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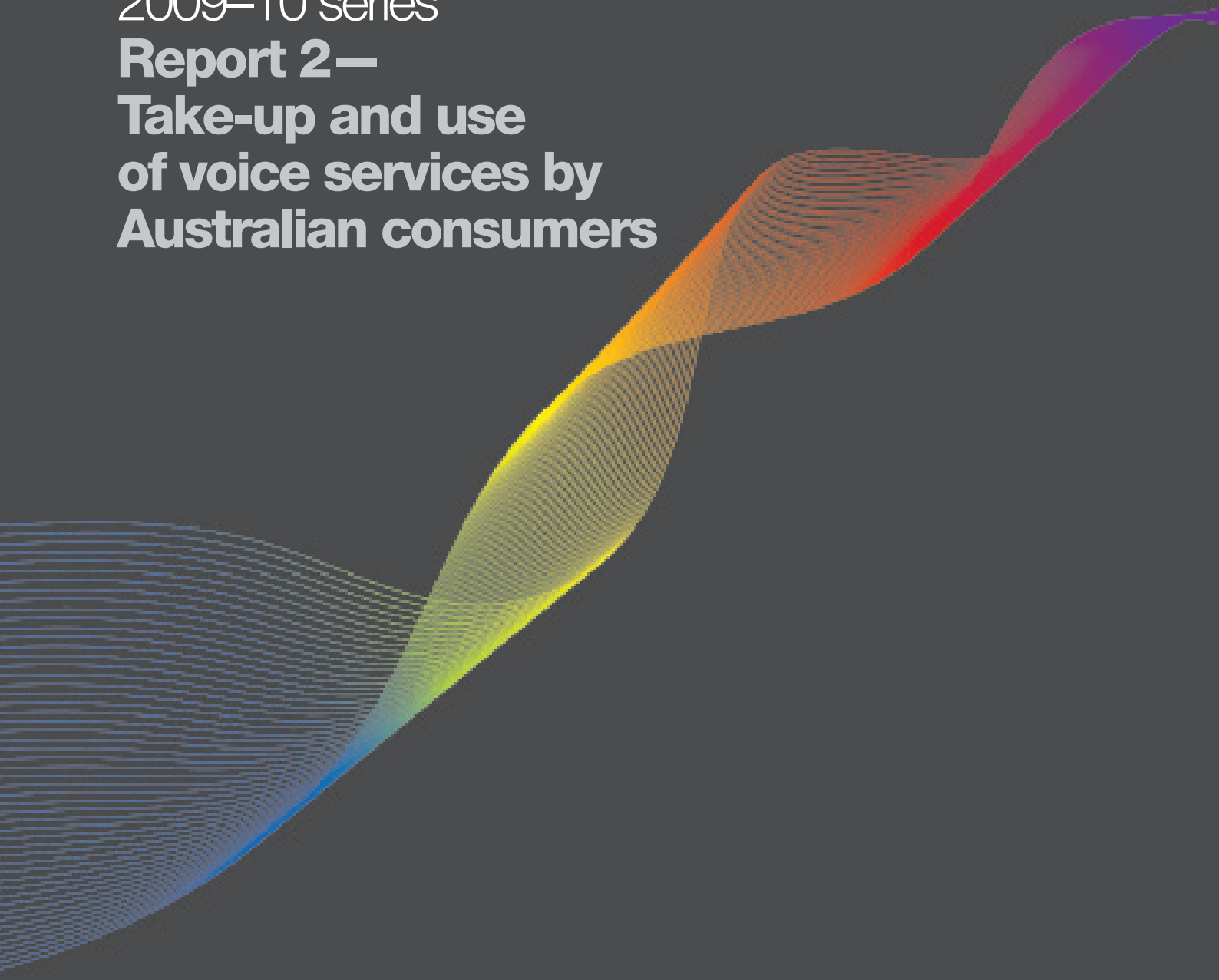
Communications report 2009–10 series

Report 2— Take-up and use of voice services by Australian consumers



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Report 2—Take-up and use of voice services by Australian consumers

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Contents

Introduction

This report is the second in a series of four research reports to be published as part of the ACMA's communications report series. Other reports in this series include:

> *Report 1—Australia in the digital economy: The shift to the online environment*

> *Report 3—Australian consumer satisfaction with communications services*

> *Report 4—Changing business models in the Australian communication and media sectors: Challenges and response strategies.*

This suite of reports is designed to complement the ACMA *Communications report 2009–10* which is produced in fulfilment of reporting obligations under Section 105 of the *Telecommunications Act 1997* (the Act). The Act requires the ACMA to report on the performance of carriers and carriage service providers with particular reference to consumer benefits, consumer satisfaction and quality of service.

These four reports also form part of the ACMA's ongoing research and reporting program (*Research at the ACMA: research program overview 2010–11)* which is available on the ACMA website.

The communications report series seeks to inform ACMA stakeholders about convergence and the digital economy and their impact on communications and media services.

The term 'digital economy' covers the global network of economic and social activities that are enabled by digital information and communication technologies such as the internet, mobile and sensor networks.[1]

As an evidence-based regulator, the ACMA has an interest in monitoring and understanding the developing digital economy and its impact on the industries that is regulates, particularly in relation to:

> regulating for the citizen in an IP-based media and communications environment where usage of voice over internet protocol (VoIP), mobile communications and the internet continues to grow, which in turn provides challenges for safeguards, such as access to the emergency call service and online security

> voice regulation, where continued growth in VoIP usage and the number of people identifying mobile phones as their main form of communication poses challenges when it comes to applying regulatory requirements that are based on traditional fixed-line voice services

> supporting consumers making informed decisions in an environment of ongoing network, device and service innovation

> regulating content in an environment where content is increasingly available on multiple platforms including the internet, mobile and traditional broadcasting networks.

This report presents the findings of quantitative research into the attitudes and behaviours of consumers with respect to fixed-line, mobile and VoIP voice communications.

[1] Department of Broadband, Communications and the Digital Economy, *Australia's Digital Economy: Future Direction,* 14 July 2009.

Summary

The Australian communications environment is changing rapidly, a reflection of continuing technological developments, service innovation and increased consumer preferences for flexible communications.

The overwhelming majority of Australian consumers are now users of multiple communications technologies—most commonly a fixed-line telephone, a mobile phone and the internet—which they use according to their immediate needs. At April 2010, 82 per cent of adult consumers with a fixed-line telephone used three or more communications services.

Portable technologies, including mobile telephony and wireless internet, have become particularly popular among Australians, with an increasing number of consumers moving away from fixed-line devices for voice services.

Young adults (aged 18–24) are leading this trend, with one in three now choosing not to connect a fixed-line telephone when they move out of the parental home. This figure has risen by almost 33 per cent in the past 12 months, with the highest incidence occurring among young adults living alone or in share households. In the wider Australian community, the proportion going 'mobile-only' for voice communications has reached 14 per cent, up from 10 per cent in the previous year.

However, despite the strong shift toward mobile technology, the fixed-line telephone maintains a solid presence in the Australian communications environment, strongly supported by older consumers and by the use of the fixed line for internet connections. This report shows a strong association between age and fixed-line use, and in particular, the apparent reluctance by consumers aged over 35 to relinquish their fixed-line telephone service. This is seen most strongly among the over 55s, who maintain near-saturation levels of fixed-line telephone take-up, though the majority of these consumers also use a mobile phone now.

Amid declining fixed-line telephone call revenue, service providers are attempting to encourage consumers to retain their traditional home phone, offering multi-function touchscreen handsets and bundling arrangements that include lower cost, or free, local calls. Despite these efforts, the number of fixed-line telephone services in operation in Australia continues to drop, reflecting trends seen in most comparable countries.

In contrast, mobile phone take-up is rising across the population, encouraged by handset innovations, such as the smartphone and ipads, and increased affordability. The importance of mobile technology to the lifestyles of many Australians is underscored by the finding that a large proportion of mobile phone users feel that they need their mobile phone to juggle their work and social lives, and that the majority regard their phone as essential for their personal security. A large proportion of mobile phone users are now taking advantage of non-voice functions such as SMS, photography and internet access, a trend that is likely to increase with the rise in take-up and use of 3G mobile handsets and user-friendly larger screen smartphones.

The report found that VoIP is gaining a foothold in the Australian communications environment, with 16 per cent (nearly three million persons) using the service a home, motivated by cheaper call prices. Low awareness of the technology was found to be the strongest barrier to VoIP take-up, a consideration that is likely to diminish as the technology becomes more common across the country.

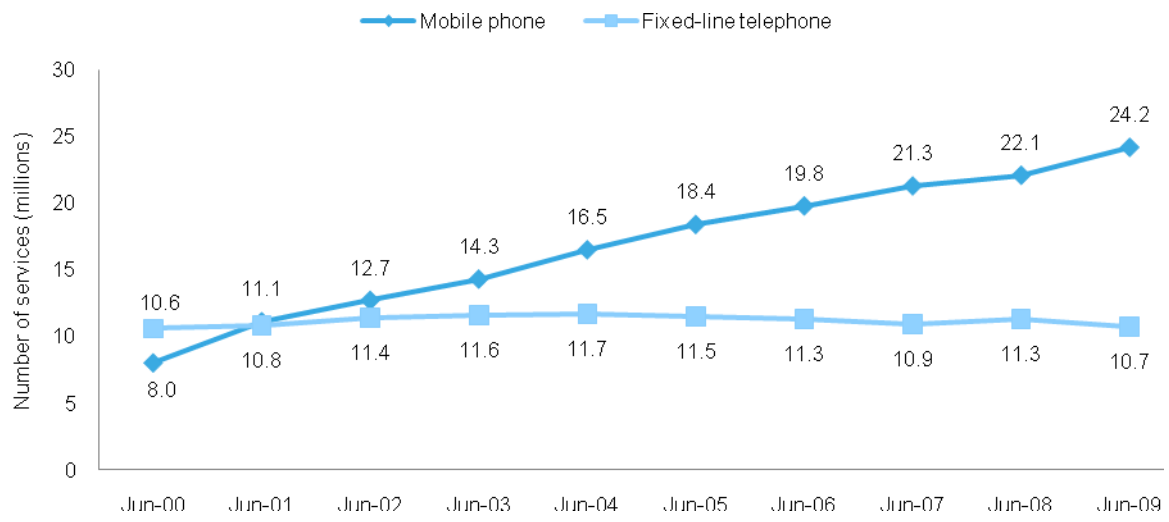
Results

The Australian communications environment

This chapter examines take-up and usage levels of fixed-line telephone, mobile phone and VoIP voice communications services, and then considers how they are used to complement or as a substitute for each other in the Australian household environment.

An examination of fixed-line telephone and mobile phone services in Australia reveals that, while mobile phone take-up continues to increase across the Australian population, the number of fixed-line telephone services in operation is reducing, having peaked at June 2004 (Figure 1). At June 2009, fixed-line telephone services in residential and commercial premises numbered 10.7 million, a fall by eight and a half per cent in five years. This decline has affected the revenue streams of some service providers, particularly Telstra, which dominates the fixed-line market. In August 2010, Telstra announced that PSTN revenue had declined by eight per cent during the 2009–10 financial year.[2]

Figure 1 Communications services in operation: fixed-line telephone and mobile phone



Note: Mobile services from 2007–08 include all services which use a SIM card, including phone and data services.
Source: ACMA/ACA Communications reports 1999–2000 to 2008–09. Includes wholesale services.

However, the majority of Australian household consumers continue to maintain a range of complementary communication options that together provide an enhanced level of flexibility.

Both fixed-line and mobile phone services offer a range of non-voice activities, such as internet access, which have extended their utility to the online environment but have added to the complexity of tracking trends in stand-alone voice service take-up. With many internet services using the public switched telephone network (PSTN), it is likely that fixed-line retention rates are at least partially a function of broadband connection

[2] Telstra, *Telstra invests for future growth, generates $6.2b cash, maintains dividend,* www.telstra.com.au/abouttelstra/media-centre/announcements/telstra-invests-for-future-growth-generates-6.2b-cash-maintains-dividend.xml, accessed September 2010.

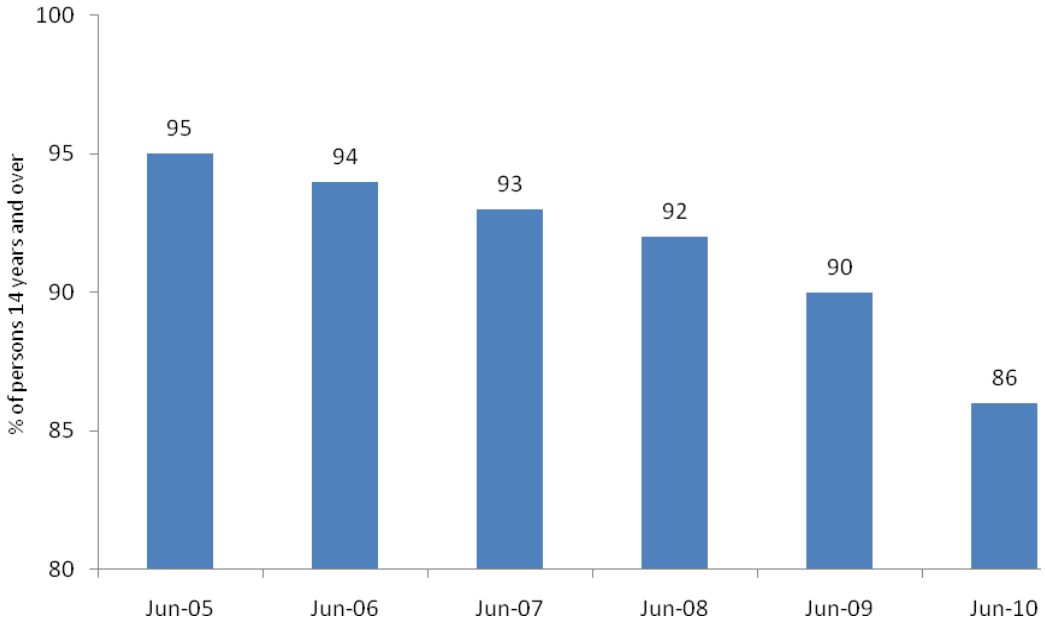
preferences rather than voice use. The ACMA's 2010 consumer survey found that seven per cent of consumers who were keeping their fixed lines connected were doing so primarily because of their internet needs - discussed further at Figure 24.

