



Communications and media in Australia

Trends and developments in telecommunications 2022-23

December 2023

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Contents

Introduction	1
ACMA's annual consumer surveys	1
researchacma	1
Executive summary	2
Access to communications at a glance	4
How Australians access and use communications services and media	5
Mobiles are the most common way we communicate and go online	5
Online activities remain steady apart from telehealth	6
More people using apps for video and voice calls	7
Spotlight: Increased calls from public payphones	8
Wired telecommunications at a glance	9
Wired telecommunications	10
The national broadband network and other networks	10
Some retail users are downloading nearly one terabyte every month	11
Most popular NBN speed plans	13
Wholesale market share differs by speed	14
Higher resolution video expected to increase data use	14
More undersea cables linking Australia and the world	15
Wireless telecommunications at a glance	16
Wireless telecommunications	17
Prepaid mobile services increase	17
5G network expansion continues	18
4G is the most commonly used network	18
Spotlight: Miners' use of private networks	19
Preparing to close 3G networks	19
Fixed wireless use grows	19
Low-Earth orbit satellites competing with other services	20
Market developments	21
Revenue increases for telecommunications companies	21
Capital expenditure by network operators	22
Glossary	23
Notes	25



Introduction

This report provides an overview of the Australian telecommunications sector from June 2022 to October 2023. It uses industry data and our annual consumer research for 2022–23. Survey fieldwork was conducted from 13–25 June 2023. The report describes key developments in the provision, take-up and use of telecommunications infrastructure and services.

We look at:

- > how Australians are accessing communication services
- > wired telecommunications
- > wireless telecommunications
- > market performance.

The report helps fulfill requirements under the *Australian Communications and Media Authority Act 2005*. These include obligations to:

- > report to and advise the Minister for Communications in relation to the broadcasting industry
- > make information about the broadcasting sector available to the public
- > inform ourselves and advise the minister on technological advances and service trends in the broadcasting, internet and datacasting industries.

ACMA's annual consumer surveys

This report references our annual consumer surveys collected from 2017 to 2023. The survey provides information on Australian adults' use of communications and media services. Unless otherwise noted, results relate to Australians aged 18 and over.

Information about survey questions is included in the chart notes. Statistically significant changes are highlighted in figures using the below symbols:

- > ▲▼ Significantly different to the prior year at the 95% confidence level.

Findings referenced from our annual consumer survey are also available in our *Communications and media in Australia: How we communicate* interactive reports. Please be aware that some findings presented in this report are based on ACMA analysis of data that is not reflected in publicly available material.

researchacma

Our research program makes an important contribution to the ACMA's work as an evidence-based regulator. It informs our strategic policy development, regulatory reviews and investigations, and helps us to support a media and communications environment that works for all Australians. The research used for this report is part of the ACMA research program.

Executive summary

Australians continue to embrace the mobile phone for online activity

The mobile phone is the most common way we communicate and access the internet. Almost all of us (95%) used a mobile phone to access the internet as at June 2023. More Australians (62%) used a smart TV to access the internet, up from 58% the previous year. Fewer people used tablets or desktop computers to access the internet in 2023 compared to the year before.

As well as for going online, mobile phones were almost universally used for voice calls (97%) and texting (96%) as at June 2023. There was an increase in the number of Australian adults using apps for messages, video calls or voice calls (84%). About 2 in 10 (18%) Australians used a landline to make voice calls in 2023.

Data growth continues

Australians downloaded about 12.2 million terabytes of data across retail wired and wireless broadband services in the 3 months to 31 December 2022. This was 1.5 million terabytes more than the same period in 2021.

The NBN carried 83% of this data. Video streaming had the highest share of data traffic on the NBN.

For online activities, there was a decline in the number of telehealth appointments – from 52% of adults who regularly go online in 2022 to 46% in 2023. The other types of activities of Australian adults online remained steady compared to the previous year.

As data consumption grows, so does the need for more communications infrastructure. Both the government (via the NBN) and industry are investing billions to upgrade and expand communication infrastructure.

Many submarine cable projects are underway to expand Australia's domestic and global interconnectivity. These cables provide a vital service in sending large volumes of data between major data hubs. This ensures Australia remains connected with the world.

Wireless continues to evolve

There were 39.6 million mobile services in operation in June 2023. This is 2.8 million more than June 2022. It includes prepaid and postpaid mobile plans, mobile broadband services and machine-to-machine connections.

The long-planned shutdown of 3G services across all networks will be complete by September 2024.

More Australians are using fixed wireless broadband services. More than 40 providers offered fixed wireless services around the country. There were 804,000 fixed wireless services in operation at the start of 2023.

The NBN uses fixed wireless to reach customers in regional, urban and outer-urban areas where fibre connections are too costly, or the terrain is too challenging. Some providers, including Telstra, Optus, TPG Telecom and Pentanet, have invested in 5G fixed wireless services.

Broadband delivered by low-Earth orbit satellites became directly available to Australian consumers in 2021. This is providing both infrastructure and services competition to other types of satellite access technologies, as well as fixed and mobile wireless broadband connections.

The telco market revenue growth continues

Australia's largest network operators all saw an increase in revenue in 2022–23, driven by an increase in subscriptions, price increases and acquisitions. Telstra had the largest capital expenditure of around \$3.6 billion over the financial year.

Access to communications at a glance



95% of us accessed news and information online.



46% of us used a telehealth service.



42% of us worked online from home.



95% of us used our mobiles to go online, with **89%** doing so at least once a day.



4 in 5 of us used an app to communicate.



1 in 5 of us made a call on a landline.

Facebook Messenger and WhatsApp were the most popular apps for voice and video calling.

How Australians access and use communications services and media

This section discusses how Australian adults use and access communication services. It shows the most popular devices for accessing the internet, and discusses what kind of activities Australians do online.

