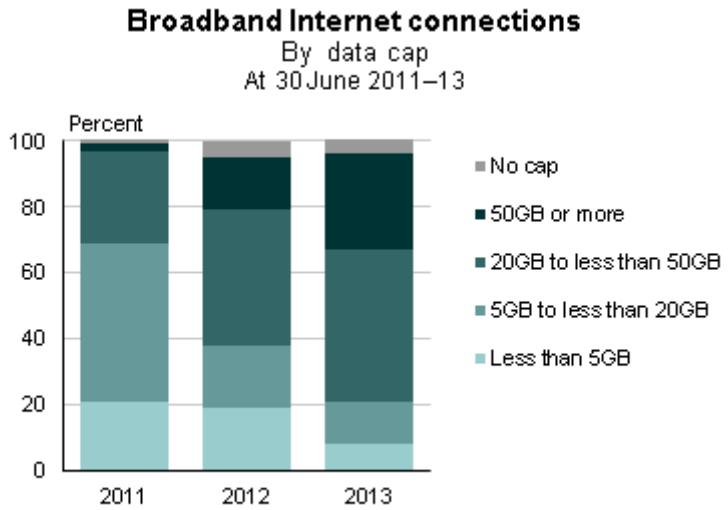
Internet Service Provider Survey: 2013

Embargoed until 10:45am – 14 October 2013

Key facts

In 2013 compared with 2012:

- Connections with a data cap of 50 gigabytes (GB) or more have almost doubled, to reach to half a million.
- The number of fibre optic connections jumped from 5,400 to 13,000, a 141 percent increase.
- Mobile handset Internet connections increased one-quarter to reach 3.2 million connections.
- As dial-up continues to fall, broadband remains the dominant connection choice, making up 95 percent of Internet connections.
- The average amount of data consumed per broadband connection is now 23GB a month.



Source: Statistics New Zealand

Liz MacPherson
Government Statistician

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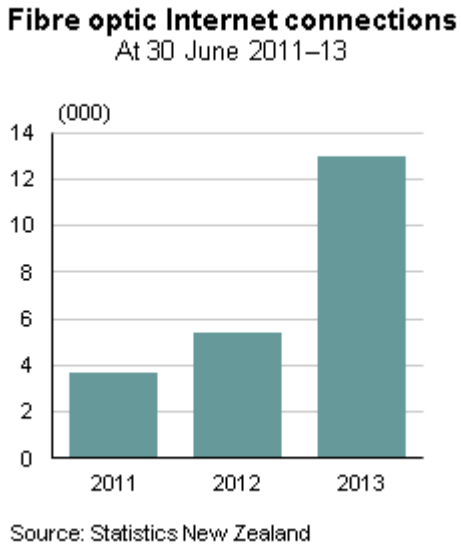
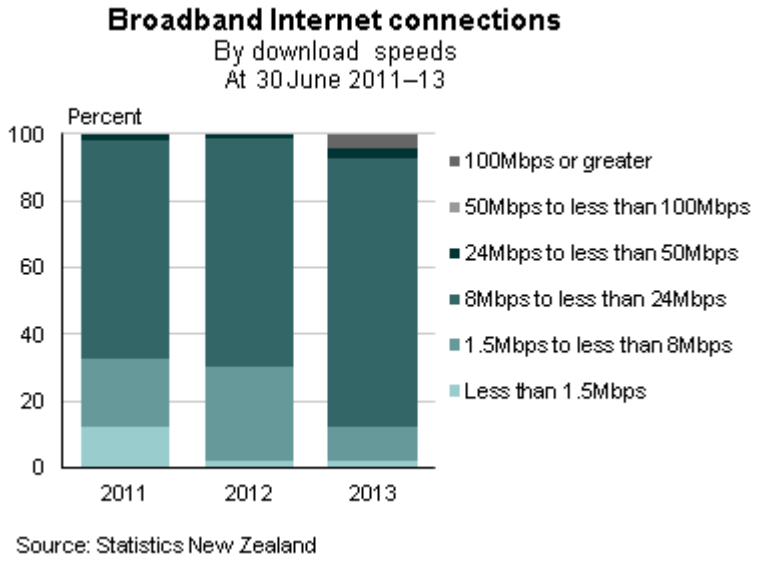
Commentary

More fibre in the diet of Kiwi Internet connections

The roll-out of fibre optic cables throughout the country is becoming apparent as fibre optic connections increased 141 percent from 2012. While fibre still makes up only 1 percent of total broadband connections, this increase shows it is the fastest-growing broadband technology. Those on fibre can enjoy speeds roughly 10 times faster than copper/DSL, with an optimal speed of at least 100 megabits per second (Mbps).

