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Report 6: Internet activity and content

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1 Introduction

The purpose of this report is to explore the increased consumer adoption of the internet, which is underpinning the growth of the digital economy in Australia. Increased adoption and use of the internet is transforming day-to-day activities and changing the way Australians access information, communicate, undertake financial transactions and work, as well as the type of entertainment they seek.

This report is the sixth in the *Telecommunications Today* series on consumer use of communications services. It examines consumer use and application of the internet. Previous reports examined consumer, farm and SME take-up and use; satisfaction with telecommunications services; and consumer choice and service preferences, with results from this earlier research cited throughout this report.

This report examines the behaviour of Australian internet users with reference to the following questions:

- How many consumers have internet access?
- What is the duration and frequency of consumers' online activities?
- What are they doing/viewing online?
- What is the impact of online activities on transactions, communication patterns and entertainment?

In investigating these issues, ACMA is also seeking to understand the significance of specific telecommunication services to Australians.

The research was also undertaken to meet ACMA's statutory reporting requirements under the *Australian Communications and Media Authority Act 2005* and Section 105 of the *Telecommunication Act 1997.* This requires ACMA to report and advise on matters affecting consumers of carriage services including consumer satisfaction and benefits, and to further disseminate consumer demand research into the broader Australian community.

2 Methodology

2.1 Research sources

Data within this report is drawn from a number of sources:

1 ROY MORGAN SINGLE SOURCE SURVEY

Roy Morgan Single Source is a survey of individual consumers aged over 14 years drawn from a large base survey sample (more than 25,000 per year in Australia). Roy Morgan statistics cited in this report were derived from data collected between January 2006 and March 2008, and included only respondents with a household internet connection.

2 NIELSEN ONLINE

Nielsen Online's *The Australian Internet and Technology Report 2007–2008* is a telephone and online survey of a random sample of Australian internet users. Data was collected in two stages. Stage one was a random sample of 550 Australian adults over 16 years who were interviewed over the telephone and Stage two was a random sample of adults aged over 16 years who participated in an online survey. In total, 1,356 internet users were interviewed.

3 WOOLCOTT RESEARCH

ACMA commissioned the consultancy Woolcott Research to undertake a series of qualitative focus groups and in-depth interviews, as well as a national quantitative survey.[1]

The qualitative phase was made up of 12 focus group discussions in five locations, as well as eight in-depth interviews in remote areas. The focus group discussions were conducted among residential consumers selected on the basis of age (over 18 years) and a self-measure of technological literacy or confidence. Focus group respondents were recruited from a random sample, with each group containing between eight and 10 participants.

The quantitative phase consisted of a representative quantitative telephone survey of 1,600 respondents. The electronic WhitePages® was used as the sampling frame for Australian households and the interviews were undertaken using computer-assisted telephone interviewing (CATI). All respondents were aged over 18 years and were screened to ensure they were the main or joint decision-maker for at least one household telecommunications service.

1 For more methodological detail, refer to Australian Communications and Media Authority (September 2007), *Telecommunications Today – Report 1: Consumer Attitudes to Take-up and Use*, <www.acma.gov.au/WEB/STANDARD/pc=PC_9058>.

Findings from this research have been published under the *Telecommunications Today* series of reports produced by ACMA and are available from <www.acma.gov.au>.

4 NIELSEN//NETRATINGS NETVIEW

Nielsen//NetRatings collect information about online activity from a randomly selected sample. Panelists install tracking software that measures internet activity onto their personal computers. The actual measurement of internet activity and retrieval of data have been designed to be as unobtrusive as possible. All data is securely and unobtrusively transmitted to Nielsen//NetRatings in real time as the panel member browses the internet. Upon installation of the meter, panellists are automatically directed to a short online questionnaire asking about demographic information of all household members.

Enumeration studies are conducted to determine the total size and demographic characteristics of the population to be measured. and are used as the basis for projecting sample information to the total population.

The Nielsen//NetRatings data used in this report is for households during the quarter ending March 2007.

5 OTHER SOURCES

- ACMA, *The Australian VoIP Market: The Supply and Take-up of VoIP in Australia*, December 2007.
- ABS, *Internet Activity, Australia, June 2008*, cat. no. 8153.0.
- ABS research paper, *Patterns of Internet Access in Australia 2006*, cat. no. 8146.0.55.001.
- Nielsen Online, *Consumer Generated Media Report: Separating Hype From Reality*, First Edition, January 2008.
- CCi Digital Futures Report, *The Internet in Australia*, July 2008.

