Public

Annual Telecommunications Monitoring Report 2012

Telecommunications monitoring report

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Executive Summary

This is the Commerce Commission's sixth annual telecommunications market monitoring report. It is produced as part of the Commission's on-going monitoring of the evolution of competition in the telecommunications sector in New Zealand.

Telecommunications investment picked up a little in 2011/12 to $1.26 billion after peaking at $1.69 billion in 2008/09. Investment by Chorus and other local fibre companies is increasing as they work to provide fibre-to-the-home networks in much of the country for the Ultra-Fast Broadband (UFB) project. However, the full impact of the UFB investment has yet to be seen.

Fixed broadband connections continued to grow steadily in New Zealand to reach 1.24 million in 2011/12.This pushed broadband penetration to around 78% of households that have a fixed line connection.

Total retail telecommunications revenues rose slightly in the last two years to reach $5.22 billion in 2011/12 after several years of minimal growth.

Fixed and mobile calling minutes both showed at least a modest decline, despite static or falling prices, and revenues fell accordingly. Calling continued to be replaced by alternatives like online social networking, which is now taking place on an increasingly wide range of devices.

In contrast to calling revenue, most forms of data revenue rose despite falling prices. In this case, increased online activity, particularly on smartphones and other mobile devices, helped fuel the demand for data. New Zealanders almost doubled the amount of mobile data used for the second year in a row. Fixed broadband data use also doubled in the last year with the average amount of data traffic per user now at 19GB.

Business fixed line data revenues, which include a range of telecommunications services delivered over dedicated data connections continued to decline.

Market concentration continued to fall in the fixed line voice, fixed line broadband and mobile markets in 2011/12, as the largest players lost market share. Market concentration will increase in the fixed line voice and broadband markets in next year's measure because of Vodafone's acquisition of TelstraClear on 31 October 2012.

Because it largely uses data from the 2011/12 financial year, this report covers a transitional period before and after Telecom's 1 December 2011 split into retail plus mobile provider, 'new' Telecom, and local access infrastructure wholesaler, 'new' Chorus.

NZ telecommunications snapshot statistics	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Total industry metrics							
Total telecommunications retail revenue ($bn)	4.92	4.9	4.92	4.93	4.96	5.03	5.22
Total telecommunications Investment ($bn)	0.92	1.07	1.18	1.69	1.55	1.24	1.26
Average monthly household telecommunications spend ($) [a]		126	-	-	145	-	-
Fixed line metrics							
Fixed lines (mil)	1.85	1.85	1.86	1.87	1.88	1.88	1.88
Total fixed broadband connections (mil)	0.48	0.68	0.85	0.98	1.05[b]	1.14	1.24
Fixed line broadband connections per 100 pop	11.6	16.3	19.8	22.8	24.5	26	28
Residential broadband as % of residential lines	-	-	-	-	65	70	78
Number of unbundled lines (000's)	-	-	3	37	67	98	116
Resold Telecom phone lines (000's)	-	168	262	326	374	414	440
Wholesale broadband lines (not Telecom)(000's)	100	165	251	285	312	362	420
Chargeable fixed voice call minutes (bn)	7.29	6.91	6.71	6.67	6.25	6.12	5.71
Non-chargeable fixed voice call minutes (bn)	-	-	5.31	5.06	4.65	4.45	4.29
Total fixed line retail revenues ($bn)	2.99	2.93	2.93	2.88	2.89	2.89	2.83
Telecom share of fixed line retail revenues (%)	80	79	78	76	71	65	61
Mobile metrics							
Mobile connections (mil)	3.8	4.25	4.58	4.7	4.7[c]	4.8	4.9
Active mobile connections per 100 population	92	102	108	109	108	110	111
Share mobile pre-paid (%)	68.2	67.8	67.6	66.1	67.2	65.7	64.9
Mobile voice call minutes (bn)	2.76	3.17	3.66	4.24	4.44	4.40	4.35
SMS messages sent (bn)	-	-	-	11.4	12.8	13.6	13.9
Total mobile retail revenues ($bn)	1.93	1.97	2.00	2.05	2.07	2.14	2.38

[a] Data published every 3 years

[b] From this year onwards this measure no longer includes fixed wireless subscribers

[c] From this year onwards this is connections active in the last 90 days rather than six months as was previously used

Introduction

Purpose of this report

This is the Commerce Commission's sixth annual telecommunications market monitoring report. It looks at the state of telecommunications markets in New Zealand and developments that occurred largely during the 2012 calendar year. The report also examines trends in telecommunications markets for the period since the Commission started its monitoring in 2006.

The Commission is interested in the state of telecommunications markets because of its function of promoting competition in these markets by regulating some wholesale prices and conditions. Telecommunications markets are complex and a range of indicators have to be analysed to get an indication of the overall state of competition.

This report is released under section 9A of the Telecommunications Act 2001, which requires the Commission to monitor telecommunications markets and generally make available reports, summaries, and information resulting from the monitoring.

Data sources

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

The data in this report originates from various sources,[2] but mainly from the Commission's 2011/12 Telecommunications Industry Questionnaire and prior year questionnaires. The data from this industry questionnaire relates to the year ending 30 June 2012 but more recent industry data, including data as at 31 December 2012, is also used where available.

The data used is sometimes later revised by the respondents or the Commission when it appears to be inaccurate, an error has been made or the Commission has used an estimate. Consequently, some prior year figures used previously have been revised.

The Commission would like to thank operators who have submitted data for this report and looks forward to their continued co-operation.

The Commission welcomes any comments or feedback on any aspect of this report.

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[1] Commerce Commission, 'Market Monitoring':
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.

Market overview

This section gives an overview of telecommunications markets by observing levels of investment, changes in subscribers, call volumes and industry revenues. It also notes significant industry events.

Telecom and Chorus part ways

Chorus, which was the former Telecom's local network arm, split from Telecom on 1 December 2011 and is now limited to wholesaling. The split was necessary to enable Chorus to take up a contract under the Government's Ultra-Fast Broadband Initiative (UFB) for the roll-out of a fibre-to-the-premise network in most areas of the country.

Telecom, New Zealand's largest telecommunications retailer, still owns core network and backhaul infrastructure but now has to buy local access inputs from Chorus like any other retailer.

The 2011/12 year is a transitional year in that Chorus and Telecom operated as a combined entity for the first 5 months of the 2011/12 financial year and separate entities for the remaining 7 months of the year.

Vodafone acquires TelstraClear

Late in 2012, Vodafone New Zealand, New Zealand's largest mobile network operator, acquired TelstraClear, New Zealand's second largest fixed network operator. The transaction was completed on 31 October 2012, and Vodafone stopped using the TelstraClear brand name on 1 April 2013.

The market consolidation caused by Vodafone acquiring TelstraClear does not generally show up in the statistics used in this 2012 monitoring report.

Telecommunications investment shows mild rebound

Figure 1: Telecommunications investment
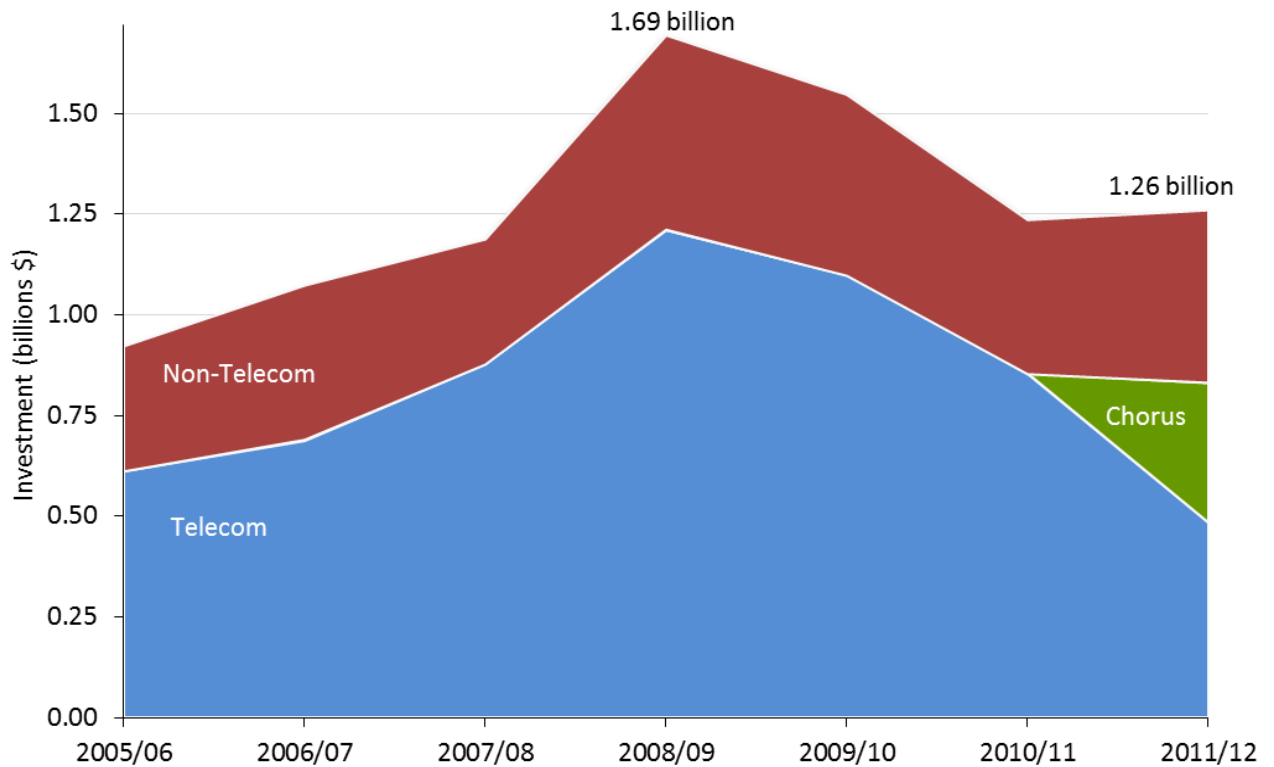
Industry investment, largely driven by Telecom and Chorus, showed a mild rebound in 2011/12, as shown in Figure 1. Total surveyed investment by the telecommunications industry hit a peak of $1.69 billion in 2008/09 before it dropped back in subsequent years to $1.24 billion in 2010/11 and then rose slightly to $1.26 billion in 2011/12.

Chorus as the owner of the only nation-wide copper access network and main UFB partner is likely to be a larger investor than Telecom in future. The transitional nature of the 2011/12 year means some access network investment in the first part of the year was undertaken by 'old' Telecom. However, most access network investment was undertaken by Chorus in the second half of 2011/12 as it started to construct its fibre access network. .

Chorus reported capital spending of $274 million on fibre in the 7 months to 30 June 2012. Capital spending on fibre in future years is likely to be greater. Future years will also include the capital spending of the other UFB partners whose fibre investment started largely after the end of the 2011/12 year.
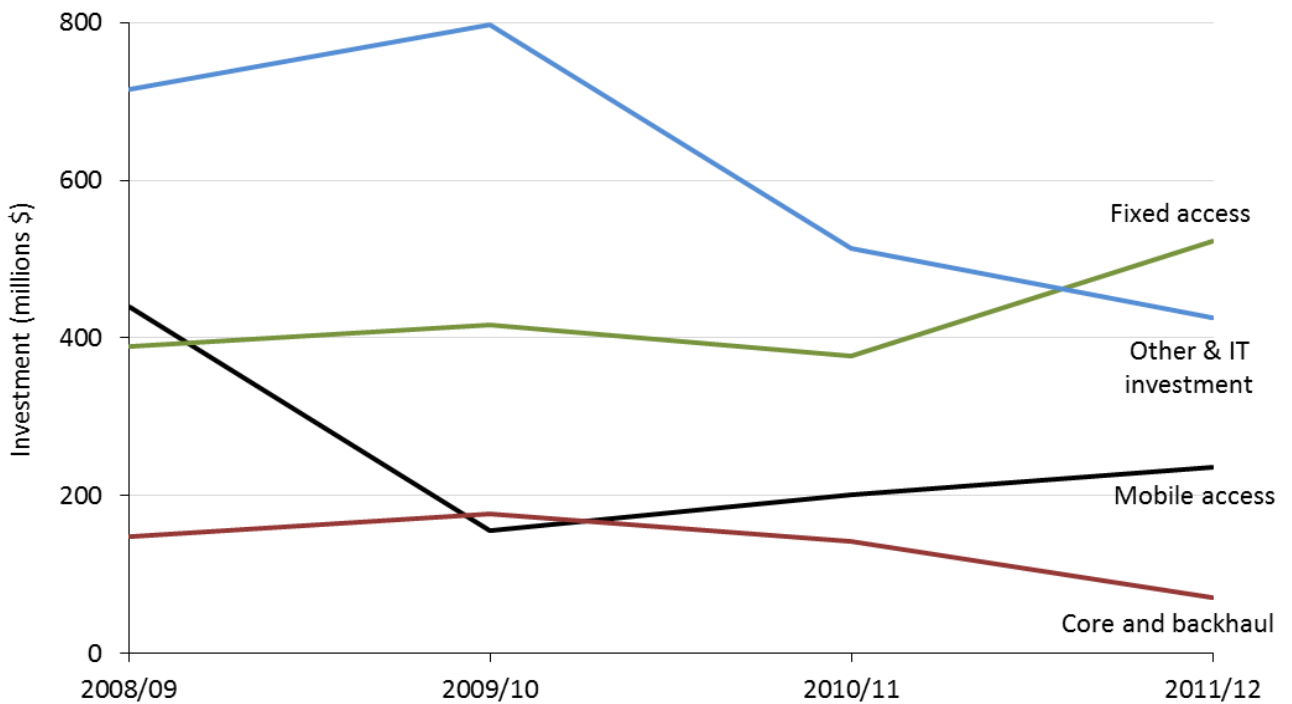
Figure 2: Investment by component

Figure 2 shows the various components of total telecommunications investment. Investment in the fixed access network, including new fibre connections, has continued to rise in recent years. 'Other and IT investment', including intangible investment in product development and systems, has continued to fall, although it still makes up a large portion of the total.

Fixed line broadband connection growth fastest in OECD

One measure of the size of telecommunications markets is the number of connections or subscribers in the market. Telecommunications users subscribe to services delivered over fixed line connections and wireless connections.

Figure 3: Fixed line telephone lines and broadband connections
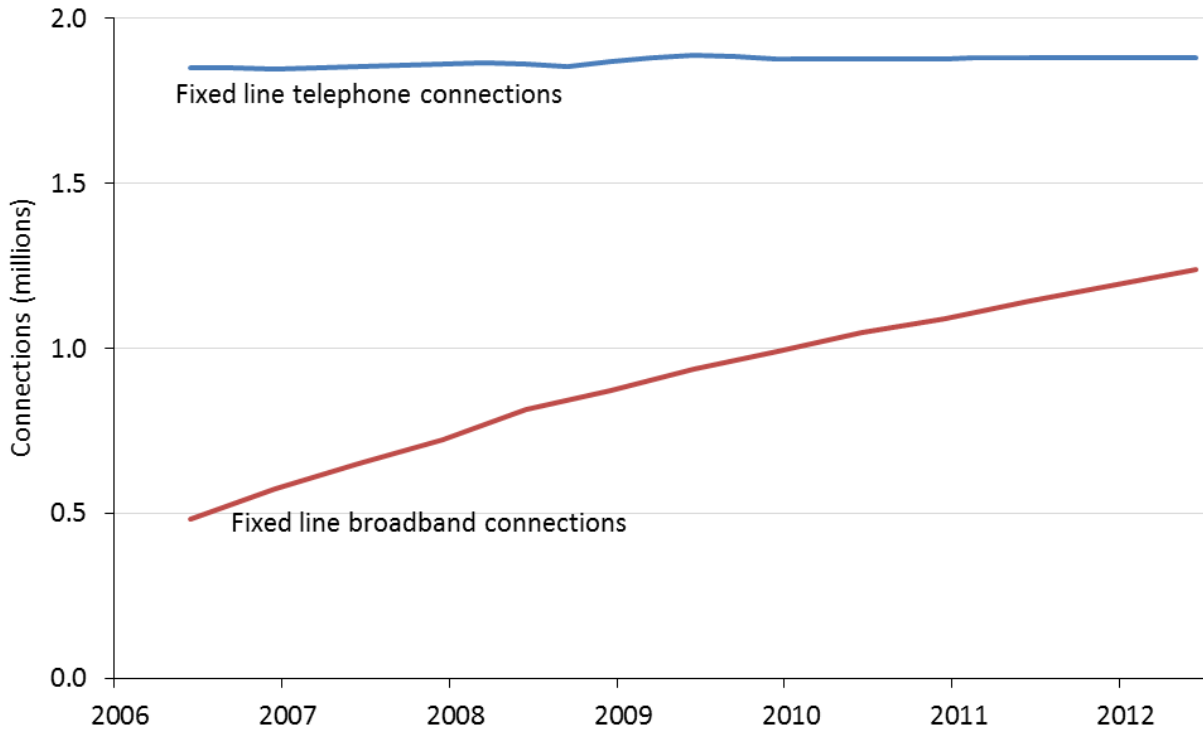

Figure 3 shows that the number of fixed line telephone connections has continued to remain static while fixed line broadband connections have continued to grow steadily, to reach 1.24 million by mid 2012.

The OECD compares the rate of broadband penetration between countries by measuring connections per 100 of population. As at 30 June 2012, New Zealand had 28 fixed line broadband subscriptions per 100 of population, compared with the OECD average of 26, which gave us a ranking of 16 out of 34 OECD countries.

New Zealand had the highest rate of growth of fixed line broadband penetration in the OECD for the six months to 30 June 2012 at 4.6% compared with the OECD average of just 1.2%.[3] Likely drivers were the fact some New Zealand consumers were still migrating from dial-up internet and that New Zealand has not had the drop in fixed line connections experienced in recent years by some other countries.

Dial-up internet connections dropped to 8% of fixed line residential connections in 2011/12 and fixed line broadband connections rose to 78%.

