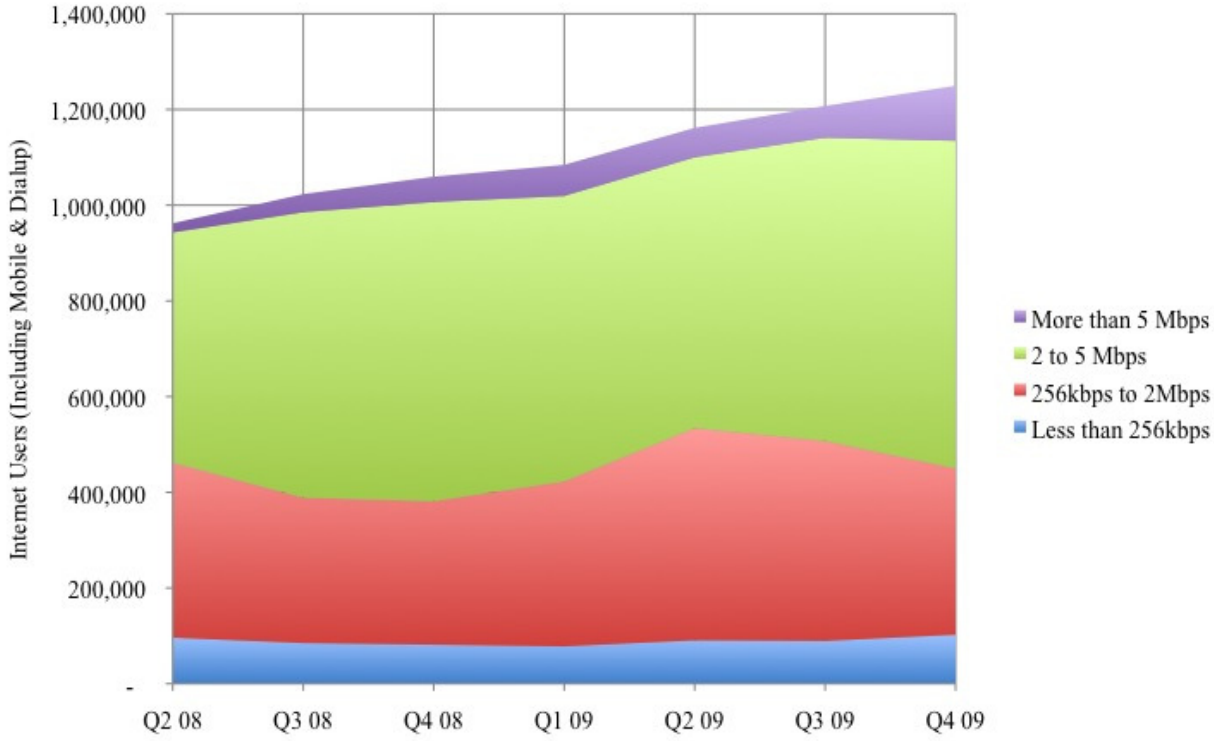
Source: Chorus

[44] Minister of Communications and ICT media release of 13 December 2006.

An independent company Akamai[45] provides data on average through-put speeds achieved by internet users (using a system of delivering large content files such as operating system updates from a distributed system of servers typically located at ISPs)[46]. The distribution of the speed of downloads delivered by Akamai in New Zealand over the seven quarters to 31 December 2009 is shown in Figure 29[47].

Figure 30 shows broadband speeds measured by Akamai for a number of Asia Pacific countries as well as the UK. New Zealand's relative performance for average broadband speed appears to be on par with Australia and Singapore, and slightly below the UK and the US. The actual broadband speeds are considerably lower than the potential DSL speeds able to be achieved in New Zealand although average broadband speeds appear to be improving.

Figure 29: Distribution of Download Speeds in New Zealand



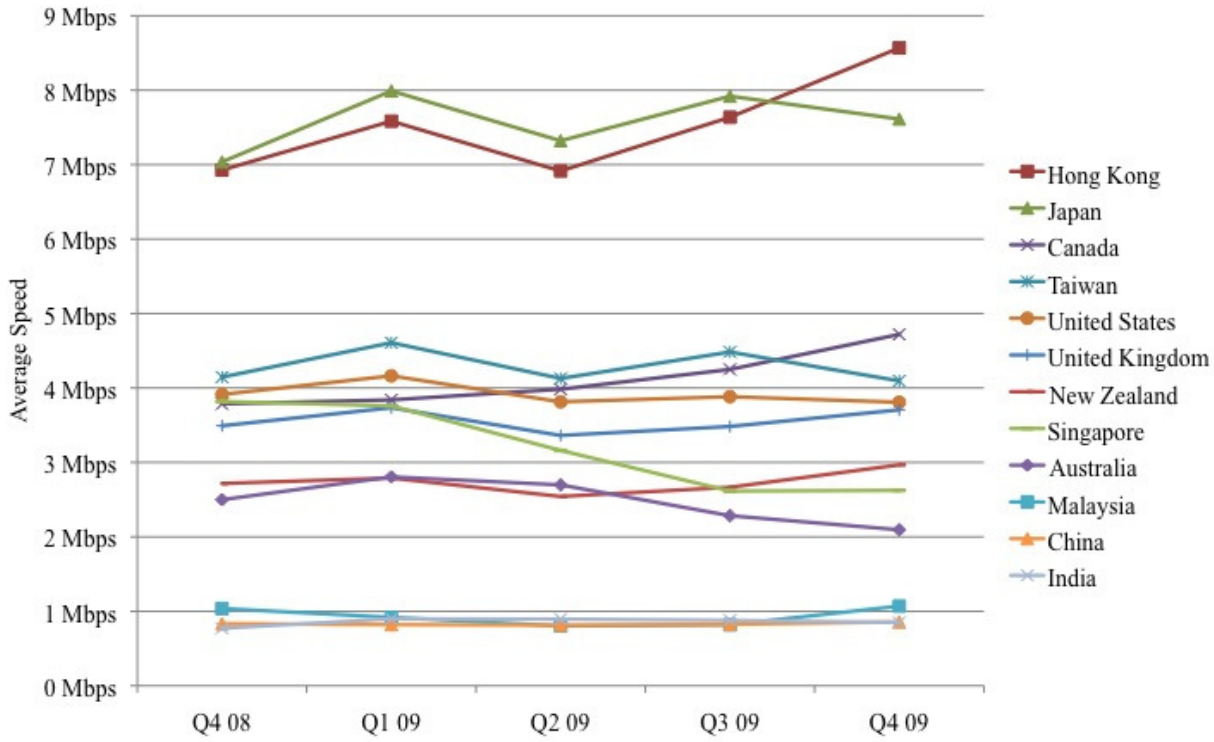
Source: Akamai

[45] http://www.akamai.com

[46] The testing carried out by Akamai has been described as "in the network, third party testing". Akamai measures speeds locally so they are not affected by international backhaul and also they are measured delivering a real service that is unlikely to be influenced by specific ISPs or users. Akamai measures a significant number of individual downloads as it delivers data to virtually every broadband connection in the country (including connections that do not use DSL technology). It claims it delivers approximately 20 per cent of the world's web traffic via its platform of more than 56,000 servers.

[47] Note that the Akamai speed measure is quite different to the broadband performance measures collected by Epitiro's ISP-I system and reported in the Commission's reports on broadband quality. ISP-I tests only premium broadband plans at sites located close to the exchange so the results give close to the optimum performance that can be expected rather than the average performance achieved by users. ISP-I also measures web browsing speeds rather than file download speeds.

Figure 30: Average Speeds by Country



Source: Akamai

In the New Zealand market there are three main DSL retail plans offered to customers, specified by the maximum download and upload speeds provisioned for the plans. Specified in upload/download speed terms, the three types of plan are FS/FS, FS/128 service, and 256/128 (full speed is the fastest speed over the access line available to consumers given the technology in the exchange or cabinet). The lower speeds are achieved by the service provider being provided with a wholesale service that is 'throttled'.

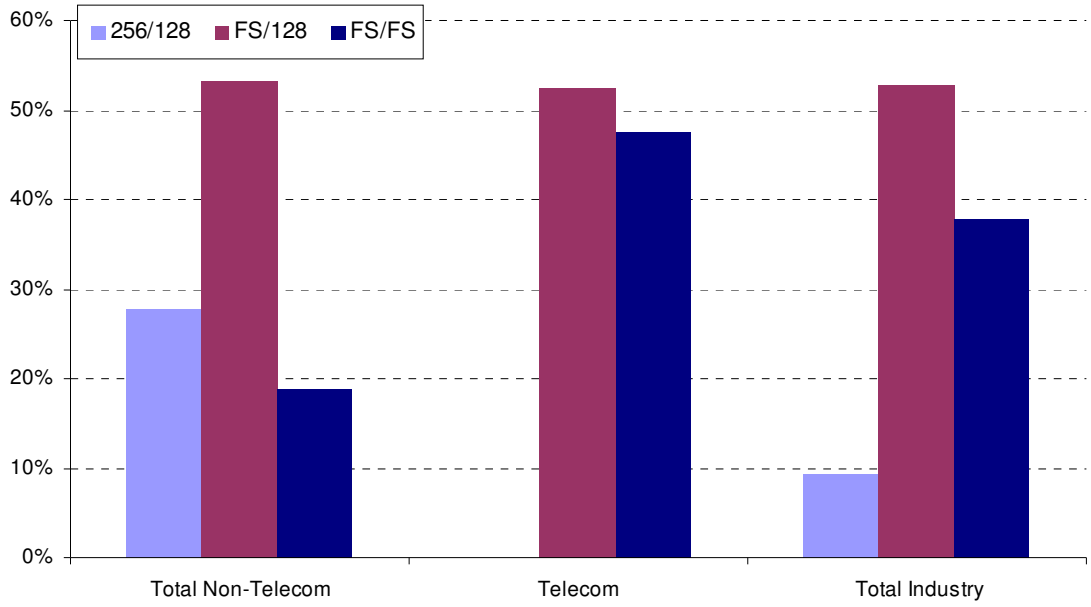
While 78 per cent of connections are capable of delivering higher speed broadband services, consumer demand for higher speed broadband plans has not been strong. Many consumers have demonstrated a preference for purchasing cheaper plans offering lower speed and/or lower data caps. This is apparent from the distribution of DSL plan speeds sold by Non-Telecom retailers as shown in Figure 31. As at 30 June 2009, Non-Telecom DSL broadband retailers were selling full speed DSL plans to less than 20 per cent of customers and over a quarter of customers were on the lowest speed 256/128 kbps plans.

A possible reason for the apparent lack of demand (i.e., willingness to pay) for high speed broadband could be a lack of applications requiring high speeds.

As shown in Figure 31, Telecom has had a policy of migrating customers off older, slower plans with lower data caps onto newer faster ones with higher data caps, without increasing the price. A large migration of customers was undertaken in the second half of June 2009 which is illustrated by the change in the distribution of Telecom customer speeds between Figure 31 and Figure 32. Before 30 June 2009, Telecom had increased the share of its retail DSL customers on FS/FS plans to 48 per

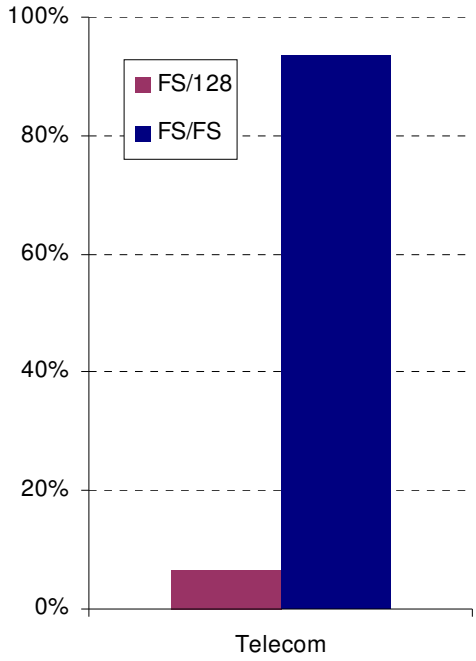
cent and by 30 November 2010 to 93 per cent. This was done 'seamlessly' with no increase in cost to customers. This may have led to a perception by customers that higher speeds have no cost.