2.2 Definitions

Telecommunications: For the purpose of this research, this includes all voice (landline telephone, mobile telephone and VoIP) and data services (dial-up and broadband in all its forms such as ADSL, cable, satellite and wireless).

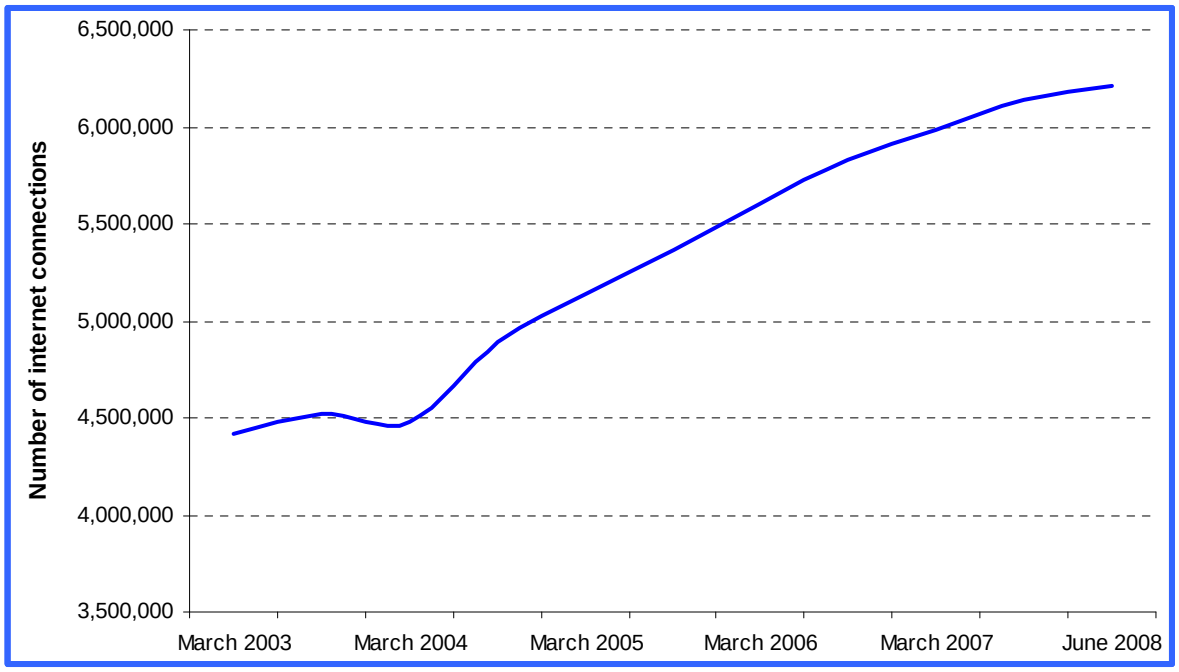
Broadband: In this report, broadband refers to an ‘always on’ internet connection with an access data rate equal to or greater than 256 kbit/s—the data rate used by the Organisation for Economic Cooperation and Development (OECD) to describe broadband. For consistency, high-speed and non-dial-up are also referred to as broadband.

Respondents: As a number of data sources are used, ‘internet households’ and ‘internet users’ have been chosen to provide consistency when referencing internet users examined by the data sources. Roy Morgan Single Source refers to respondents with a household internet connection, ABS *Internet Activity* uses ‘subscribers’, ABS *Patterns of Internet Access in Australia 2006* uses ‘people’ and ‘households, while Nielsen Online uses ‘Internet users’.

3 Internet take-up is increasing

According to the Australian Bureau of Statistics (ABS), 73 per cent[2] of Australian households are connected to the internet. The ABS reported that there were 6.21 million active internet households in Australia at the end of June 2008—an increase of 41 per cent since March 2003.[3] However, the latest ABS data excludes resuts for ISPs with less than 10,000 subscribers. . Figure 1 shows that the number of internet households has grown steadily over time.