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[3] Organisation for Economic Co-operation and Development, 'OECD broadband statistics update': www.oecd.org/sti/broadband/broadband-statistics-update.htm

Households need only one fixed line connection, so the number of fixed line connections is much less than the actual number of users served by those lines. This is in contrast to mobile connections which tend to serve just one user, or less than one user as some users have more than one mobile device.
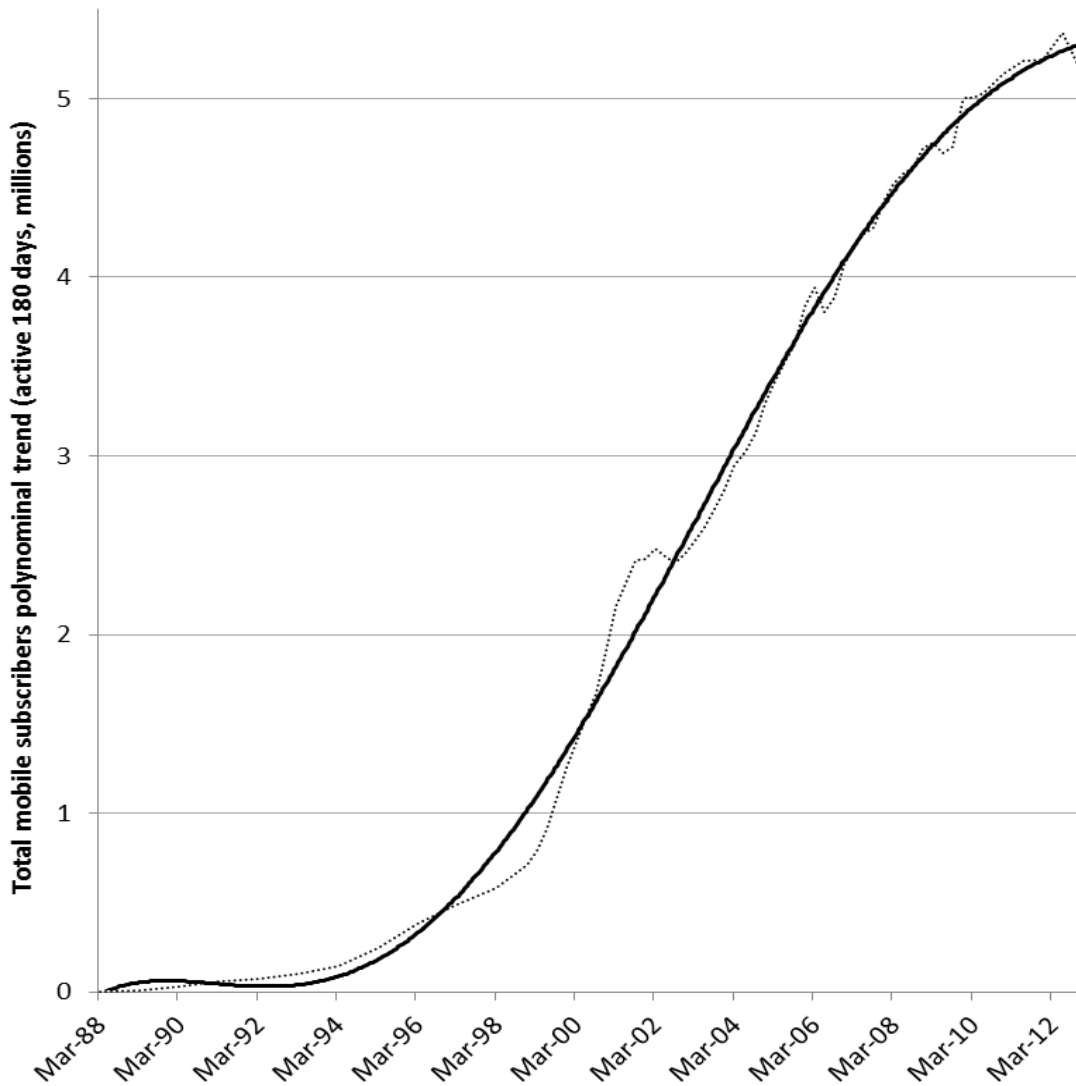
Figure 4: Mobile connections

Figure 4 shows that the mobile market as measured by publicly reported mobile connections has gone through a classic 'S' growth curve, and the period of high growth has given way to much lower growth in recent years. Actual reported numbers, shown by the dotted line, have dipped briefly from time to time when networks closed or inactive users were removed for other reasons. Machine-to-machine connections may be a growth area but are not included in the total. Some further growth in connections may come from the growing use of tablets, which often can be connected to the mobile network to provide mobile broadband.

Calling volumes continue decline

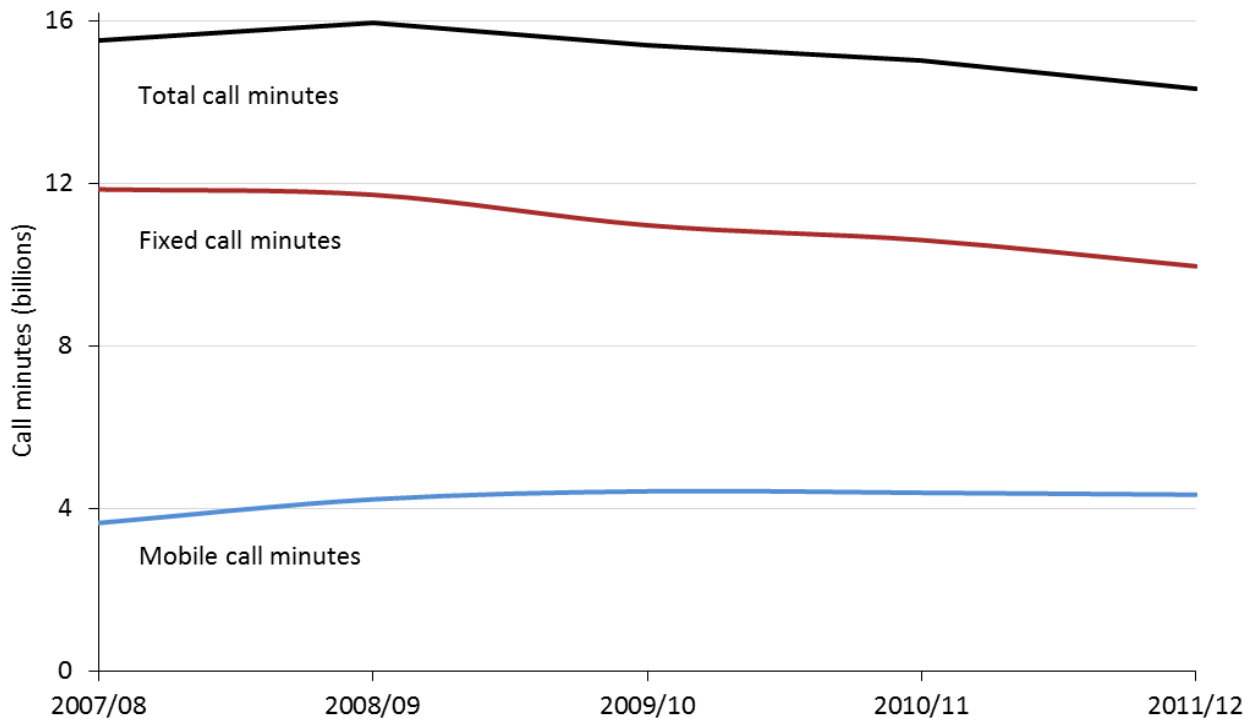**Figure 5: Fixed, mobile and total calling minutes**

Figure 5 shows that total calling and fixed calling minutes continue the gradual decline started after 2008/09. Mobile call minutes also continue the very small decline that first appeared in 2010/11. Possible reasons for the mobile decline are discussed in the retail mobile section.

Figure 6: 2011/12 calling minutes by call type
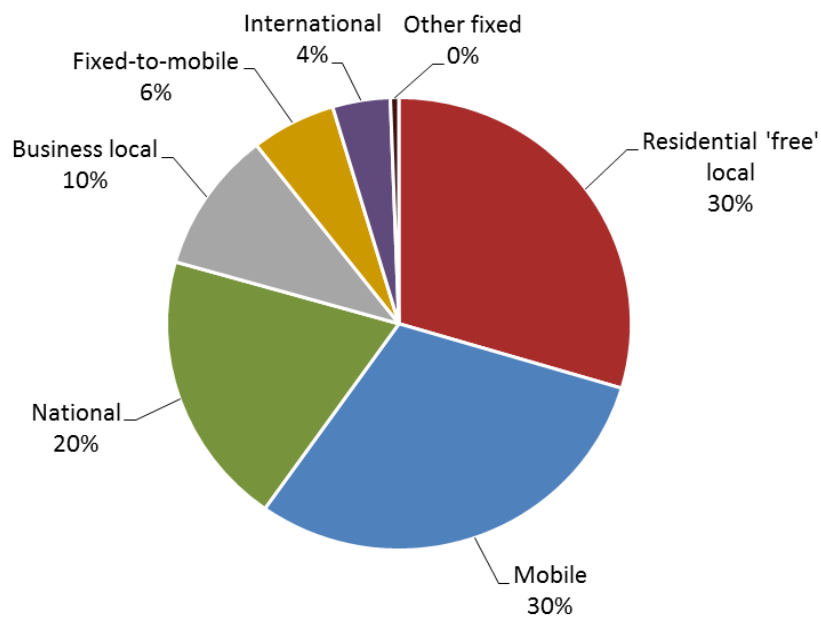
Residential 'free' local calling continues to generate the most call minutes, making up 30% of total calling, which is the same as all mobile calling, as shown in Figure 6. The proportions are almost the same as last year with the only material change being the fall in business local calling (which has a per-minute charge) by 2 percentage points.

Industry revenue picks up

Surveyed telecommunications industry retail revenues picked up in 2011/12 and hit $5.22 million after several years of incremental rises.[4] However, had industry revenues kept pace with inflation since 2006/07, they would have hit $5.74 billion.

Figure 7: Telecommunications retail revenues by service
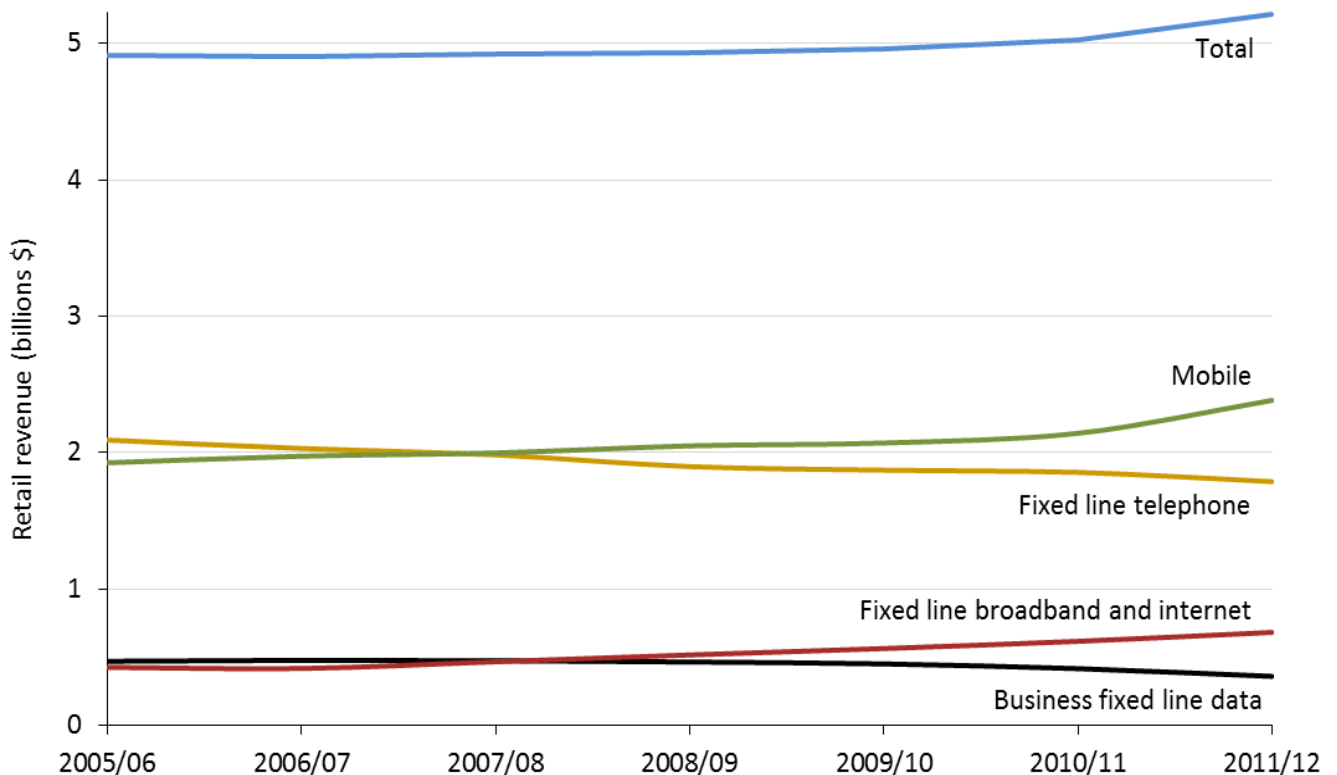

Figure 7 shows that mobile revenues had the most notable rise. Also rising were fixed line broadband and internet revenues, which together with the mobile rise were more than enough to offset falls in fixed line telephone service revenues and business fixed line data revenues.

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[4] The Commission has revised its figures for the 2009/10 and 2010/11 years upwards to just over $5 billion.

Figure 8: Separating voice and data revenues
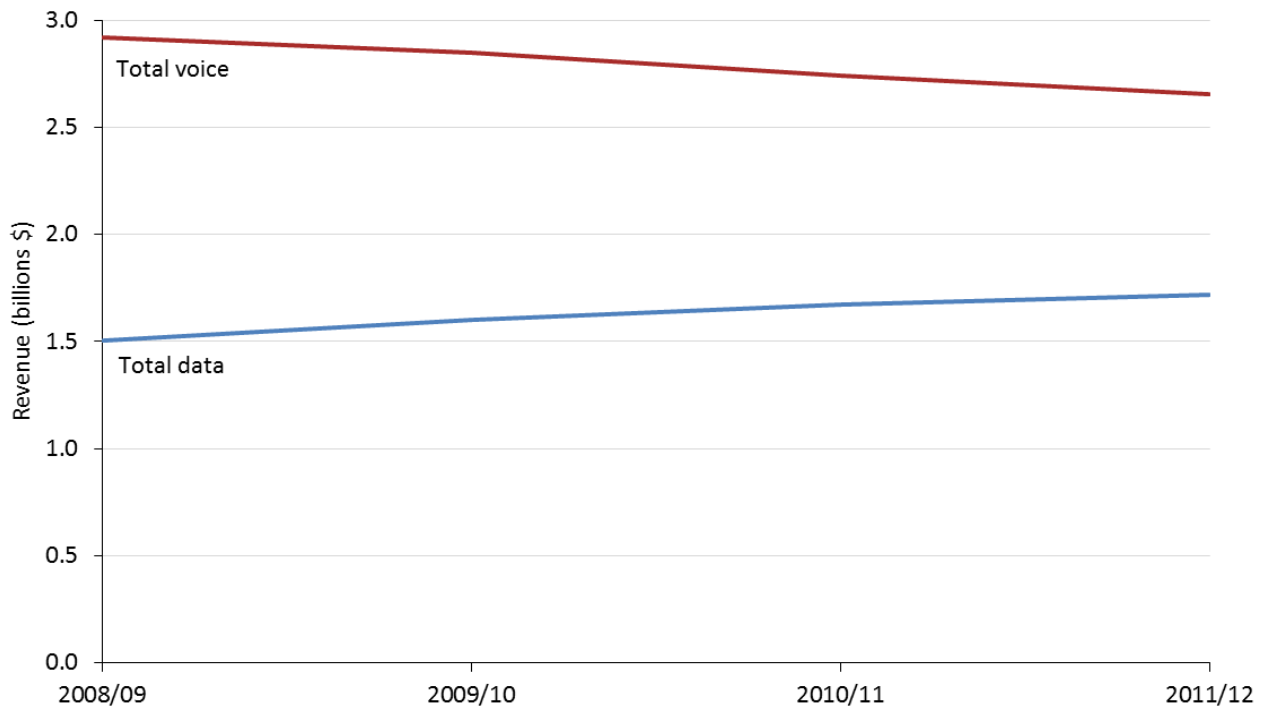
As shown by Figure 8, the Commission has again attempted to separate voice and data revenues collected from the fixed and mobile markets to see the much-signalled trend of data revenues replacing voice revenues. Previously, the Commission apportioned 'other mobile' revenues between voice and data but increasing handset revenues disrupted the series. This time, only revenue that was clearly either voice or data related was included in the chart.

While some types of data revenue have been growing very strongly, as discussed in later sections of this report, aggregate data revenue growth shown in Figure 8 has been tempered by falling business data revenues.

However, we note again that the trend shown in Figure 8 could be more pronounced than the figures indicate because a large amount of the revenue attributed to voice comes from the fixed monthly line rental. Since phone line use in most households is increasingly dominated by internet use, with the household typically spending a much smaller amount of time making voice calls, it could be argued that a large portion of phone line rental revenue should be attributed to data rather than voice.

Retail fixed line market

This section examines the fixed line market. It starts with an overview of the players in the market and revenues, then looks at the voice market, the fixed line data market and the development of unbundling before concluding with a brief look at broadband quality.

Market overview

From 1 December 2011, ownership of the fixed line access network that takes voice and data traffic from local exchanges to end-user premises in most parts of New Zealand was transferred to Chorus after its split from Telecom.

Telecom retained ownership of much of the core network used to provide backhaul between exchanges and other points of interconnection. Chorus received a share of the fibres used to provide backhaul but is not yet using them to compete with Telecom.

Vodafone completed the acquisition of TelstraClear on 31 October 2012. TelstraClear had a competing copper access and cable broadband network in much of Wellington and Christchurch. Like Vodafone, TelstraClear used Unbundled Copper Local Loops (UCLL) and resale to provide fixed line retail services in other locations around New Zealand.

UCLL requires retailers to install their own infrastructure in exchanges, but doing so gives retailers more control over the quality of the service and a cost-based price. Other retailers using UCLL to provide voice and broadband services around the country include Orcon, Slingshot/CallPlus and Compass. With most city exchanges unbundled, unbundling has now reached rural towns such as Oamaru, Stratford and Waipukurau.

The alternative to unbundling is for retailers to buy Unbundled Bitstream Access (UBA), a wholesale broadband service, from Chorus. This requires less investment in infrastructure but gives less control over the service and the price continues to be based on a discount to an historic Telecom retail price.

Where lines have been cabinetised – meaning broadband is supplied from a fibre fed cabinet closer to end-user premises – unbundling line from the cabinet is generally not economic for retailers. Instead they purchase UBA from the cabinet (Sub-Loop UBA or SLUBA) but may provide voice from the exchange using their own equipment by buying a Sub-Loop Extension Service (SLES). This means nearly all retailers using UCLL also use UBA services to provide broadband to cabinetised lines and lines served by exchanges that have not been unbundled.

Some retailers use only UBA to provide broadband services. These retailers include WorldxChange, Woosh and TrustPower Kinect.[5] Retailers using UBA often bundle a resold Telecom voice service with broadband to allow consumers to have all their fixed line services on one bill from that retailer.

A small number of end-users now have a fibre access network running past their homes or businesses, with fibre gradually being rolled out by the winners of the UFB tender. The

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[5] A number of other very small telecommunications retailers also operate in New Zealand.

wholesalers of fibre are Chorus in most of the country, NorthPower in Whangarei, Ultra Fast Fibre led by WEL Networks in Hamilton, Tauranga, Tokoroa, New Plymouth, Hawera and Whanganui, and Enable Networks in Christchurch.

Consumers have to purchase fibre services from an independent retailer. In 2012, fibre retailers included Orcon, Slingshot/CallPlus and Snap. Only a very small number of consumers had purchased a retail fibre-to-the-premise broadband service by the end of 2012.