Further, the take-up and usage rates of mobile services may be influenced by not only the voice functionality of mobile phones, but also by non-voice functionalities such as SMS and wireless internet access.

Fixed-line service use among consumers

The downward trend of fixed-line telephone services is confirmed by consumer data, which reveals that the proportion of consumers with a household fixed-line connection has dropped by nine percentage points since June 2005.

Figure 2 Household consumers with a fixed-line telephone at home



Source: Roy Morgan Single Source, June 2010.

The decline of fixed-line telephone use by Australian household consumers has translated into a fall in PSTN revenue. In August 2010, Telstra reported that its PSTN revenues had dropped by $504 million (eight per cent), a figure which, despite increased earnings from its mobile and internet services, resulted in an overall drop in revenue for the company. [3]

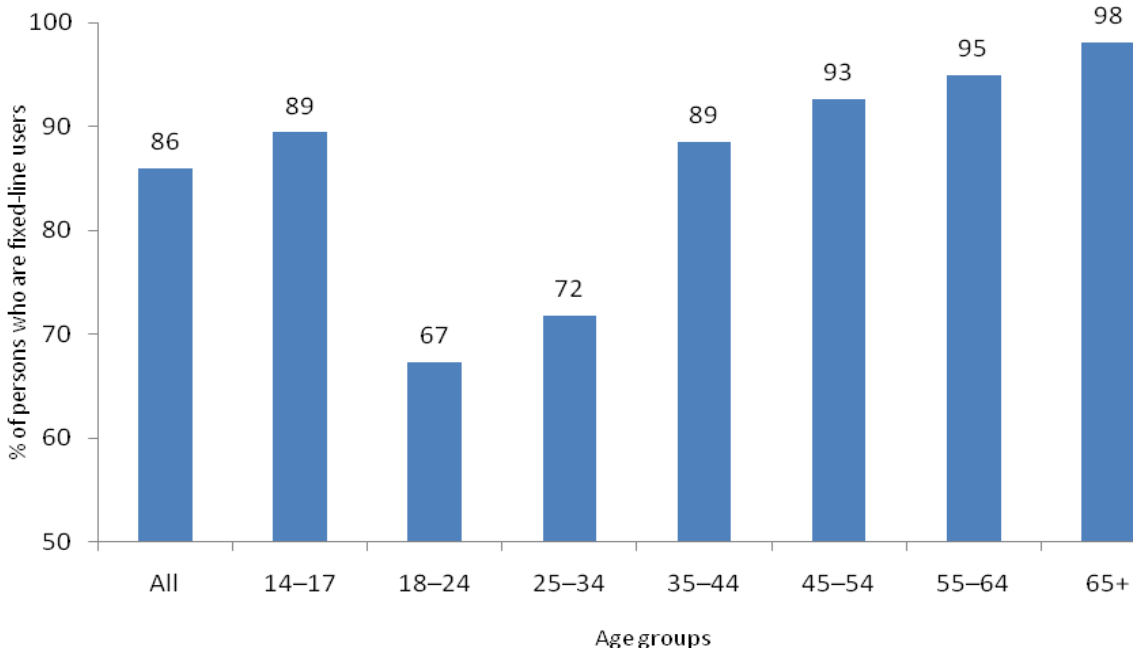
Demographic analysis of fixed-line use in Australia

Survey results indicate that there is a strong relationship between age and subscription levels for a household fixed-line service (Figure 3). Older Australians are much more likely to maintain a fixed-line telephone, with 94–97 per cent of those aged over 55 subscribing to a fixed-line telephone service. Australians aged under 18 also have a high fixed-line take-up rate, likely a reflection of their parents' communications choices. The lowest incidence of fixed-line service take-up is seen among young adults, with 67 per cent of 18–24-year-olds having a fixed-line service in their

[3] Telstra, Preliminary report for the year ended 30 June 2010, August 2010.

household at June 2010, down from 73 per cent 12 months earlier.[4] However, this figure is likely inflated by the number of young adults still living with their parents, which stood at 49 per cent at June 2009 and 45 per cent at June 2010.[5] Once outside the parental home, the home access rate of fixed-line telephones among 18–24-year-olds drops dramatically. Of those living in a single occupant household, 42 per cent have a fixed-line telephone. In a shared household this figure is similar, 41 per cent.[6]

Figure 3 Household consumers with access to a fixed-line telephone at home by age groups, June 2010



Source: Roy Morgan Single Source, June 2010.

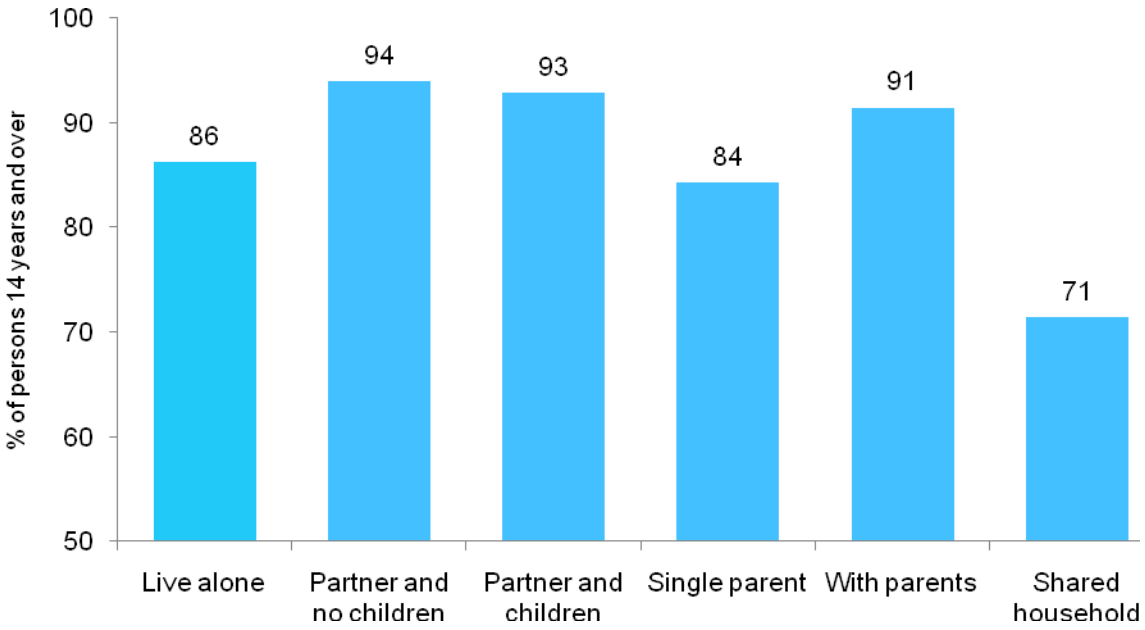
Living arrangements may exert a strong influence on the retention fixed-line services across all age groups more generally. Those who are living in shared households have the lowest rate of fixed-line connections at 71 per cent, followed by single parent households and Australians living alone have a fixed-line take-up rate of 84 per cent and 86 per cent respectively (Figure 4).

In general, households comprising couples were more likely to have a fixed-line telephone than other households. Couples without children had the highest level of fixed-line telephone usage (94 per cent), due to the higher proportion of people aged over 65 years in this category (52 per cent).[7] Couples with children had the second highest level of fixed-line telephone usage, at 93 per cent. Fixed-line usage in single parent households declined to 84 per cent, dropping to 60 per cent of single parents aged less than 34 years.[8]

[4] Roy Morgan Single Source, June 2010.
[5] Roy Morgan Single Source, June 2010.
[6] Roy Morgan Single Source, June 2010.
[7] Roy Morgan Single Source, June 2010.
[8] ABS, 4102.0-*Australian Social Trends,* December 2009.

The pattern of fixed-line service take-up shows little variation between metropolitan and non-metropolitan respondents.

Figure 4 Household consumers with access to a fixed-line telephone at home, by living arrangement, June 2010



Source: Roy Morgan Single Source, June 2010.

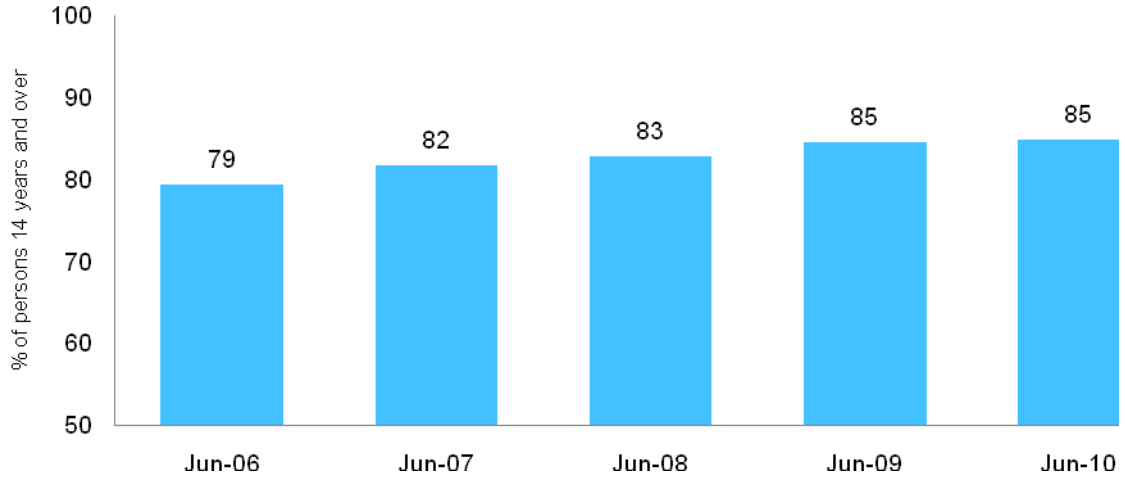
Mobile services

The mobile services market in Australia continues to evolve and is becoming increasingly complex as technical innovations extend handset functionality well beyond voice communication. Developments in mobile internet access, professionally produced and packaged applications for mobiles, and advances in handset technology such as smartphones, have accentuated the dynamic, converging environment, and, in turn, made it difficult to distil discrete trends in mobile voice communication from other uses.

While the number of mobile service subscribers suggests that penetration in Australia has exceeded saturation for several years,[9] consumer surveys indicate that the level of mobile phone take-up among household consumers in Australia stood at 85 per cent at June 2010. Mobile phone adoption rates have risen by six percentage points since June 2006 (Figure 5).

9 The ACMA, *Communications report 2008–09* reports that the number of mobile services in operation at June 2009 (24.22 million) exceeded the total population. The number of mobile services reported by the ACMA also includes business phones and mobile wireless broadband services where a consumer connects to the internet via a mobile network using a dongle or datacard connected to a computer.

Figure 5 Take-up of mobile phones



Source: Roy Morgan Single Source, June 2010.

Take-up of 3G mobile phones in Australia has continued to rise since the closure of the CDMA network in April 2008 and as consumers upgrade their phones. Industry data collected by the ACMA indicates that at June 2009, 51 per cent of mobile phone users in Australia (12.3 million) subscribed to a 3G service, compared with 39 per cent in March 2008.[10] Telstra saw the number of its 3G mobile subscription services rise by 38 per cent in the half-year to December 2009 alone.[11]

Despite these statistics, many household consumers are yet to access the web using their mobile phone. Studies into the adoption of communications technologies and consumer behaviour have suggested that, while many consumers may be attracted to the potential utility of a 3G handset (such as ready access to the internet), perceptions about the expense of specific functions may inhibit their use.[12] In April 2010, just over four in every ten mobile phone users who had an internet-enabled device had accessed the internet with their mobile.[13] This figure tended to decrease with age; while 56 per cent of 18–24-year-olds and 63 per cent of 25–34-year-olds accessed the internet using their mobile phone, this figure dropped to six and seven per cent of consumers aged 65–74 and 75 years and over respectively (Figure 6).

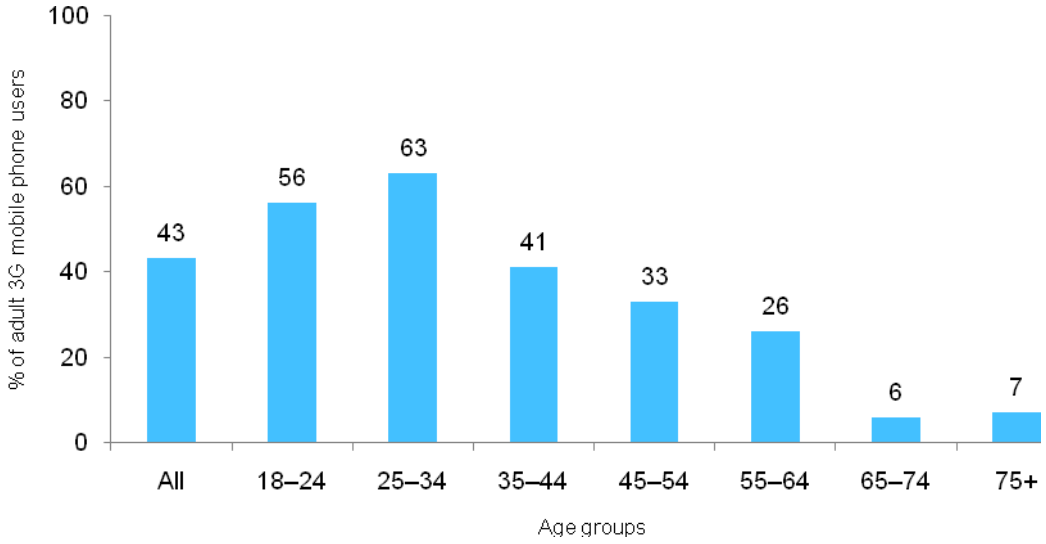
[10] The ACMA, *Communications report 2008–09*.