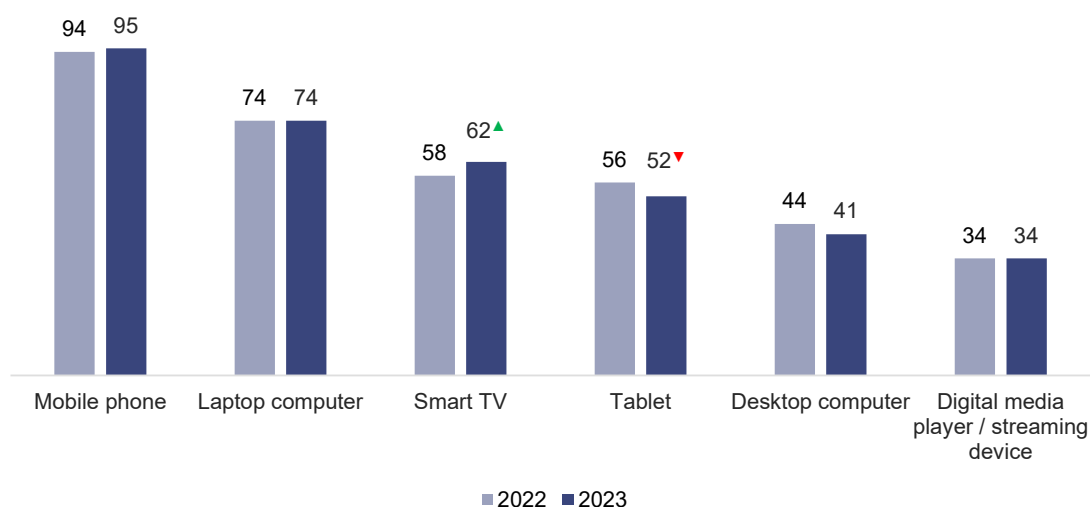
Mobiles are the most common way we communicate and go online

The way Australian adults use telecommunications services to communicate continues to evolve. Most communication is now done through apps using mobile phones. This includes voice calls and messaging.

Figure 1 shows devices used by adults who went online to access the internet in the previous 6 months to June 2022 and 2023. Key points:

- > Almost all of us (95%) used a mobile phone to access the internet in 2023.¹
- > Around 7 in 10 (74%) used a laptop computer to access the internet in 2023, unchanged from 2022.
- > Around 6 in 10 (62%) used a smart TV to access the internet in 2023, up from 58% in 2022.
- > Around 5 in 10 (52%) used a tablet to access the internet, down from 56% in 2023.

Figure 1: Devices used to access the internet in the 6 months to June 2022 and 2023 (%)



▲ ▼ Significantly different to the prior year at the 95% confidence level.

Base: Australians aged 18 and over who accessed the internet in the past 6 months using any device, 2022 (n=3,856), 2023 (n= 3,543).

Source: ACMA annual consumer survey, QD5. Which of the following devices have you used to access the internet in the past 6 months, for personal purposes?

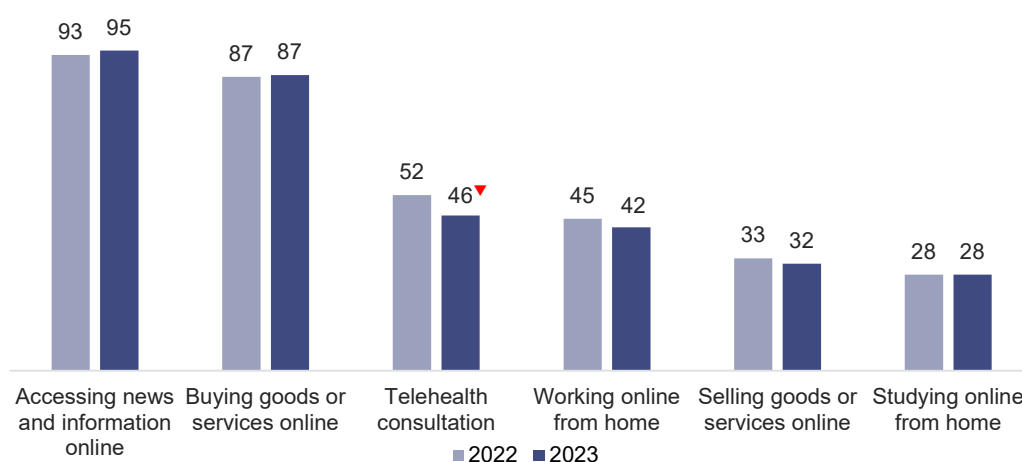
Online activities remain steady apart from telehealth

Figure 2 shows the internet-based activities by online adults in 2022 and 2023. While most online activities remained similar to 2022, the use of telehealth services fell from 52% in 2022 to 46% in 2023. This is still well above 2020 levels (36%), which marked the beginning of the COVID-19 related lockdowns and social distancing which likely increased the use of telehealth services over the next 2 years.

In the 6 months to June 2023, 42% of adults used the internet to work from home. Over 50% of those aged under 45 worked online from home in 2023.²

Almost 3 in 10 online adults (28%) used the internet to study from home in the 6 months to June 2023. This is the same as the year before.

Figure 2: Internet based activities in the previous 6 months to June 2022 and 2023 (%)



▲ ▼ Significantly different to the prior year at the 95% confidence level.

Base: Australians aged 18 and over who accessed the internet in the past 6 months using any device, 2022 (n=3,538), 2023 (n=3,543).

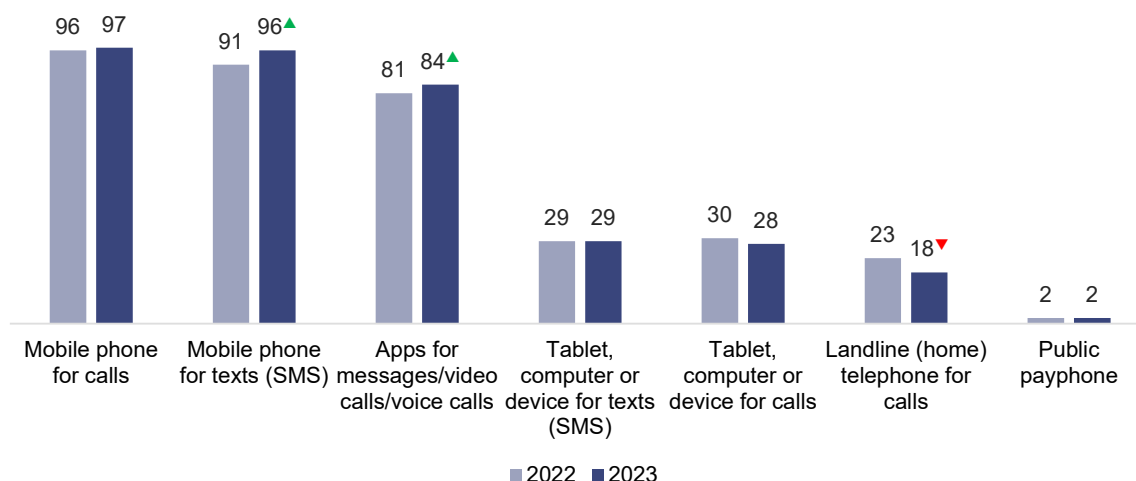
Source: ACMA annual consumer survey, QD8. Below is a range of internet-based activities. Please indicate whether or not you have done any of the following in the past 6 months at home or elsewhere.