Figure 31: Distribution of DSL Plan Speeds – June 2009



Source: Telecom

Figure 32: Distribution of Telecom DSL Plan Speeds – November 2009



Source: Telecom

While Telecom is moving to supply a FS/FS product universally other providers have chosen to target other segments of the market with lower cost, lower speed broadband services such as the 256/128 service, as shown by Figure 31. The 256/128 service is typically marketed at a cost of $25 a month compared to $40 a month for a FS/FS service.

In its Telecommunications Market Monitoring Report for the six months to 30 June 2009, the Commission reported on broadband benchmarking undertaken in June 2009 and concluded that the pricing of broadband services in New Zealand was broadly in line with that of similarly developed countries. New Zealand appears to be unusual internationally in that the main broadband supplier, Telecom, now has price differentiation driven almost solely by data usage rather than speed.

Backhaul

In telecommunications, backhaul generally refers to the transport of voice and data traffic between points of aggregation, and can be supplied on a national (core networks) or international (via submarine cables) basis.

Investment in backhaul is important for growth in both fixed-line and mobile broadband services, as inadequate backhaul capacity may restrict the speed at which data services can be delivered to consumers of both fixed-line and mobile services. There are significant costs associated with the initial investment in backhaul as it often involves laying fibre-optic cable either underground or under the sea. In contrast, once the network has been built, the cost of increasing capacity is relatively small, as suppliers need to invest in additional electronics at each end of the cable. The electronics are generally subject to rapid technological progress and so are prices for this type of equipment.

Due to the large economies of scale associated with such networks, there are considerable cost savings from supplying large amounts of voice and data traffic on these networks.

Domestic backhaul

Domestic backhaul network operators include Telecom, TelstraClear, Vector, Kordia, FX Networks, Network Tasman, and CityLink, as well as a number of local authorities and smaller network operators (such as Velocity and Inspire). Most of these operators are fibre-based networks, although backhaul is also supplied using other technologies such as digital microwave radio (DMR).

TelstraClear and FX networks operate national fibre-based backhaul networks, providing intercity connectivity. TelstraClear's fibre network covers most of New Zealand, while FX Networks has completed a fibre ring throughout the North Island. Other providers are more regionally focussed, with Vector operating a fibre network in Auckland and Wellington, Citylink in Wellington, Inspire in Palmerston North, Velocity in Hamilton and Network Tasman in Nelson. Kordia, on the other hand, primarily operates a DMR backhaul network.

Backhaul services are becoming increasingly important for both fixed and mobile services. The delivery of higher speed broadband services is enabled by the deeper deployment of fibre into the access network. For example Telecom's cabinetisation programme and the government's Ultra-Fast Broadband Initiative (UFB), has increased and will continue to increase the demand for greater

backhaul capacity as new services emerge using the capabilities of fibre access networks. Mobile operators require backhaul connections for routing traffic from cell sites to their core network, with greater capacity required to provide increasingly popular mobile data services.

DMR has typically been used to link cell sites, although the advent of 3G and the introduction of new data intensive applications has increased the backhaul requirements of mobile networks. The deployment of new devices such as the iPhone has also led to an increase in data traffic.

This has driven the need for increased reliance on the provision of fibre-based backhaul for mobile networks, in order to ensure that consumers receive a reasonable quality of service when using data-intensive applications. For example, due to increased backhaul requirements associated with its 3G network, Vodafone has partnered with Vector for the provision of backhaul from its cell sites in the Auckland region to its main data centres.[48]

Regulated domestic backhaul services

There are currently two regulated domestic backhaul services: UCLL Backhaul and UBA Backhaul. These regulated services enable ISPs to purchase backhaul services from Telecom, to be used in conjunction with the UCLL and UBA services. The UCLL Backhaul and UBA Backhaul services are priced according to the distance of the link and the bandwidth chosen by the access seeker.

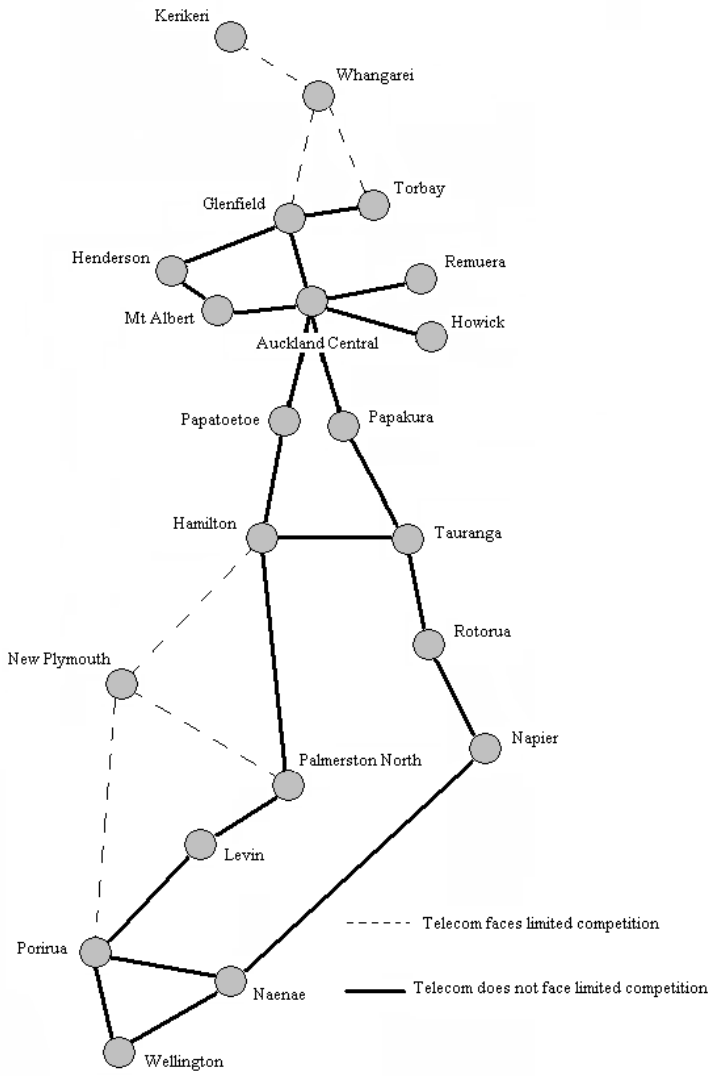
The UCLL Backhaul Service incorporates a number of Primary and Secondary links across New Zealand. Primary Links are from a local telephone exchange to its Parent Point of Interconnection (POI) Site and Secondary Links are from a Parent POI Site to an access seekers' nearest available POI.

The Commission assesses competition in the domestic backhaul market as part of its regular UCLL Backhaul competition reviews. Telecom is only required to provide the regulated backhaul service on those routes where it faces limited competition.

The latest UCLL Backhaul competition review was completed on 3 December 2009, in which the Commission found effective competition in the supply of backhaul services on 52 out of 98 primary links considered during that review. The Commission assessment of secondary links is summarised in Figure 33 and Figure 34 below.

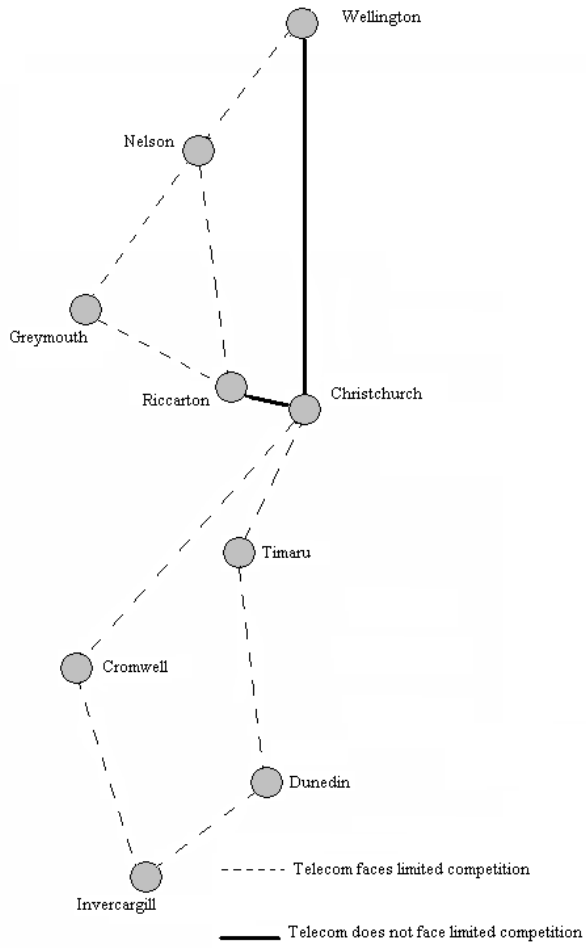
[48] http://www.vectorfibre.co.nz/sites/vectorfibre.co.nz/files/pdf/VCO092%20Vodafone%20Case%20Study%20v2.pdf

Figure 33: UCLL Backhaul Secondary Links (North Island)



Source: Commerce Commission

Figure 34: UCLL Backhaul Secondary Links (South Island)