[11] Telstra, 2010 Half-Year Financial Results, February 2010.

[12] Teng, W., Lu, H-P., And Yu, H., 2009, 'Exploring The Mass Adoption Of Third-Generation (3G) Mobile Phones In Taiwan,' *Telecommunications Policy 33*, pp. 628–641.

[13] ACMA-commissioned research, April 2010.

Figure 6 3G mobile users who have used the internet via their mobile handset, by age groups, June 2010

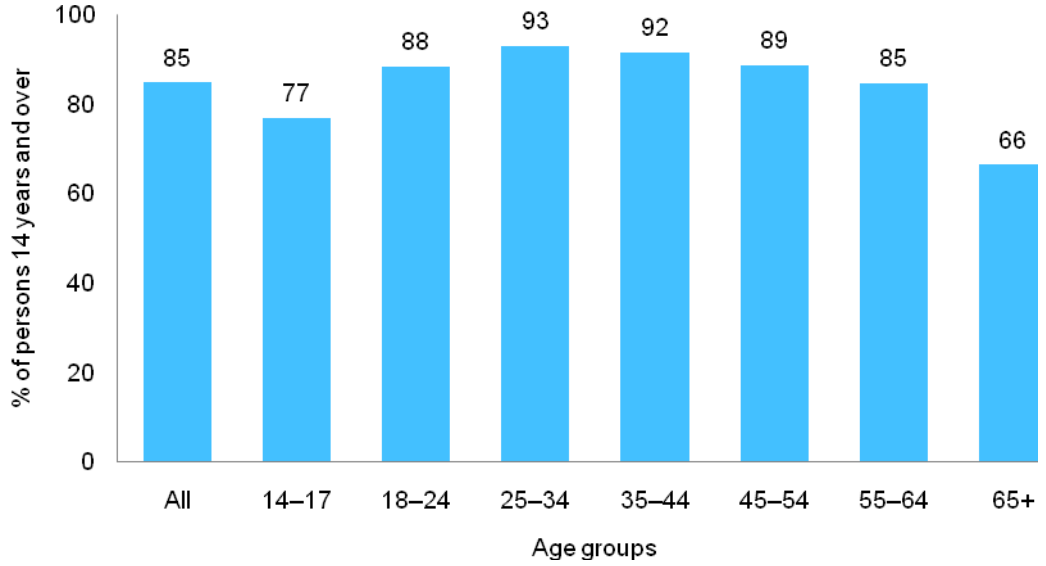


Source: ACMA-commissioned research, April 2010.

Age

Australians have readily embraced mobile phone technology, with between 85 and 93 per cent of consumers aged 18 to 54 using a mobile phone at June 2010 (Figure 7). Mobile phones are now commonly provided to children aged between 14 and 17 with 77 per cent of children in this age bracket with a mobile phone at June 2010. Consumers aged 65 and over remain the least likely to have a mobile phone, with a take-up rate of 66 per cent, 19 percentage points below the average of 85 per cent for the total population 14 years and over.

Figure 7 Take-up of mobile phones by age, June 2010



Source: Roy Morgan Single Source, June 2010.

Gender

There appears to be little difference in the mobile phone take-up rates by men and women in Australia, at 84 per cent and 86 per cent respectively.[14] However, the underlying rationale for mobile phone take-up and use appears to differ between the genders. Seventy-four per cent of female mobile phone users in Australia reported that they needed their phone for personal security reasons, compared with 40 per cent of male phone users.[15] Conversely, 11 per cent of male mobile phone users agreed with the statement 'if I did not need to carry a mobile for work, I wouldn't have one at all', compared to seven per cent of female mobile phone users.[16]

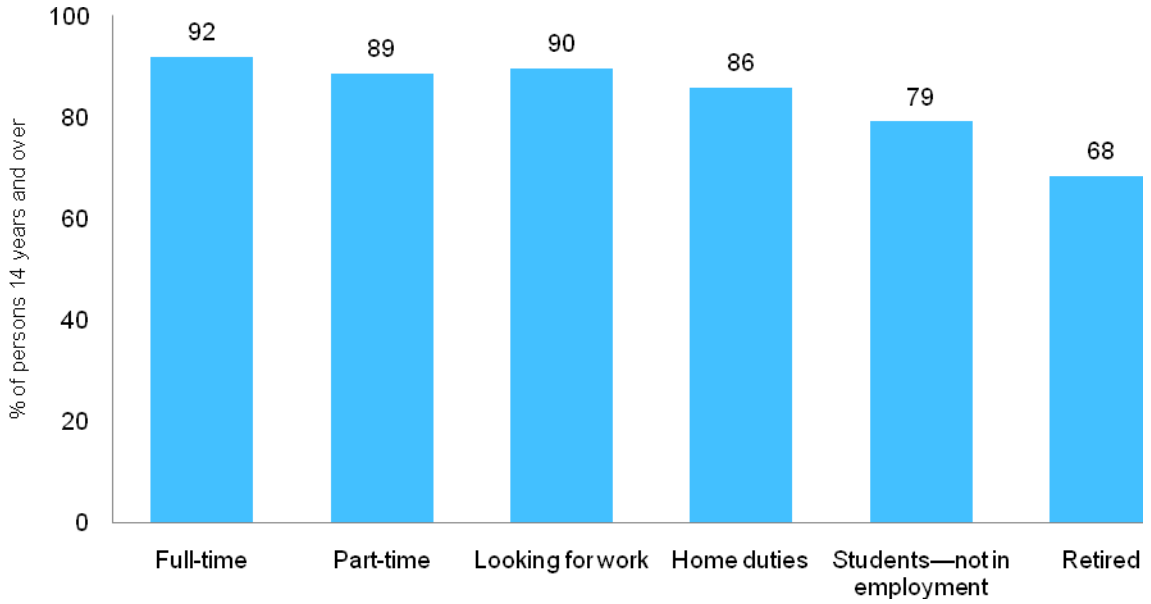
Nevertheless, Australians appear to place a strong value on their ability to maintain social contact through their mobile phone. Approximately 42 per cent of all mobile phone users—44 per cent of male and 38 per cent of female mobile phone users—conceded that they need a mobile phone to help them juggle their professional and personal life, and the majority (62 per cent of men and 68 per cent of women) reported that they enjoyed being able to contact friends wherever they were.[17]

Labour force status

Lifestyle, and more particularly, the proportion of time spent at home, appears to be reflected in the ownership of mobile technology by consumers. The survey results suggest that work status in particular may play an influential role in the take-up of mobile services in Australia across all demographic groups (Figure 8). Retirees have the lowest take-up rates of mobile services at 68 per cent, perhaps reflecting the fact that 86 per cent of those who are retired are more than 65 years old. This age group has the lowest level of mobile phone take up.[18] Australians who work (whether full-time or part-time) have the highest take-up of mobile services at 89 per cent and 92 per cent respectively, enabling them to remain contactable regardless of whether they are at home or work; those who are actively looking for work have a similarly high mobile take-up rate at 90 per cent. Students not in paid employment have one of the lowest mobile phone take-up levels at 79 per cent. This figure may reflect the fact that the majority of people in this category are under 18 years of age (63 per cent)[19], who typically live with their parents (74 per cent) and have access to a fixed-line telephone at home.

[14] Roy Morgan Single Source, June 2010.
[15] Roy Morgan Single Source, June 2010.
[16] Roy Morgan Single Source, June 2010.
[17] Roy Morgan Single Source, June 2010.
[18] Roy Morgan Single Source, June 2010.
[19] Roy Morgan Single Source, June 2010.

Figure 8 Take-up of mobile phones, by labour force status, June 2010



Source: Roy Morgan Single Source, June 2010.

Location

While mobile coverage is available across 25 per cent of Australia's total landmass,[20] the three companies providing mobile phone networks[21] provide coverage to a total of 99 per cent of the Australian population where they live. Survey results suggest that location plays little role in determining the take-up of mobile communications, with only a marginal difference between metropolitan and non-metropolitan respondents—85 per cent and 84 per cent take-up respectively.[22]

Type of mobile subscription—payments and plans

Among those mobile phone users surveyed, there appeared to be a clear preference for post-paid contracts. In April 2010, 68 per cent of consumers were on a contract with a monthly bill (capped or pay-as-you-go), while 32 per cent[23] were pre-paid customers. The ACMA's 2010 report *Mobile capped plans: consumer attitudes and behaviours* revealed that consumers in the identified younger and older age groups—commonly associated with lower income levels—were more likely to adopt pre-paid plans than those in other age groups (Figure 9). By paying for their calls in advance, consumers may avoid unexpected bills, while the absence of fixed-term contracts avoids ongoing set minimum fees and allows users to easily switch providers without having to pay cancellation fees.[24]

[20] Department of Broadband, Communications and Digital Economy website, www.dbcde.gov.au/mobile_services/mobile_phones, accessed 13 July 2010.

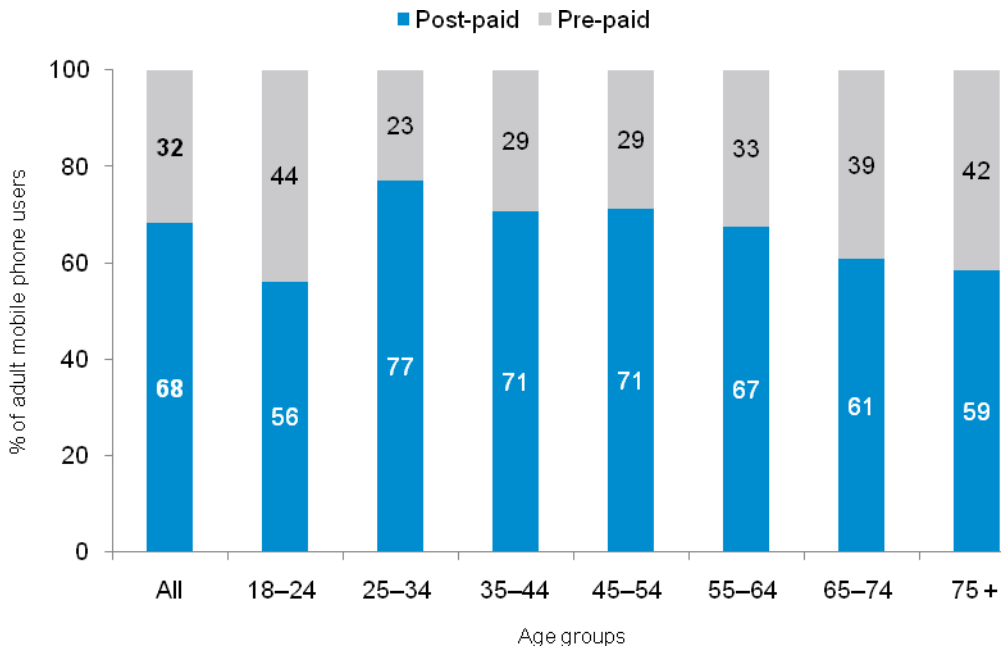
[21] Telstra, Optus and VHA operate more than one network. The ACMA, *Communications report 2008–09.*

[22] Roy Morgan Single Source, June 2010.

[23] ACMA-commissioned research, April 2010. The reported number of mobile phone users on a contract and pre-paid plan is different to current industry figures. This difference can be attributed to wholesale and retail figures, in addition to different sampling techniques.

[24] Some pre-paid services may also have termination charges if a handset is provided under contract.

Figure 9 Type of mobile phone plan, by age, April 2010

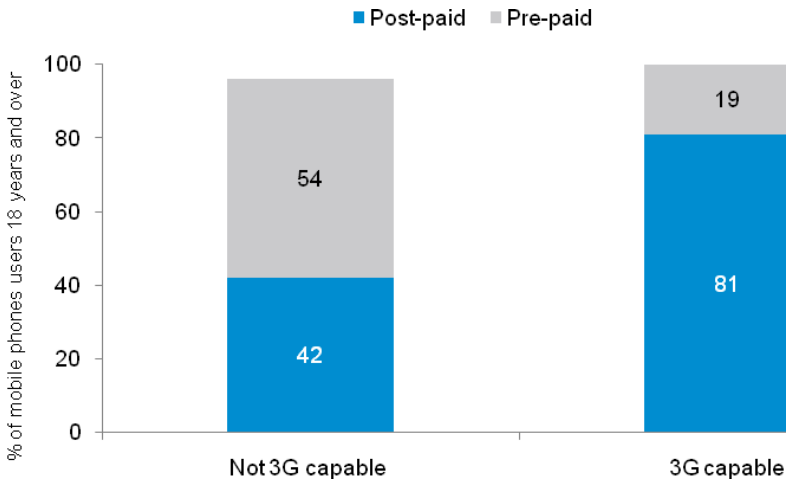


Source: ACMA-commissioned research, April 2010.

Consumers who use their mobile phones more frequently, and particularly for advanced functions such as mobile internet or video calls, appear to have a preference for post-paid plans. Many post-paid plans are based on a minimum monthly charge or cap, where limits are set for voice calls, messaging and data.