Figure 9: New Zealand fixed line network of Chorus and Telecom
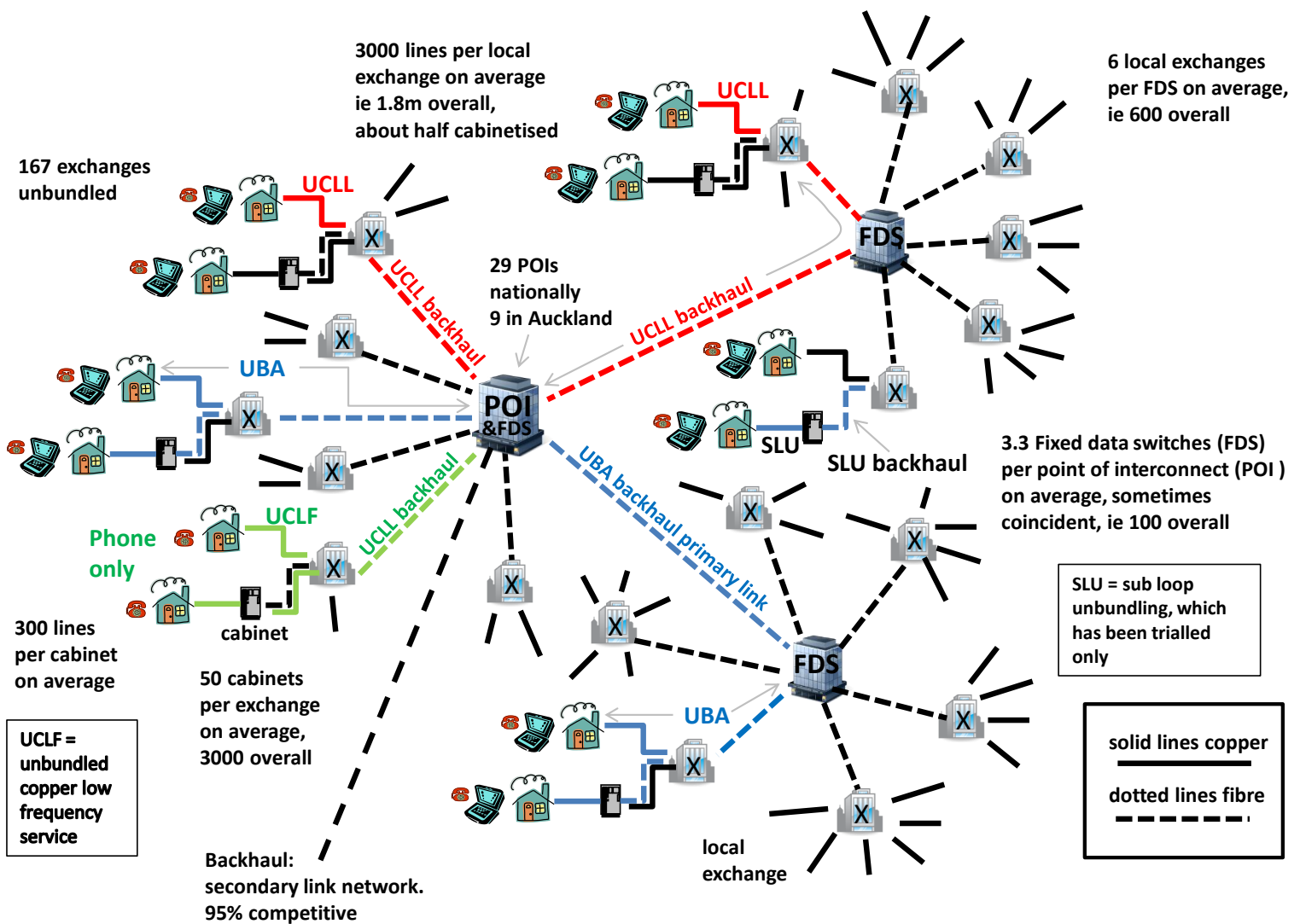
Figure 9 is a stylised diagram of the fixed line network owned by Chorus and Telecom that is used to provide telephone and broadband services. Some of the regulated wholesale fixed line services are illustrated. Other networks of varying sizes and functions in New Zealand interconnect with this network to exchange voice and data traffic.

Falls all around for fixed line calling

Figure 10: Fixed line retail call minutes by call type

Figure 11: Average fixed line calling prices by type

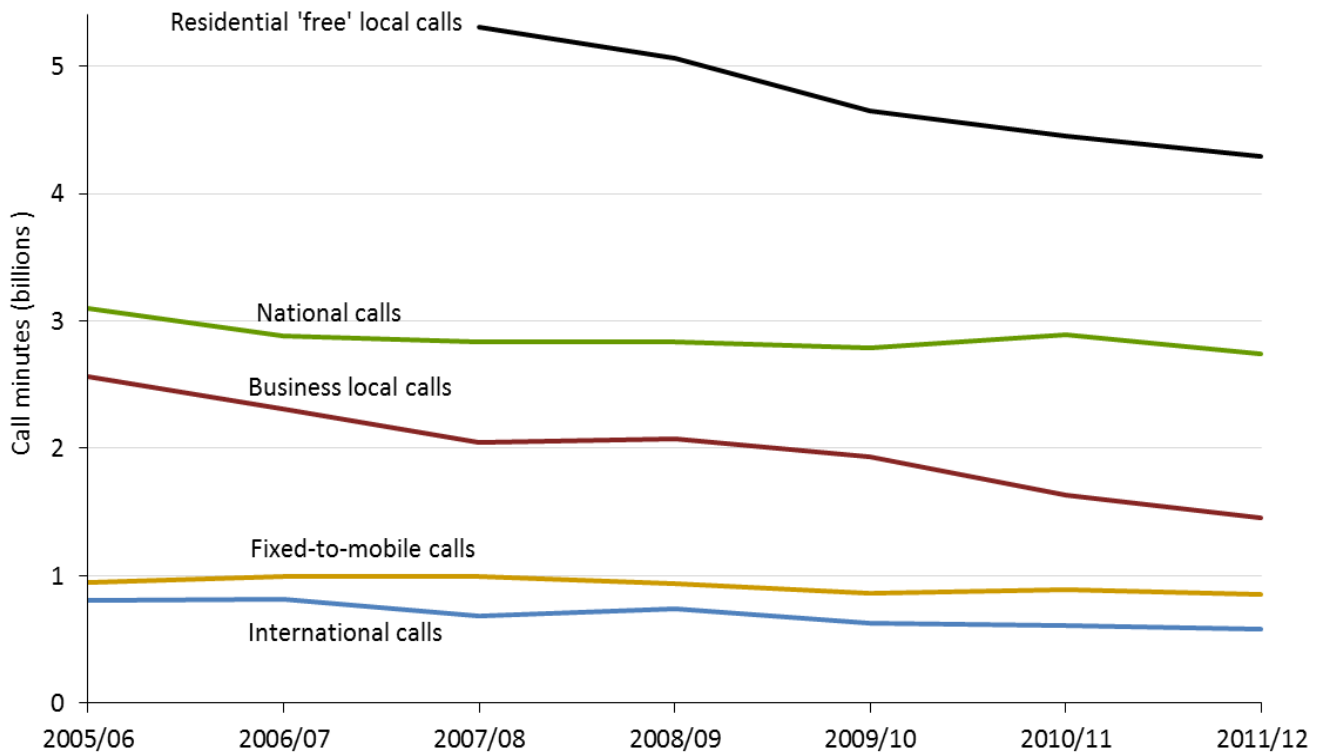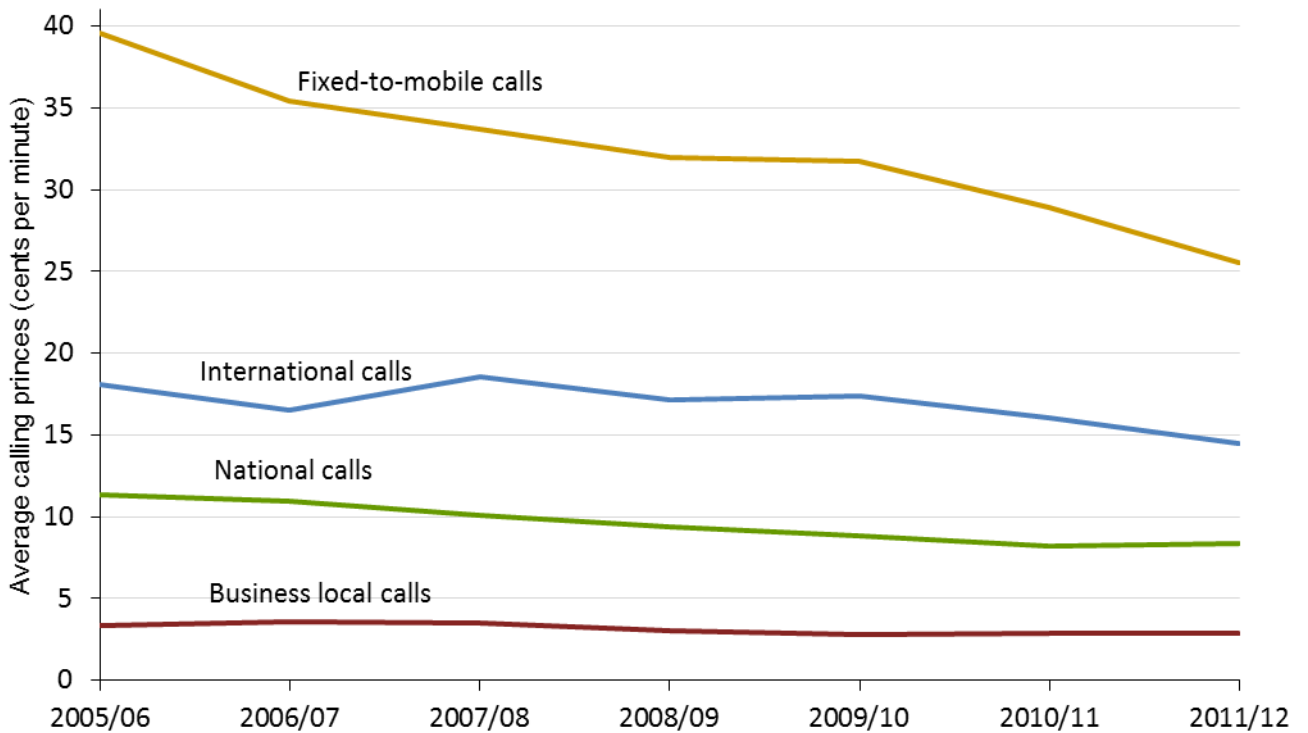Fixed line calling minutes continue to fall, as shown in Figure 10, despite most calling prices also continuing to fall, as shown in Figure 11. The continuing significant fall in the fixed-to-mobile calling price was expected in 2011/12 with the regulated mobile termination rate falling from 5.88 cents per minute 3.97 cents per minute on 1 April 2012.

The number of consumers and businesses using Voice over Internet Protocol (VoIP) rather than conventional Public Switched Telephone Network (PSTN) voice, that requires a dedicated low frequency service, continues to increase. However, where VoIP calls connect to the PSTN and the VoIP operator charges for the service, the minutes and revenues are included in the data captured for this report. The Commission again attempted to collect data on the volume of 'free' end-to-end VoIP calls made within New Zealand, with limited success. In any event, it appears that such calls do not yet make up a significant portion of total voice calls.

Only broadband and internet revenues rising

Figure 12: Fixed line retail revenues by type
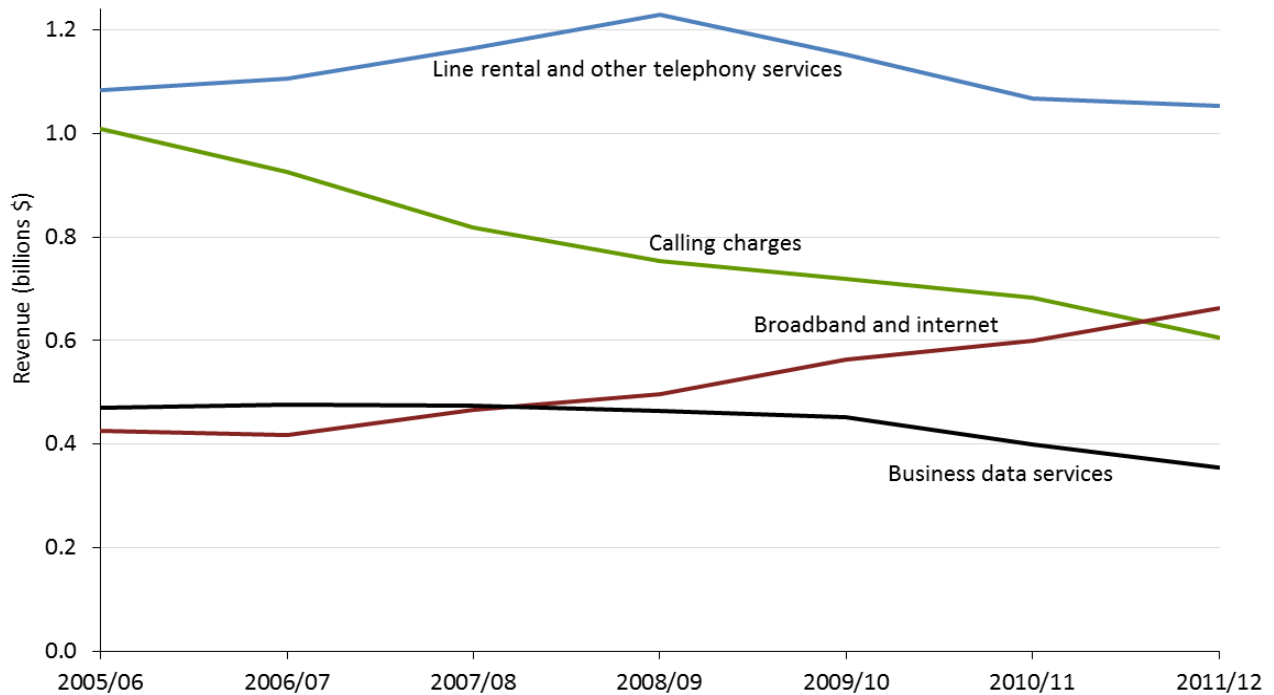
Given falling voice traffic and static or falling calling prices, most forms of fixed line revenue continue to fall. Only revenue from broadband and internet access is rising, as can be seen in Figure 12. Broadband and internet services are used by residential consumers and small businesses.

Business data services tend to be purchased by larger businesses and can include calling as part of a bundle of telecommunications services delivered over a dedicated data line. The better value being offered in this market is leading to falling revenues.

Figure 13: Non-Telecom voice services
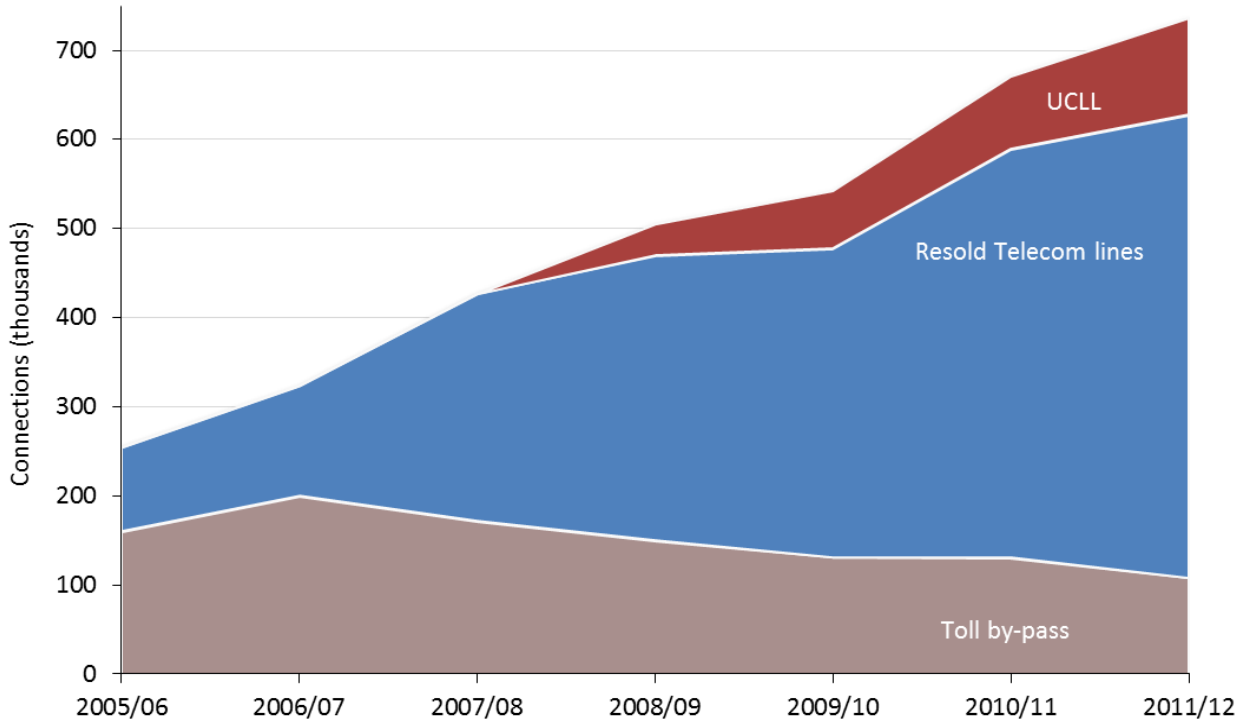
The number of retail voice services sold by retailers other than Telecom continues to increase, as can be seen in Figure 13. Most of these voice services are being sold in conjunction with broadband, apart from tolls-only services (toll by-pass) which continue to decrease in popularity.

Figure 14: Retail voice market HHI index
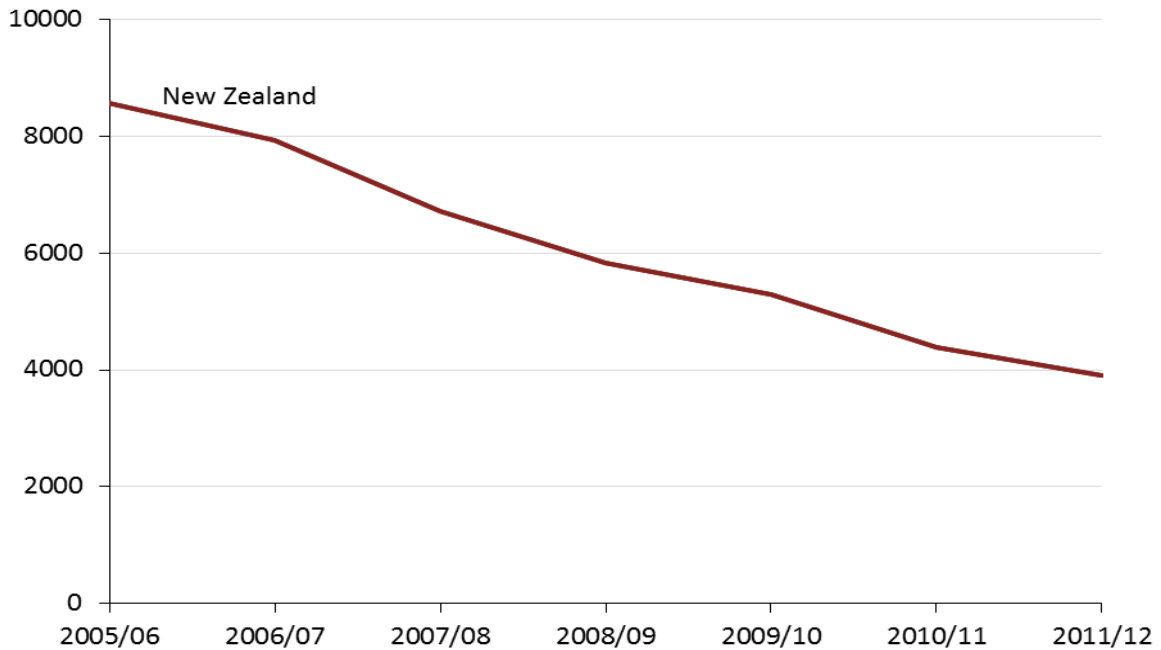
The increasing share of voice connections sold by incumbent Telecom's retail competitors is also indicated by the falling market concentration in the retail voice market. Market concentration is measured by the Herfindahl-Hirschman Index (HHI),[6] and the movement of the HHI for the retail voice market over time is shown in Figure 14. This indicator will kick up next year when the merged Vodafone and TelstraClear will be counted as one entity.

Fixed line broadband subscribers continue to grow as dial-up shrinks

Data services delivered over fixed lines include broadband and internet services, and business data services. Fixed line broadband is a service largely consumed by households and small businesses. Larger businesses often buy a managed data service that includes all their telephony and data needs, commonly delivered over a fibre optic cable.