Source: Commerce Commission

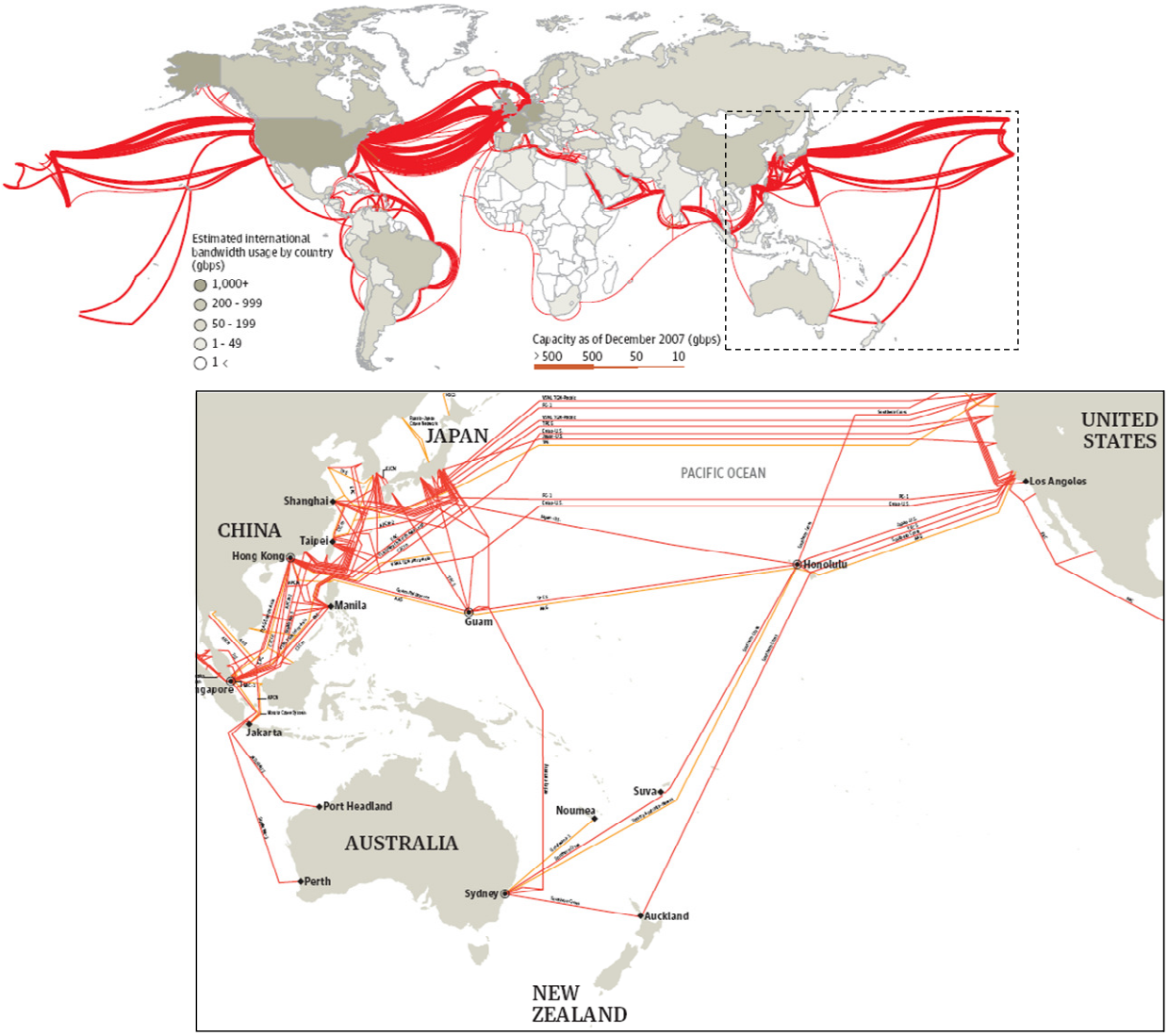
International backhaul

International backhaul is important for providing broadband services, as transporting data over international routes is one component of the cost of providing broadband services in New Zealand. It has often been argued that data caps in New Zealand are a function of the cost for international backhaul.

The Southern Cross Cable is the main provider of international backhaul for New Zealand operators and has provided international bandwidth from Australia, New Zealand and Hawaii to the USA for the last decade.[49] The Southern Cross Cable, as well as a number of other international backhaul links, is depicted in Figure 35 below.

[49] Southern Cross is an independent entity and is owned by Telecom New Zealand (50%), SingTel Optus (40%) and Verizon Business (10%).

Figure 35 International connectivity



Source: Telegeography.com submarine cable map 2008. Internet statistics from Internetworldstats.com

In August 2009, Southern Cross Cable Network announced a price reduction and capacity boost for its undersea cable network that directly connects Australasian broadband users to US internet hubs. In a media release, it was stated that: [50]

- prices for circuits to the US, from both Australia and New Zealand, have been reduced by 15%, bringing reductions over the last 18 months to more than 50%; and
- by March 2010 lit capacity will grow to 620 Gbps per cable, taking total lit capacity to 1.24 Tbps.

[50] http://www.southerncrosscables.com/public/news/newsdetail.cfm?StoryID=172

On 11 March 2010, Pacific Fibre announced plans to build a 5.12 Terabits per second capacity fibre cable to be ready in 2013, connecting Australia, New Zealand and the USA[51]. The initial proposal is a cable which will deliver five times the capacity of the existing Southern Cross system. Following this announcement, Kordia welcomed the Pacific Fibre initiative, noting that it "is looking forward to working with them on delivering a technology solution that will bring New Zealand business up to speed with the rest of the world".[52] Kordia had previously announced plans to install a fibre link between Auckland and Sydney.

[51] http://blog.pacificfibre.net/press-release/new-zealand-businessmen-propose-project-to-build-international-fibre-cable-2/

[52] http://www.kordia.co.nz/_blog/What's_new/post/Kordia_welcomes_Pacific_Fibre_initiative/

MOBILE MARKET

Overview of regulatory developments

The key regulatory developments in the mobile market since December 2006 include the following:

- The implementation of mobile number portability on 1 April 2007, which enables end-users to switch mobile networks whilst retaining the same phone number.
- Completion of the Schedule 3 investigation into mobile co-location on 14 December 2007, which concluded that non-price issues associated with mobile co-location had created barriers to market entry.
- Release of the Mobile Co-location standard terms determination on 11 December 2008, which set the non-price terms for the sharing of cell phone towers owned by New Zealand mobile network operators.
- Announcement on 30 June 2009 that the Commission intended to launch a Schedule 3 investigation into whether regulation of the national mobile roaming service should be extended to include price. The commencement of the investigation was deferred until after the MTAS investigation is completed.
- Completion of the mobile termination access services (MTAS) Schedule 3 investigation on 22 February 2010.

Overview of the New Zealand Mobile Market

2009 saw a number of significant developments in the New Zealand mobile market. Most importantly:

- Vodafone extended its 3G coverage to 97 per cent of the population[51];
- Telecom launched it's XT network in May 2009; and
- 2degrees launched New Zealand's third mobile network in August 2009.

There are now three active mobile network operators in the New Zealand market. Vodafone operates a nationwide[53] 2G GSM and 3G UMTS[54] network. Telecom operates a nationwide 3G UMTS network (the XT network), as well as its legacy CDMA network. 2degrees, began service with a 2G GSM network proving coverage using its own cell sites in Auckland, Wellington, Christchurch and Queenstown, while relying on roaming via Vodafone's GSM network to provide coverage outside these areas.

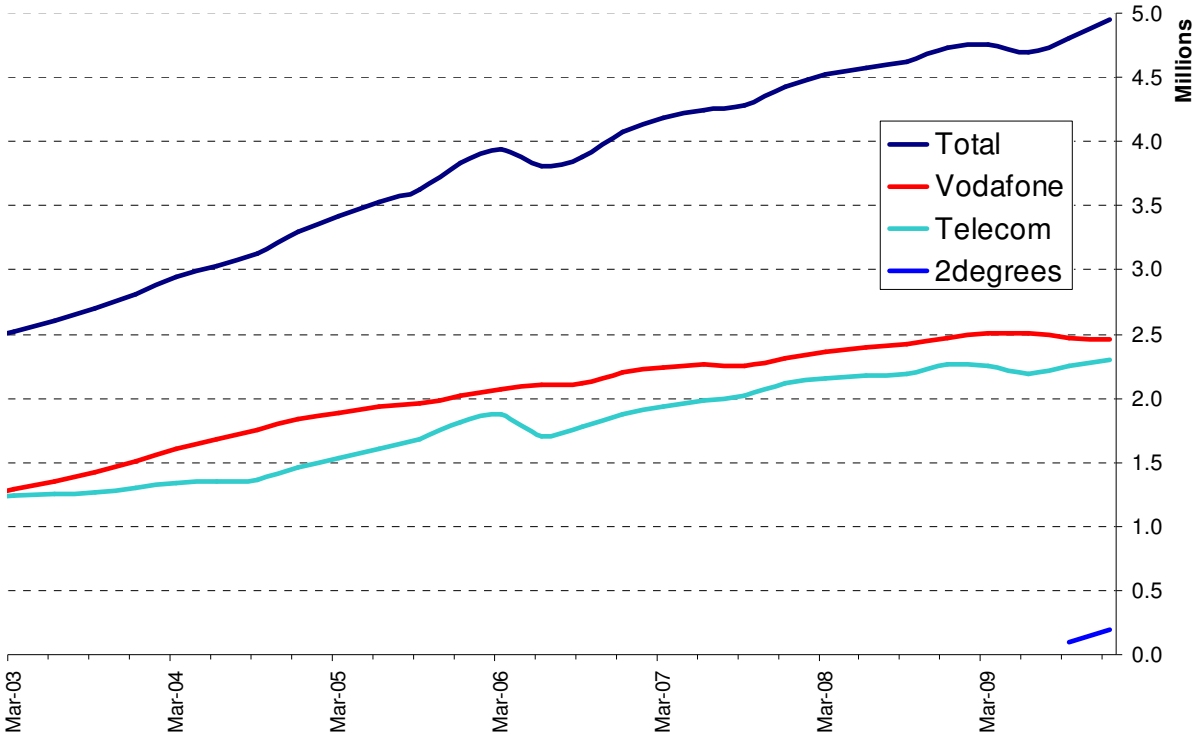
[53] According to Vodafone, its network provides coverage to 97% of the population (measured in terms of % of areas where New Zealanders live, work and play)
[54] Universal Mobile Telecommunications System (UMTS) is the 3G successor to the 2G GSM standard. The most common form of UMTS uses W-CDMA as the underlying air interface.

Key market trends in the mobile market

- Usage Growth.
- Rise in mobile penetration.
- Preference for pre-paid.
- Decline in voice revenue.
- Messaging and data growth.

Mobile phone connections grew by approximately 20 per cent in the last three years from 4.1 million as at 31 December 2006 to an estimated 4.9 million as at 31 December 2009 (+19.5%), as shown in Figure 36 below. This equates to a penetration rate of 114 percent of the population.

Figure 36: Mobile Connections by Provider



Source: Telecom, Vodafone, Commerce Commission

On 12 February 2010, 2degrees announced that 206,000 customers were actively using its services[55]. Based on this information, the Commission has estimated the market shares of Vodafone, Telecom and 2degrees. Vodafone's market share of subscribers as at 31 December 2009 was estimated to be 49.6 per cent, Telecom's market share is estimated to be 46.6 per cent and

[55] See http://blog.2degreesmobile.co.nz/media/206000-new-zealanders-join-2degrees-mobile-in-first-six-months

2degrees' market share is estimated to be 3.8 per cent. Market shares for earlier periods are shown in Table 1 below.

Table 1: Market shares as at 31 December (2006-2009)

	Vodafone	Telecom	2degrees
2006	54.0%	46.0%	-
2007	52.2%	47.8%	-
2008	52.1%	47.9%	-
2009[54]	49.6%	46.6%	3.8%

Source: Commerce Commission (2009)

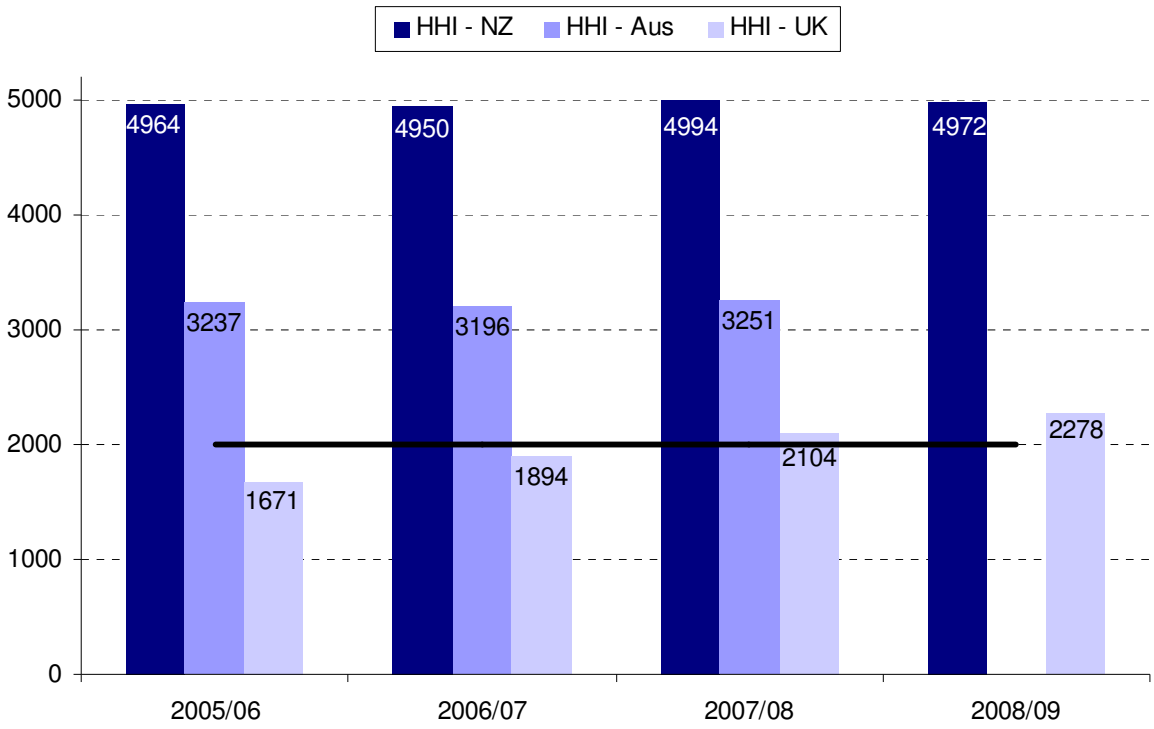
As Vodafone and Telecom count all customers who have been active in the previous six months when compiling their subscriber figures, there is likely to have been some double counting of subscribers in official figures. The Commission has adjusted for this factor in its estimate of the number of mobile subscribers in New Zealand as at 31 December 2009.[56]

2degrees has grown its subscriber numbers rapidly since its launch in August 2009 to reach an estimated market share of over four per cent by 31 January 2010.