ACMA consumer survey data presented in Figure 10 indicates a high correlation between the type of handset used and the consumer's choice of payment plan. Those using a 3G-capable mobile handset were much more likely to use a post-paid contract than those using a handset that was not 3G capable. This may be reflective of the wide range of 3G phones available at low or no cost on post-paid plans, or reluctance by those who use their pre-paid mobile phone solely for voice calls to upgrade their handset to one with features they do not deem necessary. Furthermore, 3G services such as mobile handset internet often attract higher charges when used via a pre-paid plan (Table 1). It is therefore more likely that those who are intending to use this feature will more frequently be drawn to post-paid contracts.

Figure 10 Pre- and post-paid mobile subscriptions, by 3G capability of phone, April 2010



Source: ACMA commissioned research, April 2010.

Table 1 Snapshot of mobile phone data allowances and additional data costs among prepaid and post-paid SIM-only plans of Australian mobile service providers, 21 September 2010

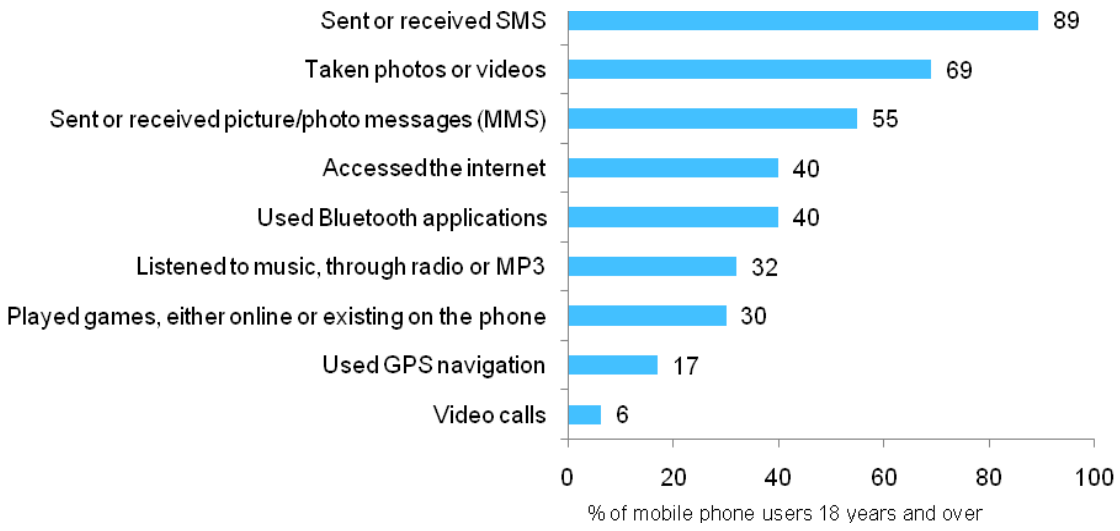
Mobile service provider	Payment plan/product	Maximum included data allowance	Cost of additional/ included data*
Telstra	Pre-paid $100 cap plan	1GB	$2.00/MB
	Post-paid $99 NextG cap	500MB†	$0.25/MB
Optus	Pre-paid $50 Turbocap	500MB	$1.32/60KB
	Post-paid $49 BYO cap	750MB‡ plus unlimited Facebook, Twitter, eBay, LinkedIn, foursquare, MySpace	$0.25/MB
Vodafone	Pre-paid $79 Flexicap	325MB	$2.00/MB
	Post-paid SIM only $55 cap	1GB internet, 1GB video streaming	$0.50/MB
Three	Pre-paid $99 cap	2GB	$0.40/MB within 3's broadband zone and $5.00/MB roaming on other network.
	Post-paid SIM-only unlimited $99 cap	3GB internet, 3GB video streaming	$0.10/MB within 3's broadband zone, $0.50/MB roaming on other network.
Virgin	Pre-paid $95 top up	50MB (+1GB bonus for each recharge)	$0.02/KB
	Post-paid BYO Topless $89 cap	4GB	$0.02/KB

** Data prices refer to the cost of data usage above the included data allowance for post-paid plans, and within the included data for pre-paid plans.*
† Telstra NextG Cap includes 500MB data, plus an additional 500MB of extra data should specific phone models be chosen.
‡ Optus $49 BYO cap provides 500MB additional data to customers who chose this option.
Sources: Service provider websites, accessed 21 September 2010, Optus Yes Guide September 2010 http://issuu.com/networkcomms/docs/optus-yes-guide-september-2010.

Use of non-voice mobile phone functions and services

The use of mobile handsets for tasks other than voice calls is increasing as technological developments such as 3G and smartphones make non-voice functions easier to access, and prices for these activities reduce. ACMA research has found that even the simplest of functions such as stored phone numbers may provide an incentive for consumers to use mobile services over fixed-line technology.[25] The most popular non-voice service is SMS, which is used by 89 per cent of mobile phone users (Figure 11). Photography, whether still or video, is undertaken by the majority of users (68 per cent), with just over half of mobile phone users forwarding or receiving photos or video via their mobile. Global positioning services (GPS) were used by 17 per cent of mobile phone users, a number likely to increase with the popularity of free GPS applications on handsets such as the iPhone.

Figure 11 Take-up of non-voice mobile phone functions by Australian mobile phone users, April 2010



Source: ACMA-commissioned research, April 2010.

VoIP services

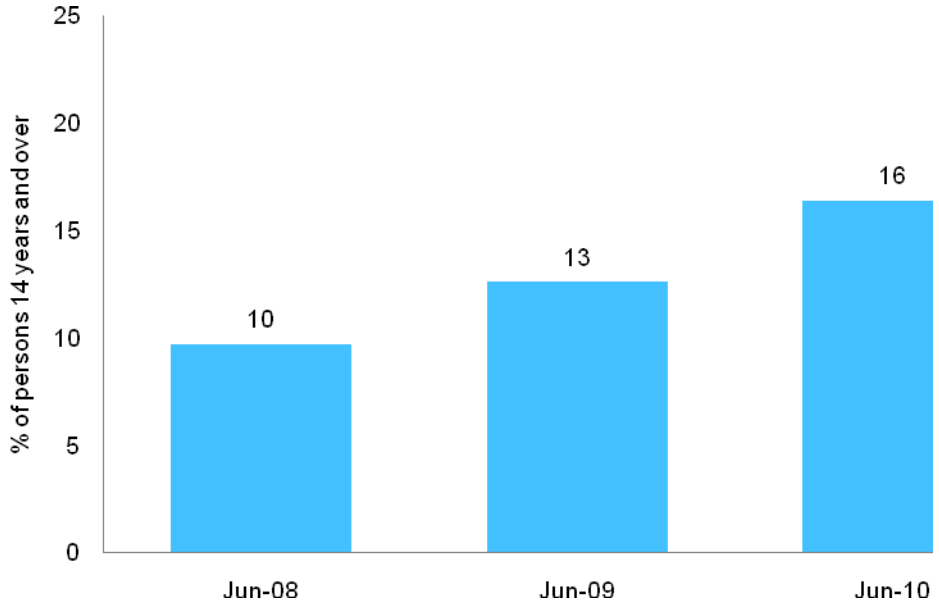
Use of voice over internet protocol (VoIP)[26] services has been steadily increasing in recent years (Figure 12) as more consumers become aware of the technology and its price competitiveness, particularly for long distance, international and video calls. At June 2010, 16 per cent of Australians surveyed said they use VoIP in the home, compared with 13 per cent at June 2009 and 10 per cent at June 2008.[27]

[25] The ACMA, C*onvergence and communications, Report 1–Australian household consumers' take-up and use of voice communications services*, March 2009.

[26] A VoIP service allows voice and/or video calls to be made using an internet connection. VoIP can be used with a software phone that makes calls through a computer (such as Skype), or with a fixed-line handset plugged into an adaptor.

[27] Roy Morgan Single Source, June 2010.

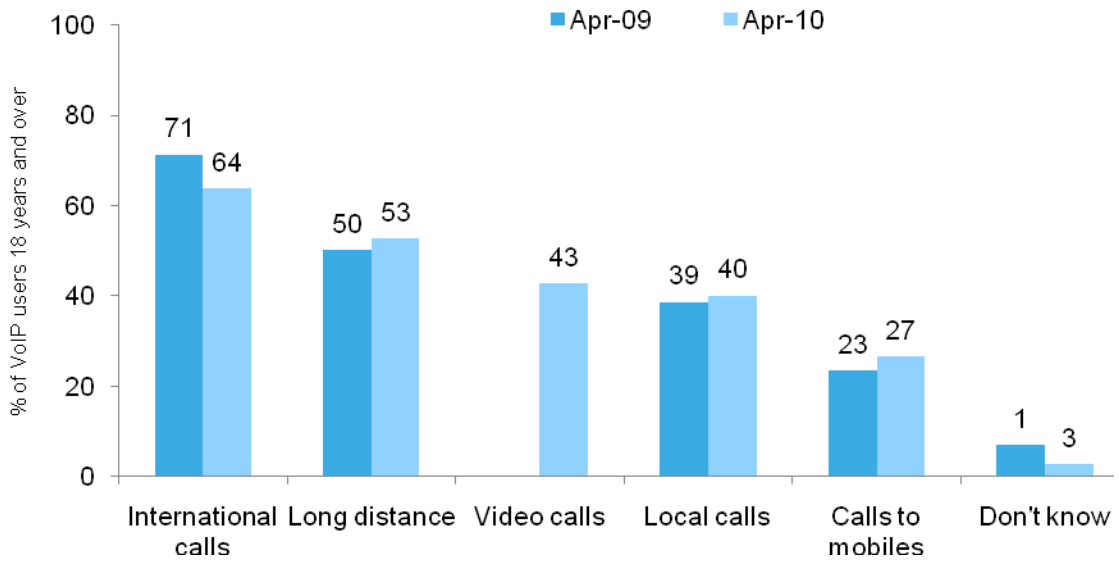
Figure 12 Households consumers using VoIP at home



Source: Roy Morgan Single Source, June 2010.

The most common household use for a VoIP service is to make overseas (64 per cent) and long distance/national calls (53 per cent) (Figure 13). However, Figure 13 shows that, while the proportion of users making VoIP international calls has declined since April 2009, a growing number of consumers are using VoIP for national and local call, and calls to mobiles, suggesting that VoIP may be increasingly used as a substitute for fixed-line PSTN services.

Figure 13 Types of calls made by home VoIP users, by calendar year

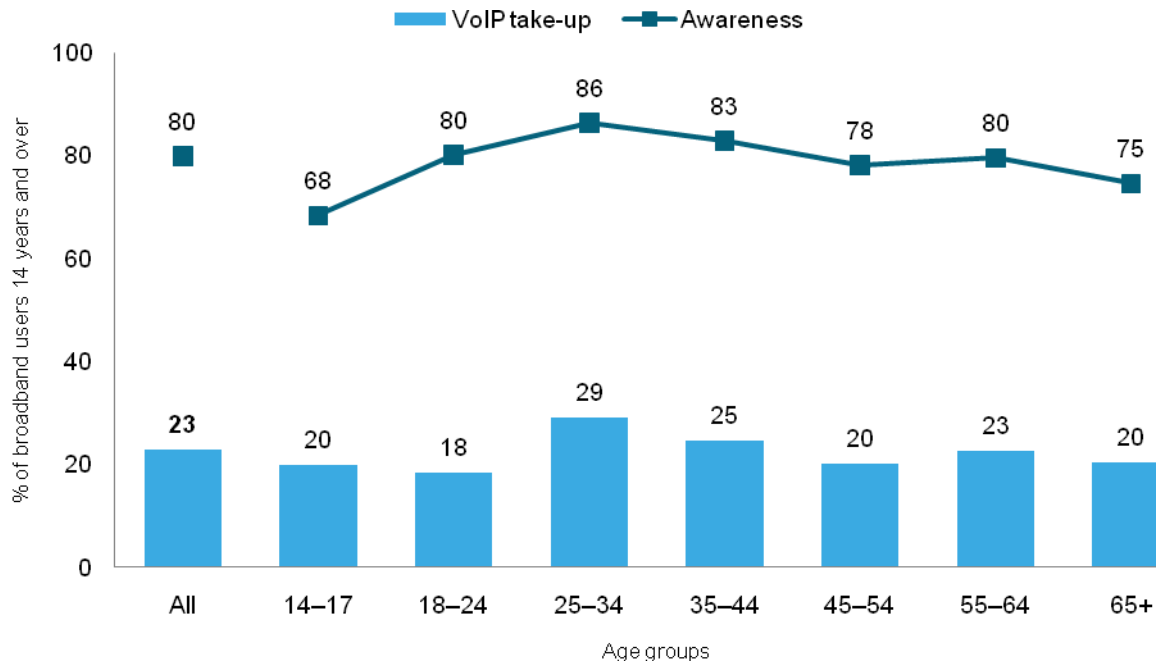


Notes: Multiple responses allowed; information on video calls was not collected in 2009. Dates are calendar years.
Source: ACMA-commissioned research, April 2010.

Figure 14 suggests that while VoIP access among broadband users is fairly uniform at around one in five (18 to 29 per cent), the highest usage is among those aged 25 to 34 and 35 to 44, with VoIP take-up levels reaching 29 per cent and 25 per cent respectively. Awareness of VoIP is also higher among broadband users in these age groups, at 84 and 81 per cent respectively. Among the general Australian population, VoIP awareness is at 80 per cent, five percentage points higher than June 2009 levels.[28]

[28] Roy Morgan Single Source, June 2009.