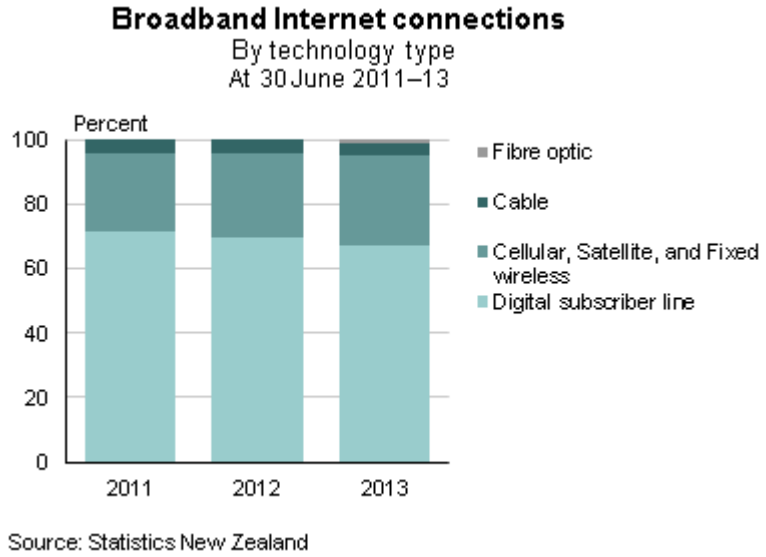


Fibre is one ingredient contributing to the rise in ultra-fast connections. There are now more than 70,000 connections throughout the country with a download speed of 100Mbps or more. At this speed you could download a feature film in five minutes and a music album in just three seconds. But the benefits aren't limited to entertainment. Improved reliability and speed could also benefit small businesses, giving them the ability to move large files between locations, and even replacing servers with cloud-run services.



Connections with faster upload speeds also rose, with most now falling into the 1.5–10Mbps category. Faster upload speeds allow for easier creation of content rather than just consumption.

DSL still makes up most of the broadband connections (67 percent). There are now many types of DSL connections, including ADSL, ADSL2+, SHDSL, and VDSL (see definitions for more information), which provide varying performance ability, but all run on traditional telephone (copper) lines. There are now just under 1.2 million connections via DSL, an increase of almost 60,000 connections since 2012.

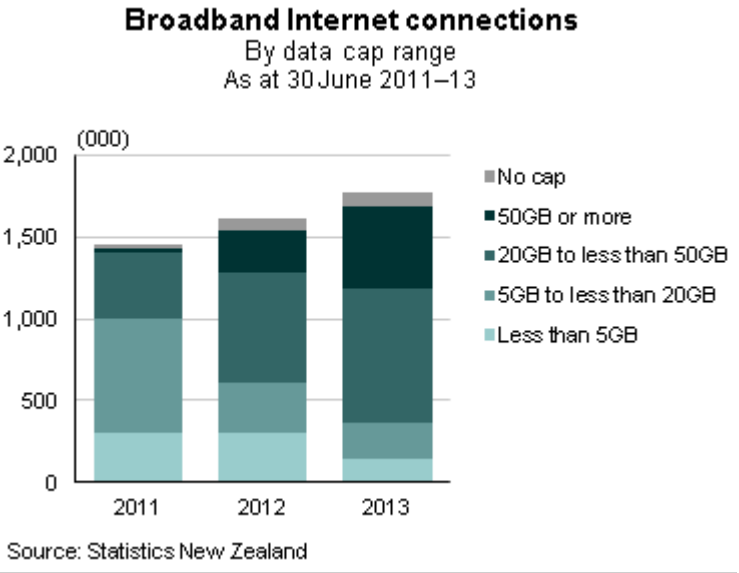


While the number of cable connections remained relatively steady over 2011–13, wireless technology connections increased 22 percent. These include cellular, satellite, and fixed wireless connections. The largest contributor to this increase came from cellular connections, which uses the same technology used by cell phones. This increase may be due partly to the Rural Broadband Initiative, which includes upgrading and building new cell towers.