Increasing broadband and internet revenue is driven by increasing broadband subscribers. Household broadband penetration can be estimated by observing the proportion of residential broadband connections compared to the number of residential fixed line connections.

Figure 15: Estimated household penetration of internet services
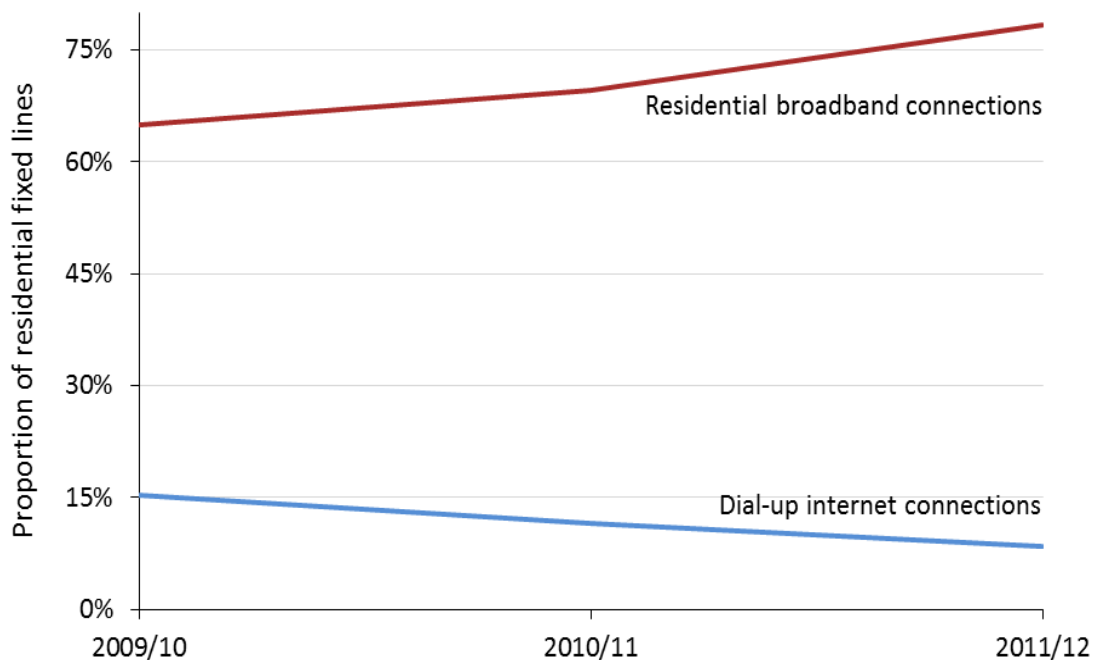
Figure 15 suggests the continued growth in residential broadband penetration to reach 78% of residential fixed lines has been partly driven by the migration of dial-up internet subscribers to broadband. Figure 15 shows the fall in dial-up connections, from 15% over

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[6] The Herfindahl-Hirschman Index (HHI) is a commonly accepted measure of market concentration and 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.

the 3 years to 8% in 2011/12, was more than offset by the rise in residential broadband connections, up from 62% to 78%.

Figure 16: Home internet connection market share from World Internet Report survey
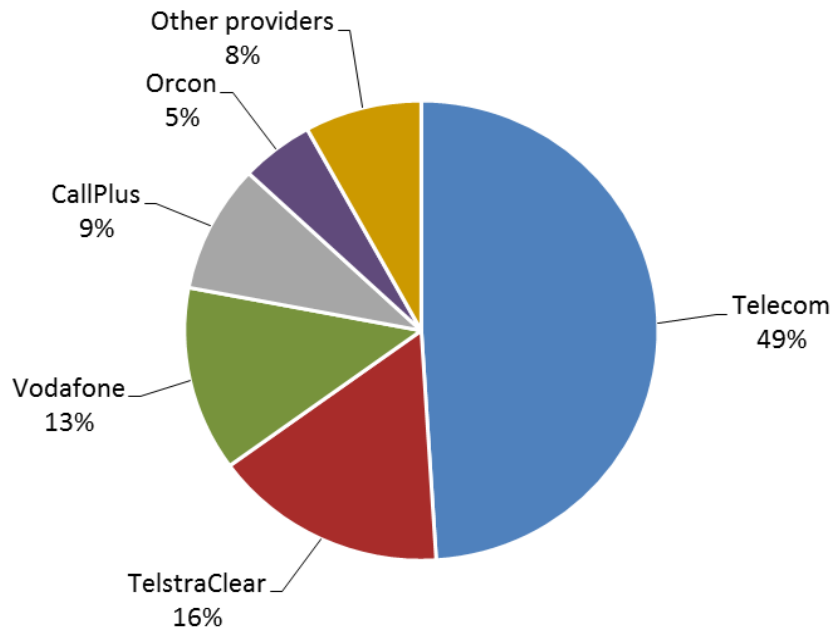
The retail broadband market is one of the most competitive telecommunications markets in New Zealand, with Telecom's competitors having about a 50% share of the retail broadband market as at 30 June 2012. Publicly available survey data shown in Figure 16 gives an indication of the relevant market shares of those Internet Service Providers (ISPs) that provide internet connections to the home.[7] This pie chart is repeated from last year's report because no new public survey has been completed and it is still a good indication of market shares. Last year the pie chart understated Telecom's then known market share so movement of the market in the 2011/12 year means the chart is probably now a better indicator of the actual market shares than it was last year.

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[7] P Smith, A Gibson, C Crothers, J Billot, A Bell. (2011). *The Internet in New Zealand 2011*. Auckland: Institute of Culture, Discourse & Communication, AUT.

Figure 17: Retail broadband market HHI index
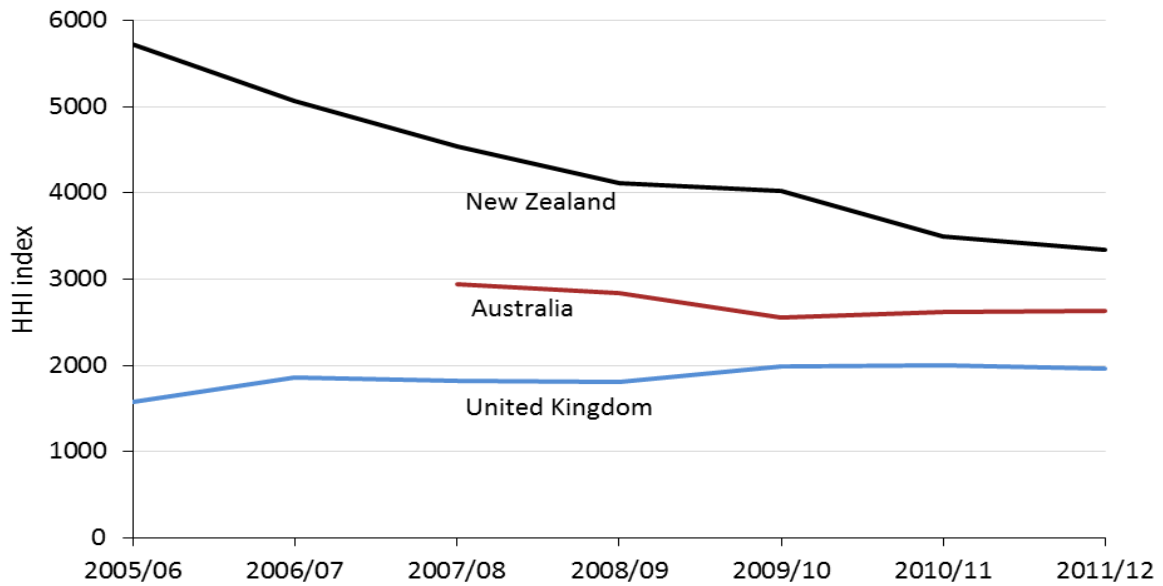
Figure 17 shows that the broadband retail market concentration in New Zealand has continued to fall over the last 3 years while in Australia and the United Kingdom it has stayed about the same. The HHI indices were calculated from the figures obtained by the Commission. As with the voice market, the index will kick up next year when the acquisition of TelstraClear by Vodafone is taken into account.

The number of unbundled lines still rising

Broadband retailers put their infrastructure into unbundled exchanges to allow them to lease UCLL lines from Chorus. This means they can offer broadband and voice services, with substantial control over how the service is delivered. Current regulatory provisions give them a cost-based wholesale price.

Figure 18: Number of unbundled lines
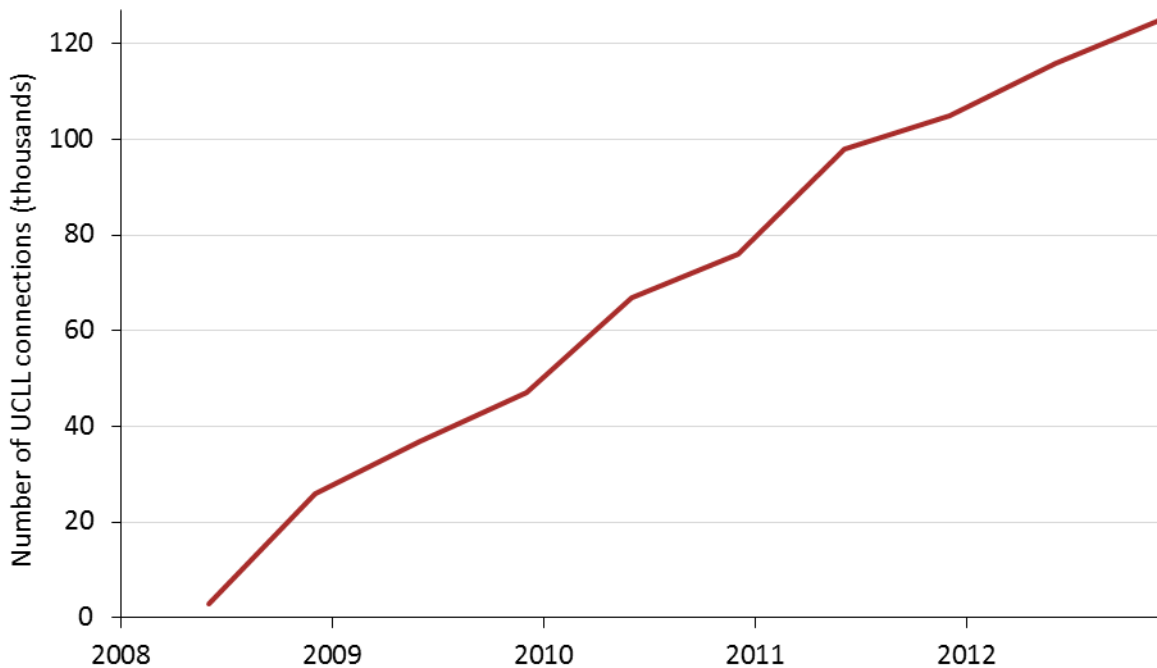
The number of unbundled lines has continued to grow and reached 125,000 at the end of 2012, as shown in Figure 18. Recent increases have largely been driven by more exchanges being unbundled rather than new UCLL customers being found in exchanges unbundled some time ago. The total number of unbundled exchanges reached 167 at the end of 2012 with exchanges in many rural towns now being unbundled.

The unbundled lines figure included 16,000 SLUBA/SLES cabinetised lines with the voice service provided from the unbundled line and the broadband service provided from the cabinet. This is more costly for the retailer and gives less control over quality.

The maximum number of unbundled lines, lines over which a full UCLL service could be offered, was around 620,000 as at the end of 2012. This number was calculated by taking the total number of lines served by unbundled exchanges and subtracting the number of lines in those exchanges that have been cabinetised.

Naked broadband and data growth trend continues

Naked broadband services (where fixed line broadband is provided without a conventional voice service) have continued to grow in popularity. This growth is likely to have been driven by two factors. First is the availability of competitively priced fixed line broadband and VoIP services, such as Orcon's Genius, that use a naked DSL connection.

The second factor likely to promote naked broadband is the falling price of mobile voice services. More generous bundles of voice minutes and cheaper calling rates make it more economic for a consumer to use a mobile phone for all their calling (despite 'free' calling to local numbers) and ditch their fixed line number. Obtaining so-called 'free' local calling on a

fixed line does require payment of a monthly voice line rental charge or a rental component if conventional PSTN voice is purchased with broadband in a bundle.

Figure 19: Naked broadband connections
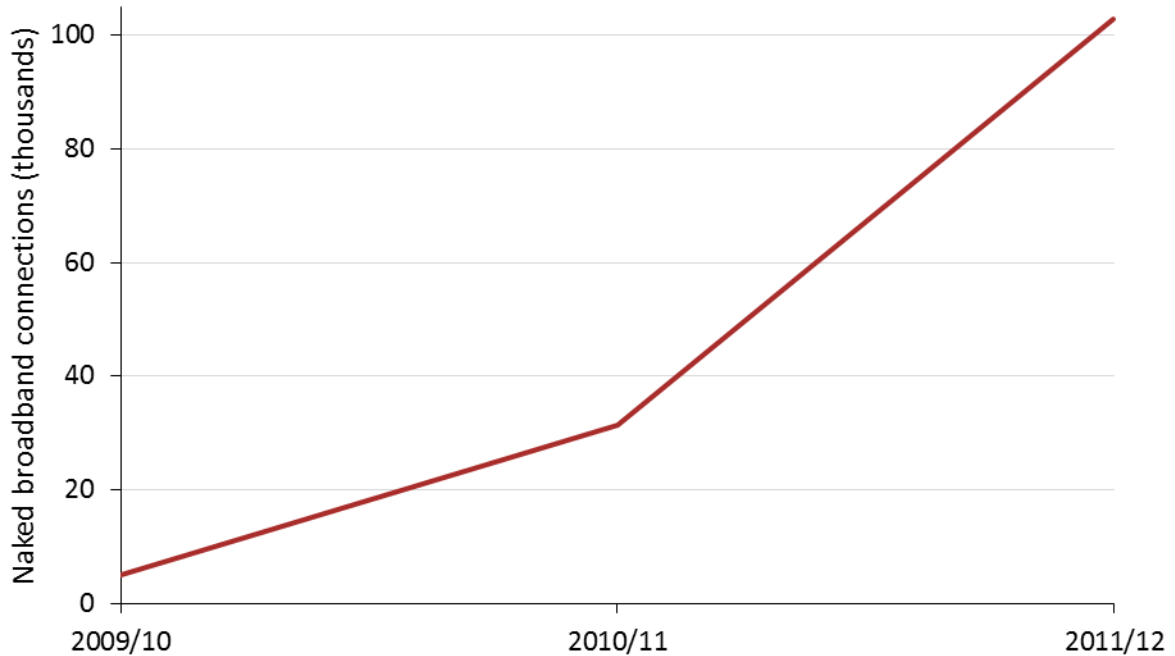
Figure 19 shows the very strong growth in naked broadband numbers from an estimated 5,000 connections in 2009/10 to 103,000 connections in 2011/12.

The amount of data traffic used by each broadband connection (naked and clothed) is continuing to increase rapidly too. The Commission's survey data indicates that the average amount of data used by each fixed line broadband subscriber rose from around 10GB per month in 2010/11 to 19GB per month in 2011/12.[8]

Some fixed line data use in the home is now occurring on mobile devices, with many homes having WiFi routers to enable WiFi-capable mobile phones and tablets to connect to the fixed line broadband connection. This increasing use of fixed line data by mobile devices is known as mobile data traffic offload.

No recent improvement in broadband speeds

An indication of broadband quality is the average download speed being achieved by end-users. It is difficult to track this measure over time, especially when the speed of plans being purchased and typical consumption is rising.

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[8] The Commission moved from collecting an average broadband data use figure from respondents to collecting total data broadband data sold by respondents, which was used to calculate an average.

Data distribution company Akamai[9] provides data about average throughput speeds achieved by internet users (from delivery of large content files such as operating system updates from a distributed system of servers typically located at ISPs).[10]

Figure 20: Average download speeds by country
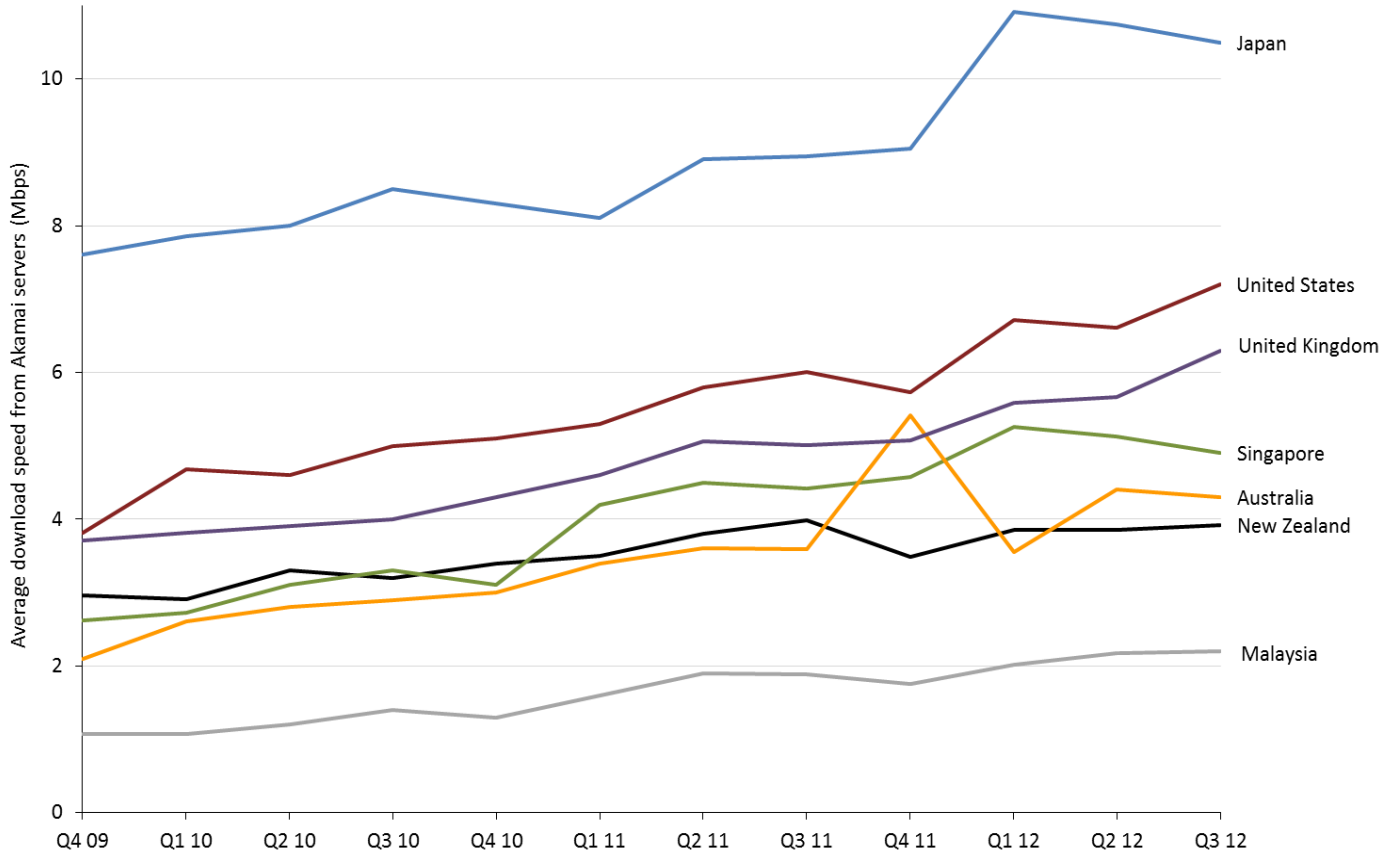
Source: Akamai

Figure 20 shows average broadband speeds measured by Akamai for a selection of Asia Pacific countries and the United Kingdom. New Zealand's average speed showed no improvement over the 2012 year, with the Q3 12 (third quarter for 2012) average download speed being 3.92 Mbps. This means we have slipped behind Australia with a Q3 12 average broadband speed of 4.3Mbps.