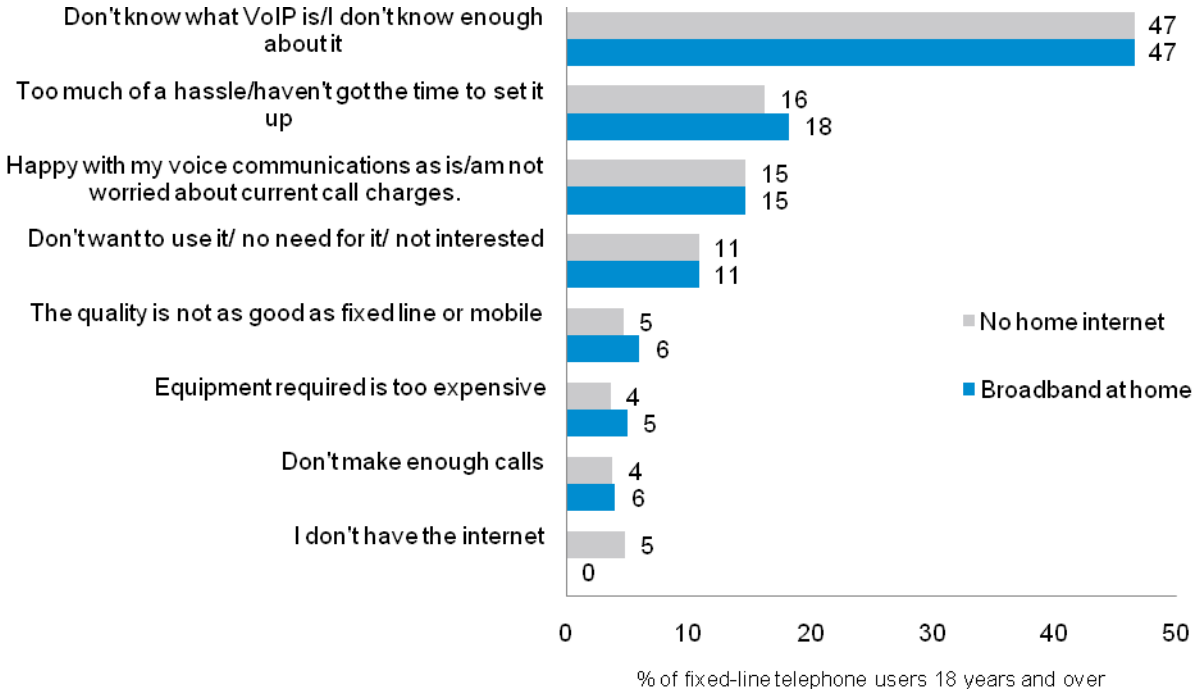
Figure 14 Broadband users with VoIP access in the home and VoIP awareness, June 2010



Source: Roy Morgan Single Source, June 2010.

Despite relatively high levels of awareness, insufficient understanding appears to be a major barrier in the take-up of VoIP by consumers regardless of whether they have a broadband connection. When asked why they hadn't adopted VoIP, almost half of all respondents indicated that it was because they were either unaware of VoIP, or that they did not know enough about it (Figure 15). Eighteen per cent of broadband users regarded VoIP has being too time consuming to set up, while 15 per cent of all respondents stated that they were happy with their voice communications and therefore did not see the need to connect to a VoIP service.

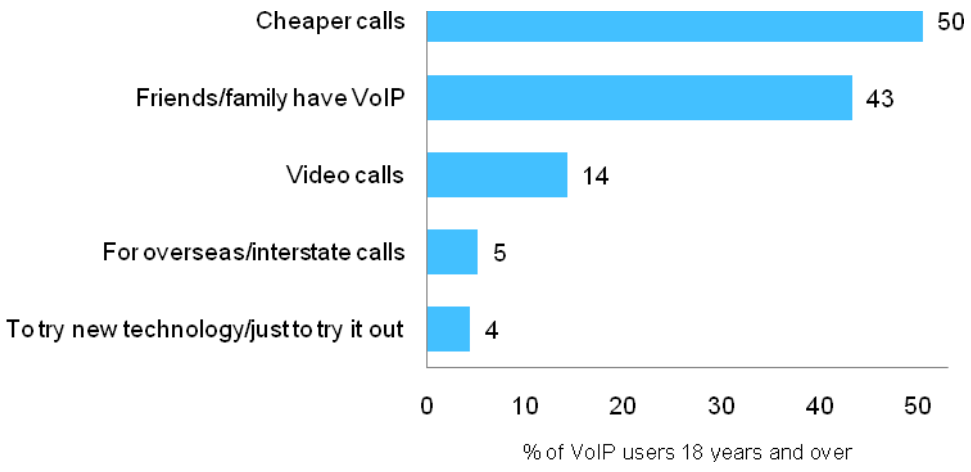
Figure 15 Most common reasons provided by consumers for not taking up a VoIP service, April 2010



Note: Multiple responses allowed.
Source: ACMA-commissioned research, April 2010.

Among VoIP users, the most common grounds for VoIP take-up was for cost-saving, with half citing cheaper calls as the primary reason for using the technology (Figure 16). The importance of word-of-mouth in the adoption of technology is highlighted by the high proportion of VoIP users indicating that they use VoIP because 'friends and family have it' (43 per cent).

Figure 16 Most common reasons for taking up VoIP, April 2010

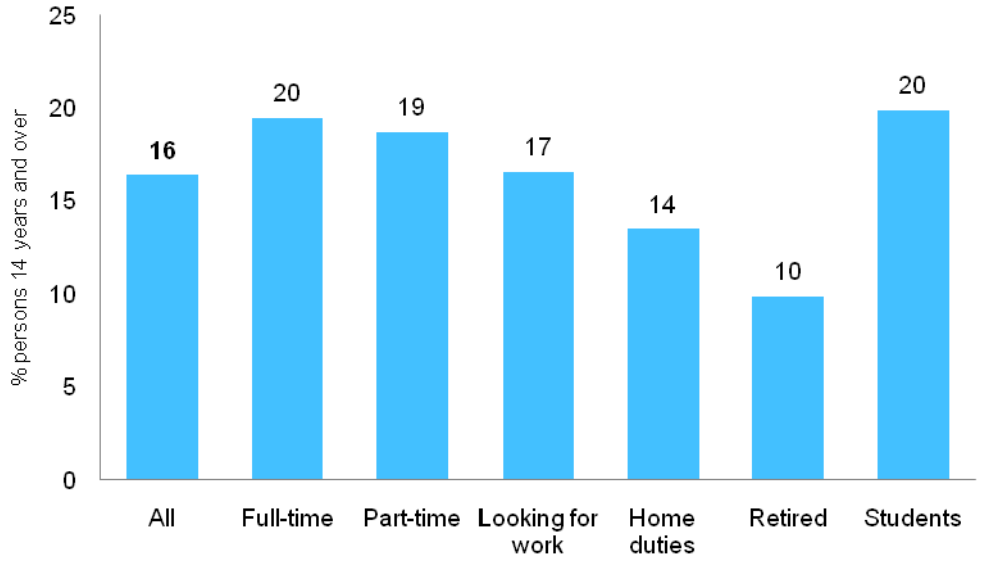


Note: Multiple responses allowed.
Source: ACMA-commissioned research, April 2010.

Employment status

Australian consumers in the paid workforce, whether part-time or full-time, and those who are currently studying, were found to have higher VoIP take-up than those in other categories at 19 per cent, 20 per cent and 20 per cent respectively (Figure 17). This might be influenced by the fact that those in the paid work force or studying are more likely to have access to a household broadband connection (73 to 75 per cent, and 75 per cent respectively),[29] rendering VoIP establishment costs relatively inexpensive.

Figure 17 Persons using a VoIP service at home, by labour force status, June 2010



Notes: Students include those in paid employment.
Source: Roy Morgan Single Source, June 2010.

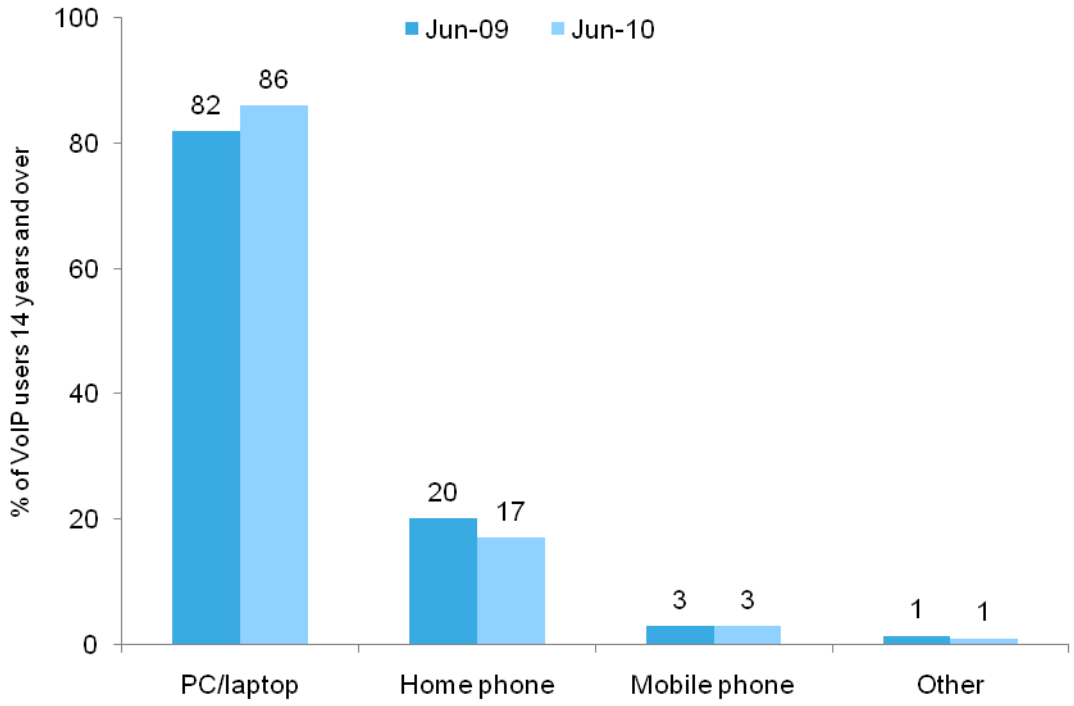
VoIP access device

Desktop or laptop computers are currently the most popular devices used by Australians to access VoIP services, accounting for 86 per cent of consumers, marginally higher than in June 2009. Figure 18 shows that other devices are also used, with standard fixed-line telephones and mobile handsets now accounting for 17 per cent and three per cent respectively of VoIP users respectively.[30]

[29] Roy Morgan Single Source, June 2010.

[30] Fixed-line telephones use an analog telephone adapter (ATA) that takes an analog signal from a traditional handset and converts it into digital data for transmission over the internet.

Figure 18 Device used by consumers to access VoIP services at home



Note: Multiple responses allowed.
Source: Roy Morgan Single Source, June 2010.

While 16 per cent of Australian consumers have taken up VoIP,[31] the number of users is likely to increase as the public becomes more familiar with the technology, the equipment required and the cost benefits of using the service. A further driver might also come from more internet service providers (ISPs) bundling VoIP services with broadband services. ABS figures indicate that at June 2010, 55 per cent of Australian ISPs were offering VoIP services to their subscribers.[32]

Consumers are increasingly interested in taking up VoIP. At June 2010, 21 per cent of consumers surveyed (including those not connected to the internet) expressed an interest in using VoIP in their home in the next 12 months. Among home broadband users, the level of interest was higher, at 25 per cent.[33] This number is likely to continue to grow as awareness of VoIP increases through word-of-mouth and through bundling inducements offered by ISPs.

Substitution and complementarity in voice communications

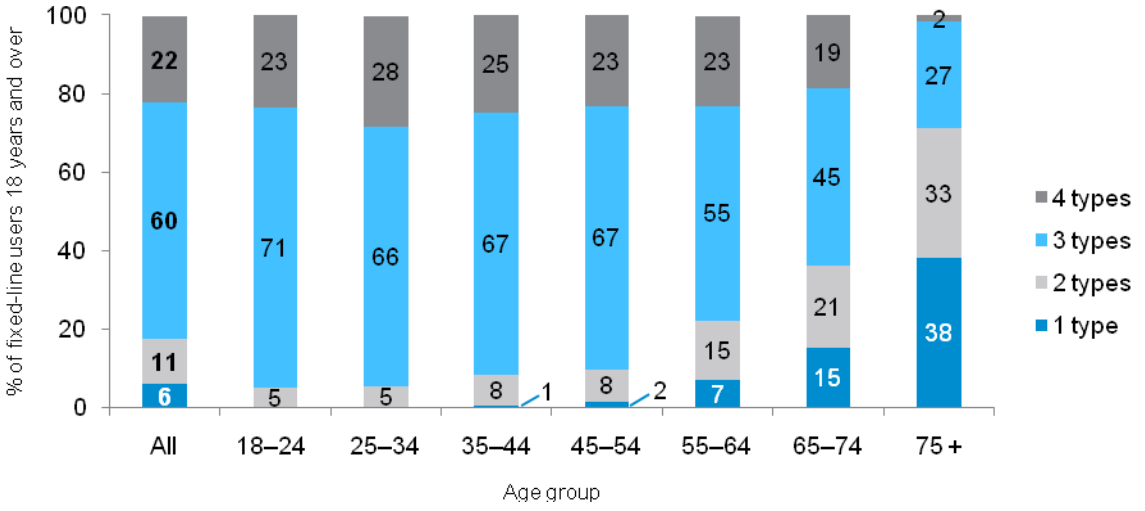
Substitution is the term used to describe the process when consumers replace one communications service type for another service type that offers a comparable function, for example, replacing a fixed-line telephone service with a mobile phone service. The process of substitution is rarely a simple switch from one communications

[31] Roy Morgan Single Source, June 2010.
[32] ABS, 8153.0–Internet Activity, Australia, June 2010.
[33] Roy Morgan Single Source, June 2010.

technology to another. Rather, it is most often a gradual process, with usage patterns changing over time, at a rate that varies according to the complexity and cost of the new technology, awareness and the age of the user.[34] While Australians have been quick to adopt new communications devices, a large proportion of consumers appear to be reluctant to relinquish their fixed-line telephone connection, choosing instead to maintain several communications devices that complement each other and together provide additional flexibility.