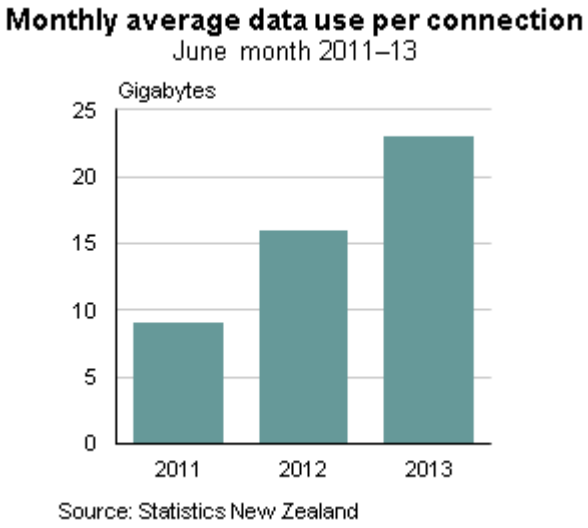
Overall, total broadband connections increased 10 percent in 2013, to just under 1.8 million. In contrast, dial-up connections decreased more than 50 percent over the past two years. At 100,000 they now account for just 5 percent of total Internet connections.

ISPs raise their caps to hungry data users

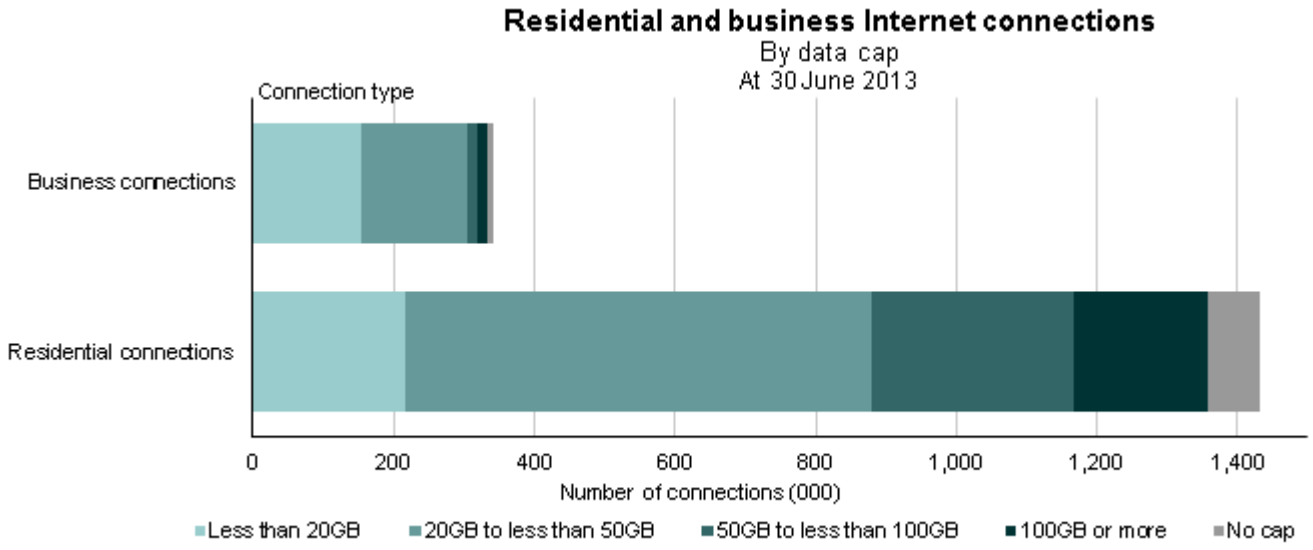
Data caps, or data allowances, are getting larger. From 2012, the number of connections with a data cap of less than 5GB decreased to 147,000, while those with 50GB or more almost doubled, to reach half a million. The ‘all-you-can-eat’ option of unlimited data (no cap) remains steady. This suggests that these upsized caps are satisfying our current appetite for bytes.