The market concentration has changed very little over the last four financial years, as shown by the stable HHI index in
Figure 37. A marginal rise in the HHI in 2007/08 was caused by a drop in the retail mobile customers of TelstraClear for that year. TelstraClear maintained a small presence in the retail mobile market in all four years, but is now marketing to both commercial and consumer services under a new agreement with Vodafone (discussed later). By way of comparison, HHI figures have been collected for Australia and calculated for the UK from connection figures.

[56] Those subscribers estimated to have switched to 2degrees from Vodafone and Telecom in the previous six months are deducted from the totals reported by Vodafone and Telecom.

Figure 37: HHI Index in the retail mobile market

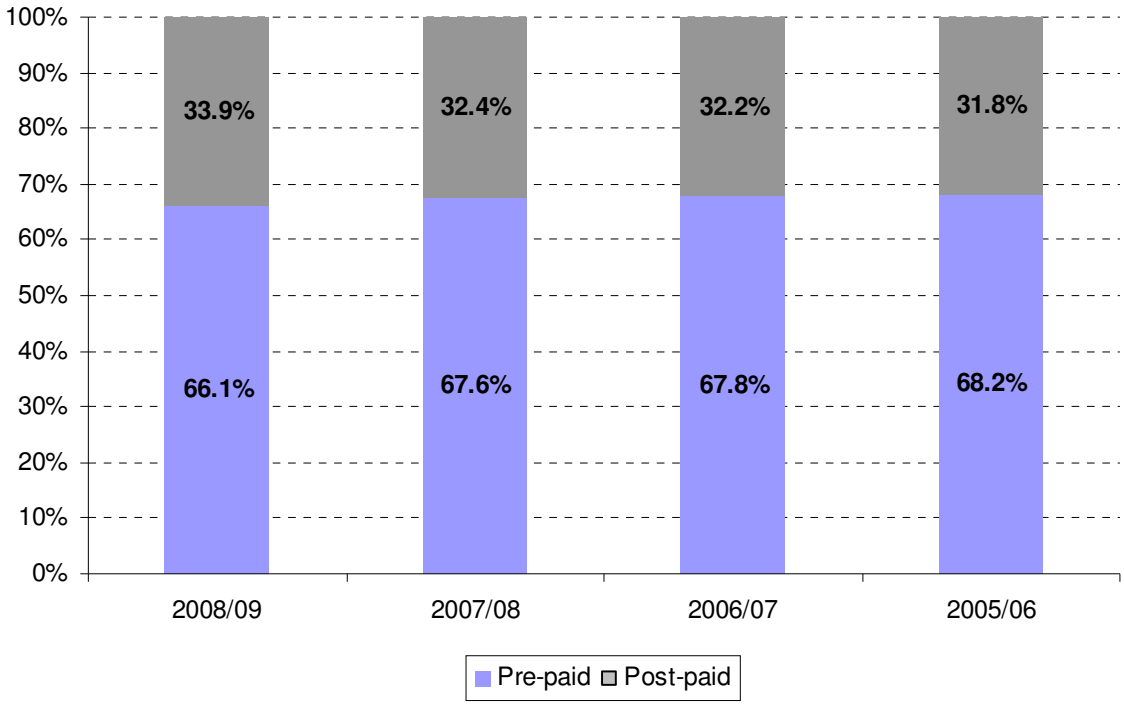


Source: Commerce Commission

Approximately two-thirds of New Zealand mobile subscribers have pre-paid connections, with the remainder being post-paid (or contract) subscribers. This figure has remained relatively static in recent years, as depicted in Figure 38 below. Data contained in the OECD Communications Outlook 2009 indicates that New Zealand has a higher proportion of pre-paid customers than most mobile markets in the OECD.[57] For 2007, the OECD lists New Zealand as having 68 per cent of mobile subscriptions pre-paid compared to the OECD average of 44 per cent.

[57] Table 4.14 on page 135 of the 2009 OECD Communications Outlook indicates that New Zealand had the seventh highest proportion of pre-paid subscribers across all OECD countries in 2007.

Figure 38: Percentage of Pre-Paid Mobile Subscribers (2006-2009)



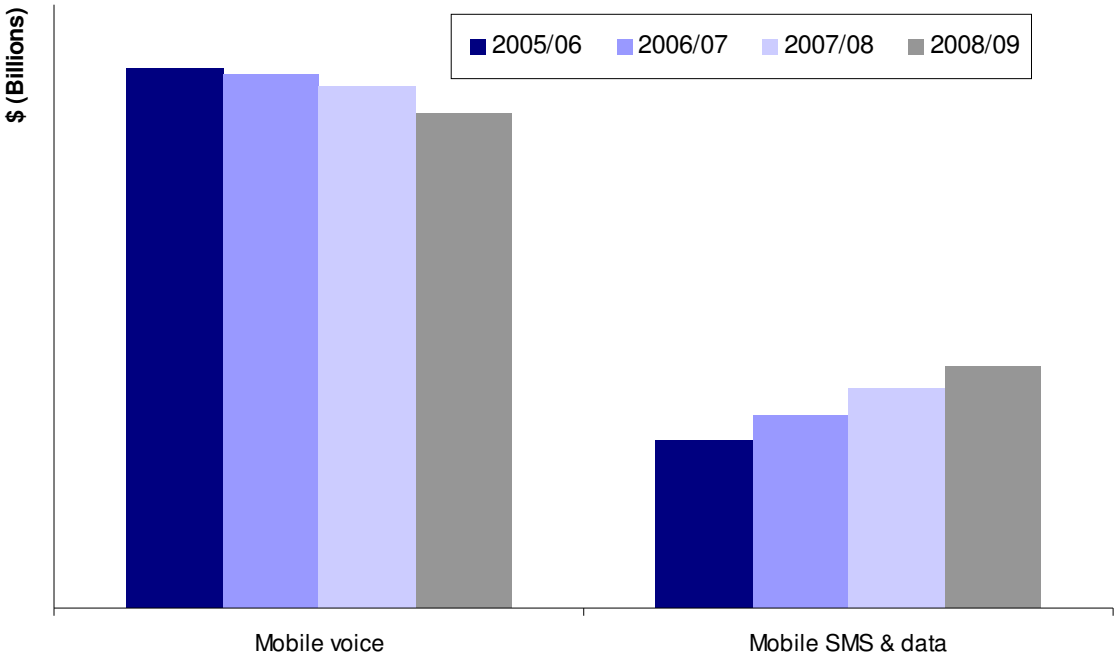
Source: Vodafone, Telecom

Mobile revenues have risen modestly over the last three years, increasing by less than five per cent in total. A change in the data questionnaire for 2008/09 to explicitly collect wholesale revenue makes year-on-year comparisons difficult. However, revenue from mobile voice services has been falling while revenue from mobile data services (including SMS and mobile broadband) has been rising, as shown in Figure 39 below.[58]

By contrast, mobile usage has been growing strongly with significant increases in voice minutes, SMS and probably data usage occurring in recent years. These increases are discussed in later parts of this section.

[58] The mobile revenue split for 2008/09 has been estimated by the Commission. The scale has been removed from the figure to protect the confidentiality of the data.

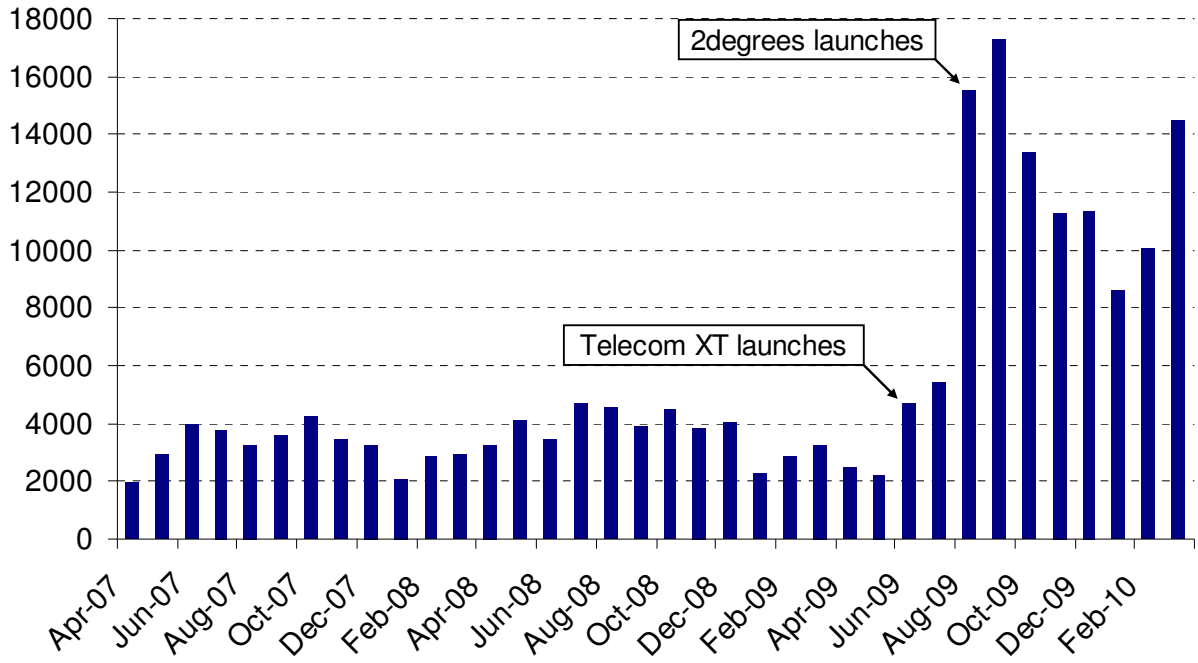
Figure 39: Mobile Voice and Data Revenue (2005/06 to 2008/09)



Source: Commerce Commission

Mobile number portability was implemented in New Zealand in April 2007. As a result, it is now possible for an end-user to switch networks whilst retaining the same phone number.

Figure 40: Mobile Numbers Ported each Month



Source: TCF

The volume of mobile numbers that have been ported each month since April 2007 is shown in Figure 40. This indicates that the level of porting rose significantly after the entry of 2degrees in August 2009. 17,313 mobile numbers were ported in September 2009; the highest of any month since the inception of number portability.