More people using apps for video and voice calls

Figure 3 shows communications services used for personal purposes in 2022 and 2023. Changes of statistical significance are:

- > More Australians are using mobile phones for texting – mobiles were almost universally used for texting as well as voice calls in 2023.
- > More Australians are using apps for messages, video calls or voice calls:
 - > Facebook Messenger and WhatsApp were the most popular apps for messages, video calls or voice calls.
 - > Using an app for messages, video calls or voice calls to communicate is more common with Australians aged 18–44 (92%), compared to those over 45 (77%). Use was also greater among women (88%) than men (80%) and for those living in metropolitan areas (87%), compared to those living in regional areas (80%).³
- > Fewer Australians are using landline telephones for calls:
 - > Declining use of landline telephones has been a trend for the past decade.⁴
 - > Older Australians use landline telephones for calls more than other age groups. Nearly 6 in 10 (58%) Australians aged over 75 still use their landline, down from 8 in 10 (81%) in 2020.⁵

Figure 3: Communication services used for personal purposes in the 6 months to June 2022 and 2023 (%)



▲▼ Significantly different to the prior year at the 95% confidence level.

Base: Australians aged 18 and over, 2022 (n=3,580), 2023 (n=3,572).

Source: ACMA annual consumer survey, A1. In the past 6 months which of the following communications services have you used for personal purposes?

Only 2% of Australian adults used public payphones in the 6 months to June 2023. This figure has remained stable since 2017.⁶ While the proportion of people using public payphones is unchanged, there has been an increase in the number of calls from public payphone (see the spotlight below for more details).

Spotlight: Increased calls from public payphones

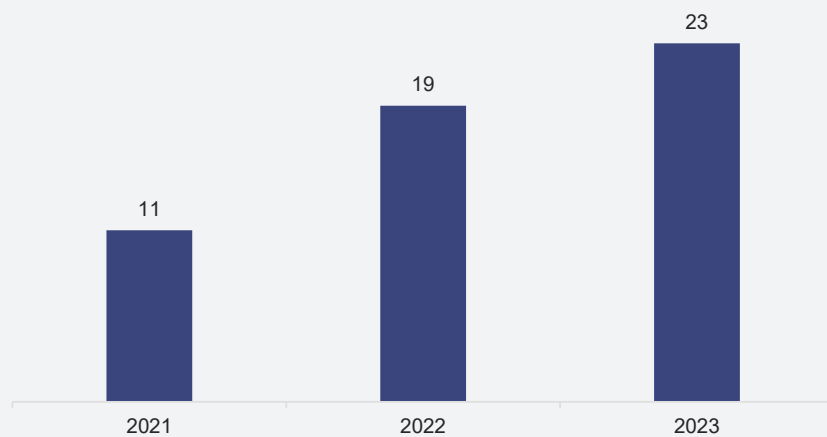
Telstra is responsible for making ‘payphones reasonably accessible’.⁷ This is part of an agreement with the Australian Government called the Universal Service Guarantee. Telstra receives \$40 million a year from a pool of funding provided by the government and industry to supply payphones.⁸

The number of calls from payphones fell from about 40 million in 2011–12 to about 11 million in 2019–20.⁹

In August 2021, Telstra made calls on its payphones free. It found emptying and repairing coin collection mechanisms was costing more than it made from call revenue.¹⁰ Since then, the number of calls made on its payphones has doubled to 23 million in the 12 months to August 2023 (Figure 4).

In August 2023, Telstra noted calls to support services and helplines had increased since payphones became free. More than 250,000 calls were made to emergency services in 2023.¹¹ Telstra reported substantial increases in calls to police, premium ‘13’ numbers and ‘1300’ numbers. This includes the police general contact number (up 34%), Centrelink reporting line (up 31%), Lifeline (up 30%) and bank call centres (up 25%).

Figure 4: Number of calls made from Telstra’s payphones (millions)



Source: Telstra.¹²

Wired telecommunications at a glance



We downloaded over **12.2 million terabytes** of data over retail broadband internet and mobile services in the final 3 months of 2022. **83%** of this data was carried on the NBN.



The heaviest retail internet users are on very fast speed plans. They download nearly **1 terabyte** of data every month.

50 megabits per second remains the speed of choice for NBN users.



About **90%** of NBN plans had unlimited data, up from **80%** in June 2021.

In December 2022, an NBN connection on:

- > 100 megabits per second downloaded nearly 673 gigabytes of data on average
- > 50 megabits per second downloaded about 463 gigabytes of data on average.

Wired telecommunications

Wired telecommunications carry most of the data sent across Australia and around the world. This includes cables laid underground, under the sea and between poles or buildings. These fixed lines play an important role keeping Australians connected, informed and entertained.

This section discusses trends and developments in fixed communications.

The national broadband network and other networks

The national broadband network (NBN) is the primary wholesale network for carrying Australia's fixed-line voice and data services. It primarily serves residential and small business customers – also known as retail customers. Over 8.5 million premises were connected to the NBN in June 2023.¹³ The NBN is operated by NBN Co, a government-owned company.

NBN Co is a wholesale-only company and cannot sell services directly to retail customers. These customers purchase NBN services through retail service providers. There are over 100 retail service providers buying services from NBN Co then selling retail internet and phone plans to residential and business end-customers.

In December 2020, the then Minister for Communications and the Arts announced the NBN was built and fully operational.¹⁴ New rules were introduced under the statutory infrastructure regime that made NBN Co the default statutory infrastructure provider for most of Australia.

The regime allows other telecommunications companies to become the main provider in certain areas if they have installed their own infrastructure in new developments or building redevelopments.¹⁵ These companies connect premises to the internet and provide internet services to other retail service providers upon request. In September 2023, 31 non-NBN Co statutory infrastructure providers were registered. These providers connect 464,081 premises across Australia.¹⁶

NBN Co submitted a variation to its wholesale agreement, called a special access undertaking, to the ACCC for approval in August 2023. The ACCC approved this varied undertaking in October 2023.¹⁷ The undertaking removes volume-based capacity charging for the highest-speed access services from the end of 2023, and for remaining speeds by 2026. This, and other revised pricing, is designed to increase wholesale price certainty and encourage more efficient use of the infrastructure.¹⁸

In the 3 months to 31 December 2022, about 12.2 million terabytes of data was downloaded across retail broadband services – 1.5 million terabytes more than the same period in 2021.¹⁹ Of this:

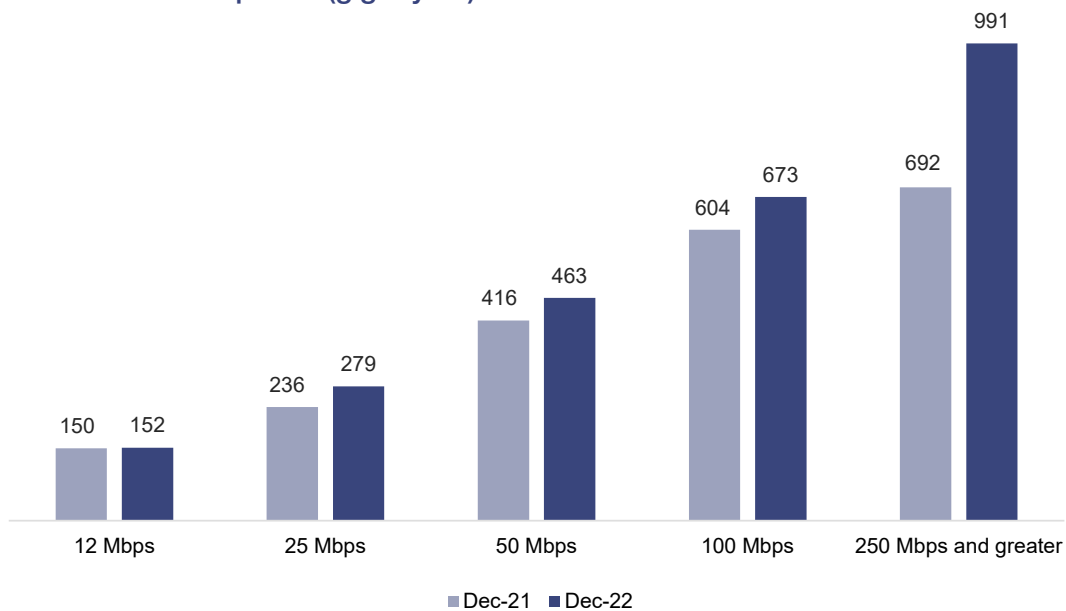
- > the NBN carried 83%
- > non-NBN networks carried 17%.²⁰

Some retail users are downloading nearly one terabyte every month

Figure 5 shows the average data downloaded every month for retail wired plans available on the NBN. Key points for this figure are:

- > Users on the highest speed plans of 250 megabits per second or greater downloaded the most data. This was nearly 1 terabyte of data in December 2022. Users on these plans downloaded about 300 GB more data in December 2022 compared to the previous year. This is a 43% increase.
- > Users on the speed plan of 25 megabits per second downloaded 43 GB more data in December 2022 compared to the previous year. This is an 18% increase.
- > Users on the lowest-speed plan of 12 megabits per second downloaded about the same amount of data in December 2023 compared to the previous year.

Figure 5: Average data downloaded per month on NBN retail connections of different speeds (gigabytes)



Source. ACCC Internet activity report December 2022. Quarterly data has been divided by 3 to produce average monthly figures.

Figure 6 shows the average data downloaded per month by retail customers by connection type in December 2021 and December 2022. Key points:

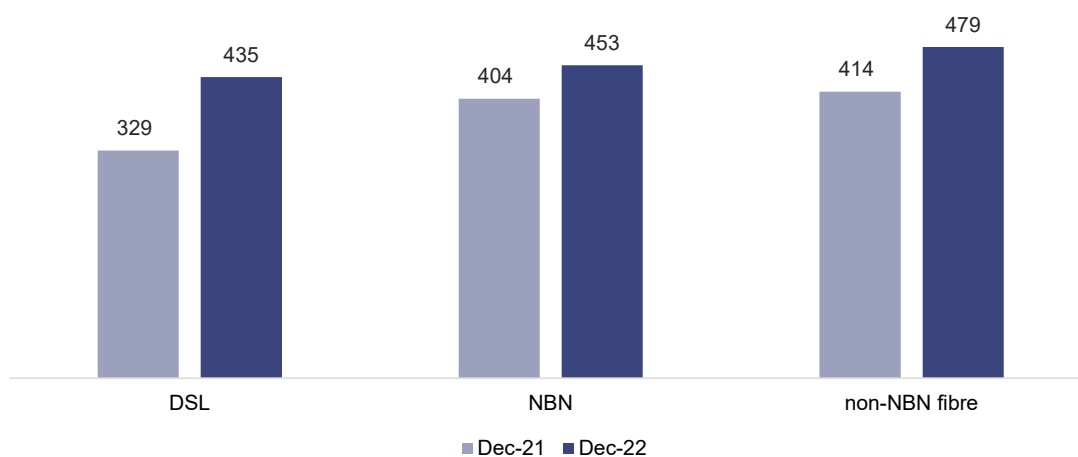
- > Retail customers on non-NBN fibre downloaded more than customers on the NBN or digital subscriber line (DSL).
- > All retail connection types had an increase in downloads compared to the previous year – DSL (32%), NBN (12%) and non-NBN fibre (16%).

This coincides with increases in video streaming and working from home, as well as more unlimited data plans.

In December 2022:

- > About 90% of NBN plans had unlimited data.²¹ It was 80% in June 2021.
- > 78% of non-NBN wired plans had unlimited data. This was 65% in June 2021.

Figure 6: Average data downloaded per month by retail customers by connection type in December 2021 and December 2022 (gigabytes)



Source: ACCC Internet activity report December 2022.²² Quarterly data divided by 3 to produce average monthly figures.

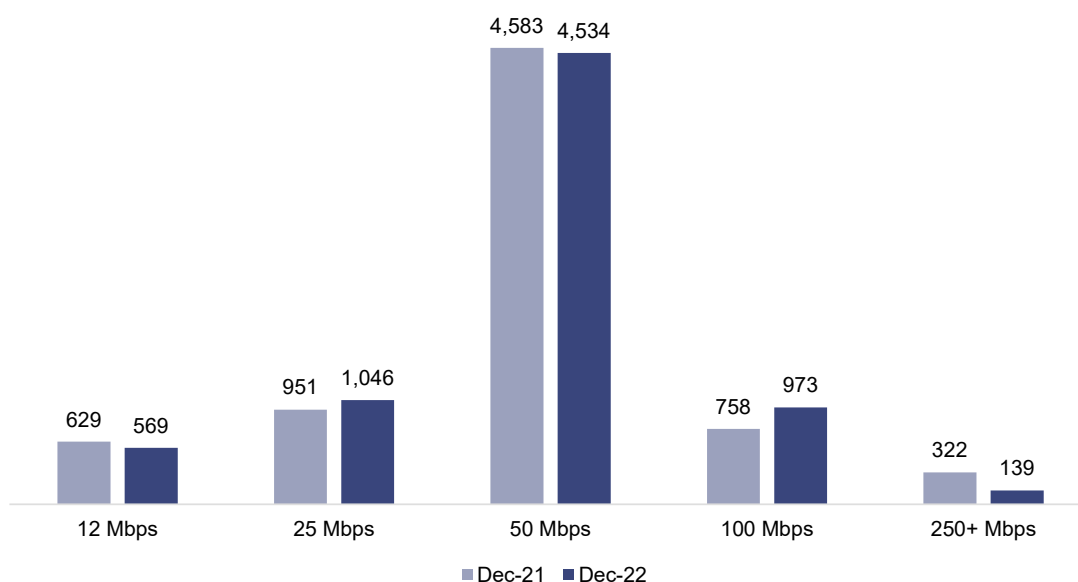
Most popular NBN speed plans

Figure 7 shows the number of NBN connections by download speed in December 2021 and December 2022. Key points:

- > The most popular plan was 50 megabits per second.²³ About 6 in 10 NBN connections (60%) were this speed plan. The number of these plans decreased by 49,000 in December 2023, compared to the previous year – a 1% drop.
- > The number of plans with speeds of 250 megabit per second or greater decreased by about 180,000 in December 2023, compared to the previous year – a 56% decrease. A temporary pricing incentive for the fastest speed plans offered by NBN Co to retail service providers ended within this period.²⁴
- > The number of plans with speeds of 100 megabit per second increased by 215,000 in December 2023 compared to the previous year – a 28% increase. It indicates consumers moved to this speed from plans of 250 megabits per second or faster.

NBN Co received \$2.4 billion from the Australian Government in October 2022 to upgrade its network.²⁵ The upgrades will provide 10 million Australian premises access to download speeds of 500 megabits per second or faster by the end of 2025.²⁶

Figure 7: NBN connections by download speed ('000)



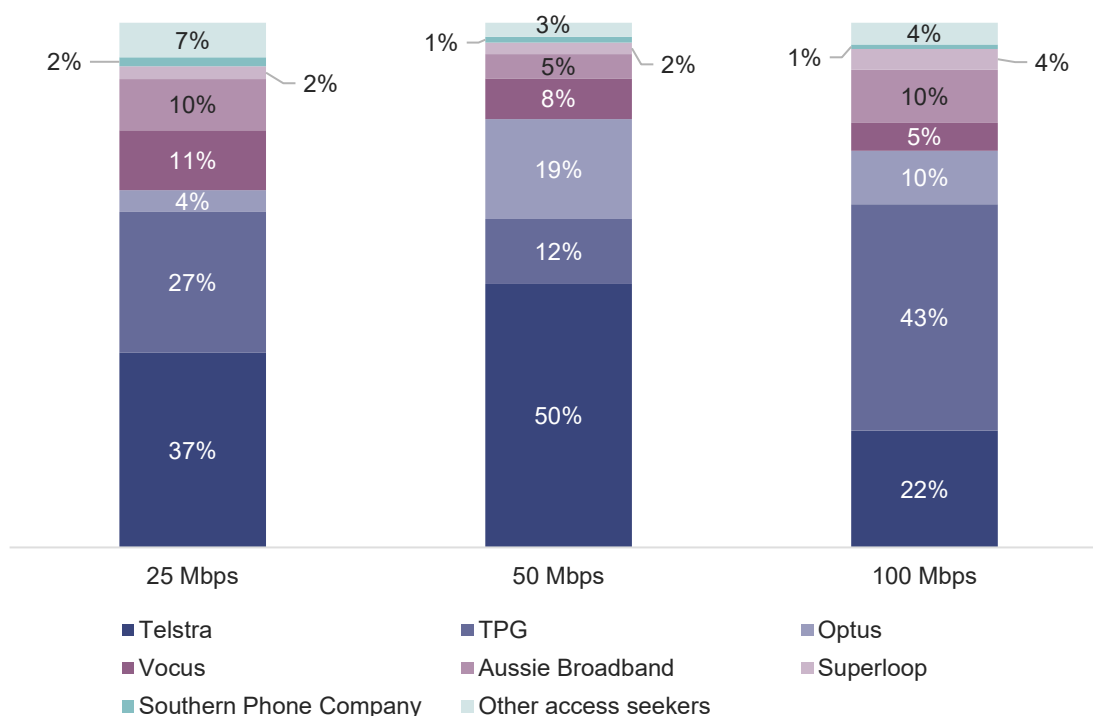
Source: ACCC Internet Activity Report December 2022.²⁷

Wholesale market share differs by speed

The 3 most popular NBN speed plans as at December 2022 were 25, 50 and 100 megabits per second (as shown in Figure 7). There are differences in the wholesale market share for the plans with different speeds, as shown in Figure 8. For example:

- > Telstra's wholesale market share differed between 25 megabits per second (37%), 50 megabits per second (50%) and 100 megabits per second (22%).
- > TPG's wholesale market share differed between 25 megabits per second (27%), 50 megabits per second (12%) and 100 megabits per second (43%).

Figure 8: Wholesale market share of different NBN speed plans by company at December 2022



Source: ACCC NBN Wholesale Market Indicators Report.²⁸

Higher resolution video expected to increase data use

The increase in data use coincides with the popularity of video streaming for entertainment and gaming purposes.

Video streaming had the highest share of internet traffic on the NBN in 2022.²⁹ NBN Co expects data use to increase as more Australians stream video in higher resolutions on 4K and 8K-enabled TVs and other devices.³⁰

The Bureau of Communications, Arts and Regional Research notes that video streaming in higher resolution formats (along with other activities such as streamed gaming) will drive an increase in bandwidth and data demand. According to the Bureau, the average monthly data downloads from households will rise from 199 gigabytes in 2018 to 767 gigabytes in 2028.³¹

NBN Co notes any increase in data use from gaming will be influenced by the availability of online video games and other applications to Australian audiences.³² GlobalData estimates there were around 650,000 users playing cloud games in Australia in 2022. This is forecast to increase to over 1.3 million users by 2027.³³

More undersea cables linking Australia and the world

Submarine cables act as internet ‘superhighways’. They carry large volumes of data across Australia and around the world. Most data carried to and from overseas websites travels along submarine cables at some point. Subsea cables are regularly upgraded and expanded to accommodate growing demand for data. Australia is connected by many submarine cables extending east, west and north (Figure 9).