Actual broadband speeds like those measured by Akamai are generally lower than those given by speed test applications because such applications generally give a peak speed that could be achieved downloading a large file. Networks are also often managed to maximise the results of speed testing applications.

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[9] Akamai website: www.akamai.com

[10] The testing carried out by Akamai has been described as "in the network, third party testing". Akamai measures speeds locally so speeds are not affected by international backhaul, and measured as delivering a real service unlikely to be influenced by specific ISPs or users. Akamai measures a significant number of individual downloads because it delivers data to virtually every broadband connection in the country (including connections that do not use DSL technology).

Retail mobile market

This section examines the mobile market. It begins with an overview of who is involved in the market, the revenues earned and market shares, and then looks at the mobile voice followed by data, which includes Short Message Service (SMS) and mobile broadband.

Market overview

New Zealand has three mobile network operators that share 4.92 million connections. Vodafone operates a nationwide 2G GSM and 3G UMTS[11] network. Telecom operates a nationwide 3G UMTS network (the XT network). The third operator, 2degrees, began service with a 2G GSM network in August 2009 and a year later commenced operating its 3G UMTS network. 2degrees now provides extensive coverage using its own cell sites which cover most cities. It relies on roaming via Vodafone's GSM network to provide coverage where it does not have its own network.

The next generation of mobile phone technology, offering much higher speed data and known as Long Term Evolution (LTE) or 4G, started making a limited appearance only in the 2013 year.

MVNOs still insignificant

New Zealand has a number of small mobile virtual network operators (MVNOs) who resell mobile services provided by Vodafone or Telecom. [12] MVNOs usually have some scope to offer different bundles of services than those retailed by the wholesale mobile network operator. Some MVNOs are standalone operations, but in New Zealand most are adjuncts to a retail fixed line business.

TelstraClear operated the largest MVNO in 2012, but this disappeared in 2013 following TelstraClear's acquisition by Vodafone. Other, smaller MVNOs include Black + White/M2, Digital Island, CallPlus/Slingshot, Compass and Orcon.

MVNOs have an insignificant share of the New Zealand mobile market. Reported total connections from surveyed MVNOs as at 30 June 2012 were 70,000 (54,000 in prior year), with total revenues of $38 million ($37 million) and 49 million call minutes (49 million). These figures will drop substantially for 2012/13 with the disappearance of TelstraClear.

Data and handset sales drive rising retail revenues

Mobile retail revenues grew more strongly in 2011/12 than in any recent years to hit $2.38 billion after reaching $2.14 billion in 2010/11.

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[11] Universal Mobile Telecommunications System (UMTS) is the 3G successor to the 2G Global System for Mobile (GSM) standard. The most common form of UMTS uses W-CDMA as the underlying air interface.
[12] 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 21: Mobile retail revenues by type
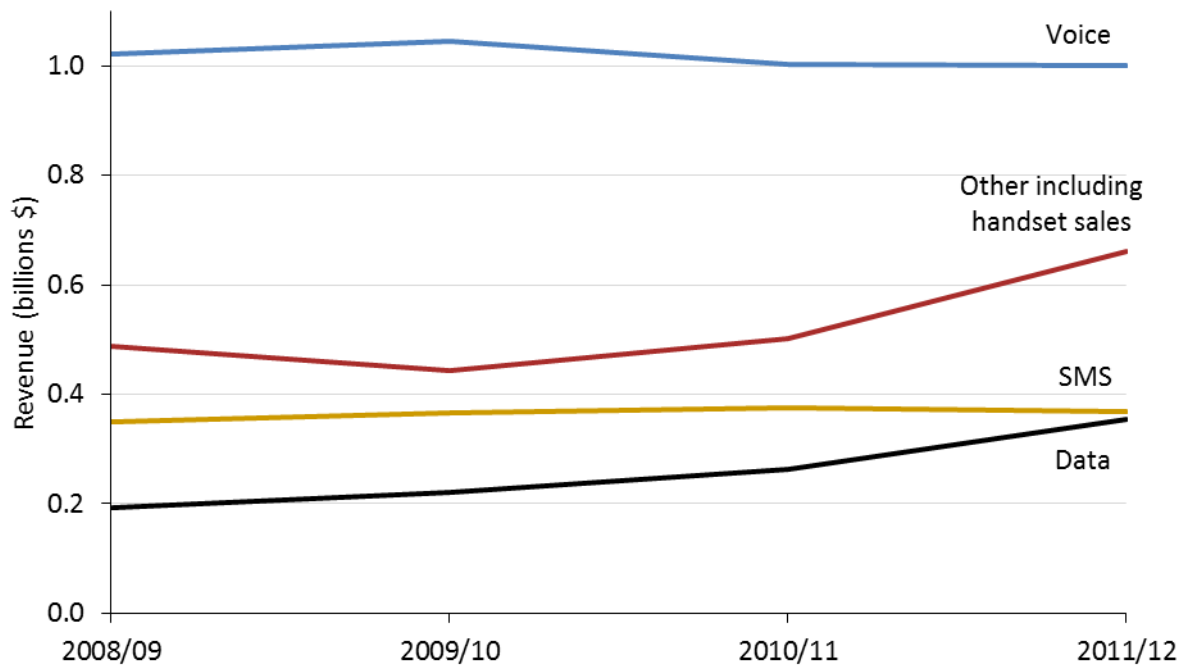
Figure 21 shows that increased data revenues and other mobile revenues (largely handset sales) drove the growth in total mobile retail revenues in 2011/12. Handset sales haven't been collected separately before, but were $417 million out of a total of $661 million 'other' mobile revenues. So they were a substantial portion, and likely to have accounted for much of the increase from $501 million of 'other' mobile revenues in 2010/11. Mobile voice and SMS revenues fell very slightly in 2011/12.

Mobile market shares show signs of converging

Figure 22: Mobile connections by provider
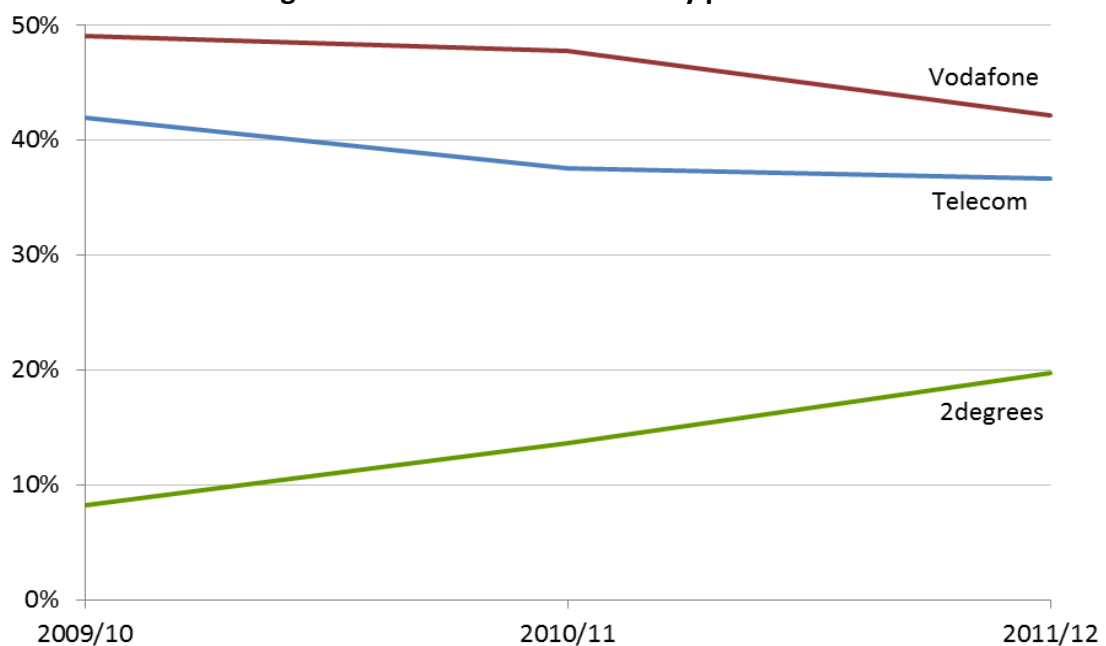
Over the 2011/12 year the mobile connections of each operator showed signs of converging towards more equal shares. Market leader Vodafone lost customers, Telecom remained roughly static in second place and 2degrees continued to gain customers, as can be seen in Figure 22.

On a connections basis Vodafone had 42% of the market, Telecom 37% and 2degrees 20% as at 30 June 2012, with MVNOs making up the remaining 1%. This convergence trend led to a further fall in the retail mobile market concentration as measured by the HHI in 2011/12.

Figure 23: Retail mobile market HHI index
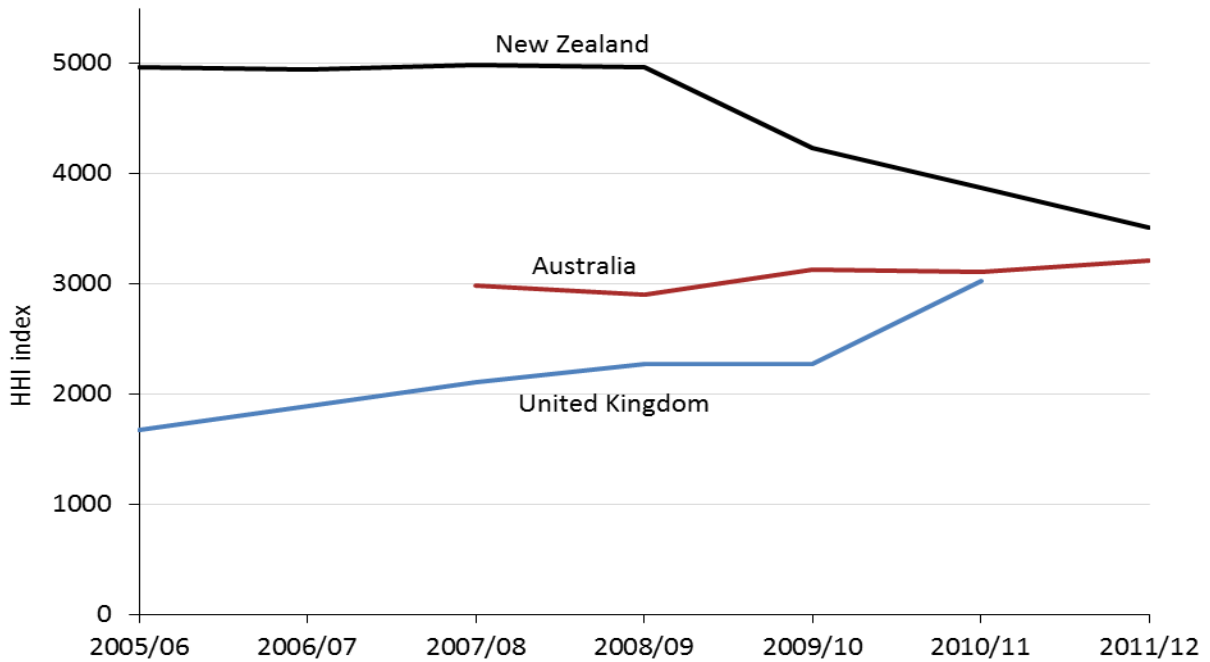
Figure 23 shows that New Zealand's mobile market concentration, measured on a subscriber basis, continues to get closer to that in Australia and the United Kingdom. However, subscriber numbers can be a misleading way of showing market share because they don't show how valuable a particular operator's customers are.

2degrees' customers are, on average, less valuable than those of Vodafone and Telecom because they are largely prepay customers from the 'budget' end of the market.

Mobile voice minutes refuse to grow

Figure 24: Retail mobile voice minutes
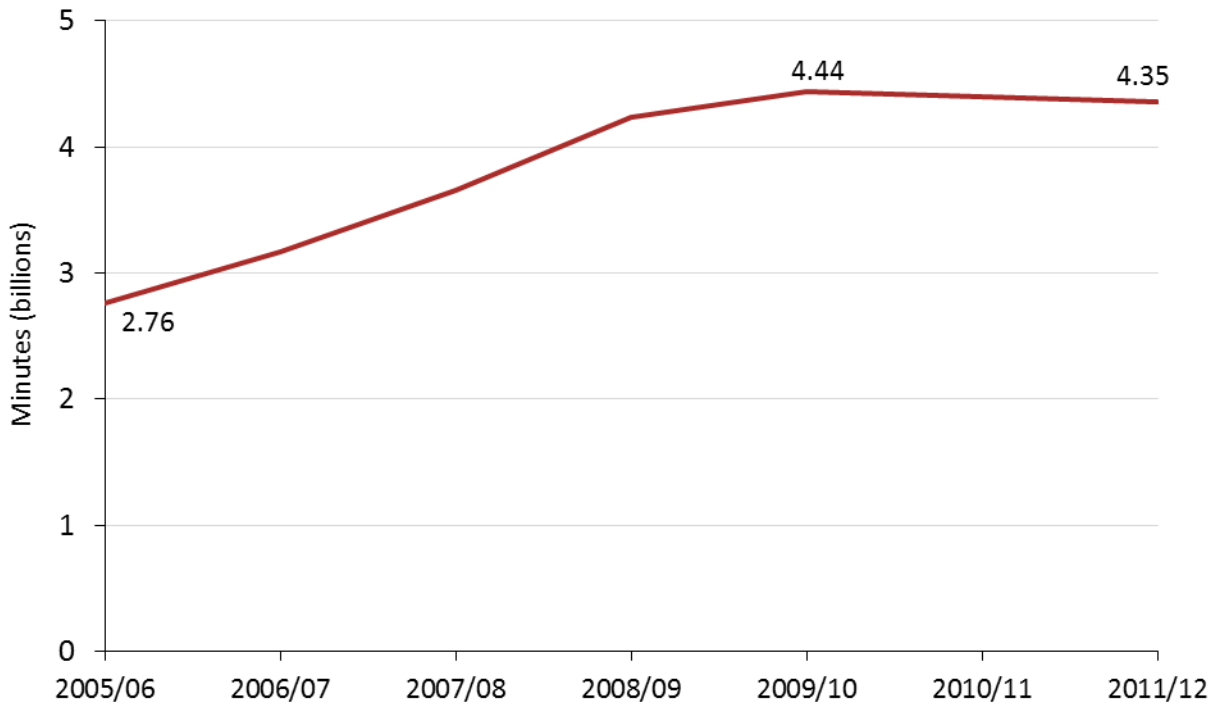
Figure 24 shows total mobile voice minutes grew rapidly from 2005/06 to 2008/09, with the growth rate slowing in 2009/10 on reaching 4.44 billion minutes before growth stopped from 2010/11 onwards. This was unexpected given mobile voice use in New Zealand was still low compared with most other countries.

Interestingly, mobile voice minutes have also stopped growing in other Western countries in recent years. For example, Ofcom reported that outgoing mobile minutes in the United Kingdom fell slightly from 125 billion minutes in 2010 to 124 billion minutes in 2011. That was an average of 126 minutes per connection per month compared with 74 minutes in New Zealand 2011/12.

Mobile operators are continuing to try to encourage more voice use by providing larger buckets of 'free' minutes in competitively priced bundles. A new development in the prepay market in 2012 was the introduction of the $19 monthly prepay bundle, bundling a large amount of text messages with a relatively generous amount of minutes and data.

The rise in the demand for data has come from the recent rapid uptake of smartphones. These allow easy access to email and social networking websites, which could be a reason why mobile users are tending to make fewer calls despite falling prices.

Figure 25: Mobile call volumes by call type
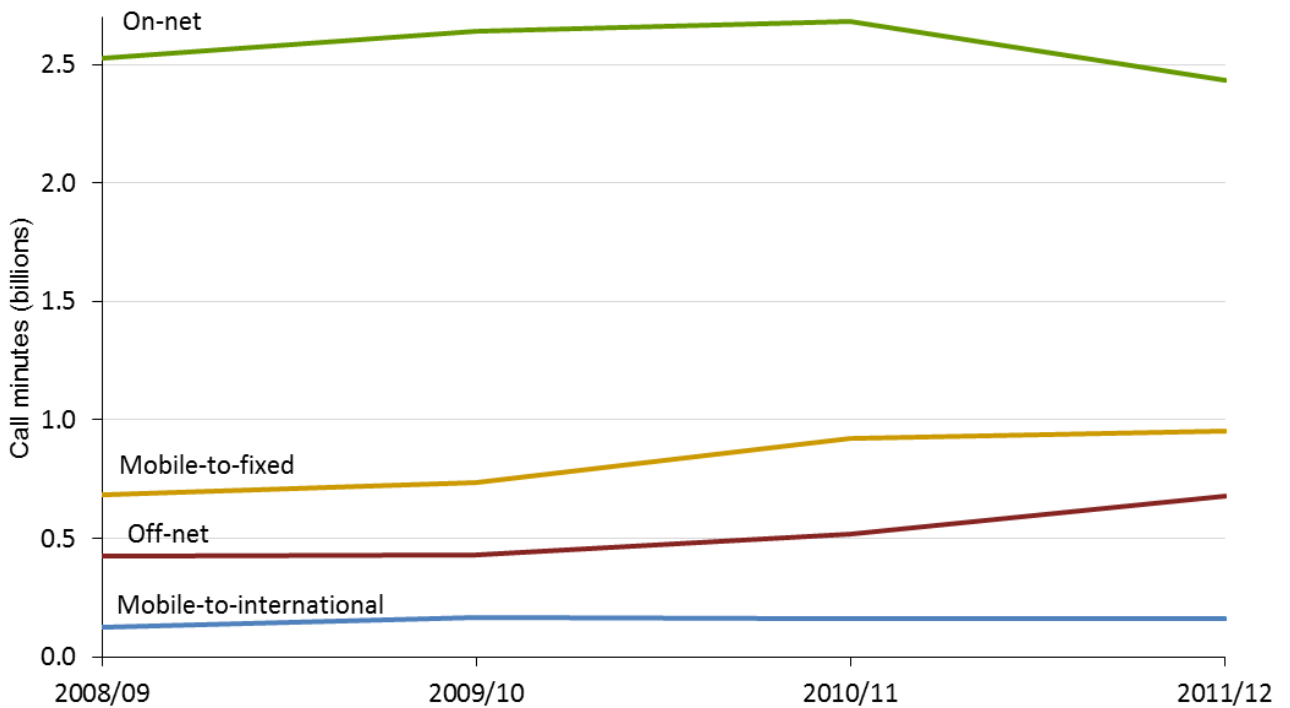
Another notable market trend which can be seen from Figure 25 is less on-net calling (calling between users on the same mobile network) and more off-net calling (calling between users on different mobile networks). Some of the change will have been purely a function of mobile market shares becoming less unequal, but it is also likely there has been less intense use of closed-user-group calling of the type offered with add-ons like Vodafone's BestMate,[13] as some users have migrated to newer plans and changed networks. That may explain how cheaper calling can encourage some users to make extra calls while others are making fewer calls (the rise in off-net calling is being off-set by the fall in on-net calling). Survey data shows that in 2011/12 average minutes consumed per prepay user fell slightly while the average minutes consumed per on-account business user rose slightly.

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[13] BestMate costs $6 a month as an add-on to certain Vodafone mobile plans and allows up to 1,000 minutes of calling and 1,000 texts to one other Vodafone mobile number. Some Vodafone plans now have a NZBestMate which is the same except the mobile number can be on any NZ mobile network.