Another recent development is the entry of mobile virtual network operators (MVNOs)[59]. MVNOs rely on wholesale access to the network infrastructure of facilities-based mobile network operators, such as Vodafone, Telecom and 2degrees, in order to provide mobile services to retail customers. A full MVNO arrangement will allow the operator to develop its own services rather than just reselling plans of the parent operator.

There are currently seven individually-branded MVNOs operating in the mobile market. These MVNOs are TelstraClear, M2, Compass, Black and White, CallPlus, Slingshot, and Digital Island. Apart from Digital Island and some of TelstraClear's customers, who use Telecom's CDMA network, the MVNOs are operating on the Vodafone network. Orcon also has an MVNO agreement with Vodafone, but is yet to launch its mobile offering.

Little data is available to assess the impact that the entry of MVNOs has had in the New Zealand mobile market. However, the Commission estimates that there are currently less than 100,000 end-users supplied with mobile services by MVNOs. The Commission intends to collect more data on MVNOs for future reports.

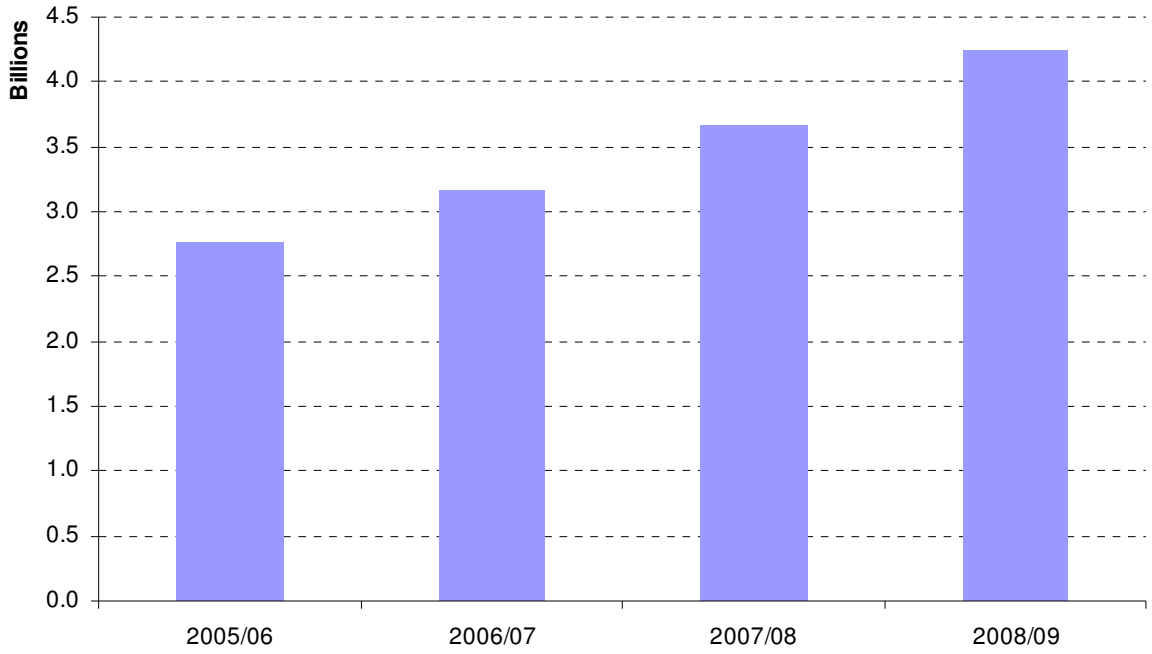
Mobile Voice

Mobile voice usage has risen strongly over the last three years, as shown in Figure 41 below. Until the launch of Telecom's XT network and 2degrees' network during 2009, headline mobile calling prices had remained relatively static. This suggests the increase in calling volumes was likely to have been driven by the popularity of restricted on-net calling offers such as Vodafone's Bestmates and Telecom's My Favourites. These offers allow unlimited calling and, in the case of BestMates, both unlimited calling and texting, between nominated persons on the same network for a flat monthly fee. The resulting increase in call minutes would not have increased revenue like it would have been likely to if the increase was in off-net minutes.

A comparison of calling prices and volumes discussed later in this section indicates that on-net pricing plans are extensively used and provide much cheaper average prices than off-net plans. Vodafone in particular has heavily promoted such plans.

[59] An MVNO is an operator that provides mobile phone service but does not have its own licensed frequency allocation of radio spectrum, nor does it have the entire infrastructure required to provide mobile telephone service.

Figure 41: Mobile Voice Minutes

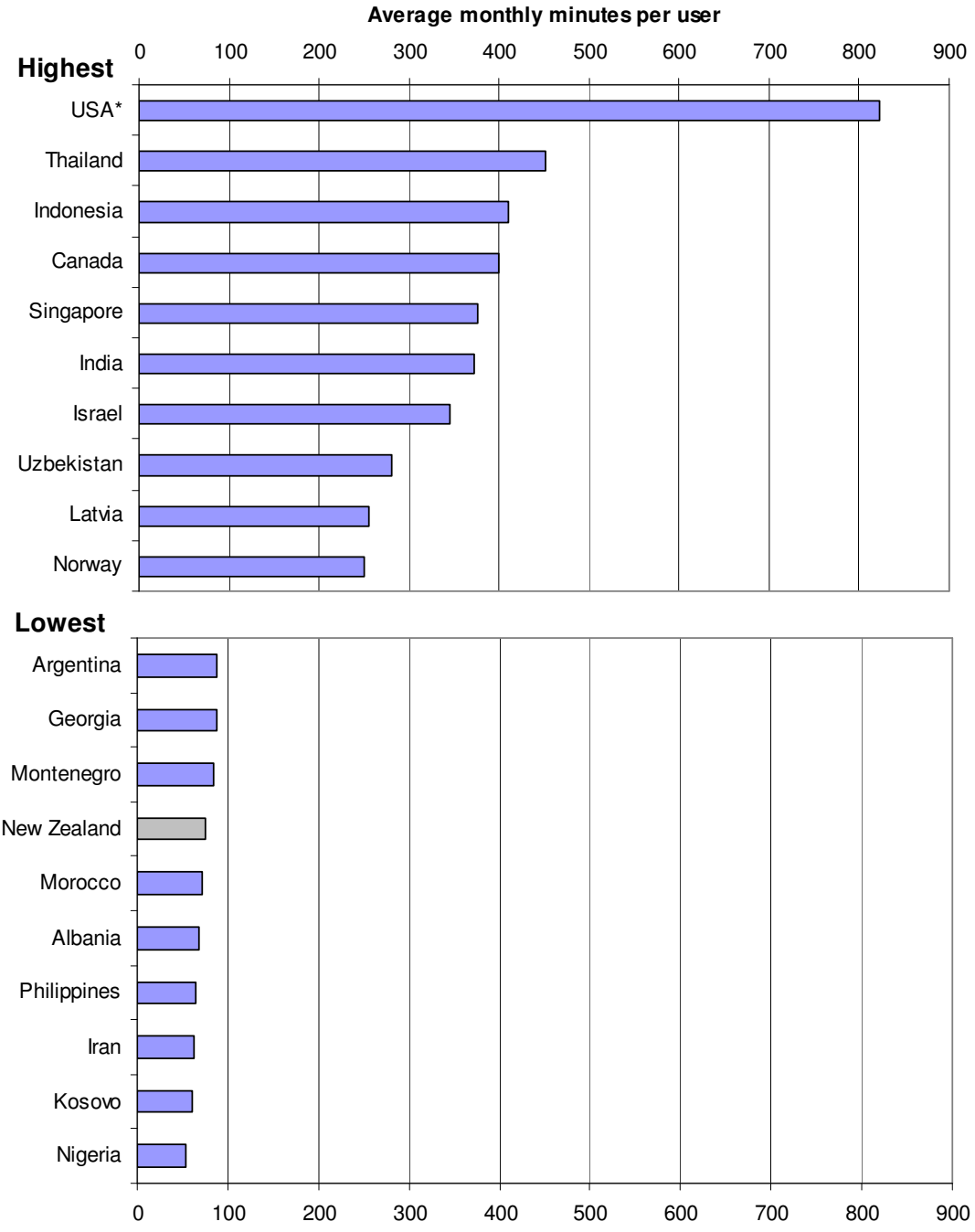


Source: Commerce Commission

Despite the trend of increased mobile calling that has been observed in recent years, New Zealand's use of mobile phones for voice calls relative to fixed lines still remains relatively low. As discussed earlier, the proportion of voice call minutes made on mobile phones comprises only 27 per cent of all call minutes, despite there being two and a half times more mobile connections than fixed line connections. This compares with 44.5 per cent of call minutes in the UK for the 2008 year and 53 per cent in Ireland for the quarter ending 30 June 2009.

Information provided by GSMA (based on publicly available data) indicates that mobile voice traffic per subscriber in New Zealand is amongst the lowest in the world. Of those countries for which data is available, the 10 with the highest usage and the 10 with the lowest usage are depicted in Figure 42 below.

Figure 42: Mobile voice usage (Q4 2009)

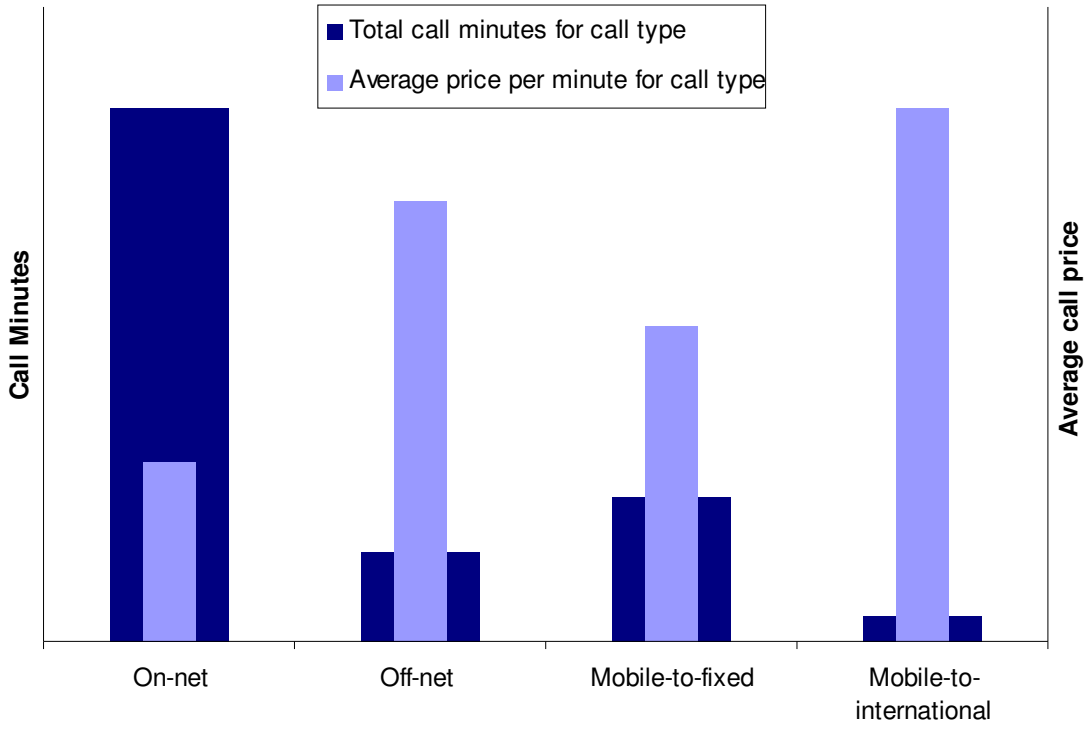


*Includes incoming minutes
Source: GSMA

The existence of free local calling has often been advanced as a reason for New Zealand's low mobile voice usage. However, Figure 42 shows that US has the highest mobile phone use in the world yet, like New Zealand, fixed local calling is almost universally free. Canada also has free local calling. This indicates that the availability of free local calling does not necessarily lead to lower mobile phone use.