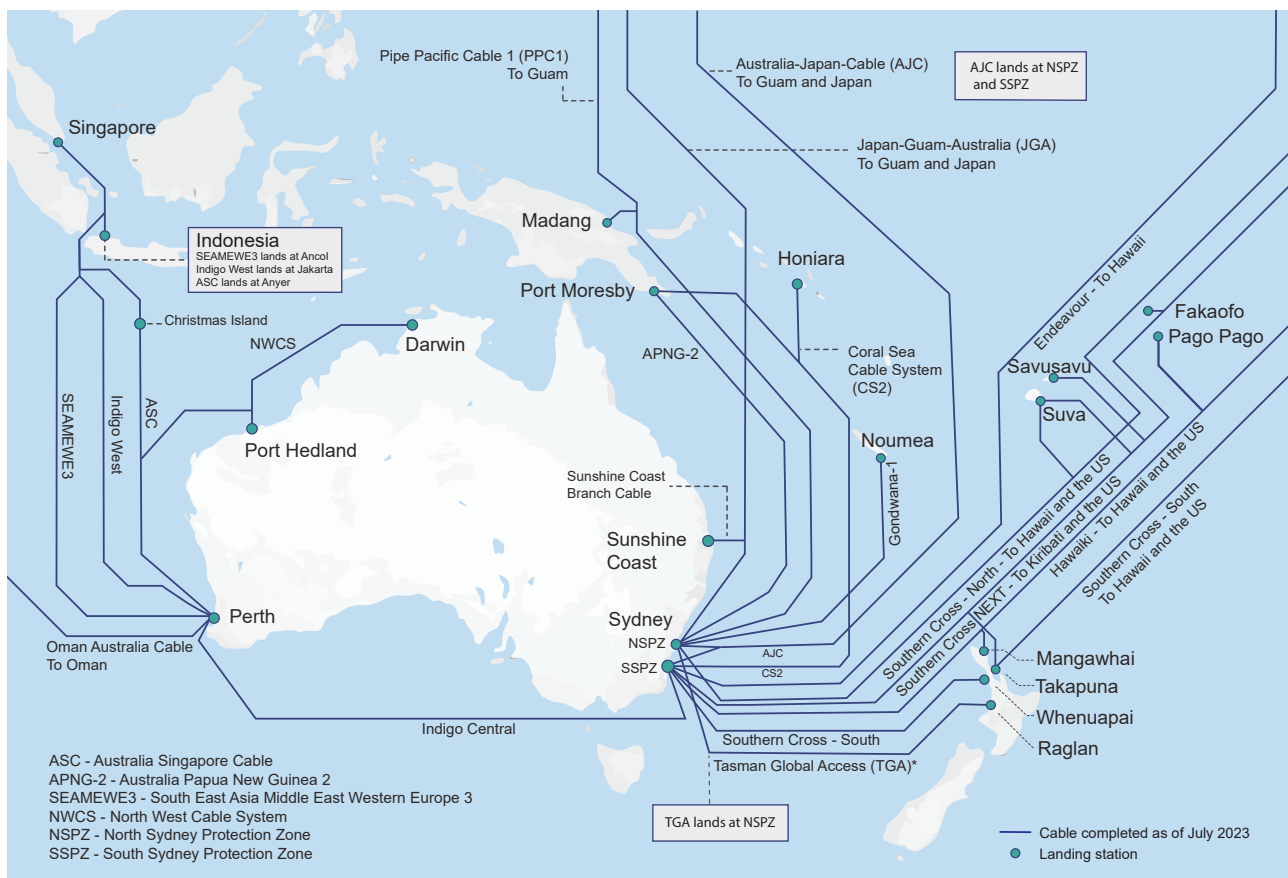
In May 2023, Vocus connected the North-West Cable System running between Darwin and Port Hedland to the Australia-Singapore cable. This created a new Darwin-Jakarta-Singapore cable system and connected Darwin to international submarine cables for the first time.³⁴ The combined segments between Darwin and Singapore are 7,700 km long.

Vocus is also planning extensions to link Kupang in Indonesia and has a contract to build a cable to Timor Leste.³⁵

In August 2023, Subco announced construction was ready to start for the first phase of a 5,000 km submarine cable running from Sydney to Perth via Melbourne and Adelaide.³⁶

In October 2023, the Australian Government announced it is co-funding submarine cables with the US government to connect Pacific Island countries.³⁷ As part of this project, Google will build 2 new cables and BW Digital will build branching units on its Hawaiiki Nui submarine cable.³⁸

Figure 9: Submarine cable landings in Australia



Source: ACMA.

Wireless telecommunications at a glance



There were **28.7 million** prepaid and postpaid mobile plans in Australia in December 2022, **up 1.4 million** from the previous year.

There were **39.6 million** mobile services in Australia as at December 2022.



All 3G networks will be shut down by the end of 2024.



5G mobile networks covered **85%** of the population in July 2023.



Non-NBN fixed wireless connections increased **39%** to **410,000** premises in 2022 compared to the previous year.

Wireless telecommunications

Wireless telecommunications play an important role in providing connectivity for Australians. Wireless services include:

- > mobile telecommunications
- > fixed wireless internet, also known as fixed wireless access
- > satellite communications.

This section discusses trends and developments in wireless services.

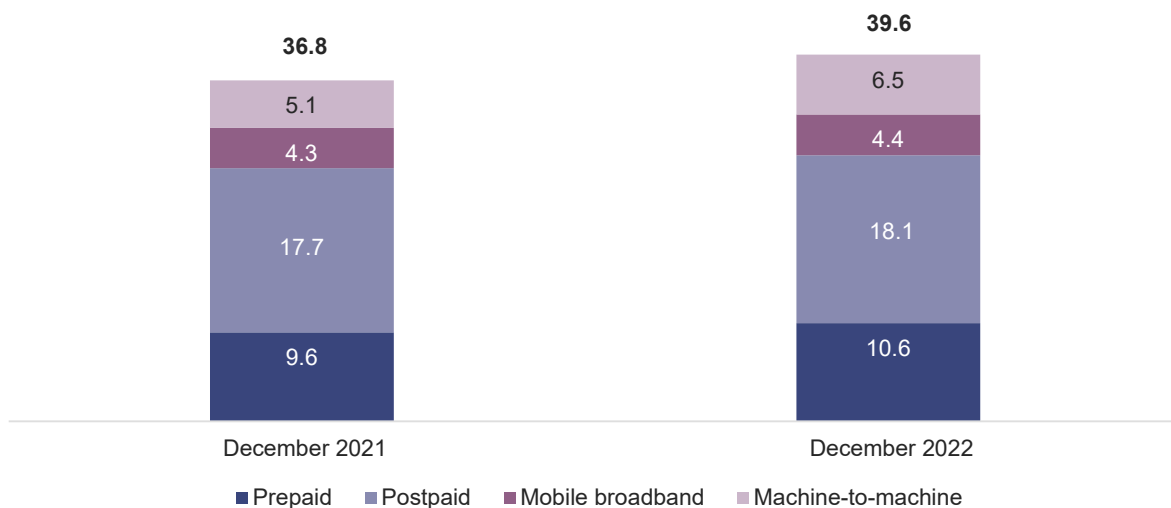
Prepaid mobile services increase

Figure 10 shows the number of mobile services in operation by type for December 2021 and December 2022. Key points:

- > The total number of mobile services in Australia increased from 36.8 million in 2021 to 39.6 million in 2022 – an increase of 7%.
- > The number of machine-to-machine services increased from 5.1 million in December 2021 to 6.5 million in December 2022 – an increase of 27%.
- > There was a larger increase in the number of prepaid services (10%) than post-paid services (2%).