In 2013, New Zealanders took advantage of this shift to larger data caps by consuming an average of 7GB more a month compared with last year. As a country, this means we are now consuming about 41,000 terabytes (TB) a month compared with 26,000TB in 2012. This is equivalent to downloading all of the data held by Google Maps twice in a month.



When looking at data caps for residential and business connections, most movements are similar to the overall trend. However, business connections with caps of 20GB or more increased more substantially. Over 100,000 business connections were added to the 20–50GB category, more than three times the number in 2012, while those with a cap of 100GB or more rose to 14,000.

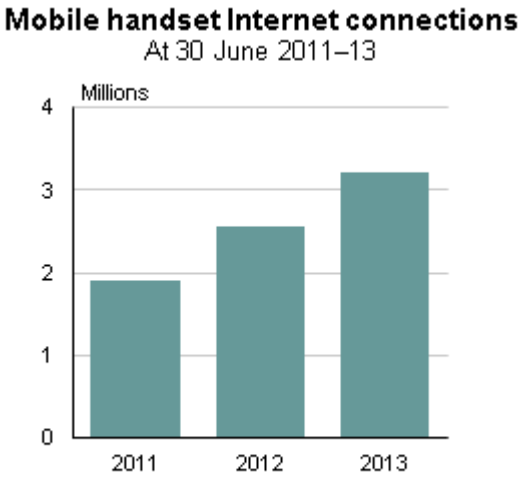


Source: Statistics New Zealand

Several factors may be contributing to these movements. These include falling numbers of dial-up connections that are likely to be switching to broadband, the falling cost of broadband plans, and businesses using multiple connections. A further challenge for ISPs is differentiating between home businesses and residential customers. Overall, business connections make up 20 percent of total broadband connections.

Mobile Internet now second nature for Kiwis

Whether it is finding directions, checking bus timetables, or working from the local café, accessing the Internet on the go appears to be almost second nature to us. This is helped by the variety of devices emerging to enable this. When looking specifically at Internet connections from mobile phones, there are now 3.2 million connections, an increase of over 650,000 since 2012. With the expanding capability of mobile devices, it seems instant access to the Internet, wherever we are, is becoming more essential for New Zealanders. Most mobile phone connections come from bundled packages (voice, texts, and data) with just under 2.8 million connections. An additional 425,000 are data-only connections.



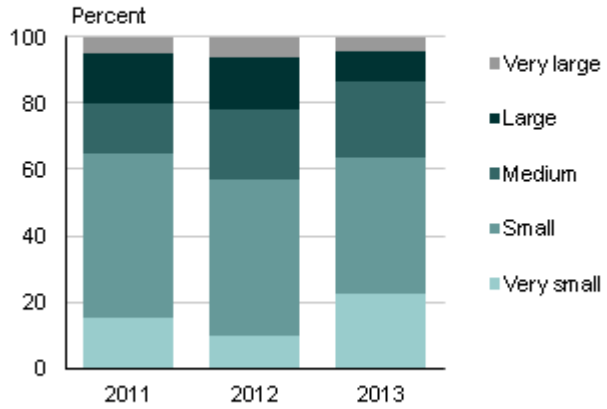
Source: Statistics New Zealand

While the ISP Survey does not differentiate between personal and business mobile connections, or individuals with multiple phones, other estimates put smartphone use in New Zealand at about half of the adult population. For example, according to Household Use of Information and Communication Technology: 2012, over 92 percent of Internet users aged 15 and over had a mobile phone, and 44 percent had used mobile phones or mobile data cards to connect to the Internet.

Size not everything when operating an ISP

The total number of ISPs operating in New Zealand increased since 2012, with most of the growth in the small and very small ISPs. These are businesses that supply up to 1,000 connections. Although they account for 70 percent of all ISP businesses, small and very small ISPs are responsible for just under 13,000 connections – less than 1 percent of total connections. However, these ISPs appear to specialise in fixed wireless connections for niche geographical communities. Fixed wireless connections make up 52 percent of their provision, a connection type that tends to suit rural areas where phone lines are not available. DSL makes up just over 30 percent of their other connections.