As with fixed line calling, there is a clear relationship between the price of calls and the volume of calling undertaken by consumers. This is depicted in Figure 43 below which shows that the cheaper the price, the greater the volume of calls.[60]

Figure 43: Average Price vs Total Call Minutes (2008/09)



Source: Commerce Commission

Figure 43 shows that there is a significant price differential depending on whether calls are made to a mobile phone on the same network (on-net) or to a mobile phone on another network (off-net). The low average price per minute for on-net calls is a result of the introduction of restricted on-net pricing plans such as Vodafone BestMates and Telecom My Favourites.

The prevailing mobile termination rate (MTR) is currently 15 cents per minute, which is billed on a minute+second basis (this is roughly equivalent to 18.45 cents per minute when billed on a second+second basis[61]). The Commission noted in its recent Schedule 3 investigation into the mobile termination access services (MTAS) that a cost-based MTR for New Zealand is likely to lie within a range of between 5.4 cents per minute and 8.3 cents per minute for 2009.[62]

The competition concerns associated with significant on-net price discounting, in combination with above cost mobile termination rates, were highlighted in the MTAS investigation. The Commission intends to closely monitor pricing and usage trends in the mobile market following the outcome of the MTAS investigation.

[60] Calculations are based on billed minutes but scales have been removed to protect the confidentiality of the data.
[61] In the MTAS report, the Commission scaled up MTRs expressed on a minute+second basis by 23 percent in order to reach an equivalent second+second rate. This is discussed in paragraph 91 of the Commission's Final MTAS Report.
[62] See paragraph xv in the Executive Summary of the Commission's final MTAS report.

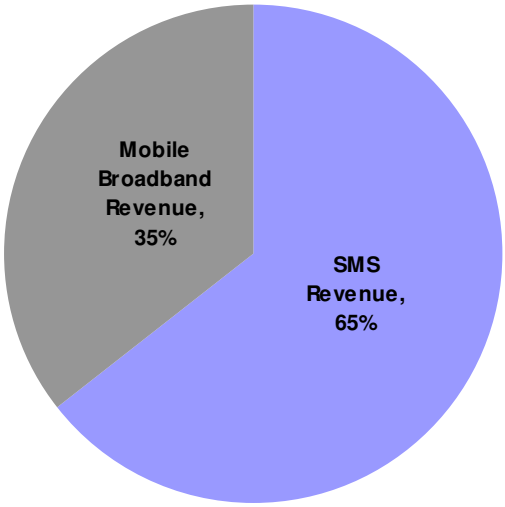
Mobile Data

There are two main categories of Mobile Data services: SMS and mobile broadband. SMS, or text messaging as it is commonly referred to, is one of the key services delivered by mobile providers. SMS enables consumers to send short text messages, of 160 characters or less, to each other using their mobile handsets.

Mobile broadband has been gaining popularity in recent years. With the deployment of higher-speed data technologies by mobile network operators, mobile handsets are now able to be used for applications such as web surfing and streaming video. Devices such as data cards and USB dongles are able to be used to provide wireless broadband connections to PCs and laptops.

SMS is the major source of mobile data revenue for New Zealand mobile operators. This is shown in Figure 44 below.

Figure 44: Split of Mobile Data Revenue for 2008/09



Source: Commerce Commission

SMS

In recent years texting has become more popular around the world, even in markets with high calling minutes per user like the US. It is difficult to find comprehensive up-to-date statistics on international SMS use, however, in the Commission's recently released MTAS report it was noted that in 2007 New Zealand had higher SMS usage than the 10 countries for which data was reported in the Ofcom 2008 International Communications Market report.

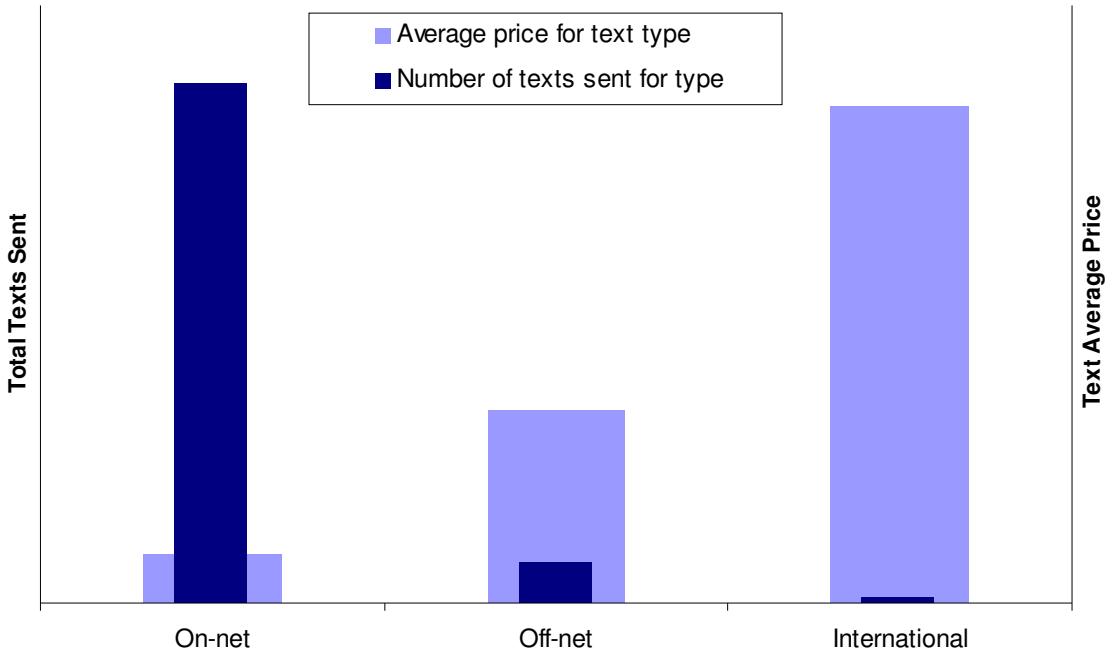
Since then, the Commission has obtained further information regarding SMS usage in other countries. In New Zealand an average of approximately 8 texts a day per subscriber are sent. The highest use is believed to be in the Philippines where it is reported that an average of 27 text messages per subscriber are sent per day. In the UK, around 3 text messages are sent per day. In the US mobile subscribers are now reported to send an average of 15 texts a day.

This indicates that although New Zealanders may be relatively prolific texters, the average per user is not extraordinarily high compared to other countries. The US experience indicates that consumers can spend a lot of time talking on their mobiles and send a lot of texts.

Similar to mobile calling, there is a significant price differential depending on whether text messages are sent to a mobile phone on the same network (on-net) or to a mobile phone on another network (off-net). This can be seen in Figure 45[63] below.

The low average price for on-net SMS is likely to be largely due to the effect of bulk on-net texting offers, for example, Vodafone's TXT2000. Not surprisingly, this on-net price discounting has led to significant on-net/off-net traffic differentials, as can be seen below.

Figure 45: Average Price vs Total SMS Messages Sent (2008/09)



Source: Commerce Commission

A bill and keep regime[64] for SMS messages is likely to allow operators to price off-net texts at a rate sufficiently low to eliminate the on-net/off-net price differential.

Mobile broadband

The demand for broadband services provided over mobile networks has been growing in recent years. Mobile data cards can be connected to laptops, and mobile phones themselves can now be used to access the internet. The New Zealand World Internet Project recently reported that the

[63] The scales have been removed to protect the confidentiality of the data.
[64] Defined by the OECD as "A pricing scheme for the two-way interconnection of two networks under which the reciprocal call termination charge is zero - that is, each network agrees to terminate calls from the other network at no charge."

proportion of people accessing the internet via mobile phones more than doubled from 7 per cent in 2007, to 18 per cent in 2009.[65]

As at 30 June 2009 there were around 150,000 mobile broadband connections using data cards.

Telecom's XT mobile network uses W-CDMA technology like Vodafone and is advertised as supporting average data speeds of 3Mbps downstream and 750 kbps upstream, depending on conditions[66]. Vodafone advertises its 3G mobile network as providing average download speeds of 800 kbps to 1.4 Mbps and upload speeds of 700 kbps to 1.2 Mbps for 3G broadband devices[67]. Both networks advertise 3G coverage to 97 per cent of the population. This is gained with coverage to about 40 per cent of New Zealand's land area.

2degrees is also currently providing mobile data services using GPRS and EDGE technology. The 2degrees network is 3G capable; however, 3G services are yet to be enabled. In a recent media release, 2degrees indicated that 3G services will be offered in the market some time in 2010.

Fixed-to-mobile substitution

Telecommunications markets across a number of developed countries have observed in recent years a trend of:

- an increasing proportion of voice calls being carried over mobile networks compared with the proportion of voice calls carried over the fixed-line networks; and
- a decrease in the number of fixed-line connections and an increase in the number of mobile connections.

The term "fixed-to-mobile substitution" (FTM substitution) has commonly been used to describe both these market developments. Substitution in the form of an increasing proportion of traffic carried over mobile networks is driven by users opting to make calls on their mobile phones rather than their fixed-line phones. In contrast, substitution in terms of access is driven by users discontinuing their fixed-line subscription, and instead using a mobile solution to meet their basic connectivity needs.

Reasons for FTM substitution may include:[68]

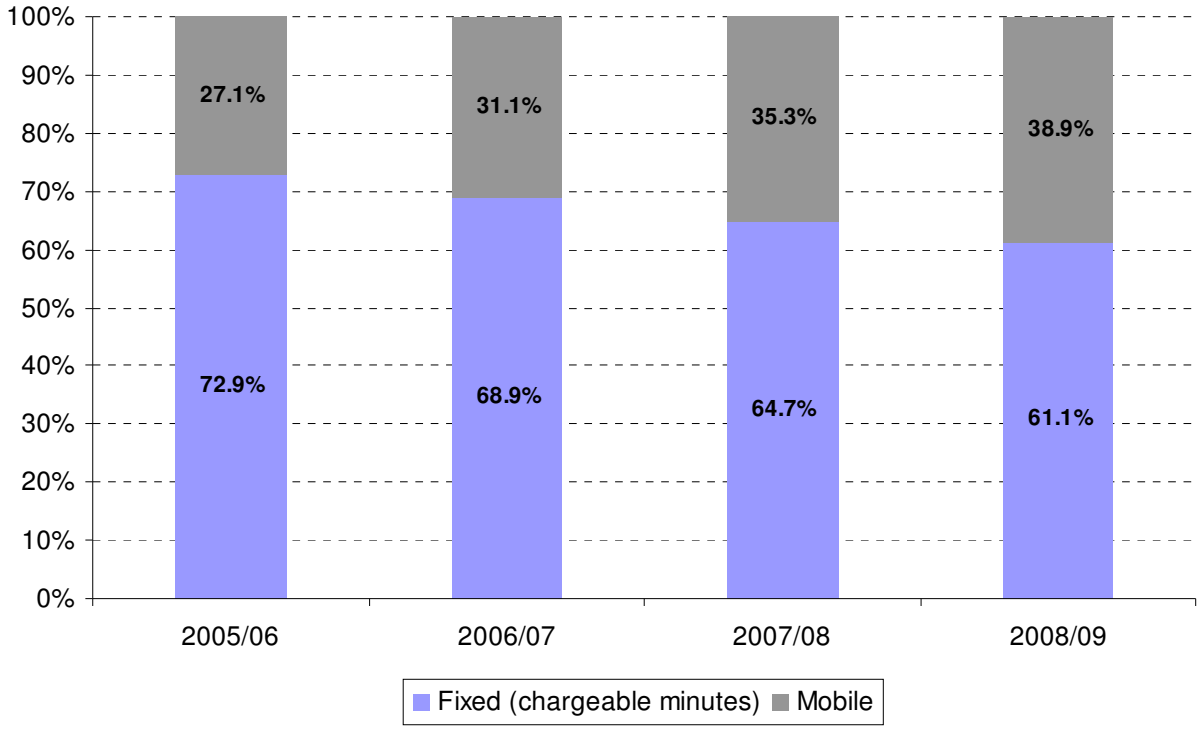
- increasingly mobile lifestyles demanding flexible communications;
- decreasing prices for mobile services, lowering the barrier for migrating traffic; and
- increasing interest among service providers to undertake developments for FTM convergence.