Nearly a third (31%) of Australian adults with a mobile phone service in their name changed their mobile provider or plan in the 12 months to June 2023. The most common reason for changing mobile phone providers or plans was finding a cheaper plan (33%). This was followed by getting more data (12%) or upgrading phones (10%).³⁹

Figure 10: Number of mobile services in operation by type for December 2021 and December 2022 (million)



Source: ACCC internet activity report December 2022.⁴⁰ Please note, these numbers have been rounded to one decimal place.

5G network expansion continues

In 2018, 5G became available to Australia consumers.⁴¹ About 36% of all mobile services used 5G in 2023. This is expected to increase to 74% by 2027.⁴²

About 37% of all mobile sites were 5G enabled in January 2023, up from 28% in January 2022.⁴³ Most 5G sites are in major cities.⁴⁴

In January 2021, Telstra announced that more than 50% of the Australian population had access to 5G services on its network.⁴⁵ At June 2023, Telstra said this had increased to at least 85% of the population.⁴⁶

Network operators promote 5G for both mobile and fixed wireless broadband as an alternative to wired internet for households and businesses.

Other providers have also entered the market to supply fixed wireless services using 5G technology. For example, Pentanet began selling its 5G fixed wireless services in Perth in 2023.⁴⁷

4G is the most commonly used network

The technology known as '4G long term evolution' became available to Australia consumers in 2011.⁴⁸ Most Australians use the 4G mobile network. About 63% of all mobile services used 4G in 2023. This is expected to decrease to 26% by 2027.⁴⁹

The 4G networks cover most of Australia's population. For example:

- > Telstra's 4G network covers 99.5% of all Australians.⁵⁰
- > Optus's 4G Plus network covers 97% of all Australians.⁵¹
- > TPG's 3G and 4G network covers up to 96% of all Australians.⁵²

4G is commonly used in private wireless networks. These networks are built for specific industrial purposes. They are typically owned and operated by businesses, but these services may also be delivered by national telecommunications companies as an enterprise service offering. Small private wireless networks can digitise operations and control automated machinery. Private wireless networks have been most commonly deployed in the manufacturing sector in the US and Europe.

In Australia, the mining and resources sector use 4G for their private wireless networks (see the spotlight below for more details).

Spotlight: Miners' use of private networks

The mining and resources sector is well advanced in deploying private wireless networks in Australia. There are an estimated 50 private wireless networks operating in Australian mines using 4G technology.⁵³ In 2022, Nokia noted about half of the private wireless networks worldwide were built with 4G long-term evolution equipment with a migration path to 5G.⁵⁴

The private wireless network market in Australia was worth \$130 million in 2021. It is predicted the market will grow nearly 30% annually over the next 5 years and be worth \$695 million in 2027.⁵⁵ Adoption will depend on business demand for automation and access to spectrum.

For more information, see the ACMA's *Market study: Private wireless networks using 4G or 5G in Australia*.

Preparing to close 3G networks

In 2006, 3G became available to Australia consumers.⁵⁶ About 2% of all mobile services used 3G in 2023.⁵⁷ 3G networks across Australia are progressively being closed. Network operators have been communicating the following dates to their customers:

- > December 2023 for TPG Telecom⁵⁸
- > June 2024 for Telstra⁵⁹
- > September 2024 for Optus.⁶⁰

Telstra and Optus will reuse the spectrum from 3G for 5G services.⁶¹

Fixed wireless use grows

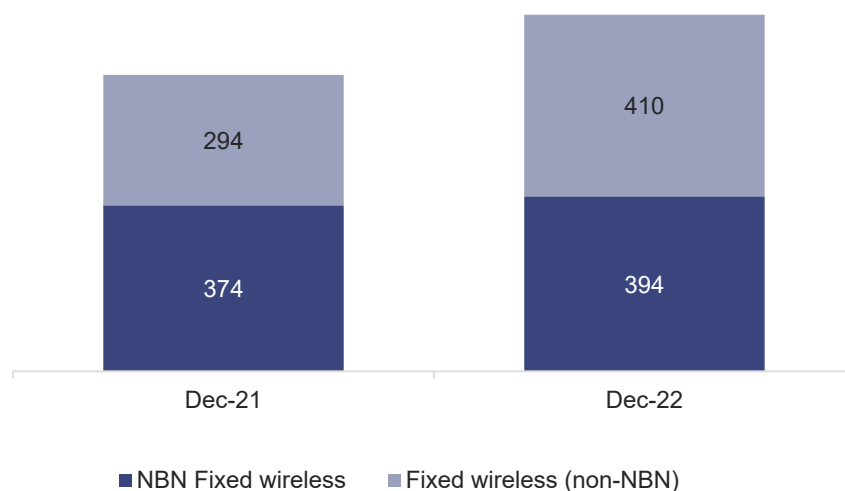
In this type of service, a fixed modem connects wirelessly to a nearby base station. This avoids laying fibre or cables all the way to the premises.

There are over 40 companies providing fixed wireless services in Australia. Many are small providers that cover a regional town or specific community.⁶² Large national providers include:

- > Telstra, Optus and TPG Telecom. These companies use their 4G and 5G mobile networks to supply fixed wireless services.
- > NBN Co, who's fixed wireless network is spread around regional, urban and peri-urban areas and not shared with mobile customers.⁶³ It is upgrading parts of its fixed wireless network to 5G technology in 2024 and expanding coverage to reach an additional 120,000 premises.⁶⁴

Figure 11 shows the number of fixed wireless services in December 2021 and December 2022. Total services in operation increased from 668,000 to 804,000 during the period – a 20% rise. The number of non-NBN fixed wireless services increased by 39%. The number of NBN fixed wireless services increased 5%.

Figure 11: Fixed wireless services in operation in December 2021 and December 2022 ('000s)



Source: NBN Co Weekly Summary, ACCC Internet Activity Report December 2022.⁶⁵

Low-Earth orbit satellites competing with other services

Satellite broadband delivered by low-Earth orbit satellites became directly available to Australian consumers in 2021. This is providing new competition to the other types of satellite technologies, as well as fixed and mobile connections.