Figure 1: Number of internet households, March 2003 to June 2008



Source: ABS (2008) 8153.0 – Internet Activity, Australia*, June.*

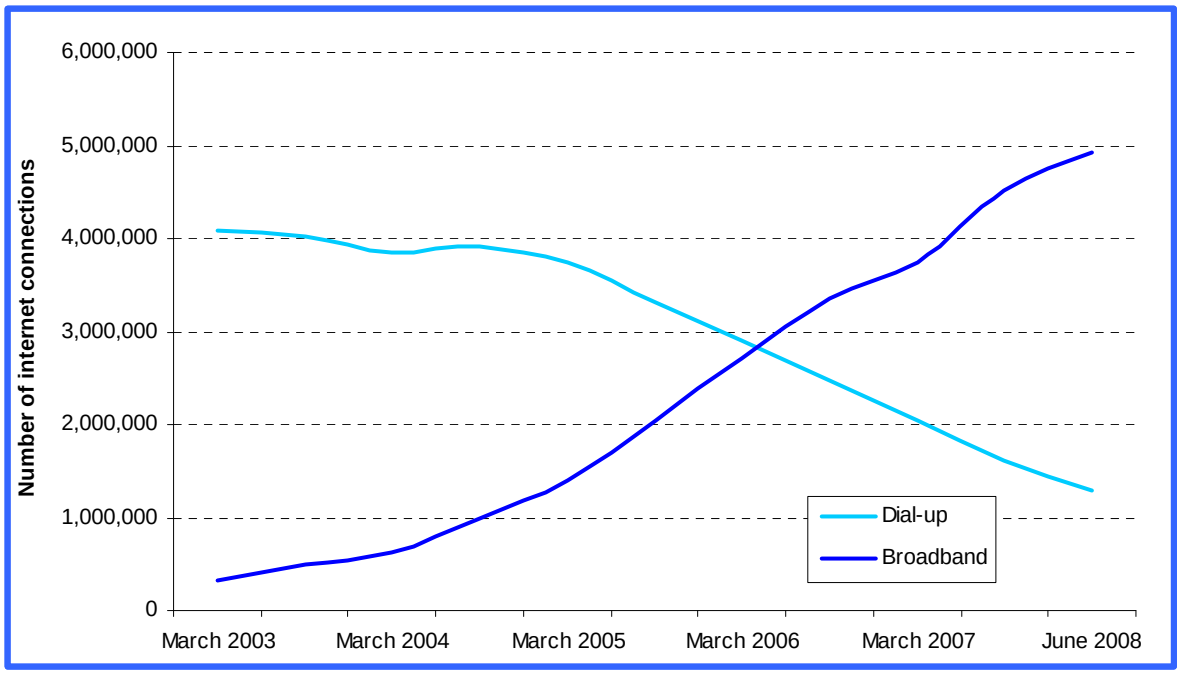
[2] According to the ABS, *1301.0 – Year Book Australia, 2008*, at 30 June 2006 there were a projected 8.1 million households in Australia, with the number of households increasing on average by 2.6 per cent per year. With this data, ACMA projects there were 8,526,676 households in Australia as at July 2008.

[3] ABS (2007) *8153.0 – Internet Activity, Australia,* December. Note that the data in June 2008 includes ISPs with more than 10,000 internet users, while the remaining data includes all ISPs.

3.1 Household take-up of faster internet services

Household adoption of broadband internet connections has experienced a steady growth since March 2003. Figure 2 shows a sharp increase in the household adoption of broadband internet. Simultaneously, households connected to dial-up services decreased, with the most rapid decline recorded from March 2005 to September 2006. This growth in broadband households and decrease in dial-up households points to substitution from dial-up to broadband internet connection.

Figure 2: Type of household internet connection, March 2003 to June 2008



Source: ABS (2008) 8153.0 – Internet Activity, Australia, *June.* Note: June 2008 data is based on ISPs with more than 10,000 internet users.

ABS statistics also identified a shift towards the adoption of higher download speeds, as demonstrated in Table 1 below.

Table 1: Type of household internet connection, June 2006 to December 2007

Internet households (000's) download speed	September quarter 2006	March quarter 2007*	December quarter 2007	June quarter 2008*
Fewer than 256 kbps	2,478	1,848	1,619	1,290
Broadband:				
256 kbps to fewer than 512 kbps	1,150	1,240	1,391	1,423
512 kbps to fewer than 1.5 Mbps	1,224	1,186	949	813
1.5 Mbps or greater	978	1,394	2,182	2,685

Source: ABS (2008) 8153.0 – Internet Activity, Australia, *June. Note*:* March 2007 and June 2008 data is based on ISPs with more than 10,000 internet users.