Figure 46 below shows the proportion of chargeable fixed and mobile voice minutes in New Zealand for the period from 2005/06 to 2008/09. This indicates that there has been a gradual

[65] See http://www.aut.ac.nz/__data/assets/pdf_file/0005/107447/Media-release-final.pdf
[66] http://www.telecom.co.nz/mobile/mobilebroadband/discover
[67] http://www.vodafone.co.nz/mobile-broadband/speed.jsp
[68] Northstream, *Fixed-to-mobile substitution in Europe*, September 2004, available at http://northstream.se/wp-content/uploads/2004/09/Fixed-to-mobile-substitution-in-Europe.pdf

increase in the proportion of mobile minutes relative to chargeable fixed-line minutes since 2005/06.

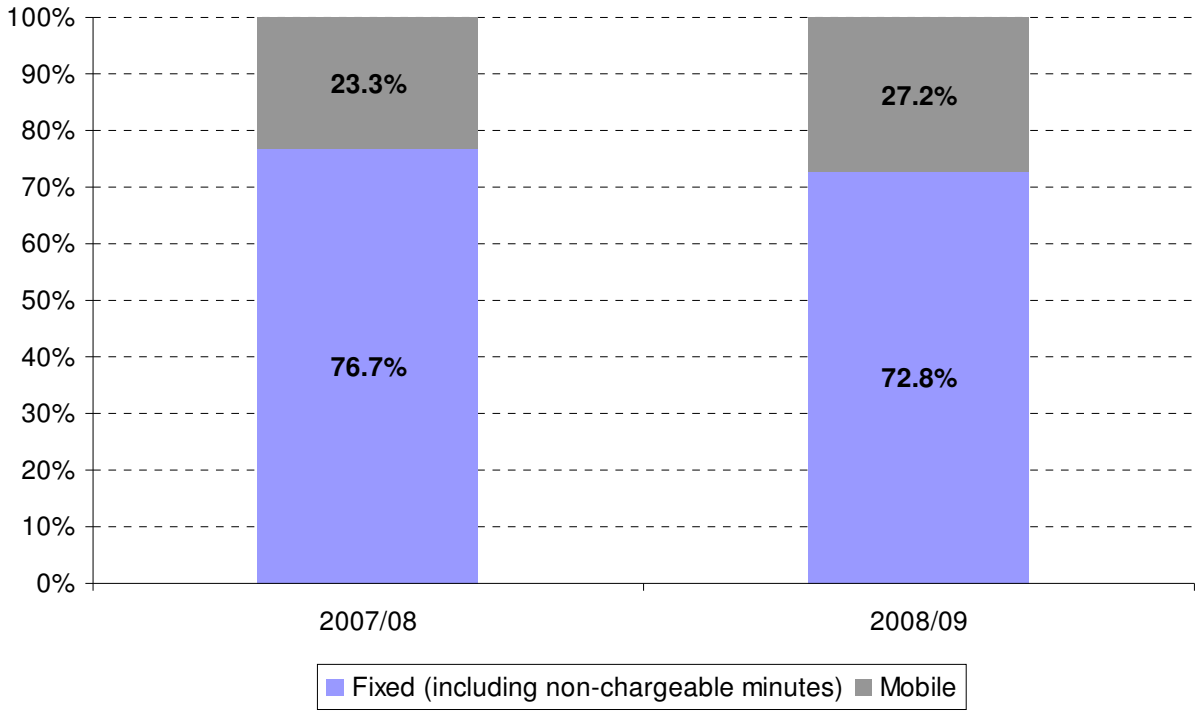
Figure 46: Proportion of Fixed (excluding Non-Chargeable) and Mobile Voice Minutes



Source: Commerce Commission

The proportion of mobile minutes relative to total minutes (including non-chargeable fixed-line minutes) is depicted in Figure 47 below. As data on the level of non-chargeable fixed-line minutes (i.e. free local calling minutes) was not available for earlier periods, information is only presented for the 2007/08 and 2008/09 years. This also indicates that the level of fixed-to-mobile traffic substitution has been increasing. In 2008/09 mobile minutes accounted for approximately 27 per cent of total voice minutes in New Zealand.

Figure 47: Proportion of Fixed (including Non-Chargeable) vs Mobile Voice Minutes

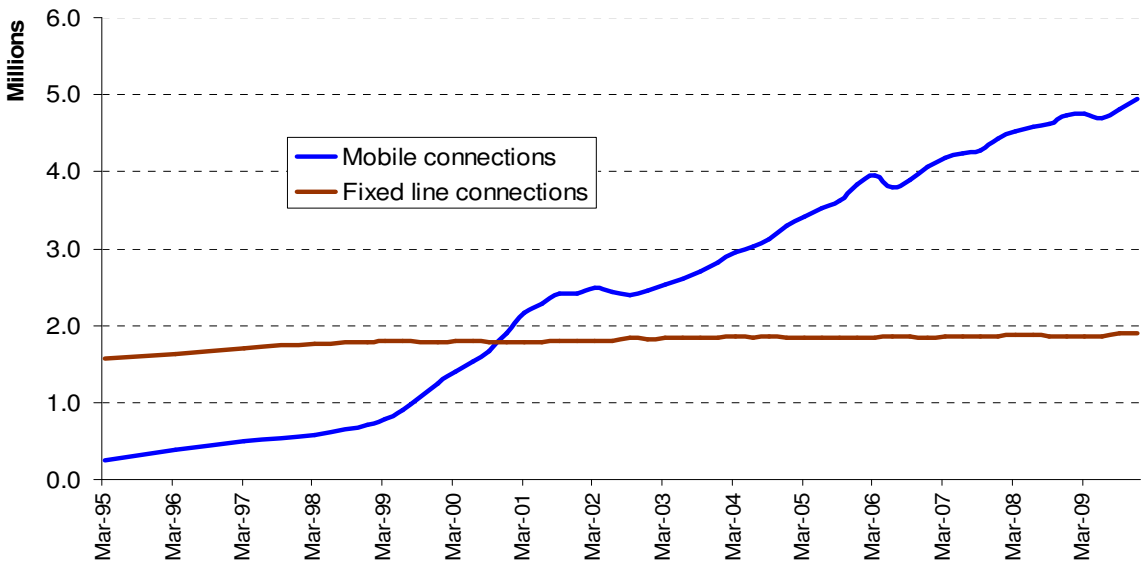


Source: Commerce Commission

The data presented in Figure 46 and Figure 47 above indicates that fixed-to-mobile traffic substitution has been observed in the New Zealand market, with end-users increasingly opting to make calls on their mobile phones rather than their fixed-line phones. The Commission expects this trend to increase in the coming years, given the scope for increased mobile voice usage. As noted earlier in this report, New Zealand currently has one of the lowest mobile voice usage levels in the world.

Figure 48 below shows the overall number of fixed-line and mobile connections in New Zealand from March 1995 to December 2009. Mobile connections have been steadily increasing over this period, while fixed-line connections have remained relatively static. The number of mobile connections exceeded the number of fixed-line connections for the first time in December 2000.

Figure 48: Fixed-line and mobile connections in New Zealand



Source: Commerce Commission

Wireless services designed to replicate the functionality provided by traditional fixed-line voice services are now available over mobile networks. For example, Vodafone offers a product called 'Home Phone Wireless'[69], which provides home phone solution delivered over its mobile network.

Despite the introduction of retail services such as this, the trend of FTM **line** substitution is less clear than that for FTM **traffic** substitution, as fixed-line connections have continued to increase (although only slightly) over the last decade. This is in contrast with the trend observed in a number of overseas jurisdictions. In Australia, for example, the number of fixed voice services has decreased from 11.66 million in 2003/04 to 11.00 million in 2007/08.[70]

Broadband services may be having an impact on the trends in FTM substitution. Although end-users are now able to use mobile broadband services in place of traditional fixed-line broadband services, the data speeds available over mobile networks are generally lower than those available over fixed-line networks and the cost higher. As a landline connection is required in order to receive fixed line broadband services, this may explain why the level of fixed-line subscription has continued to hold up in recent years.

In addition, Vodafone New Zealand was relatively slow in adopting 3G technology, with its 3G network launch in 2005 coming two years after simultaneous launches by Telstra and Hutchison in Australia. The relatively late introduction of mobile broadband services in New Zealand (when compared to Australia), may also contribute to the trends observed in these two countries.

There is, however, some evidence that end-users are now starting to substitute fixed-line access with mobile access. Despite the number of households in New Zealand increasing, fixed-line connections have remained relatively static, while the number of mobile connections has risen significantly.

[69] http://www.vodafone.co.nz/home-phone/wireless/
[70] ACMA, *ACMA Communications Report 2007-08*, p 14.

THE YEAR IN REVIEW

There have been a number of developments during 2009 and early 2010 that have had an impact on telecommunications markets in New Zealand. Some of the more important developments are noted below:

February 2009

- In apparent response to Telecom's planned launch of its new nationwide 3G mobile WCDMA 850 network in June 2009, Vodafone announced that it would have its 3G roll-out to 97 per cent of the population completed by 31 May 2009 rather than April 2010.
- Vector announced plans to extend its fibre optic network in Auckland with Vodafone as its flagship customer. The extended network will allow Vector to supply backhaul services to 41 of Telecom's exchanges.

March 2009

- Telecom Wholesale introduced the All of New Zealand Offer, which consisted of various bundled offers that included broadband, phone line and backhaul services to its wholesale customers, who use these bundles to provide services to residential end-users. This 'loyalty offer' gave effective price discounts of 20 to 30 per cent and locked customers into a two-year deal, but required the service provider to keep 90 per cent of all current and future customers on Telecom Wholesale services.
- Telecom's retail unit started selling Total Home Lite which includes line rental and free national calls to one nominated landline number. It also includes broadband with 3 GB of data. The price is $85 per month in Auckland, Wellington and parts of Christchurch, and $95 per month in other areas. This product is similar to bundled offers from Vodafone and Orcon which are cheaper in areas where these service providers have unbundled Telecom exchanges under the Commission's UCLL decision.
- FX Networks announced it had completed its fibre roll-out connecting Tauranga, Rotorua, Taupo, Napier, Hastings, Dannevirke, Masterton and Wellington, at a cost of $17 million. The company said it had deployed 680 kilometres of fibre in the previous 12 months.
- Slingshot started offering free dial-up internet for all customers that have their Homeline and direct dial calling with Slingshot.