Figure 26: Mobile call average price by call type

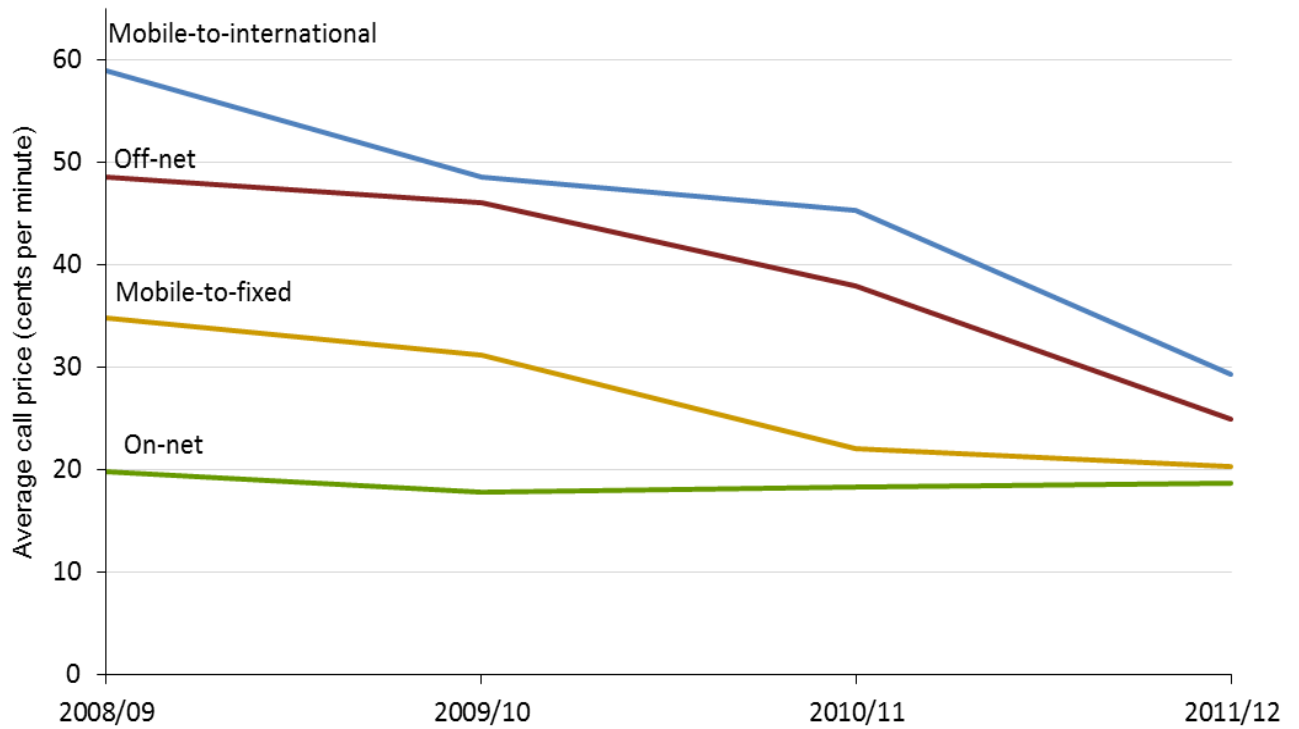Figure 26 shows that average mobile calling prices (apart from on-net) have continued to fall, with particularly steep falls in the price of mobile-to-international calls and off-net calls.

SMS fades while mobile broadband continues rapid growth

SMS and mobile broadband have been classified as mobile data services by the industry, although technically SMS is a feature associated with the voice service.

Figure 27: SMS and mobile broadband revenue
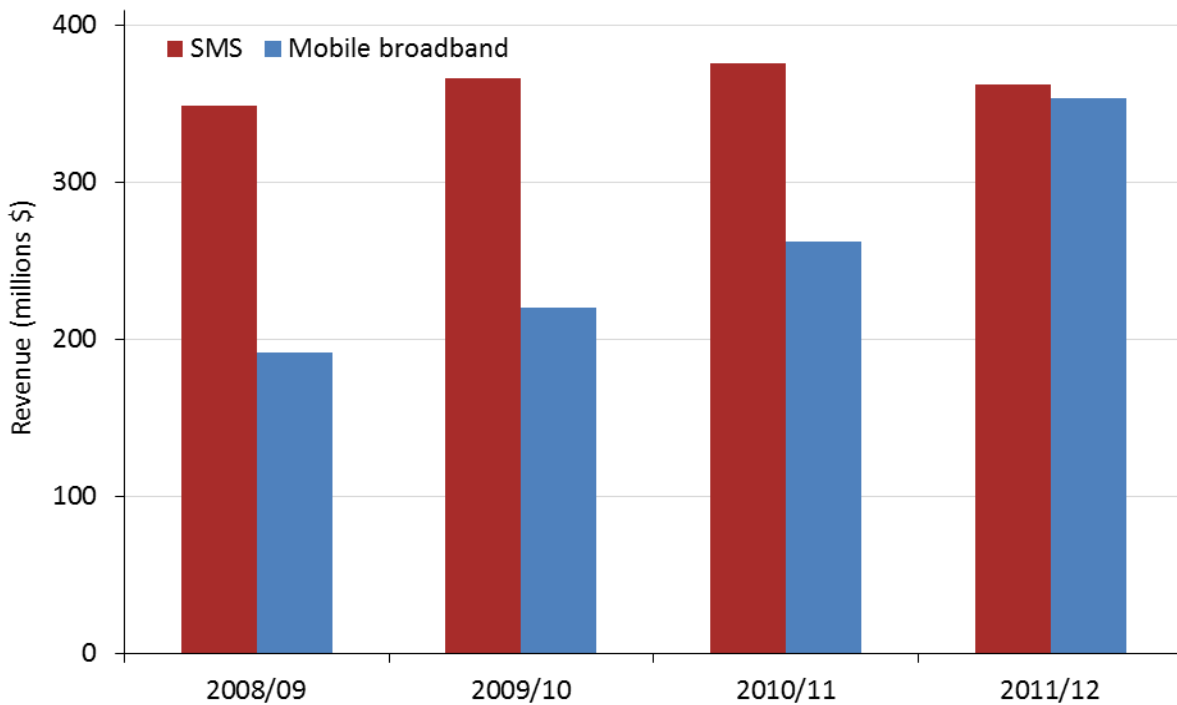
SMS or texting is a service that has been very popular in New Zealand and has earned significant revenue for mobile operators. Figure 27 shows revenue from SMS appears to have peaked, with 2011/12 revenue falling to $362 million from a high of $376 million in 2010/11.

An increasingly large number of texts are being bundled with most mobile plans and packages,[14] with Telecom and 2degrees in 2012 starting to give unlimited texts (subject to a reasonable use requirement) in many of their bundles. This will have reduced the revenue generated from excess or out-of-plan texts sold on a per text basis.

Mobile broadband revenue continues to grow rapidly, as can also be seen in Figure 27, hitting $354 million in 2011/12. This was likely driven by strong demand from consumers increasingly using smartphones and other mobile devices to access the internet, probably helped along by the falling data prices shown in Figure 31.

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[14] The practise of selling a bundle of services including voice, texts and data for one price means that the revenues reported and therefore average prices reported for each service is dependent on how the bundled revenue is attributed to each service.

Figure 28: SMS volumes by type
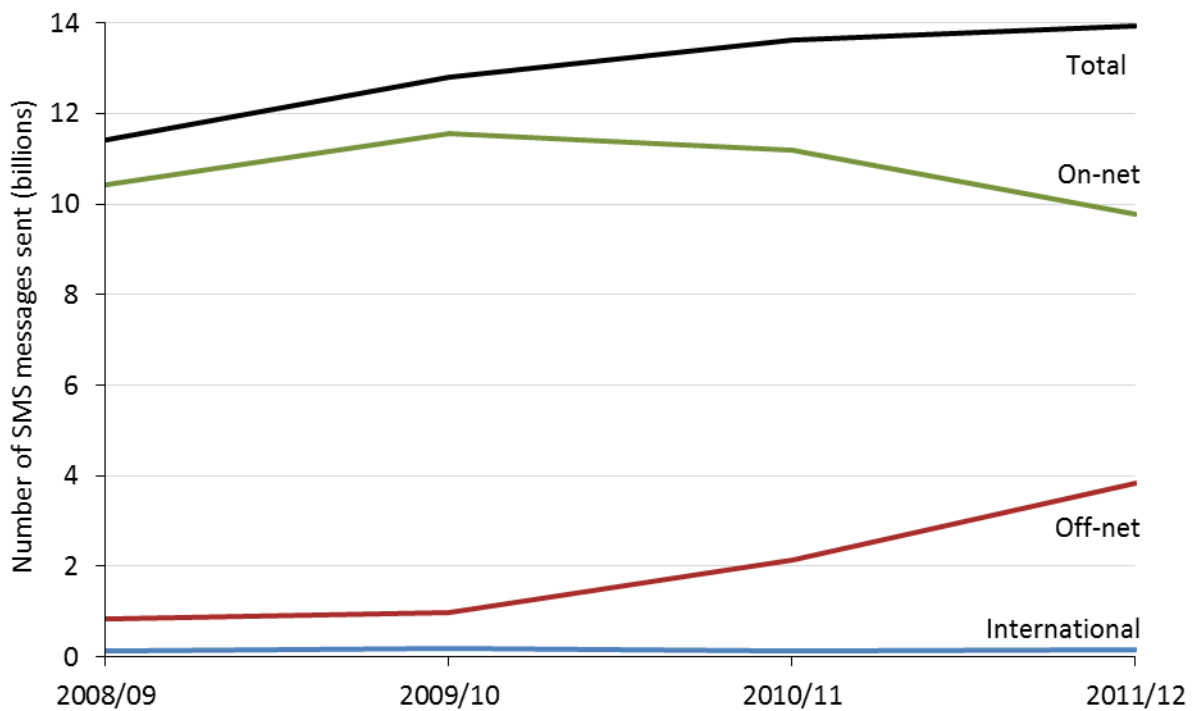
Figure 28 shows SMS volumes continued to rise in 2011/12, reaching nearly 14 billion (236 per connection per month) but earning less revenue as discussed. As with voice calls, off-net traffic has been rising and on-traffic falling. The drivers of this pattern are also likely to be similar to those for voice. Some closed-user-group add-ons like Vodafone's BestMate provide a large number of texts to the nominated number in addition to voice minutes.

Figure 29: SMS average price by type
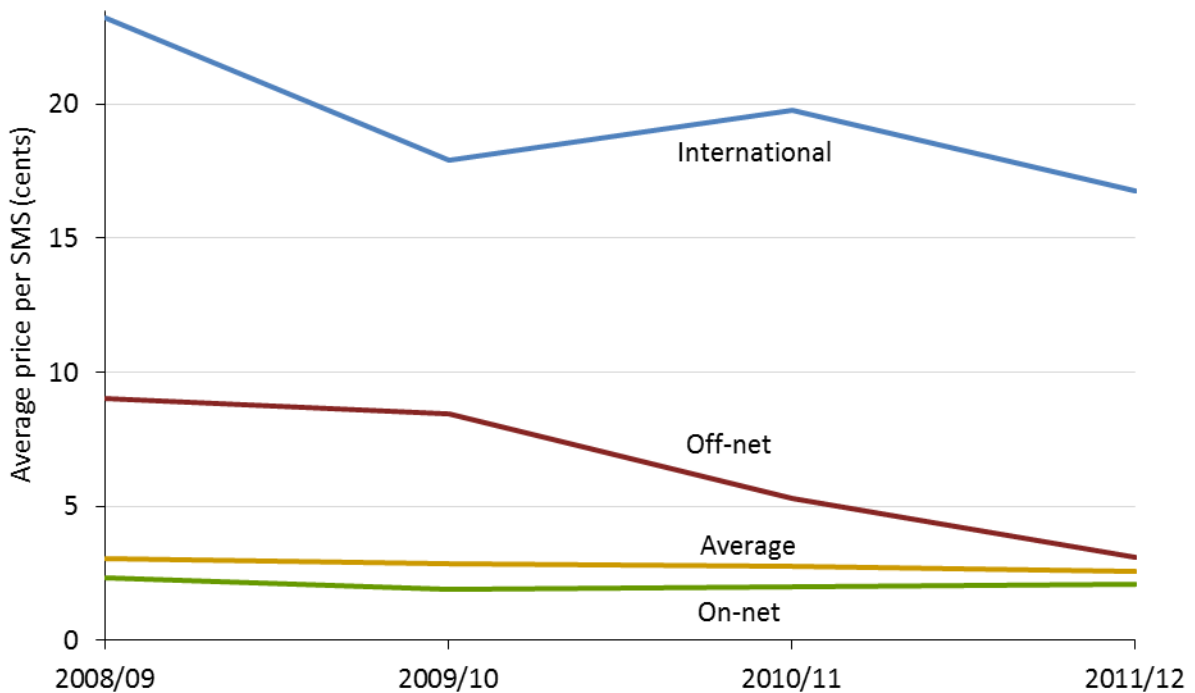
Figure 29 shows that off-net average text prices had a substantial fall in 2011/12 while on-net prices had a slight rise. The fall in the average off-net price was probably driven by the large number of any-net texts being offered in bundles, as discussed previously. Given that the volume of on-net texts still dominates, the overall average price for texts was flat.

Figure 30: Total mobile data purchased
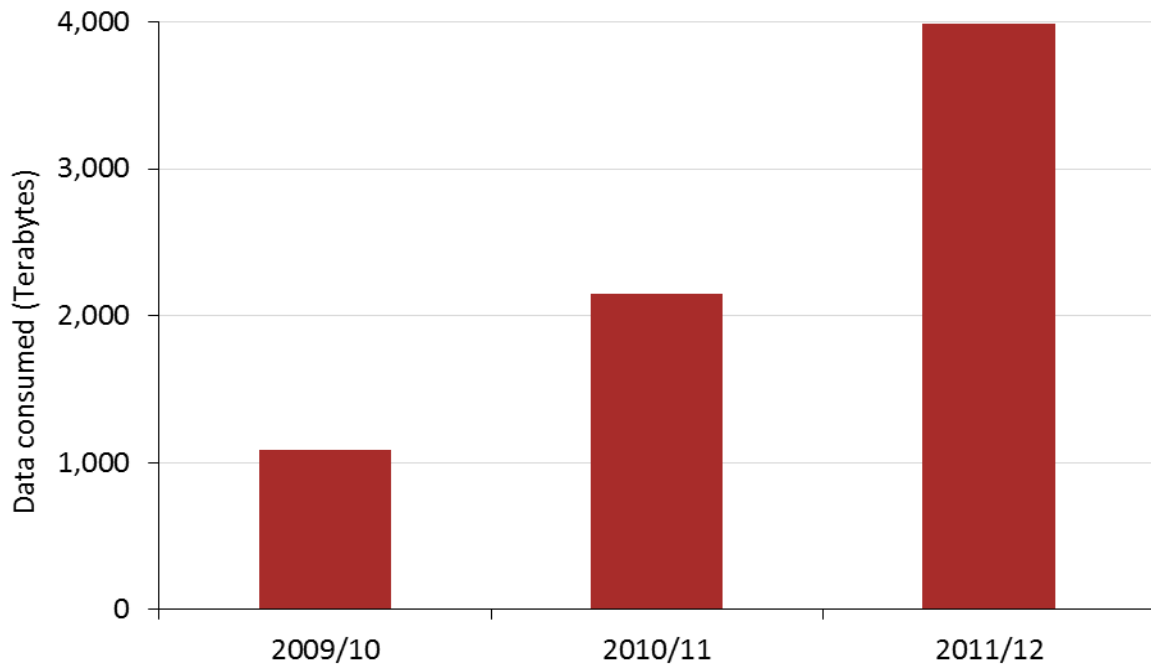
The amount of mobile data purchased has grown substantially in 2011/12, again nearly doubling from the previous year, as shown in Figure 30.

Figure 31: Mobile data average price
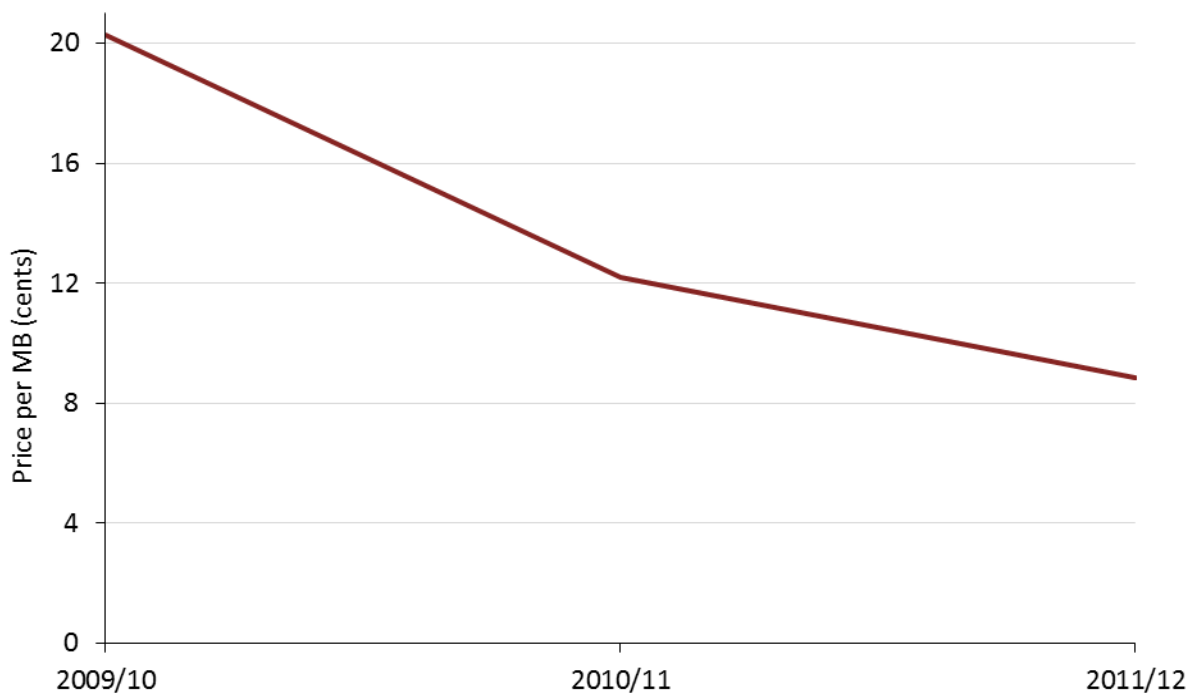
The average retail price for mobile data has fallen significantly again too, to 9 cents per MB, but the rate of decrease was not as great as the previous year, as shown in Figure **31**.

The changing telecommunications consumer

In this section, we look at various aspects of telecommunications markets from the perspective of the consumer who uses telecommunications services. We present an overview of the major consumer trends that have made life increasingly digital, drawing on national and international information.

Life is becoming more digital

New Zealanders are moving away from using traditional fixed and mobile voice services to communicate with each other. Technological innovation means there is an ever-expanding array of digital communications devices that are changing the way we socialise, entertain ourselves, organise our lives and communicate in general. These changes are fuelling demand for more data to be delivered at higher speeds.

New Zealand has high internet use

How much we use the internet depends on our digital literacy, our socioeconomic background and our age. Examining these three factors shows why New Zealand is a country with high internet use.