Internet service providers
By size[1]
At 30 June 2011–13

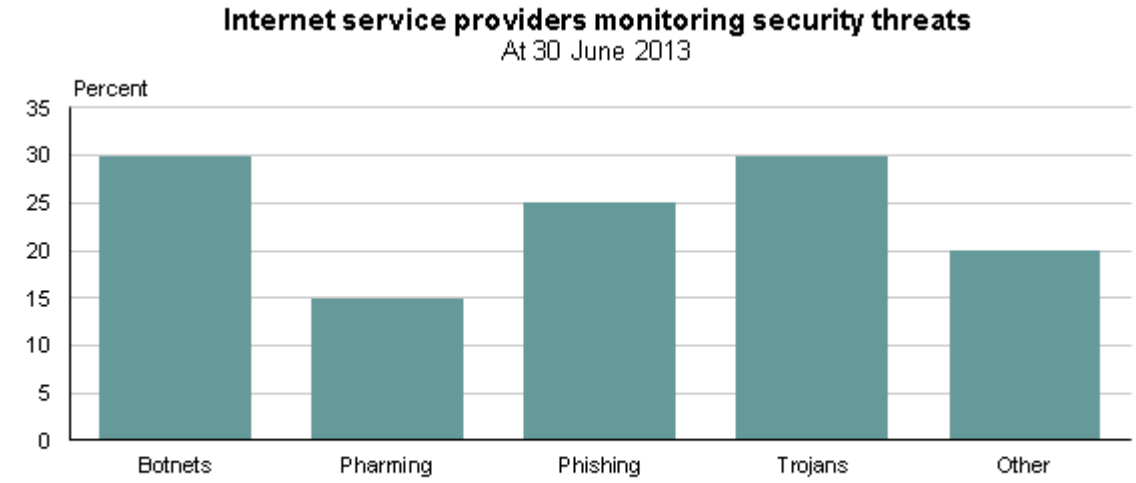


1. Size by number of dial-up and broadband connections.

Source: Statistics New Zealand

As is true for smaller providers, most ISPs are primarily focused on Internet provision and are not involved in wholesaling activities. Just 10 percent of ISPs provide mobile handset connections.

Almost half of ISPs consistently monitor traffic for security purposes, which include threats such as botnets, pharming, phishing, and trojans (see definitions for descriptions of these threats). Botnets and trojans remain the most highly monitored threats, with 30 percent of ISPs keeping an eye on these. The good news for customers is that only 1.3 percent of monitored connections were identified as having compromised security.



Source: Statistics New Zealand

For more detailed data see the Excel tables in the 'Downloads' box.

Definitions

About the Internet Service Provider Survey

The Internet Service Provider (ISP) Survey collects information on businesses that provide Internet access to individuals, households, businesses, and other organisations in New Zealand. This information allows us to measure the global connectivity of New Zealanders, which is an important factor in economic growth and social well-being. Measuring New Zealand's global connectivity will help individuals, communities, businesses, and government understand the role of information and communication technology in the economy and society.

Further definitions

Active subscriber: connection that has accessed the Internet or paid for access to the Internet through this Internet Service Provider within the last 90 days (see 'connection' below) Note: For clarity, we used the term 'connection' in place of 'subscriber' throughout this release.

Active connection: connection that has been used to connect to the Internet within the last 90 days.

ANZSIC06: Australian and New Zealand Standard Industrial Classification 2006, the system used to classify and categorise all businesses on the Statistics NZ Business Frame. See data quality for the specific codes used to classify Internet Service Provider Survey data.

Botnets: collection of compromised computers that, although their owners are unaware of it, have been set up to forward transmissions (including spam or viruses) to other computers on the Internet.

Broadband: technologies that provide an 'always on' service. These include digital subscriber line (DSL), cable, fibre optic, satellite, cellular, and fixed wireless.

Business Frame: a register of all economically significant businesses operating in New Zealand.

Connection: connection provided through an Internet service provider enabling access to the Internet. Active connections are those that were used to access the Internet within the last 90 days. Under this definition, the following inclusions and exclusions are made.

Includes:

- all connections providing access to the Internet through an ISP
- all dial-up and broadband connections
- free or discounted connections offered for staff
- free or discounted connections offered for customers.

Excludes:
web-hosting-only subscribers
email-only subscribers.

Note: Customers, residential or business, may have more than one Internet or mobile handset connection.

Data cap: method employed by ISPs to limit the volume of data downloaded and/or uploaded by subscribers during a fixed period, normally a month. Once subscribers reach the cap, lower speed or extra access charges may apply. Also referred to as a data allowance.