April 2009

- Vodafone and Kordia filed complaints with Telecom's Independent Oversight Group (IOG) and the Commission regarding Telecom Wholesale's All of New Zealand Offer, alleging that the offer breached the Commerce Act 1986 and the Telecom Separation Undertakings. The IOG is responsible for monitoring Telecom's compliance with the Separation Undertakings, which require Telecom to maintain separate access network, wholesale, and retail business units (Chorus, Telecom Wholesale, and Telecom Retail and Gen-I, respectively).
- Telecom raised the line rental for residential fixed line phones with effect from 1 April. The standard residential home line rental increased by $1.50 to $46.35 per month, in line with inflation, as allowed under the local calling TSO (formerly Kiwi Share). TelstraClear raised its line rental for resold Telecom lines from $49.99 to $51.65 per month, which is discounted depending on tolls spend.

- Telecom lowered its residential fixed-to-mobile calling rates by two cents per minute (including GST) and Vodafone lowered its single residential fixed-to-mobile calling rate by 1.2 cents per minute (including GST). The cuts in the calling rates were required under the terms of the deeds provided by Vodafone and Telecom, and accepted by the government, in lieu of regulation of fixed-to-mobile termination rates in 2007. The drops in calling rates coincide with a drop in the wholesale fixed-to-mobile termination rate by one cent per minute from 16 to 15 cents per minute (excluding GST), which the undertakings require Telecom and Vodafone to pass through to end-users.
- Vodafone introduced a new data plan for mobile broadband prepaid customers that allows them to purchase half a gigabyte of data for $40.
- Orcon entered the business fixed line market with a plan that included free local calls. The plan is only available to businesses located in the areas Orcon has unbundled the local Telecom exchange so it can offer lines by means of the UCLL regulated service (at the time Orcon had unbundled exchanges only in Auckland).
- TelstraClear completed a 40 gigabits per second link between Wellington and Christchurch. It follows two paths, one on land and the other by sea cable, to provide full back-up for TelstraClear's customers and additional capacity to meet increased demand for broadband.
- TelstraClear stated that it had signed up 41 per cent of all new fixed line broadband connections in New Zealand in the six months to 31 December 2008.
- CallPlus announced it would become a mobile virtual network operator (MVNO) in August using Vodafone's network.

May 2009

- Orcon announced it was cutting its staff numbers by 16 per cent, laying off 23 employees. CEO Scott Bartlett said although the company is on target to meet the current year profit targets, the company anticipated a challenging year ahead.
- Woosh announced a partnership with Telecom Wholesale that will allow Woosh to provide fixed-line home phone and broadband bundles with non-geographic pricing. The plans announced by Woosh include free voice mail and start at $69 per month with one gigabyte of data.
- Vodafone and Telecom reached an out-of-court settlement in a dispute arising from interference between Telecom's new 3G mobile network and Vodafone's existing network. Telecom agreed to install filters to resolve interference issues affecting Vodafone mobile customers, delaying its XT network launch date.
- Compass Communications started offering mobile phone plans from $15 per month with calls at 25 cents per minute for its residential customers.
- NZ Communications Limited rebranded itself as 2degrees and announced it would launch its mobile network in August 2009. 2degrees stated that it will ultimately provide a mixture of 2G and 3G services running on 900MHz, 1800MHz and 2100MHz frequencies.
- Vodafone, on 28 May, completed its 3G mobile network extension to cover 97 per cent of the population. It appears the extensive roll-out was speeded up from the originally proposed April 2010 completion date to ensure it was completed before the launch of Telecom's XT network.

- Vodafone reported that it had 500,000 customers using 3G handsets, which are capable of downloading music, pictures, and making use of other high-speed data services through the mobile handset.
- It was disclosed that Vodafone offers 3G services outside the major populated areas using its 900 MHz frequencies. The 2100 MHz frequencies are used in more populated areas and reach 70 per cent of population. 3G devices that work only at 2100 MHz on Vodafone's network such as the popular Apple iPhone do not, therefore, receive 3G service in all areas.
- Telecom's new XT mobile network went live on 29 May. The XT network has a new range of one-rate pricing plans that charge a flat fee for all off-network calls, any time of day and to any other mobile network.
  - The effective one-rate calling charge varies by postpaid plan, ranging from 60 cents per minute for the $29.95 a month plan to 32 cents per minute under the $799.95 per month plan.
  - On-net offers remain with "My Favourites", an add-on service that allows unlimited calls to nominated Telecom numbers, and the "Business Share" plans, which allow (for a fixed monthly fee) unlimited calls between users that share the plan.
  - Telecom's $10 text offer is not available on the XT network, although other text bundles are available.
  - Regular prepaid plan calls are charged at the same flat rate as Vodafone's Supa Prepaid plan (89 cents per minute) but are billed per second after the first minute rather than rounding up to the nearest minute like Supa Prepaid.
  - In addition, XT prepaid top-ups earn bonus credits of 25 to 33 per cent. However, XT prepaid balances expire after six months rather than the usual 12.
  - Customers are likely to need to buy a new phone to use the XT network, but may port their existing telephone numbers under the LMNP Deed.
- The Commission finalised its first review of backhaul services. The review concluded that four routes that the Commission had previously expected to be subject to competition were not competitive, so regulated backhaul services were made available on those routes. The Commission also concluded that three routes that the Commission had not previously expected to be subject to competition were in fact competitive. In addition, unbundling of additional local exchanges by Telecom's competitors meant that new backhaul routes, which were not considered as part of the Commission's June 2008 backhaul decision, were assessed. The Commission concluded that 13 of the 41 new routes are competitive.

June 2009

- TelstraClear and Vodafone raised their residential line rental. TelstraClear's line rental for its cable customers rose by $1 to $36.95 per month. Vodafone's line rental for resold Telecom lines rose to $50 per month while the line rental for lines in its so called Red Zone rose to $40 per month.
- Telecom reported customers using Facebook on their mobile phones had increased by 700 per cent since January 2009.
- Vodafone started offering Sky TV to its fixed line customers. The price is the same retail price charged by Sky with the only attraction being that everything is on one bill. Telecom ceased

offering discounted Sky bundles in May 2008 and existing customers of those bundles had them grandfathered.

- The Commission released its decision on the price and non-price terms on which Telecom must make the unbundled sub-loop services available to other telecommunications providers. The monthly rental charge set for access to the sub-loop unbundled copper local loop service was $11.99 per line in urban areas and $22.14 per line in non-urban areas. In addition, there are other charges for sub-loop co-location and sub-loop backhaul services. The combined cost per customer for the unbundled sub-loop services is approximately 26 per cent higher than the corresponding costs for local loop unbundling but service providers will be able to provide customers with higher-value services over the sub-loop services.
- The Commission released its draft report recommending that mobile termination prices be regulated.

July 2009

- Telecom Wholesale announced its follow-up to the All of NZ Offer, the Regions Offer, which made available discounted wholesale broadband and phone line bundles in specific regions (Hamilton, Palmerston North, Rotorua, Tauranga and Hibiscus Coast). To accept the offer, wholesale customers had to agree to use Telecom Wholesale services to provide retail services to 90 per cent of all current and future end-users outside of Auckland.
- TelstraClear signed a three-year MVNO agreement with Vodafone, but it will retain its Telecom CDMA agreement until Telecom closes down that network. TelstraClear plans to start offering mobile services on Vodafone's network to business customers in the last quarter of the year.
- Telecom started offering a $600 credit to entice Vodafone's iPhone customers to switch to Telecom. The offer gave 240MB of free data each month for 24 months to any user who signed up for the $79.95 a month One Rate 180 plan or higher on a 24-month contract.

August 2009

- 2degrees launched its GSM (2G) and EDGE mobile network with one simple prepaid plan.
  - Phone calls are charged at a flat rate of 44 cents per minute (rounded up to the nearest minute) regardless of time of day or destination network.
  - Texts cost 9 cents each.
  - Top-ups are a minimum of $20 which gives 100 free texts and 22 cents per minute calling to other 2degrees customers and any landline for 30 days. Any unused balance expires after 12 months.
  - Data is charged at 50 cents per MB.
  - SIM cards generally cost $2 (with $2 credit).
  - Customers can bring existing mobile numbers and get a credit of $5 for doing this.
- Southern Cross announced a price reduction of 15 per cent for circuits to the US.
- CallPlus and its residential arm Slingshot launched mobile services that use Vodafone's network.
- The IOG reached the view that Telecom Wholesale's loyalty offers (the All of NZ Offer and the Regions Offer) constituted a breach of Telecom's Separation Undertakings.

- Following the announcement of the IOG and the receipt of complaints from Vodafone (and later Orcon), the Commission launched an investigation into the alleged breach.

September 2009

- It was announced that Vector would be providing high speed fibre optic broadband connections to all the new houses and buildings to be constructed at the Government's Hobsonville project in Auckland.
- Kordia announced it was pleased with the progress being made on the development of its project to deploy a trans-Tasman submarine cable.

October 2009

- Telecom introduced for fixed-to-mobile calling caps for residential customers purchasing its bundled plans. The caps allow customers calling Telecom mobiles to talk for up to two hours and pay no more than $2 or $2.50, depending on the plan.
- Vodafone moved over 100 customers onto HSPA+ high-speed 3G broadband which became available across multiple 3G cell sites in and around Auckland's CBD.
- TelstraClear launched its nationwide local loop unbundling programme two years after Orcon and Vodafone started their rollouts, which were largely limited to Auckland. The programme initially gave TelstraClear access to over 220,000 homes and businesses connected to 23 exchanges in Auckland and 19 exchanges in other urban areas. A further 20 exchanges were planned to be added later in the year with seven additional exchanges under consideration. Phone and broadband packages were priced from $79 a month.

November 2009

- TiVo is launched in New Zealand. It is a set-top box for recording TV programs and allows Telecom customers to download movies and shows to their TV over their broadband connection without affecting their monthly data allowance.

December 2009

- For the first time fibre only connections are being rolled out by Chorus, Telecom's network arm, at a new residential subdivision in Grenada in Wellington. Customers have to buy the retail service from WorldxChange as Telecom does not yet have such a service.
- Unison Fibre lit the first fibre optic cable on its new Hawke's Bay fibre route that is planned to link Napier and Hastings, and later Havelock North other areas of Hastings and central Napier as well as Rotorua and Taupo.

January 2010

- Slingshot started requiring new broadband customers to rent their phone line from Slingshot to get the $10 a month discount rather than just purchase their tolls from Slingshot. Slingshot also introduced new lower broadband prices, including a $24.95 a month 256kbps broadband service with 2 GB of data and a $49.95 a month full speed broadband service with 25 GB of data.

February 2010

- 2degrees announced it had 206,000 active subscribers at the end of January 2010. These are customers who have been active within the last month. Fifty thousand or one quarter of the

subscribers had come from other networks. Some 80 per cent of the new customers had switched from Vodafone. Switching is relatively easy for Vodafone customers because it is just a SIM card swap. Users from Telecom's CDMA network would need to buy new phones in order to change to 2degrees.

- The Commerce Commission delivered its final report on mobile termination access services to the Minister for Communications and Information Technology. The report recommended that the Minister accept Telecom's and Vodafone's final undertakings as an alternative to regulation.

March 2010

- Northpower opened up its layer 2 fibre network in Whangarei to local retail internet service provider Xf Net. Xf Net is offering a voice and 5 Mbps symmetrical broadband service with 10 GB of data for $79 a month and the same bundle with IP TV for $99 a month.
- Northpower is rolling out a $500,000 residential expansion to its fibre network in Whangarei over the four months. The extension will provide fibre to the home for 850 homes in the city's Kensington and Regent suburbs. Northpower said the project will feature GPON technology and will provide 100Mbps broadband using overhead fibre cables. Retail services will be offered to end users by retail service providers, including XFNet, TelstraClear, Uber Group, World Exchange and others.