Starlink commenced offering satellite broadband to Australian consumers in 2021. It had 120,000 satellite broadband services in Australia in May 2023.⁶⁶ Starlink launched satellites into low-Earth orbit from 2018. It had over 4,000 satellites in low-Earth orbit in February 2023.⁶⁷

Amazon plans to offer satellite broadband to Australian consumers. It began launching satellites into low-Earth orbit in late 2023,⁶⁸ and plans to trial satellite broadband services in 2024.⁶⁹

There are other providers of services using low-Earth orbit satellites, including companies such as OneWeb, ViaSat and O3B. They sell their satellite broadband services through wholesalers or directly to enterprise customers.

In 2022–23, Telstra, Optus and Vocus made separate agreements with providers of low-Earth orbit satellites to resell voice and broadband services.⁷⁰

If you would like more information about the satellite market, please see the ACMA's *Market study: Australian space sector*.

Market developments

This section discusses recent revenue and capital expenditure of publicly listed telecommunication companies in Australia with a market capitalisation above \$250 million.

Revenue increases for telecommunications companies

The telecommunications companies listed in Table 1 increased revenue in 2022–23. These companies operate in both wired and wireless markets.

Table 1: Revenue for 12 months to 30 June 2023 (\$millions)

Company	2021–22 (\$ million)	2022–23 (\$ million)	Change [#]
Telstra	21,277	22,702	▲ 7%
Optus*	7,836	8,053	▲ 3%
TPG Telecom [†]	5,291	5,495	▲ 4%
Aussie Broadband	550	788	▲ 43%
Superloop	248	322	▲ 30%

* Optus's fiscal year is April 2022 to March 2023.

[†]Last 12 months at 30 June 2023 figure to match fiscal year of other companies. TPG Telecom's fiscal year is January to December.

[#] rounded to the nearest whole number.

Source: Company financial reports, S&P Capital.

For Telstra, Optus and TPG Telecom, which own national mobile networks, revenue increased in 2022–23 as a result of increasing mobile and fixed wireless subscriptions, and price increases for postpaid mobile products.

Aussie Broadband and Superloop had double-digit revenue growth in 2022–23, driven by growth in the consumer, wholesale and enterprise markets through organic growth and acquisition. For example, Aussie Broadband acquired company Over The Wire. Superloop acquired MyRepublic. These networks also successfully upgraded customers to faster-speed NBN plans that are higher priced.⁷¹

Capital expenditure by network operators

Table 2 shows the capital expenditure forecasts for publicly listed telecommunications companies operating in Australia with a market capitalisation over \$250 million in 2023–24.

Telstra has the largest capital expenditure. Current projects include:

- > A partnership with Viasat to co-locate satellite access nodes at hundreds of Telstra sites around Australia. Telstra is building high-speed fibre links to each site.⁷²
- > An inter-city fibre project to increase data transmission capacity.⁷³

Table 2: Table 2: Capital expenditure forecasts for publicly listed companies for 2023–24

Company	2023–24
Telstra	\$3.6 billion to \$3.7 billion
Optus*	\$1.6 billion
TPG Telecom†	\$1 billion
Aussie Broadband	\$47 million to \$52 million
Superloop	\$20 million

*Optus's fiscal year is April 2023 to March 2024.

†TPG's fiscal year is January 2023 to December 2023.

Source: Company reports⁷⁴

Glossary

3G: third-generation mobile telecommunications

Broadband mobile telecommunications services with improved data rates over their 2G predecessors, providing for applications such as web browsing, video conferencing and location-based services.

4G: fourth-generation mobile telecommunications

Enhanced broadband mobile telecommunications services that provide increased bandwidth to support voice, video, data and high-quality streaming of multimedia content over an all-internet protocol network.

5G: fifth-generation mobile telecommunications

Broadband mobile telecommunications services providing increased data rates and reduced latency compared to 4G.

ACCC: Australian Competition and Consumer Commission

An independent Commonwealth statutory authority. It enforces the *Competition and Consumer Act 2010 and other legislation promoting competition and fair trading, and regulates national infrastructure*.

ACMA: Australian Communications and Media Authority

An independent Commonwealth statutory authority. It regulates communications and media services in Australia.

ACMA annual consumer survey

Quantitative consumer research commissioned by the ACMA that provides time-series tracking of consumer communications and media use. This research considers consumer behaviour, adoption of and attitudes towards media and communications services, and emerging issues.

DSL: digital subscriber line

Transmission technology that enables high-speed data services to be delivered over a twisted-pair copper line.

broadband

A class of high-speed internet access technologies, such as digital subscriber line, hybrid fibre coaxial cable and wi-fi, offering a data rate significantly higher than dial-up internet services.

fixed-line phone service

Covers the delivery of voice services over a copper pair-based public switched telephone network or fixed-line broadband networks.

fixed wireless broadband service

A class of internet access technology that uses radio signals to connect a premises to the internet.

Gbps: gigabits per second

Data transfer rate of a billion bits per second.

GB: gigabyte

One billion bytes; a unit of information. Each byte is 8 bits.

IoT: Internet of Things

Wireless and wired interconnections of personal, consumer and industrial devices supporting diverse applications. Data generated by IoT sensors and applications can be analysed for different purposes.

Machine-to-machine

Automatic data transmission and measurement between mechanical or electronic devices using wired and wireless networks.

Mbps: megabits per second

Data transfer rate of one million bits per second.

MB: megabyte(s)

One million bytes; a unit of information. Each byte is 8 bits.

low-Earth orbit satellite

A satellite that has an orbit below 1,000 kilometres above Earth.

NBN: national broadband network

The national wholesale-only open-access data network in Australia offering high-speed broadband to premises using different technologies.

NBN Co: NBN Co Limited

A wholly owned Australian Government company established to design, build and operate the NBN.

payphone

A public phone where calls can be made for a fee. Telstra payphones have been free since August 2021.

postpaid

A telecommunications contract under which a user is charged on a periodic basis, depending on service use during the previous billing period.

prepaid

A telecommunications contract where users pay an amount upfront to buy a certain amount of use or credit.

smartphone

A mobile phone built on a mobile operating system, with advanced computing capability and connectivity. It has a touchscreen and can access the internet and run applications. For example, an Apple iPhone, Samsung Galaxy or similar device.

wi-fi

A type of wireless local-area network technology that uses radio waves to provide wireless high-speed internet and network connections using specifications in the Institute of Electrical and Electronics Engineers 802.11 series of standards for wireless local-area networks.

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