Data card: card that contains data or that is used for data operations (eg Vodafone 3G card or Telecom Aircard).

Dial-up connection: connection to the Internet via a dial-up modem that uses the public switched telephone network (PSTN). Includes integrated services digital network (ISDN) and analogue connections.

Dongle: device connected to a computer to allow access to wireless broadband or use of protected software.

DSL: technology that allows high-speed transmission of data, audio, and video over standard telephone lines; a form of broadband transmission.. This can include the following types:

- **ADSL:** asymmetric digital subscriber line is a type of DSL technology for transmitting digital information at a high bandwidth on existing copper telephone lines. It simultaneously accommodates analogue information on the same line so voice calls can be made while using the Internet. It is asymmetric in the sense that it uses most of the channel to transmit downstream to the user and only a small part to receive information from the user.
- **ADSL2+:** an extension to ADSL broadband technology that provides subscribers with significantly faster download speeds when compared with traditional ADSL connections.
- **SHDSL:** single-pair (symmetrical) high-speed DSL is a form of DSL designed to transport data across a single copper pair. SHDSL technology can transport data symmetrically so users can get the same rate of transmission for both upstream and downstream data.
- **VDSL:** very-high bit-rate DSL is the fastest available form of DSL. It is an improved version of ADSL which was developed to support the high bandwidth requirements of HDTV, media streaming, and VoIP connections.

Economically significant enterprises: enterprises that produce goods and services in New Zealand. They must meet at least one of the following criteria:

- has greater than $30,000 annual GST expenses or sales
- 12-month rolling mean employee count of greater than three
- is part of a group of enterprises
- is registered for GST and involved in agriculture or forestry
- over $40,000 of income recorded in the IR10 annual tax return (this includes some businesses in residential property leasing and rental).

Enterprise: a business operating in New Zealand. It can be a company, partnership, trust, estate, incorporated society, producer board, local or central government, voluntary organisation, or self-employed individual.

Gigabyte (GB): a measure of the volume of data. Gigabyte represents a data unit of one billion bytes.

Internet protocol (IP): system for assigning a unique identifier to all devices connected to the Internet. Each device is assigned, and can be identified by, a unique address. This address is made up of a series of numbers (similar to a phone number).

Internet Protocol version 6 (IPv6): the next generation Internet Protocol, which greatly expands the IP number space and is the approved standard to replace IPv4.

Internet Service Providers (ISPs): businesses that supply Internet connections to individuals, households, businesses, and other organisations. We breakdown the results of the Internet Service Providers Survey by size of provider. There are five sizes based on the number of connections:

- very small: 1–100 Internet connections
- small: 101–1,000 Internet connections
- medium: 1,001–10,000 Internet connections
- large: 10,001–100,000 Internet connections
- very large: 100,001 or more Internet connections.

Mbps and kbps: measures of download and upload speed. Mbps stands for megabits per second (1,000,000 bits per second) and kbps stands for kilobits per second (1,000 bits per second).

Mobile handset connection: Internet connection via a mobile phone. The connection is active if it was used to connect to the Internet within the last 90 days.

Pharming: hacker's attack aiming to redirect a website's traffic to another, bogus website. Pharming can be conducted either by changing the host's file on a victim's computer or by exploitation of a vulnerability in DNS server software.

Phishing: way of attempting to acquire sensitive information such as usernames, passwords, and credit card details by masquerading as a trustworthy entity in an electronic communication, such as fraudulent emails.

Rolling mean employment (RME): 12-month moving average of the monthly employee count (EC) figure. The EC is obtained from taxation data.

Terabyte (TB): multiple of the unit byte for digital information. Terabyte represents a data unit of 1,024 gigabytes or 1 trillion bytes.

Theoretical maximum speed: also referred to as the 'design speed'. The maximum possible upload and download speeds an ISP allows on a connection in ideal conditions.

Trojans: software that appears to perform a desirable function for the user before running or installing, but (perhaps in addition to the expected function) steals information or harms the system.

USB modem: Universal serial bus modem. A small portable device that functions as a modem and plugs into a laptop or desktop computer allowing Internet connectivity.

Related links

Upcoming releases

Internet Service Provider Survey: 2014 will be released in October 2014.