Figure 19 shows that the majority of adult fixed-line telephone users in Australia use three complementary voice communications technologies: fixed-line, mobile and internet, and an increasing number use four, adding VoIP to their communications suite, (particularly among younger age groups). [35] Consumers aged under 35 are the most likely to use multiple communications technologies (three or more). Ninety-four per cent respectively of persons aged 18–24 and persons aged 25-34 with a fixed-line telephone used three or more communications technologies at April 2010 compared to 92 per cent for 35–44 year olds and 90 per cent for 45–54 year olds. Multiple communication technology usage declined steadily for persons aged 55 years and older, declining to 29 per cent of fixed-line telephone users aged 75 years and over.

Figure 19 Number of types of communications used by Australian consumers, by age group, April 2010



Note: The proportion of 18–24, 25–34 and 35–44 year-olds who use only one communications type is one per cent or lower.
Source: ACMA-commissioned research, April 2010.

Convergence makes it difficult to track communication substitution patterns.[36] The rising popularity of VoIP services, for example, has provided an additional layer of complexity as it is available via mobile, wireless and fixed-line platforms. Further, fixed-line services are now often used by younger consumers to provide home broadband internet access, with voice calls made and received via a mobile phone or VoIP service.

[34] This process is outlined in greater detail in the ACMA's 2009 report *Australian household consumers' take-up and use of voice communications services*.

[35] The ACMA, *Communications report 2009–10*, March 2009.

[36] A converged environment is one in which previously distinct platforms, such as radiocommunications, telecommunications, broadcasting and the internet, have been merged such that a user can access a wide range of communications services using any device and any type of network connection.

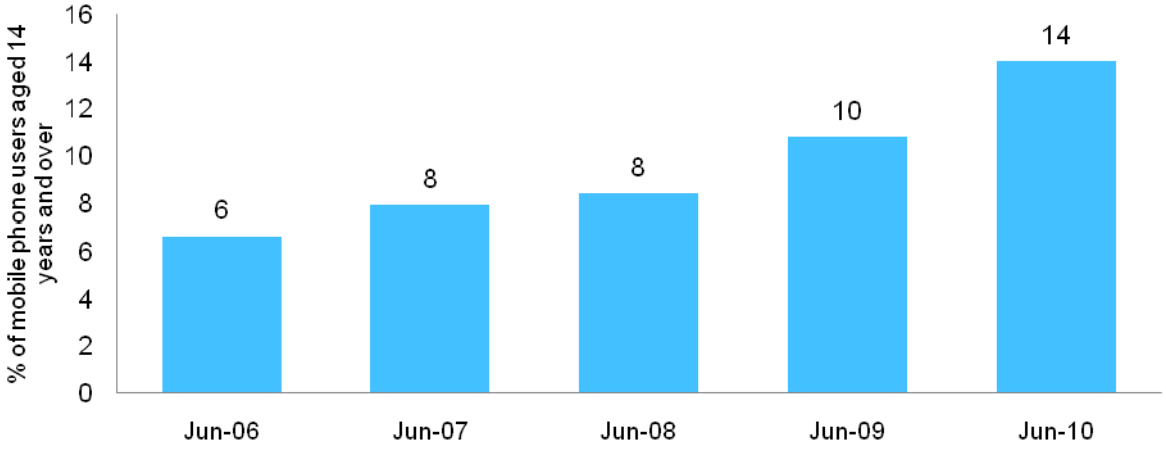
The following section considers the emerging patterns of Australians' communication preferences in a multi-choice environment. Given that the take-up of VoIP services is yet to reach mainstream levels, the primary focus of this report is fixed-to-mobile substitution.

Fixed-line telephone to mobile phone substitution

Fixed-line telephone to mobile phone substitution is becoming more common in Australia, evident in both increasing mobile voice traffic levels and customer numbers.[37] Drivers of, and barriers to, substitution are changing as the Australian telecommunications market evolves. Ten years ago, for example, comparatively high mobile phone call prices provided a strong disincentive to consumers to engage in fixed-to-mobile substitution. With mobile call costs reducing over recent years and with mobile phones used by most Australians, the disconnection of home fixed-line telephones in favour of mobile phone is becoming a realistic option for many consumers.

Consumer data reveals that an increasing number of Australian consumers are choosing not to maintain a household fixed-line telephone service, using their mobile phone as their primary voice communications service. Figure 20 indicates that at June 2010, 14 per cent of Australians used a mobile phone but had no fixed-line telephone service, an increase of four percentage points over the previous year.

Figure 20 Mobile phone subscribers without household fixed-line telephone connection, June 2010



Source: Roy Morgan Single Source, June 2010.

Age

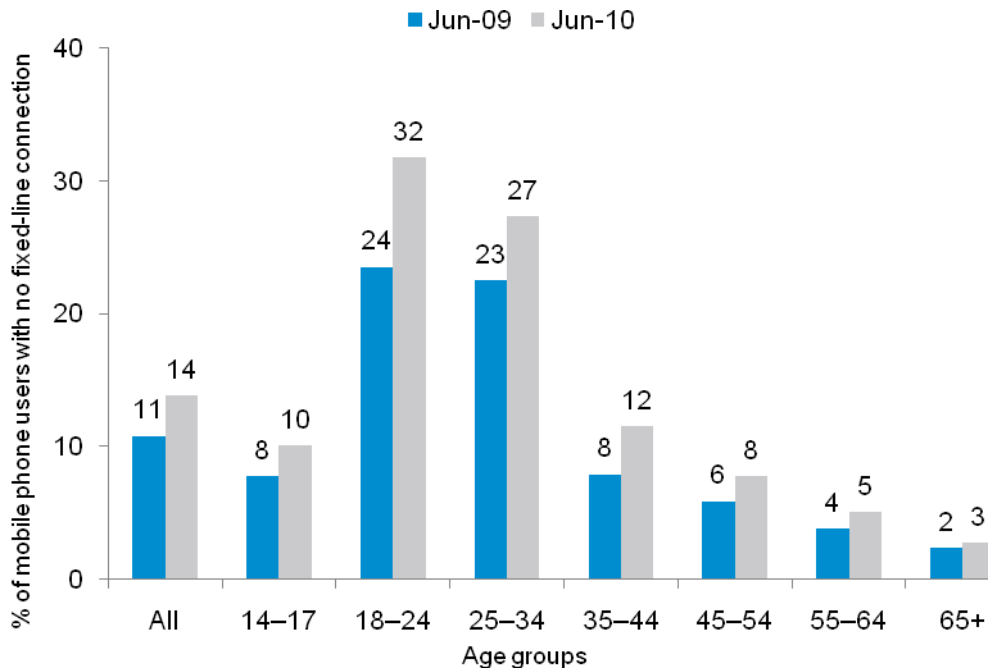
The survey results suggest a strong correlation between the age of the consumer and substitution. Figure 21 reveals that younger Australians are much more likely to maintain a mobile subscription and no fixed-line connection than those in older age brackets. Thirty-two per cent of mobile phone users aged 18–24, and 27 per cent of those aged 25–34 reported having no fixed-line connection in their household at June 2010, in contrast to consumers aged 35 and over, where full substitution is much less common.

[37] Fixed-to-mobile substitution is when a mobile service is used in lieu of a fixed-line telephone.

Previous ACMA studies have also suggested that many mobile phone users in older age brackets are reluctant to relinquish their long term fixed-line telephone number, a contact point for family, friends and services such as banks.[38] Among younger consumers, a similar sense of identification may be attached to a mobile phone service, with their mobile phone number potentially remaining constant throughout their life.

Figure 21 also reveals a steady increase in the number of consumers going 'mobile only' in the year to June 2010.

Figure 21 Mobile phone users without a fixed-line telephone, by age



Source: Roy Morgan Single Source, June 2010.

Established communications habits

The influence that communications habits have on ongoing communication choices is typically strong. Once formed, consumer habits may act as a disincentive to adopting new technology, particularly among those in older age groups who are typically more reluctant to adopt new products than any other age group.[39] Figure 23 indicates that of consumers who maintain a fixed-line telephone, 32 per cent said they did so because the fixed-line service was easier to use, or more suited to their needs, while 21 per cent said that it was because they were familiar with their fixed-line service.

Household structure

Household structure also appears to play a role in the propensity of Australian consumers to go 'mobile only'. Figure 22 shows that mobile phone users who live in a shared household, or who board, are more likely not to have access to a household

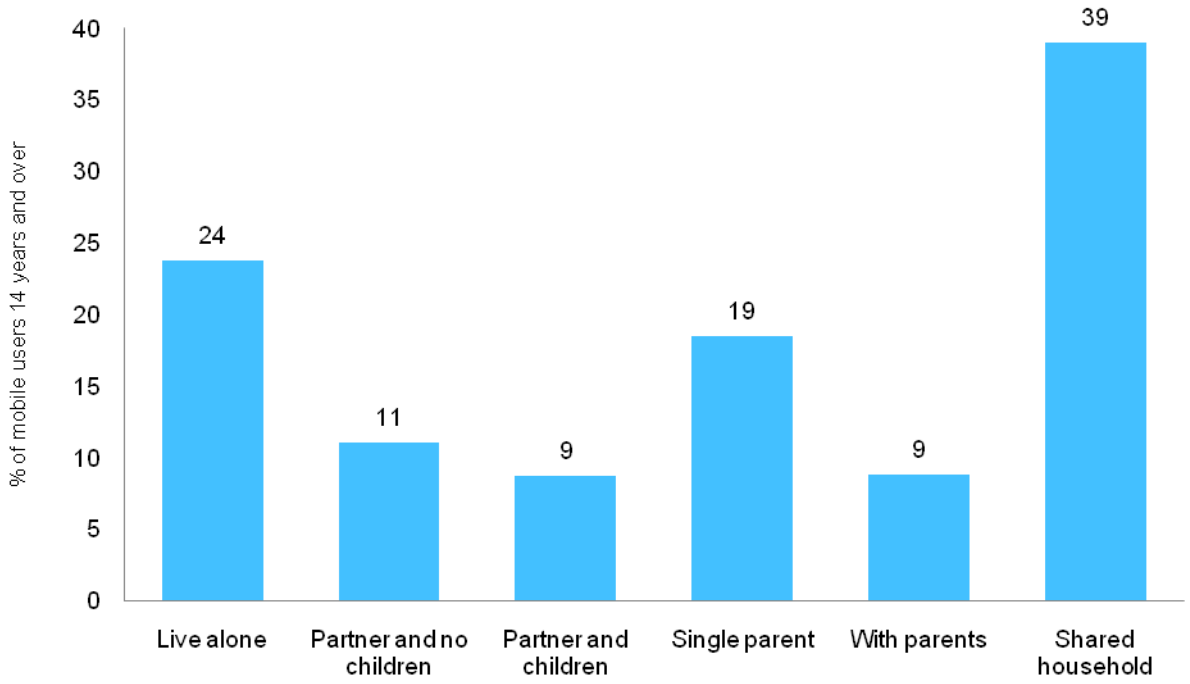
[38] The ACMA, *Convergence and communications report 1: Australian household consumers' take-up and use of voice communications services*, March 2009.

[39] Roy Morgan Single Source, June 2010.

fixed-line connection than those in any other living arrangement.[40] A similar trend has also been observed internationally: 63 per cent of adults living in shared households in the United States live in mobile only households, the highest prevalence among subgroups examined.[41]

By comparison, mobile users living with others with whom they have a personal relationship such as children and/or partners are much more likely to also have a fixed-line service. This may be related to a high proportion of internet connections among families with school-aged children, and a preference among older Australians to maintain a fixed-line, including among those who have a mobile phone.

Figure 22 Mobile phone users without a household fixed-line telephone, by household type, June 2010



Source: Roy Morgan Single Source, June 2010.

Location

Location does not appear to play a strong role in determining a consumer's engagement with access substitution, with little variation between consumers in metropolitan and non-metropolitan areas. At June 2010, 13 per cent of mobile subscribers living in non-metropolitan areas had a mobile subscription and no fixed-line connection, compared with 14 per cent of those living in metropolitan areas.[42]

[40] Consumer data indicates that among mobile phone users living in a shared household aged between 18 and 24, fixed-line use is at 50 per cent (Roy Morgan Single Source, June 2009).

[41] United States National Center for Health Statistics, *Wireless Substitution: Early Release of Estimates from the National Health Interview Survey*, July–December 2009, Hyattsville, NCHS. www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201005.htm, accessed 13 September 2010.