Compared with other developed countries, New Zealand's population is young. The median age is 36.8. By contrast, the median age is 41.2 in most European countries, 40.7 in Canada and 44.6 in Japan. Our population is also well educated. New Zealand ranked at the top of the '2012 Legatum Prosperity Index'.[15] But we ranked 21 in the 2011 Organisation for Economic Co-operation and Development (OECD) ranking on Gross Domestic Product (GDP) per capita (calculated using purchasing power parity).[16] This lower ranking may mean we have a lesser ability to pay for goods and services, including internet related services.

Figure 32: Age and gender of New Zealanders who use the internet each day (compared to EU average) in 2012
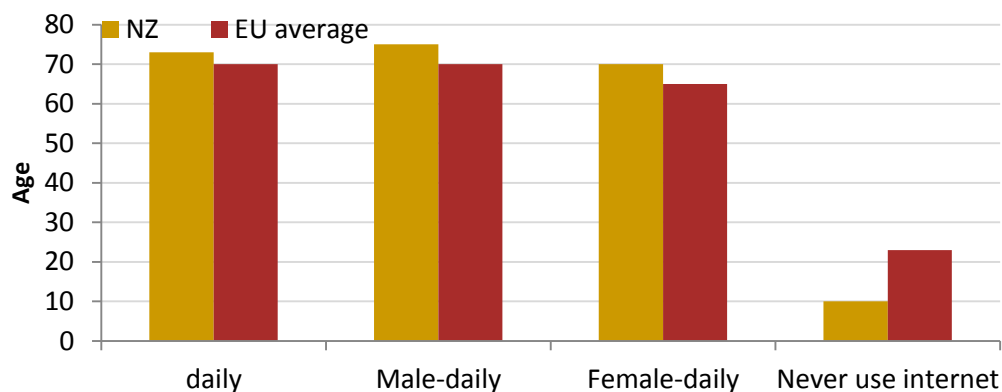
Source: Adapted from 'Internet use in households and by individuals in 2012', Eurostat, 2012; and 'Internet Service Provider Survey: 2012', Statistics New Zealand, 2012

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[15] The 2012 Legatum Prosperity Index, available at www.prosperity.com/Subindexes-4.aspx on 23 April 2013

[16] List of Organisation for Economic Co-operation and Development (OECD) member states sorted by their gross domestic product per capita, available at en.wikipedia.org/wiki/List_of_OECD_countries_by_GDP_per_capita

Figure 32 compares New Zealand with Europe in terms of internet usage. On average, internet use is higher in New Zealand. Seventy three percent of New Zealanders reported using the internet on a daily basis in June 2012. This was slightly above the European average of 70%. Ten percent of New Zealanders said they had never used the internet—significantly less than in Europe (22%).

Today's generation of young adults aged 15 to 24 are a new breed of internet users; 'digital natives' who grew up with computers, the internet and digital media. They use the internet for gaming, downloading and uploading. They prefer higher data caps and faster speeds.

Given their demographic characteristics, New Zealanders are rapidly increasing their use of data. Average data consumption rose from 10GB in 2010/11 to 19GB in 2011/12.

Social networking is changing how we communicate

Online social networking by New Zealanders is a clear example of how technology is changing what we do. Ninety-six percent of those online use social networking. Facebook is the most popular network site (see Google trends and ComScore's report).[17]

Globally, some 618 million people use Facebook every day.[18] In October 2011, Facebook reached 55% of the world's internet users and accounted for 1 in every 7 minutes spent online. New Zealand has 2.27 million users, and 61% of these access Facebook at least once a day. And it's not just young people using social networking; now older people are connecting. People aged 55 and older make up the fastest-growing percentage (10%) of those using social networking. New Zealand is typical. Figure 33 shows that 63% of Facebook users in New Zealand are between 18 and 44 and 25% are 45 or above.

Figure 33: Age of people who use Facebook
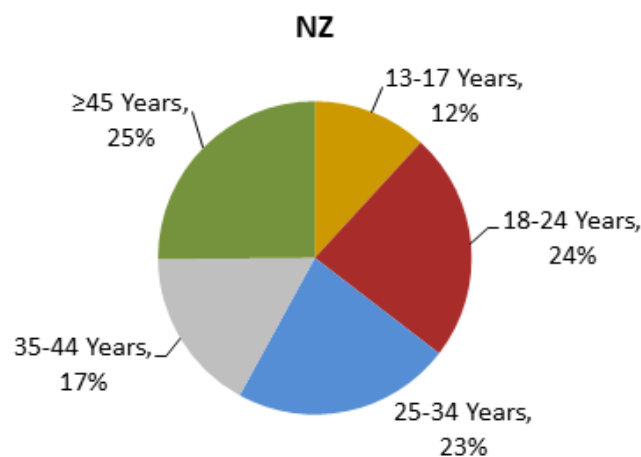
Source: Adapted from Facebook Statistics by country 2013, available at www.checkfacebook.com/ on 23 April 2013

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[17] 'It's a Social World: Top 10 Need-to-Knows About Social Networking and Where It's Headed, New Zealand', comScore's, 2012.
[18] Facebook statistics, available at www.checkfacebook.com/ on 23 April 2013.

Figure 34: Age and gender of New Zealanders who used social networking in 2011
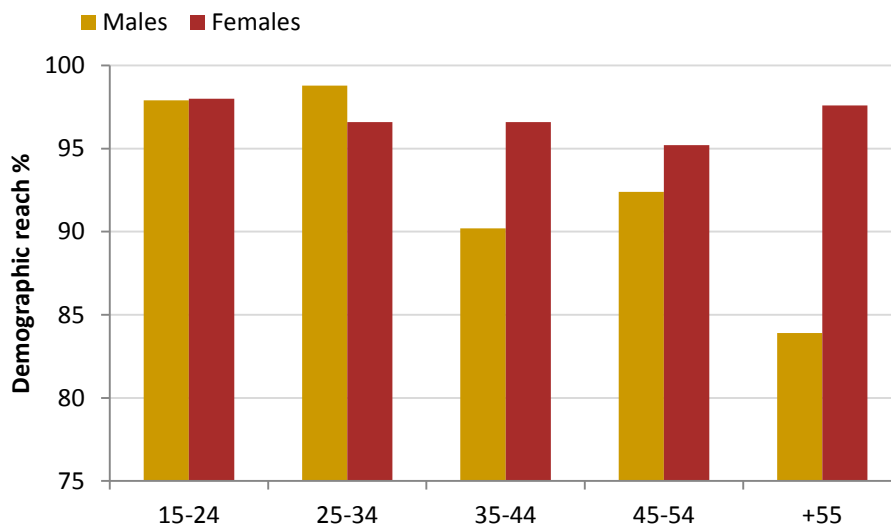
Source: 'It's a Social World: Top 10 Need-to-Knows About Social Networking and Where It's Headed, New Zealand', ComScore, 2011

Figure 34: shows the importance and depth of online social networking for different age groups. You can see that 98% of those aged 15 to 24 use social networking.

The high usage of online social networking is likely to be related to the decline in traditional voice communications. It is also likely to replace some SMS traffic, which may explain the levelling off of growth seen in that traffic.

More people are switching over to on-demand and online television

For some time broadcasters have been offering set-top boxes with on-screen guides so people can record and play back television programmes easily. With a set-top box you can fast forward advertisements and avoid interruptions. This has meant more consumers are watching television at a time that suits them, which suggests that scheduled programming may be losing its appeal for more sophisticated users. This change presents challenges and opportunities for broadcasters and content providers.

Broadcasters are putting more content online so that viewers can use their internet-enabled devices to view 'on demand'. Globally, watching video online is becoming second nature—across countries and age groups. In New Zealand, 'on demand' content is usually content that has been played already or is available only for paid subscribers. ComScore's Video Metrix research shows that 2.1 million online New Zealanders watched online video in February 2011—some 77% of the total online population. Yet although a similar percentage of males and females watch video, males spend significantly more time viewing online video than females. On average, males watched just over 8 hours of online video in February 2011, while females watched 5 hours. Males also watched more videos, averaging 85 videos each compared with 61 videos for females.

ComScore's research showed findings showed that New Zealanders favoured Google sites as their top video viewing destination. More than 1.7 million viewers watched 81.6 million

videos on Google sites. This viewership was almost entirely driven by YouTube, whose videos made up 51.6% of all videos viewed in New Zealand during February 2011. Facebook ranked second with 562,000 viewers and 2.4 million videos viewed, while VEVO ranked third with 370,000 viewers and 1.57 million videos viewed. Websites based in New Zealand and run by TVNZ and its competitor MediaWorks ranked among the top 10 video sites, reaching 201,000 and 149,000 viewers respectively.

Internet Protocol Television (IPTV) is television programming delivered over the internet in a standardised form to ensure consistent quality. IPTV brings different challenges and opportunities to the telecommunications industry worldwide. It lowers entry barriers to the once well-entrenched broadcast market. We are starting to see more competition between global and local broadcasters, and from other providers of IPTV who may be Over-The-Top (OTT)[19] content providers or Internet Service Providers (ISPs).

According to Accenture[20], as more people decide to use video over internet as an alternative or complement to traditionally delivered television, their expectations increase. These expectations focus on internet access quality. Viewers find substandard picture quality, constant buffering or long wait times for content to download unacceptable. Yet the same research states that consumers will pay, and indeed may pay more, if the quality of service matches their expectations.

More people are using cloud computing

Cloud computing means accessing and storing information remotely using the internet (so no physical saving of files to devices). Cloud computing is not new; Hotmail and Gmail are examples. Your email is stored offsite, but you can access it from any device with internet access. Yet it is only relatively recent technological developments in network capacity and speed that have meant that cloud computing can be used to effectively provide sophisticated business services.

Using cloud computing saves businesses from having to own the hardware and software necessary to run and store business applications and their outputs. Running applications on remote servers instead of local machines, and using the internet to access those applications means businesses can reduce their Information and Communications Technology (ICT) costs and become more flexible. These cost savings mean cloud computing is expected to bring significant benefits to many sectors of the economy.

More and more private and public sector entities in New Zealand are using a cloud service. In 2012 Frost & Sullivan did research on the State of Cloud Computing in New Zealand.[21] Its

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[19] Over-The-Top (OTT) describes delivery of video, audio or other content without the system operator being involved in the control or distribution of the content itself.

[20] Available at www.accenture.com/us-en/Pages/insight-video-over-internet-consumer-survey-2012.aspx on 23 April 2012

[21] Frost & Sullivan Research, 26 November 2012, available at www.frost.com/sublib/display-press-release.do?ctxixpLink=FcmCtx1&searchQuery=cloud+computing+new+zealand&bdata=aHR0cDovL3d3dy5mcm9zdC5jb20vc3JjaaC9jYXRhbG9nLXNlYXJjaC5kbz9xdWVyeVRleHQ9Y2xvdWQrY29tcHV0aW5nK25ldyt6ZWFsYW5kQH5AU2VhcmNoNoIFJlc3VsdHNAfkAxMzYzNTU0ODMzMTcw&ctxixpLabel=FcmCtx2&id=269925173, on 23 April 2013

report showed that the number of companies being interested in using cloud computing had grown substantially. Lower IT costs and ease of use are the main attractions for those using cloud services for the first time. Gains from efficiencies, agility and flexibility are the drawcards for organisations already using cloud services.

Cloud services are potential new sources of revenue for telecommunications operators. But operators will gain this revenue only if their networks, business processes, support systems and organisation are structured appropriately.[22]

If New Zealand is to gain the full benefits of cloud computing, and maximise the number of companies and individuals using cloud services, we need to ensure there is appropriate internet access quality, security and cost.

Public e-services are increasing

Worldwide, governments are putting in place austerity measures. At the same time, they are responding to the desire of their citizens to have a closer, more responsive relationship with government and public agencies. One result is the move to online services. So we see digital public services, ranging from e-government, e-health and e-education to e-procurement.

More New Zealanders are using the internet to get information from or communicate with government. The Government[23] has recently released figures that show 38.6% of New Zealanders used secure online government services between October and December 2012, up from 29.9% in June 2012.

One recent example of more people using an e-government service was the more than 30% who chose to submit their 2013 New Zealand Census of Population and Dwellings forms online—up from just 7% in 2006.[24]

More people are using smartphones for more activities

Smartphones are seemingly becoming indispensable as they are used for far more than mobile calling. Mobile apps are allowing smartphones to be used for a wide range of functions. Social networking is probably the most significant as it is increasingly replacing traditional forms of private and corporate communication.

As the boundaries between portable computers, smartphones and tablets blur, the take-up percentage of these devices is growing. A recent survey by Research New Zealand shows

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[22] Ericsson discussion paper, 'The telecom cloud opportunity: How telecom operators can leverage their unique advantages in the emerging cloud market', Ericsson, March 2012.

[23] Chris Tremain, 'Online government services prove popular', 19 March 2013. Available at www.beehive.govt.nz/release/online-government-services-prove-popular. You will find a full list of results on the Department of Internal Affairs website at www.dia.govt.nz/better-public-services

[24] Scoop Media Limited, Document SCCONZ0020130412e94b0003g and 3news.co.nz, 5/03/13 available at, www.3news.co.nz/Kiwis-give-online-census-the-tick-of-approval/tabid/423/articleID/288989/Default.aspx?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+co%2FHCaY+%283News-+Latest+News%29, on 23 April 2013

that 48% of New Zealanders own a smartphone, 66% own a laptop, 61% own a computer and 29% own a tablet.[25]

Figure 35: Smartphone user behaviour

Use smartphone everyday to access internet

Would rather give up TV than the smartphone

Prefer to access magazines/newspapers on the smartphone
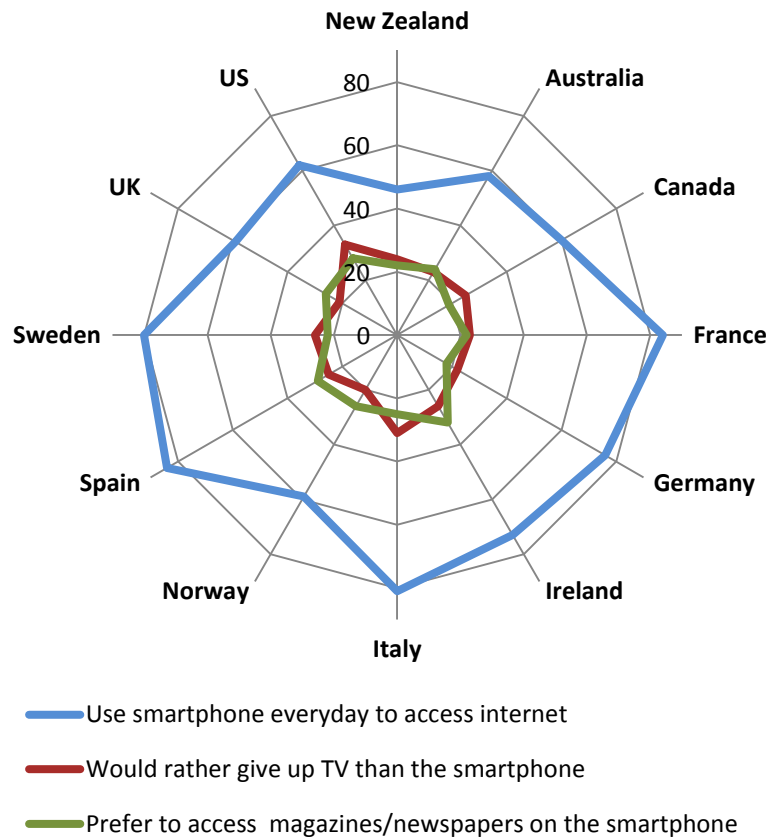
Source: Adapted from Google, "Understanding the Mobile Consumer", May 2012

Smartphone owners are becoming increasingly dependent on their device. The Google survey data in Figure 35shows that 46% of New Zealanders with smartphones use it to access the internet every day. About 25% would rather give up their television than their smartphone, and more than 20% use their device to read magazines and newspapers.

By 2017 analysts expect smartphones will generate up to 65% of all mobile broadband traffic, then laptops (17%) and tablets (11%).[26] As more people make more use of smartphones, mobile network operators will likely invest in upgrading mobile infrastructure capacity to stay competitive in the mobile market.

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[25] Research New Zealand, March 2013.
[26] Cisco Visual Networking Index: Global Mobile Data Traffic Update, 2011-2017 (2013).

Increasingly, consumers are using their smartphones to access different apps. Recent findings from Research New Zealand[27] states that the apps for smartphones and tablets that most people use are:

- social networking (eg, Facebook), 79% of users

- referencing or information (eg, maps), 76%

- news and weather, 70%

- games and other entertainment (eg, movies), 70%

- business/banking, 54%[28]

- government agencies, 16%

- other, 1%

- don't use any apps, 6%.

New Zealand has developed some mobile apps of its own; the All Blacks' sports mobile app and the Snapper mobile phone payment app come to mind. Even public agencies are providing e-services customised for smartphones. For example, the public transport information provider Metlink has a mobile version of its website that allows commuters to easily see on their smartphone when the next train or bus is due at their stop.

New mobile services also include health applications and machine to machine (M2M) communication. Health applications allow devices sitting in the body to communicate to designated smartphones using Bluetooth, sending information and warning signals such as glucose levels and heart-specific markers, potentially helping to save lives. Machine to machine applications allow physical items, such as smart energy meters, to send automatic reports.

According to the CISCO Visual Networking Index, the cellular communication between objects—the 'internet of things'—is expected to increase significantly, in particular in the health and automotive sectors.

New Zealand has been unusual in its pattern of mobile usage compared to the rest of the world. Europe has seen a clear pattern emerge of companies and people switching from fixed to mobile. We see this in voice communication in particular (see Figure 36 below).[29] By 2009, mobile traffic had exceeded fixed traffic in most European Union (EU) countries. Mobile voice traffic kept rising until 2011 when it started to decline.

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[27] Research New Zealand, 'Penetration and use of electronic devices', *New Zealand Herald*, 16 March 2013, available at www.nzherald.co.nz/technology/news/article.cfm?c_id=5&objectid=10871576

[28] In 2012, the number of New Zealanders using a smartphone app to make a bank transaction nearly doubled. See Roy Morgan study 'Number if Kiwis using mobile banking apps doubled in past year' *Mobile Payments Today*, 6 March 2013, available at www.mobilepaymentstoday.com/article/209397/Number-of-Kiwis-using-mobile-banking-apps-doubled-in-past-year

[29] European Commission, 'E-Communications Household Survey Report', Special Barometer 362. Fieldwork: February-March 2011; July 2011.

Figure 36: Percentage of fixed and voice traffic in Europe, 2005–2010
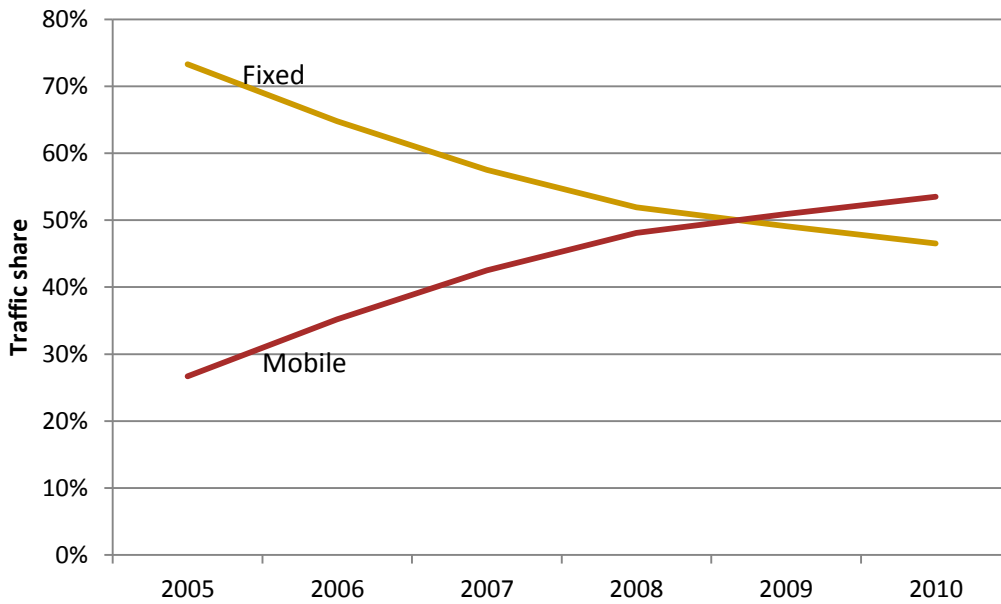
Source: Digital Agenda Europe 2012

New Zealanders' use of mobiles for calling compared to the use of fixed lines has never reached the European level. Compared with Australia and most EU countries (see Figure 37 below), New Zealand has the lowest percentage of voice traffic on mobile networks.