Information and Communication Technology Supply Survey is released every two years and measures the sale of goods and services from businesses associated with Information and Communication Technology (ICT) industries. This will be released in 2015.

Business Operations Survey (BOS): Business Operations Survey (BOS) – Business Use of Information and Communication Technology provides information on the current state of ICT use by businesses as well as considerations, activities, and outcomes. Every second year a Business Use of ICT module is included in the annual Business Operations Survey. This will be released in 2015.

Household Use of Information and Communication Technology is released every three years and provides information on the access households and individuals have to ICT. This will be released in 2016.

The release calendar lists all our upcoming information releases by date of release.

Subscribe to information releases, including this one, by completing the online subscription form.

Past releases

Internet Service Provider Survey – information releases has links to past releases.

Related information

Government Use of Information and Communication Technology was a one-off release that looked at government computer and Internet use, website features, and expenditure on ICT.

The Commerce Commission collects data as part of their regulatory work on the telecommunications industry, and publish annual monitoring reports.

Data quality

Period-specific information
This section has information about data that has changed since the last release.

General information
This section contains information about data that has not changed between releases.

Period-specific information

Population size

The Internet Service Provider (ISP) Survey is a survey sent to all New Zealand-based Internet service providers. The target population for the ISP Survey in 2013 was 74 businesses. This increased from 2012, when 70 businesses were surveyed. Such changes in the population can be explained by:

- new businesses being created
- existing businesses merging or ceasing.

Not all businesses identified in the survey population ultimately report ISP activity.

Response rates

The overall target response rate for ISP 2013 was 85 percent. The actual response rate achieved was 93 percent.

Some businesses were identified as key units if their total number of connections made significant contributions to the previous ISP survey. The target response rate for key businesses was 100 percent, and this target was achieved.

Consistency with other periods and datasets

Questionnaire changes

There was one minor change made to the 2013 ISP questionnaire. This change was a clarification of the two subscription types for mobile handsets. The notes for this question, as well as the inclusions, now provide a clearer description of the information we needed, and now more clearly reflect the Organisation for Economic Co-operation and Development (OECD) standard. Therefore, the breakdown of mobile handset connections by subscription type for 2013 (table 11) are not comparable to previous years.

Reference period

The survey was posted out in July 2013. The reference period was the last financial year, and all respondents had a 30 June 2013 balance date. This aligns with the reference period used by other OECD member countries and previous iterations of the ISP survey back to 2009.

Prior to 2009 data was collected in March and September each year. As a result of the change to the June reference date, there was a 15-month gap between the 2008 and 2009 ISP surveys.

General information

Accuracy of the data

Target population

The target population is 'all resident New Zealand Internet service providers'. Internet service providers (ISPs) are defined as economically significant businesses that supply Internet connectivity services to individuals, households, businesses, and other organisations in New Zealand. See definitions for more on economically significant businesses.

Internet connections via mobile phones were included for the first time in 2011. Mobile phones are used to access the Internet, and for the ISP Survey to cover all businesses that supply Internet connectivity, this change was required.

Businesses that provided other Internet services, such as web and domain hosting, but that did not provide ISP services, were excluded from the population. This is because the primary activity of an ISP is providing a connection to the Internet. Web-hosting units do not meet this condition, but rather, provide Internet-based services.

Businesses that provide only occasional or unmetered access (including Internet cafes, kiosks, libraries, and universities) are also excluded. The activity of this group is covered by the ISP each business subscribes to, and so do not need to be surveyed separately.

Survey population

The population is defined in terms of the ANZSIC06 classification system. No changes were made to the population selection process this year. It specifically included businesses in four ANZSIC06 codes:

- **ANZSIC J591000:** this code classifies Internet service providers and web search portals. It includes businesses mainly engaged in providing Internet access services. Also included are businesses which provide web search portals used to search the Internet.
- **ANZSIC J580100:** classifies wired telecommunications network operation. It includes businesses mainly engaged in operating, maintaining, or providing access to facilities for the transmission of voice, data, text, sound, and video using wired telecommunications networks. Businesses primarily operate fixed (wired) telecommunications infrastructure, but may also use other technologies to deliver services.
- **ANZSIC J580200:** classifies other telecommunications network operations. It includes businesses mainly engaged in operating and maintaining switching and transmission facilities that provide omni-directional or point-to-point communications via wireless telecommunications networks. Transmission facilities may be based on a single

technology or a combination of technologies, including communications via airwaves and through satellite systems.