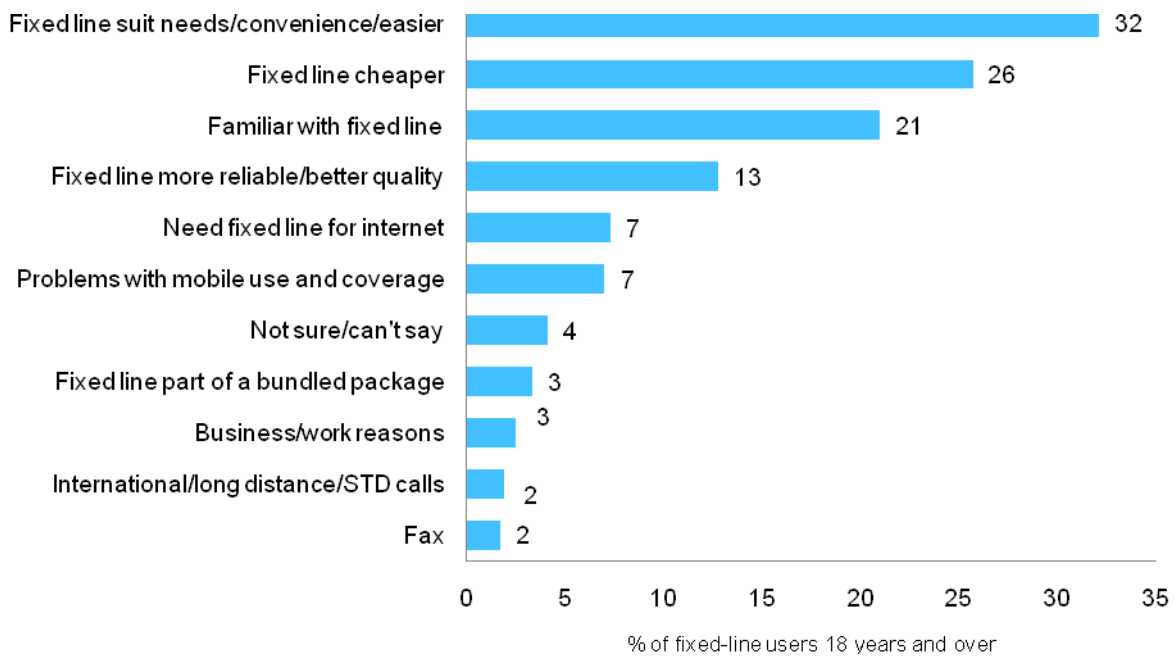
[42] Roy Morgan Single Source, June 2010.

Mobile call costs

The cost of mobile calls has deterred many consumers from going 'mobile phone-only'. While the cost of mobile calls continues to fall in Australia,[43] more than a quarter of respondents reported that they would not disconnect their fixed-line service as fixed-lines offer cheaper calls (Figure 23).[44] However, ongoing costs such as line rental, in addition to fixed lease arrangements, may have also encouraged consumers to disconnect their fixed-line service in favour of their mobile phone. Of the one in five Australians who reported that they were considering disconnecting their fixed-line service (Figure 24), 56 per cent indicated that saving money was the primary motivator in this decision, while 30 per cent reported that they would disconnect their fixed line as they did not use it often.

Conversely, service bundling, particularly free or low cost local calls or free line rental, with services such as internet or pay television, may provide a strong incentive to maintain a fixed-line telephone service and to use the fixed-line when at home.

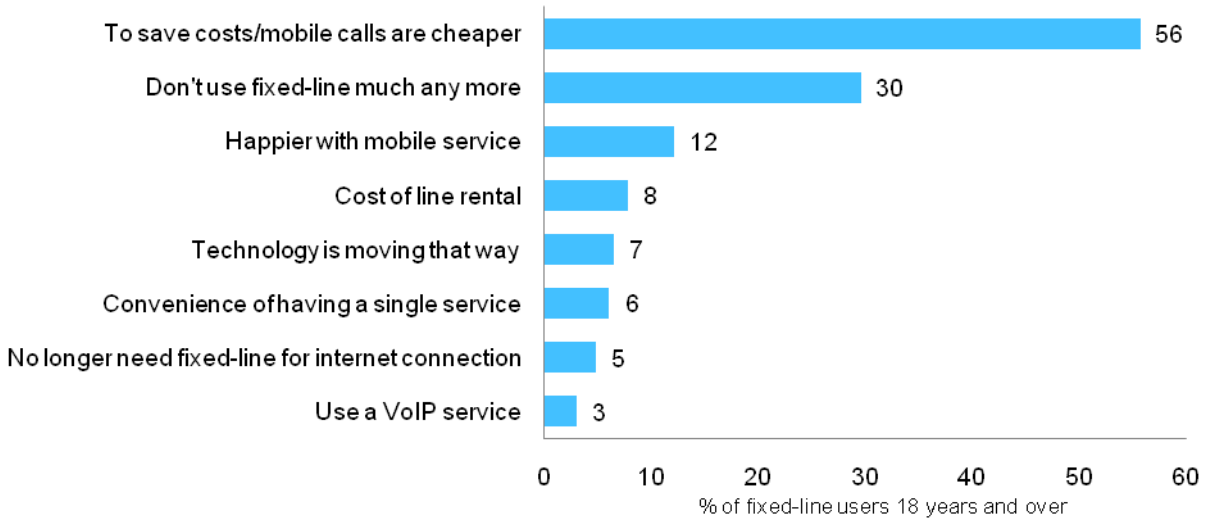
Figure 23 Reasons provided by consumers for keeping fixed-line telephone service connected, April 2010



Note: Multiple responses allowed.
Source: ACMA-commissioned research, April 2010.

[43] The ACMA, *Communications report 2008–09*.
[44] ACMA-commissioned research, April 2010.

Figure 24 Reasons for consumers considering disconnection of fixed-line telephone service, April 2010



Note: Multiple responses allowed.
Source: ACMA-commissioned research, April 2010.

Coverage

The total mobile coverage area of Australia's three mobile phone carriers now extends to 99 per cent of the Australian population, based on where they live, with Telstra claiming to cover 99 per cent, and Optus and VHA 96[45] and 94 per cent of the population respectively.[46] A perception remains among some sections of the community that mobile networks offer inferior reliability to the fixed-line, and that coverage is patchy, particularly in rural areas. When asked why they would not consider relinquishing their fixed-line telephone service, 13 per cent of consumers said that landlines offer greater reliability and better quality, while seven per cent stated that they had problems with mobile use and coverage.

Non-voice technology

As outlined earlier, the range of applications enabled by many mobile handsets extends well beyond voice communication, and includes internet, music players, scheduling software, games and access to premium services. The perceived utility of new technology can attract consumers to adopt handsets with advanced features, and discourage the retention of mono-functional technology. For example, for younger consumers whose choices may be limited by financial considerations to one communications service, and for whom mobile handset functions are attractive, fixed-line retention rates are lower.

For other Australians, advanced features of 3G and smartphone mobile handsets may, in fact, be a barrier to mobile phone adoption and substitution, particularly among the elderly. ACMA studies have found that many older consumers have low levels of digital media literacy, such that adopting advanced mobile phone technology or additional functions is a potentially intimidating process.[47] Not surprisingly, several mobile phone service providers and handset retailers are now seeking to fill this niche,

[45] 97 per cent with external antenna.

[46] Provider websites, accessed 10 June 2010.

[47] The ACMA, *Adult digital media literacy needs*, August 2009, www.acma.gov.au/WEB/STANDARD/pc=PC_311472.

promoting simple, easy-to-use handsets, with marketing specifically directed to older consumers.[48]

Industry incentives to retain fixed-line services

With the fall in PSTN revenue, several fixed-line service providers have introduced incentive programs to encourage consumers to maintain a 'traditional' home phone service. Most commonly, these programs include bundling fixed-line services with other products such as internet and pay television, and cross-subsidisation schemes that grant fixed-line users free calls or low-cost long-distance or fixed-to-mobile calls.[49]

Revenue figures indicate that these programs have gone some way in recovering the fall in PSTN service earnings for some carriers. In the half-year to December 2009, for example, Telstra revenue from pay TV bundled services reached $247 million, a four per cent increase on the previous year.[50]

Take-up of bundling arrangements

ACMA consumer survey data indicates that a large proportion of Australian household consumers have opted for bundled communications services in their home (52 per cent). These services are most commonly plans that bundle fixed-line with internet services (45 per cent) or fixed-line with internet and mobile services (29 per cent) (Figure 25).

Among those surveyed nearly all (95 per cent) of those who bundled their communications services included a fixed-line service as part of that bundle, followed by the internet (84 per cent) and mobile phones (48 per cent).[51]

Demographic factors such as age and income appear to have some influence on the take-up of bundled services. People aged 45–54 years recorded the highest level of take-up of bundled services at 63 per cent, followed by those aged 25–34 and 35–44 years, at 56 and 57 per cent respectively. Respondents over 75 years recorded the lowest level of take-up at 24 per cent, likely at least partly reflecting the low take-up figures for services beyond the fixed-line telephone, and the low average income level of this age group.

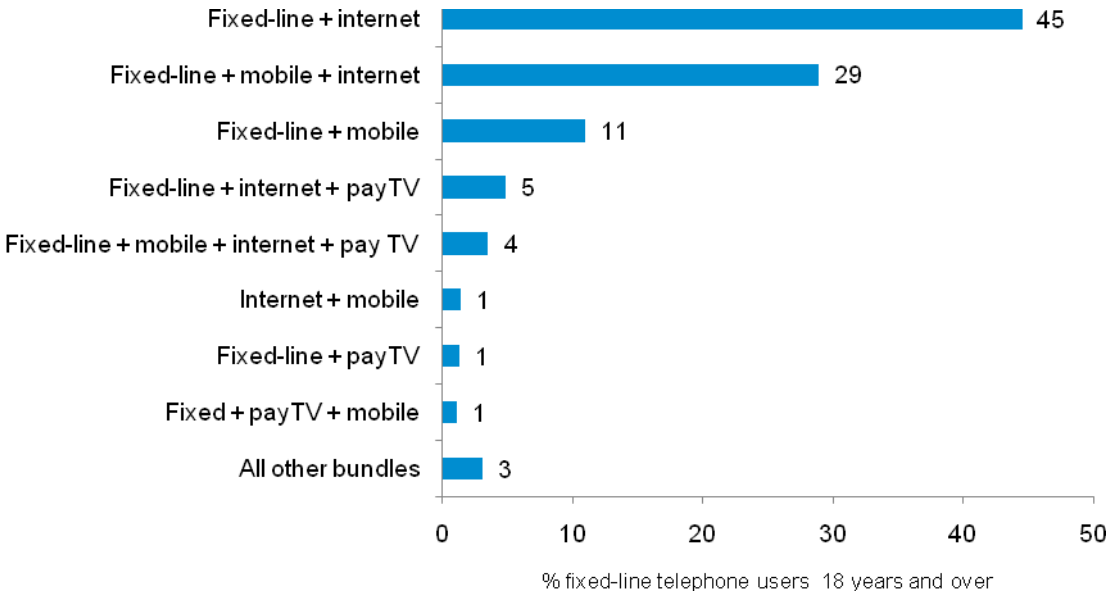
[48] See for example www.seniorsmobilephone.com.au/, accessed 7 February 2010.

[49] Bundling is the practice of marketing two or more products or services in a single package with one price.

[50] Telstra Corporation, Director's Report for the Half-Year ended 31 December 2009, February 2010.

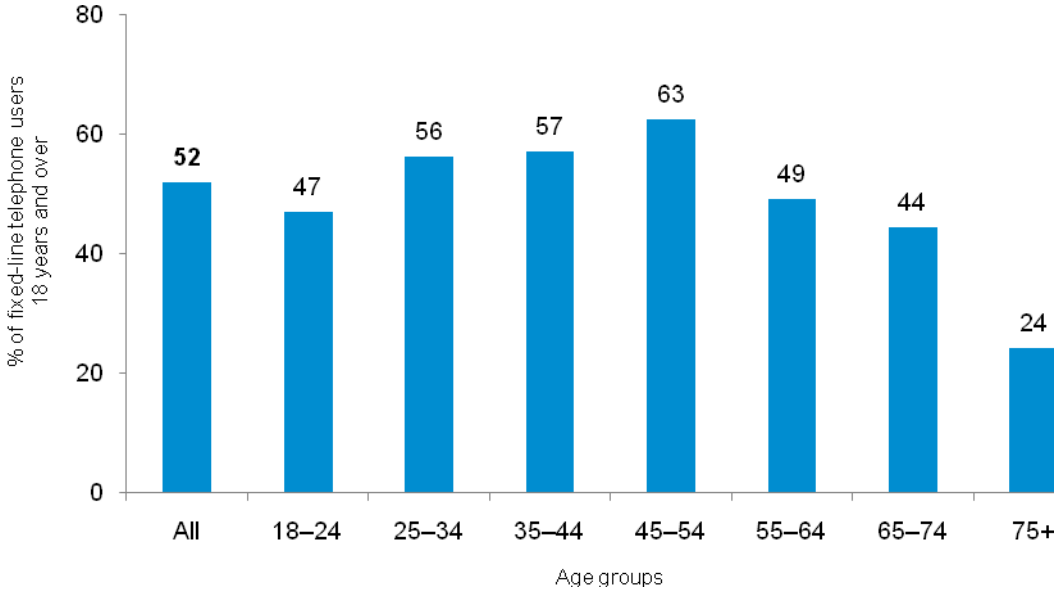
[51] ACMA-commissioned research, April 2010.

Figure 25 Take-up of bundled communications, by communications type, April 2010



Source: ACMA-commissioned research, April 2010.