Figure 37: Voice traffic split between fixed and mobile in 30 countries, 2010–2011
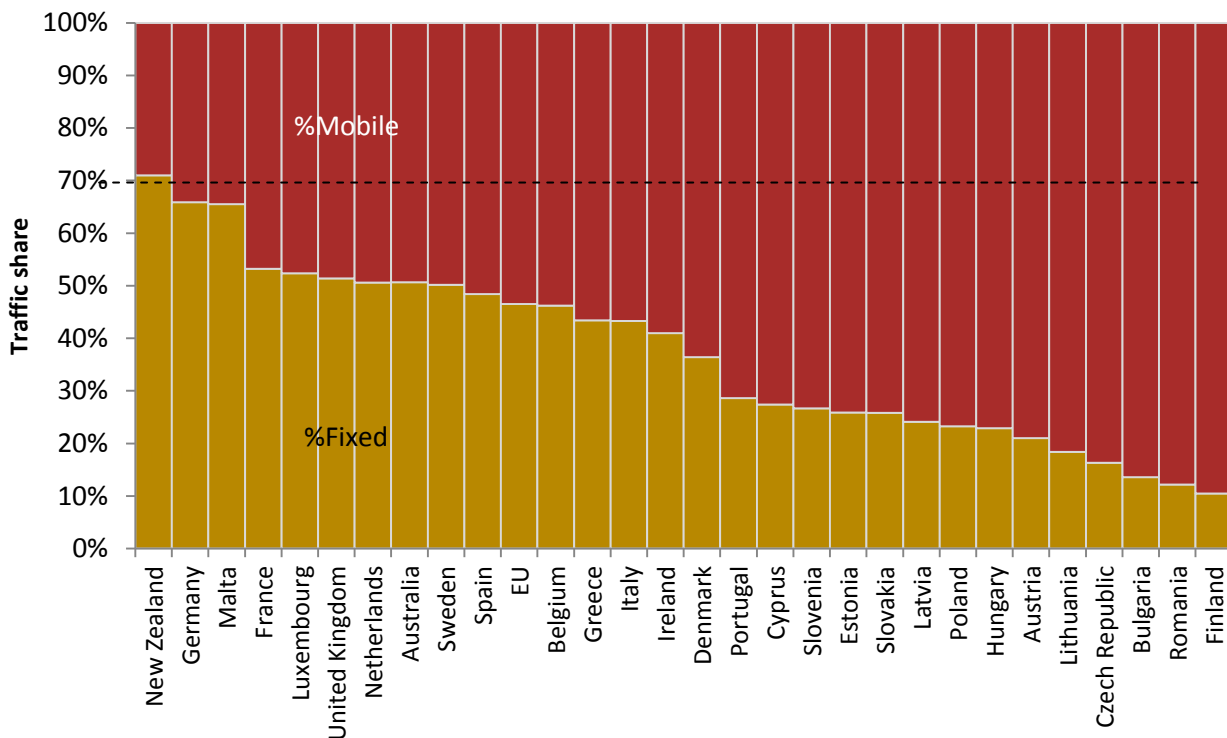
Source: Adapted from NZ mobile monitoring, EU Digital Agenda 2012, Australia OVUM mobile statistics 1H 2011

Yet the preference for SMS messaging is very clear. The number of SMS messages sent continues to rise. New Zealanders had the highest use of SMS by head of population in 2011 among 33 OECD countries (Figure 38).

Figure 38: SMS messages per month and per capita in 2011

Source: Adapted from NZ mobile monitoring, EU Digital Agenda 2012, Australia OVUM mobile statistics 1H 2011

Many factors contributed to the switch from fixed to mobile voice in Europe. These included new technologies improving the performance of mobile networks, new devices attracting new types of customers, but especially the intense competition between mobile operators (in part facilitated by lower mobile termination rates) that led to new commercial offers and substantial falls in retail prices. This encouraged the take-up of mobile phones and use of mobile voice services.

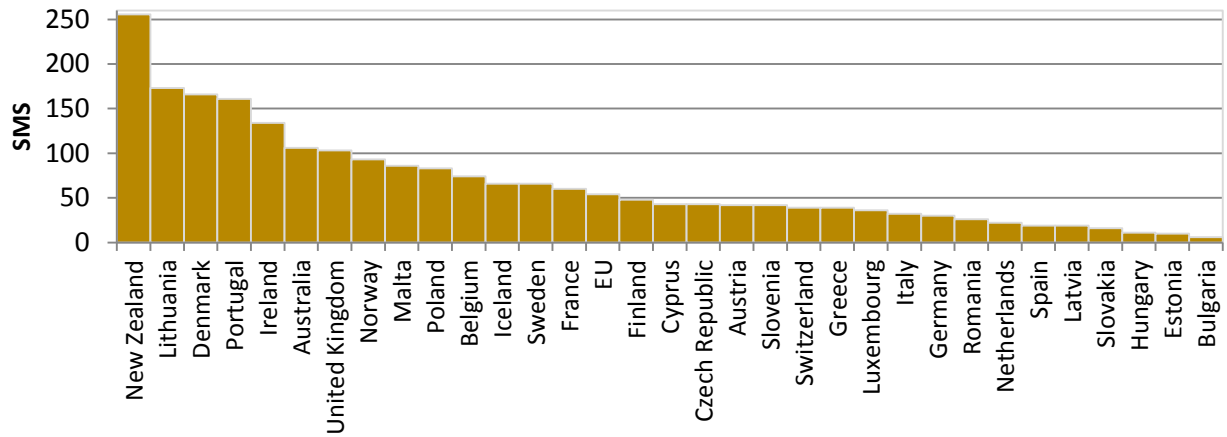Traditional fixed and mobile voice traffic worldwide is now expected to decrease as other forms of communication replace them. This is in addition to the expected replacement of traditional voice with various VoIP services that generally mean, for billing purposes, data is consumed rather than minutes.

Looking ahead

The digital revolution is expected to continue, but precisely where it will go and how fast it will progress is hard to predict. Recent developments in ICT are creating an appetite for new areas of investment. We expect demand for fixed and wireless broadband (with higher capacity and faster speeds) to grow as more sophisticated services become vital to individual and company needs. The growing demand for data should translate into continued strong growth in data consumption, especially if data prices continue to decrease.

The 2012 year in review

The 2012 year was characterised by an upswing in consumer demand for data and intensified competition between telecommunications providers, leading to successive launches of more competitive plans in all sectors. The new plans usually featured more data, and more minutes and texts where relevant.

The 2012 year also marked the start of the UFB rollout and the connection of the first UFB retail customers. It will take some years for this project to gain momentum.

The following is a month-by-month snapshot of some of the more important telecommunications market developments that occurred in New Zealand during 2012.

January 2012
- Telecom launched a new mobile brand, Skinny, designed to compete in the youth and budget end of the market.

- Southern Cross Cable announced the upgrade of the cable that connects Australia and New Zealand to the United States, to 200 gigabits of capacity and a price reduction of up to 44%.

February 2012
- Akamai's quarterly 'State of the Internet' reported that New Zealand and Australia were falling behind many of their global peers for 2Mbps+ broadband connections.

March 2012
- Quickflix launched a video streaming service in New Zealand. For a fixed monthly fee the service offers unlimited viewing from a library of movies and TV shows. These can be viewed on internet-enabled devices, including computers, smart TVs and games consoles. Movies are also available on a pay per view basis.

- ISPs Slingshot and Orcon announced they would zero-rate data consumed by the Quickflix video streaming service, meaning downloaded material wouldn't count towards users' monthly data caps.

April 2012
- TelstraClear relaunched what was New Zealand's first 100 Mbps broadband plan for residential customers. The service, first offered several years ago for a higher price, has a maximum download speed of 100Mbps. The service is provided only over TelstraClear's cable network and is claimed to reach similar speeds to those initially offered on the UFB network.

- Orcon launched three new Genius broadband plans with higher data caps of 60GB, 200GB and 1,000GB.

- Chorus began the first part of its UFB network deployment in Timaru.

- Paymark, Vodafone, 2degrees and Telecom announced plans to form a joint venture to provide a service that will allow New Zealanders to use their mobile phones to make secure payments, collect loyalty points and use public transport.

- Telecom increased the data caps on all of its home broadband plans by 100% or more.

- Ultra Fast Fibre, UFB provider in the central North Island, began construction in Tokoroa. Work was already underway in New Plymouth, Whanganui, Hamilton and Tauranga.

May 2012
- 2degrees launched a shared data offer. The service allows customers to use data from one account across a range of devices, or share data with friends and family, provided they too are on the 2degrees network.

- 2degrees and payment card company Snapper launched 'touch' mobile phone payments for bus fares in Wellington, in what was described as the first fully commercial deployment of NFC (near field communications) technology in New Zealand.

- Vodafone launched a new service to give smartphone customers more control over their data use and spend. The 'Data Angel' service enables customers to know when they hit 80% of their data bundle and halts data use at 100% before giving the customer various options to continue.

- Australian telecommunications company Vocus Communications purchased New Zealand-based ISP, data centre operator and cloud services provider Maxnet.

- TelstraClear introduced its 'Naked Broadband +'plan in areas where it can provide the service using UCLL. The plan provided a broadband and voice service for the same price as naked broadband plans from other providers that don't provide a conventional voice service.

- The Commerce Commission published its revised draft decision re-benchmarking the wholesale price for UCLL.

June 2012
- Vodafone increased by 20GB the data caps on two of its home phone and broadband packages.

- Vodafone launched its BestMates for home phone, allowing customers to call up to five nominated mobile or landline numbers without incurring any calling charges. BestMates for home phone comes bundled with some fixed line and broadband packages, or can be purchased separately for a fixed monthly fee.

- Telecom introduced its own Android music store application for its Android customers.

- Mobile phone operator 2degrees posted an $81.9 million operating loss in its second full year of operation and announced it was still on course to break even on an earnings-

before-interest-and-tax basis in 2012. 2degrees stated it had around 950,000 customers and 20% of the prepay market.

- The Commerce Commission issued final determinations for information disclosure requirements for those companies building fibre networks as part of the Government's UFB initiative.

- The Commerce Commission released its final report on factors that may affect the uptake of high-speed broadband.

July 2012
- Broadband provider Woosh began offering an 'Unzipped' service that links any iPhone or Android smartphone to local, mobile and international calling networks via a 'naked' broadband plan. This means that when the user is at home, inbound and outbound calls are routed through the internet, via the modem, straight to the smartphone.

- 2degrees doubled the size of its $10 Text Pack to 5,000 texts.

- The amount of international bandwidth used by Australia and New Zealand reached 704 gigabits per second (Gbps) and 98Gbps respectively by the end of 2011, according to TeleGeography statistics. On a compounded annual growth basis between 2007 and 2011, bandwidth use grew by 48% and 44% respectively.

- Findings of a report by Frost & Sullivan and consultancy PwC showed that shopping online is rising in New Zealand. Online shopping accounted for 5.9% of overall retail sales in 2011. However, buying online was still less popular in New Zealand than in other developed countries, with 6.3% for Australia, 7.3% for the United States and 10.7% for the United Kingdom.

- Vodafone increased the monthly data allowance for 'Prepay Smart' customers to 300MB, and doubled its Supa Prepay TXTNZ add-on to 5,000 texts.

- Orcon announced its first 1,000 UFB customers, plus having 10,000 on a wait-list. [30]

- Dr Stephen Gale took up the position of Telecommunications Commissioner, replacing Dr Ross Patterson who had completed his 5-year term.

- The Commerce Commission's released its fourth quarterly mobile monitoring report, which showed a continuing decrease in the difference between the cost of calling and texting on the same network compared with calling and texting other networks.

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[30] In July 2012 UFB only passed around 45,000 homes, with 140,000 estimated by the end of 2012.

August 2012

- Telecom launched its $19 Big Value Pack, a new very competitive prepaid offer which initially offered, for a limited time, 60 minutes of calling, 5,000 texts and 400MB of data for $19 a month. Telecom also lowered the price of all its mobile SIM cards from an RRP of $29.95 to $5, although with $1 credit loaded rather than $10.

- 2degrees launched its own $19 pre-play plans, one of them including 50 voice minutes, 5,000 texts and 500MB of data.

- Vodafone refreshed its $19 pre-play plans to offer the same benefits as its competitors.

- Callplus offshoot Flip launched a prepay homeline plan with 'free' broadband, available where CallPlus has unbundled the local exchange. For $49.95 a month, users get a phone line and broadband with 5GB of data.

- The Court of Appeal upheld a record $12 million penalty imposed against Telecom for breaching section 36 of the Commerce Act. The Court found that from February 1999 to late 2004 Telecom unlawfully took advantage of its market power to charge downstream competitors disproportionately high prices for wholesale access to its network. This action prevented competitors from offering retail end-to-end high-speed data transmission services at a competitive price.

September 2012

- Telecom increased its phone line rental for new customers in Wellington and Christchurch by about 10% to match the Auckland price. Telecom noted that it had only a very small proportion of customers signed up to home line only plans.

- Enable launched its fibre broadband services in the Christchurch suburb of Halswell. Snap, Orcon and Slingshot were to be the first retailers to provide residential services over Enable's fibre network.

- Preparing for the iPhone 5 release, Telecom NZ and Vodafone NZ launched new post-paid mobile plans that offered greater voice and data allowances for similar or lower prices.

- Orcon launched a new broadband plan with unlimited data and 'free' national landline-to-landline calling for a fixed price.

- Vodafone was sentenced in the Auckland District Court on 21 charges brought by the Commerce Commission over marketing campaigns run from October 2006 to February 2009 that breached the Fair Trading Act. Total penalties reached $1,444,275, the highest value ever imposed on a single defendant under the Fair Trading Act.

October 2012

- In a joint project, Chorus and FX Networks started laying fibre optic cable from Gisborne around the East Cape. This project is part of the government's Rural Broadband Initiative.

- Telecom revamped its residential phone and broadband plans, including increasing data allowances and introducing capped fixed-to-mobile calling to any mobile network.

- Kordia Group announced the integration of its two New Zealand telecommunications businesses, Kordia Networks and Orcon, forming the new Kordia New Zealand company.

- Vodafone New Zealand launched a new business broadband plan with 1TB (Terabyte) data to be consumed between 8am and 6pm, seven days a week, stating the plan was conceived to turn cloud use into a simple solution at an affordable price.

- 2degrees made texts unlimited on many of its plans (by changing the 5,000 text allowance to 'as much as you need').

- The Commerce Commission released the findings of its annual competition review of backhaul services for UCLL, Unbundled Copper Low Frequency (UCLF) and UBA. It found a marked increase in the number of backhaul links that were competitive and therefore no longer need to be regulated.

- The Commerce Commission released a further paper on how it planned to set the Telecommunications Development Levy that would be paid by telecommunications companies to the government.

- The Commerce Commission announced its approval of Vodafone's $840 million takeover of TelstraClear.

November 2012
- Vodafone announced a new prepay product (Prepay Freebees™) that gives customers bonus 'free' minutes, 'free' texts and 'free' data every time they top up.

- Vodafone extended its data use and spend control service ('Data Angel') to international use.

- Snap launched a 1TB (1,000 MB) data add-on.

- CallPlus launched UFB business fibre plans with unlimited data and speed up to 100 Mbps in 17 regions (Auckland, Christchurch, Dunedin, Hamilton, Hawera, Invercargill, Masterton, Napier, New Plymouth, Palmerston North, Pukekohe, Rotorua, Taupo, Tauranga, Whanganui, Wellington and Whangarei).

- Vodafone updated some of its postpaid plans with increased minutes and data allowances.

- The Commerce Commission announced that it would extend its monitoring of the telecommunications market under section 9A of the Telecommunications Act to include fixed-to-mobile pricing plans as a consequence of the Vodafone TelstraClear merger.

December 2012

- Vodafone launched a new 200GB naked broadband plan.

- Quickflix signed a memorandum of understanding with Freeview to provide its streaming of movies and TV service via a Freeview high-definition channel in 2013.

- Telecom introduced a $6 a day flat rate for data roaming in Australia, for postpaid customers.

- The Commerce Commission released its final decision on the wholesale price for UCLL.

- The Commerce Commission released its draft decision on a new cost-based price for UBA.

List of defined terms and abbreviations

DSL　　　　Digital Subscriber Line – method of transmitting high-speed data and voice simultaneously over a copper phone line.

GSM　　　　Global System for Mobile communications – a widely used digital, second-generation mobile phone standard.

HHI　　　　Herfindahl-Hirschman Index – a commonly accepted measure of market concentration. The maximum possible score is 10,000 which would be one seller with 100% market share. A low market concentration might be a score of 2,000.

IP　　　　Internet Protocol – a method that computers use to communicate over the internet.

ISP　　　　Internet Services Provider.

LTE　　　　Long Term Evolution – a name given to the fourth generation of mobile technology that can provide high-speed mobile broadband.

MVNO　　　　Mobile virtual network operator – an operator that provides mobile phone services but does not generally have its own licensed frequency allocation of radio spectrum or much of the infrastructure required to provide mobile telephone service. It therefore relies on buying services from an operator with a full mobile network. The amount of control it has over the services it offers will vary according to the nature of its agreement.

OECD　　　　Organisation for Economic Co-operation and Development.

PPP　　　　Purchasing Power Parity – an 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.

PSTN　　　　Public Switched Telephone Network – the publicly available telephone network designed for delivering voice services over dedicated voice channels.

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.

Telecom   Telecom Corporation of New Zealand Limited and Telecom New Zealand Limited.

UBA   Unbundled Bitstream Access – a regulated wholesale service that gives access to a full-speed DSL broadband service on lines on Chorus' access network.

UCLF   Unbundled Copper Low Frequency service – a regulated wholesale service that gives access to voice frequencies on lines on Chorus' access network.

UCLL   Unbundled Copper Local Loop – a Chorus copper line that connects a phone user to the local exchange that can be accessed by retail telecommunications providers to provide a voice and broadband service.

UFB   Ultra-Fast Broadband – the name given to the Government's initiative to roll out a fibre-to-the-home access network to give households access to high speed broadband.

UMTS   Universal Mobile Telecommunications System (UMTS) – the 3G successor to the 2G GSM standard. The most common form of UMTS uses WCDMA as the underlying air interface.

VoIP   Voice over Internet Protocol – a way to send voice calls over a data connection such as a broadband connection.

WCDMA   Wideband Code Division Multiple Access – a third-generation mobile phone standard often provided as a progression from the GSM standard.

WiFi   Wireless Fidelity Standard –a series of standards for a popular technology that allows electronic devices to exchange data wirelessly (using radio waves), including allowing mobile devices to connect to high-speed internet connections. The distance over which a WiFi connection will operate can vary from 20 metres indoors to tens of kilometres outdoors.