- **ANZSIC M70000:** classifies computer system design and related services. It includes businesses mainly engaged in providing expertise in the field of information technologies such as writing, modifying, testing, or supporting software to meet the needs of a particular consumer; or planning and designing computer systems that integrate computer hardware, software, and communication technologies.

These ANZSIC codes are used in conjunction with previous ISP survey populations, and filtered by a key word search.
From 2005–09, lists of ISPs obtained from NetGuide and Internet NZ were used to select the population. Since 2010, the population has been sourced from the Statistics NZ Business Frame.

Data collection

The Internet service provider survey is a postal survey of all businesses that meet the population selection criteria.

Sampling error

The ISP Survey is a census; therefore the data is not subject to sample error.

Non-sampling error

Non-sampling errors include mistakes by respondents when completing questionnaires, variation in the respondents' interpretation of the questions asked, and errors made during the processing of the data. Statistics NZ has extensive procedures to minimise this type of error, but they may still occur and are not quantifiable.

Unit non-response

Unit non-response occurs where a business does not return the questionnaire. While weighting is commonly used in other Statistics NZ surveys, it is not applied to ISP. This is because there are no external (non-survey) variables that allow us to group businesses in a way that they are likely to provide similar survey responses, and therefore be representative of one another. To minimise the impact of unit non-response on the outputs, key respondents are targeted with 100 percent response rate targets. Therefore, we do not expect overall figures to be significantly affected by unit non-response. Data for businesses that did not respond to the survey was not imputed.

Item non-response

Item non-response occurs where a returned questionnaire is incomplete. Where data was missing or required clarification, respondents were contacted in the first instance. If a response could not be obtained, missing data for individual questions were imputed based on historical data collected, or from related information within the questionnaire.

Consistency of terms and variables

Terms and variables can differ between datasets and over time and as a result may not be directly comparable. See definitions for the terms and variables used in this release.

More information

More information about the Internet Service Provider Survey is available on our website.

Liability

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Timing of published data

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Revisions

Some figures in this release will appear different from previous publications. This is because of a review of our confidentiality methods. We've now applied graduated random rounding to all counts of connections in our tables. Unless the figures appear with a revised symbol, the underlying data remains unchanged.

The 2012 figure in table 8 has been revised due to an incorrect exclusion applied in that year to the dataset. The revision resulted in a minor change to the final result, but ensures that a consistent methodology has been applied across all the years.

Figures in table 15 have been revised after a change in methodology. Previously, percentages were calculated on broadband counts only. However, as the compromised security question applies to all connections supplied by an ISP, figures published this year reflect percentages of combined broadband and dial-up counts.

Contacts

For media enquiries contact:
Hamish Hill
Wellington 04 931 4600
Email: info@stats.govt.nz

For technical information contact:
Keely Betham and/or Jason Mackiewicz
Wellington 04 931 4600
Email: info@stats.govt.nz

For general enquiries contact our Information centre:
Phone: 0508 525 525 (toll free in New Zealand)
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Tables

The following tables are available in Excel format from the 'Downloads' box. If you have problems viewing the files, see opening files and PDFs.

1. Dial-up and broadband Internet connections, at 30 June 2011–13
2. Residential and business Internet connections, at 30 June 2011–13
3. Broadband Internet connections, by type of technology, by type of technology
4. Broadband Internet download and upload speeds, at 30 June 2011–13
5. Broadband Internet data caps, at 30 June 2011–13
6. Broadband Internet data caps, by residential and business connections, by residential and business connections
7. Monthly broadband data use, June month 2011–13
8. Monthly broadband unmetered and uncharged data, June month 2011–13
9. Size of Internet service providers, at 30 June 2011–13
10. Other business activities of Internet service providers, year ended June 2011–13
11. Mobile handset Internet connections, at 30 June 2011–13
12. Availability of Internet Protocol version 6, at 30 June 2011–13
13. Barriers to installing Internet Protocol version 6, at 30 June 2011–13
14. Internet security monitoring activities of Internet service providers, at 30 June 2011–13
15. Internet connections with compromised security, at 30 June 2011–13