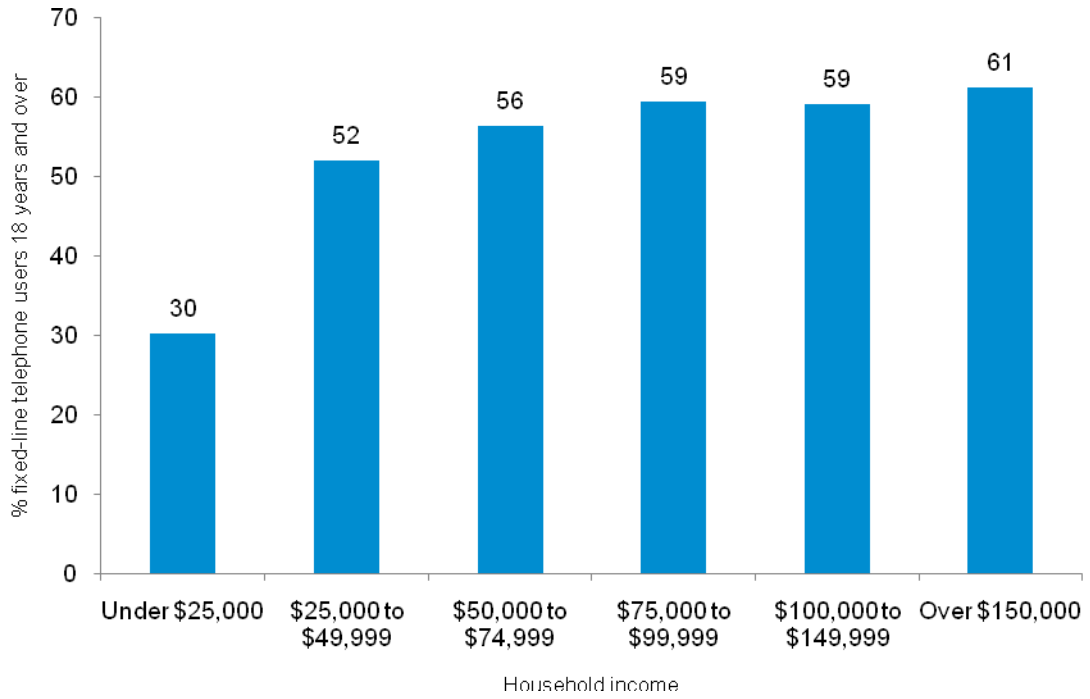
Figure 26 Take-up of bundled services, by age, April 2010



Source: ACMA-commissioned research, April 2010.

Figure 27 shows that take-up of bundled services is strongly associated with household income, with 61 per cent of people in households with an annual income in excess of $150,000 estimated to have bundled services, compared to 30 per cent for those in households with annual incomes of less than $25,000.

Figure 27 Communications service bundling, by household income, April 2010



Source: ACMA-commissioned research, April 2010.

There was little difference between take-up of bundled services by location, at 53 per cent of metropolitan consumers, and 49 per cent of non-metropolitan consumers.[52]

Other industry incentives to retain fixed-line services

Innovations in the area of fixed-line telephone technology have also been introduced to entice consumers to maintain their PSTN connection. In April 2010, Telstra launched T-Hub, a fixed-line PSTN cordless phone with a separate touch screen that allows users to connect to selected online applications such as social networking sites and YouTube.[53] Promotional material for the T-Hub stresses that the unit operates in a similar way to a mobile phone, highlighting the importance of multi-functionality as a feature of communications devices, and acknowledging the threat mobile technology poses to the fixed-line markets. In order to further encourage take-up of these devices, Telstra has partnered with NAB and the Commonwealth Bank to provide account access via the T-Hub to customers.[54] By August 2010, Telstra had reportedly sold more than 40,000 T-Hub units.[55]

Shifting patterns of use

While the majority of Australian consumers maintain their fixed-line service, many are choosing to use their mobile phone to make calls in preference to their fixed-line

[52] ACMA-commissioned research, April 2010.

[53] www.telstra.com.au/homephone/phones/thub.html, accessed 20 May 2010.

[54] Telstra, *Australian banks first on board with Telstra T-Hub*, www.telstraenterprise.com/newsevents/news/pages/australianbanksfirstonboardwithtelstrat-hub.aspx, 14 April 2010.

[55] Telstra, *Telstra invests for future growth, generates $6.2b cash, maintains dividend*, www.telstra.com.au/abouttelstra/media-centre/announcements/telstra-invests-for-future-growth-generates-6.2b-cash-maintains-dividend.xml, 12 August 2010.

handset. With almost half (46 per cent) of 18–24-year-olds stating that they 'could not live' without their mobile phone, it is not surprising that this trend is being led by Australia's young consumers.[56]

Figure 28 suggests a strong relationship between the age of a consumer and the communications service they choose to make voice calls on, with those aged between 18 and 44 years using mobiles most often, and those in older age groups making more calls on a fixed-line. The proportion of consumers who use both technologies 'equally' is highest among those aged 45–54 at 21 per cent. Consumers aged under 34 have the strongest preference for mobile phone use, with 64 per cent using their mobile phone more often. Among consumers aged 75 years and over, there appears to be a very strong preference for using the fixed-line telephone (95 per cent), underscoring the perceived influence of lifestyle needs and communication habits developed over a lifetime.

While older Australians have increasingly adopted mobile phone technology, Figure 28 implies that for the majority of these consumers, their mobile phone use is minimal; that is, they have a mobile phone for use only as a last-resort alternative to the fixed line, or in case of an emergency.

Other socio-demographic factors that are associated with the extent of usage fixed–mobile substitution among consumers include.[57]

Living arrangements—67 per cent of consumers aged 14 years and over who live with their parents prefer to use their mobile phone

Location—51 per cent of those living in non-metropolitan areas indicated fixed-line as their main form of communication compared with 41 per cent of those living in metropolitan areas

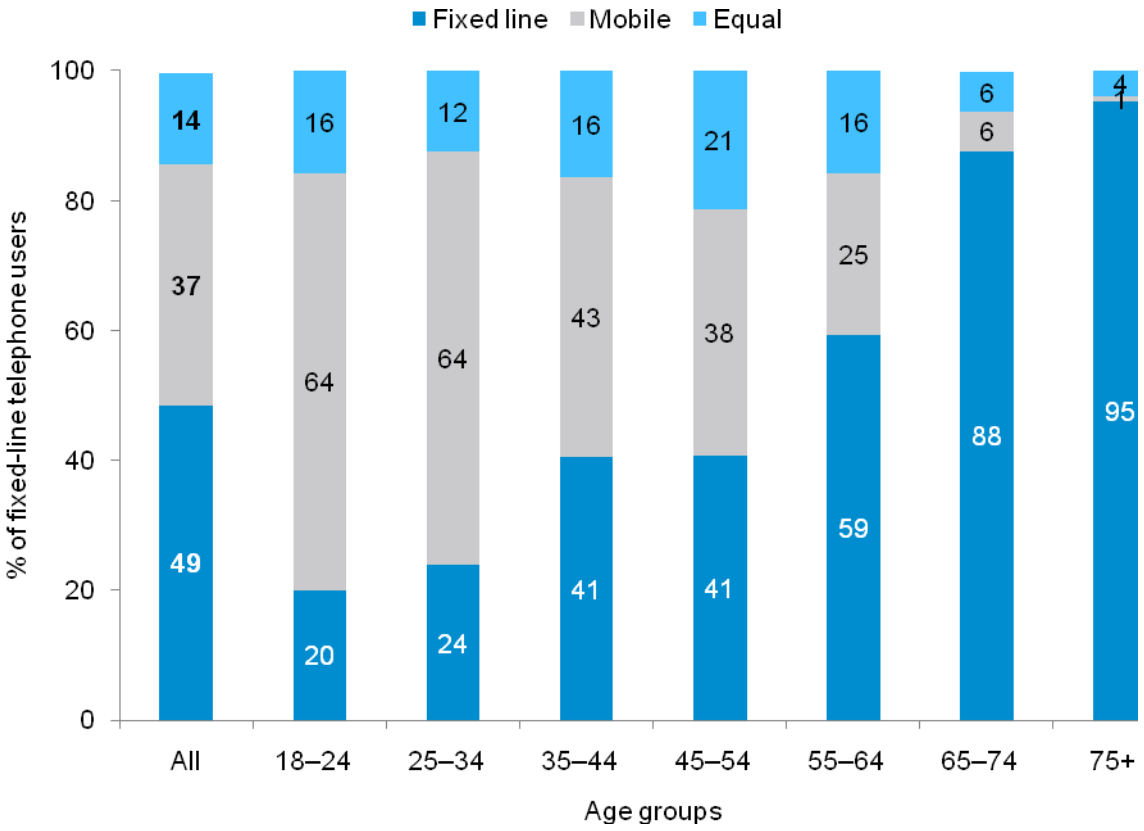
Gender—51 per cent of females indicated fixed-line as their main form of communication compared with 38 per cent of males.

Level of internet use and skill is also associated with the main form of voice communication. Consumers who use the internet frequently and who have a higher skill level (such as young high earners with a tertiary education) were found to be more likely to use a mobile phone as their main form of communication.

[56] Roy Morgan Single Source, June 2010.

[57] ACMA-commissioned research, April 2010.

Figure 28 Voice communication service used most often by consumer—fixed-line and mobile services, by age, April 2010



Note: Includes fixed-line and mobile users only
Source: ACMA-commissioned research, April 2010.

Impact of VoIP on traditional fixed-line voice communications

With VoIP subscriptions still relatively low in Australia, detecting clear substitution trends in this area of communications is not yet possible. However, available consumer data indicates some emerging patterns.

While the majority of Australian users access their VoIP service via their laptop or desktop computer,[58] an increasing number of VoIP users (18 per cent)[59] are choosing a VoIP service that directly substitutes their traditional fixed-line telephone service. This is achieved by using an analog telephone adapter, which enables the user to connect their normal fixed-line handset directly to an IP phone service using their broadband connection.

For those VoIP users who choose to maintain their traditional fixed-line telephone service, many choose to use VoIP and the traditional fixed-line telephone service as complementary service, using their fixed-line telephone for local calls and their VoIP phone for making long-distance national and international calls, in addition to video calls.[60]

[58] Roy Morgan Single Source, June 2010.
[59] Roy Morgan Single Source, June 2010.
[60] ACMA's April 2009 commissioned research found that nine per cent of VoIP users nominated their fixed line as the service they use most often.

As outlined earlier, one of the drivers toward fixed-to-VoIP substitution may be the bundled service offerings of ISPs, which frequently market low-cost, or free, local and national calls to their subscribers. For those who connect to the internet wirelessly, the option of a home phone service free of line rental creates a strong incentive to disconnect the fixed-line telephone in favour of a VoIP service. ACMA consumer research indicates that 33 per cent of fixed-line users are dissatisfied with line-rental.[61] It is not surprising, therefore, that internet service providers such as TPG market their naked-DSL VoIP products with 'no line-rental' as a key selling point.[62]

Further, the increased popularity of internet-enabled mobile phones has created an entirely mobile VoIP environment, replacing direct mobile network call service traffic with mobile data calls. The primary incentive for Australian consumers to access VoIP via a mobile handset is likely to be cost, with some peer-to-peer VoIP services providing free voice or video calls, or call costs that may be significantly lower than those offered via the standard 3G network. Consumer data indicates that mobile VoIP in Australia is still relatively low, at three per cent of VoIP users.[63] However, market predictions are that in 2010, mobile VoIP is likely to move from niche to mainstream across the globe, as WiFi-enabled[64] phones become more common and the number of WiFi hotspots proliferate.[65]

[61] ACMA-commissioned research, April 2010.

[62] www.tpg.com.au/products_services/ull_pricing.php, accessed 13 July 2010.

[63] Roy Morgan Single Source, June 2010.

[64] Wireless fidelity: used generally to refer to wireless local area network (IEEE 802.11) technology providing short-range, high data rate connections between mobile data devices and access points connected to a wired network.

[65] Deloitte Touche Tohmatsu, 2010, *Telecommunications Predictions 2010* www.deloitte.com/view/en_au/au/industries/tmt/4de7a323fa4e2210vgnvcm200000bb42f00arcrd.htm.

Methodology

The data in this report is drawn from a number of sources, including:

- ACMA-commissioned research, in the form of two surveys of consumer attitudes and use of telecommunications services; one survey was undertaken in November 2009, with a follow up survey undertaken in April 2010
- Roy Morgan Single Source, for estimates relating to online population in Australia 14 years and over, drawn from a large base survey sample (more than 25,000 per year in Australia), June 2010
- previous ACMA research.

Table 2 provides an overview of the sample sizes for key estimates in this report.

Table 2 Sample sizes for key digital economy estimates

Estimate	Sample size
ACMA-commissioned research (August 2009)	
% of respondents 18 years + with a fixed-line telephone	1,626
% of respondents 18 years + using the internet via their mobile phone	1,440
% of respondents 18 years + with a mobile phone	1,471
% of respondents 18 years + with a bundled service	846
% of respondents 18 years + with a VoIP service	383
Roy Morgan Single Source	
% of the Australian population 14 years + with a fixed-line telephone service at home	18,343
% of the Australia population 14 years + with a mobile phone	18,967
% of the Australia population 14 years + with a mobile phone but no fixed-line connection	2,126
% of the Australia population 14 years + with VoIP at home	50,451
% of the Australia population 14 years + with broadband at home	11,165
% of the Australian population 14 years + having ever used the internet	15,515

Data analysis
Results from the survey were analysed using descriptive analysis techniques, and by socioeconomic and demographic factors to identify any areas with significant patterns or differences. Only results with significant differences are reported in this research.

Sample size
The sample size limits some analysis by smaller subgroups, for example, data at state level or by both gender and age.

Rounding
Discrepancies may occur between the sums of the component items and totals due to the effects of rounding.

Previous ACMA research

This report also draws on the following key ACMA reports:

- The annual communications report www.acma.gov.au/web/standard/pc=pc_311541
- Convergence and communications report series, particularly
  - *Australian household consumers' take-up and use of voice communications services,* March 2009
  - *Take-up and use of communications by small and medium enterprises,* March 2009
- *Mobile capped plans—Consumer attitudes and behaviours*, May 2010.

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