Data from Nielsen Online also reveals that consumers are taking up faster broadband speeds. Some 32 per cent of internet users had connections with average download speeds greater than 1.5 megabits per second (Mbit/s).[4]

[4] Nielsen Online (2008) *The Australian Internet and Technology Report 2007–2008*, Edition 10, February.

Data collected by Roy Morgan Single Source Survey also recorded an increase in the number of consumers adopting broadband. The number of households with a broadband internet connection doubled from 32 per cent of respondents for the quarter ending March 2005 to 79 per cent of households for the quarter ending March 2008.

3.2 Factors influencing internet take-up and use

The ABS report *Patterns of Internet Access in Australia* (co-funded by ACMA) found that characteristics such as regional differences, income, family structure and level of education achieved influenced the take-up of internet. The ABS found that:

- Australians living in very remote areas were 24 per cent less likely than people living in major cities to have an internet connection, and 22 per cent less likely to have a broadband internet connection.
- Households with an income of $2,000 or more per week were three times more likely to have broadband compared to households on less than $600 per week.
- Australians with postgraduate degrees were 83 per cent more likely to have broadband access than people with no tertiary qualifications.
- Families with children under 15 years or dependant students were three to four times more likely to have internet access than other families.
- Australians in low-skill occupations were 27 per cent less likely to have broadband than those employed in high-skill occupations such as managers and professionals.
- Australians who do not speak the English at all or do not speak it well were 27 per cent less likely to have broadband than those proficient in English.
- Unemployed Australians were 12 per cent less likely to have broadband.
- Indigenous households were about half as likely to have broadband.
- Australians requiring assistance with core activities, which include self-care, mobility and communication, were 20 per cent less likely to have broadband than those who did not need assistance.

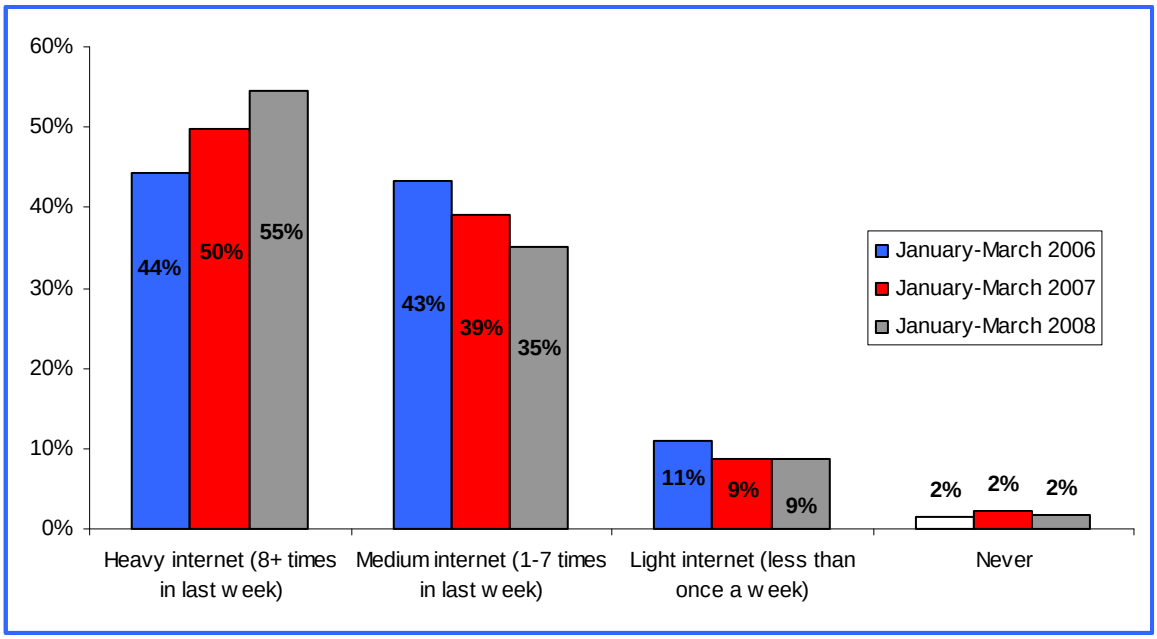
Data from Roy Morgan also confirms the relationship between factors such as socioeconomic/demographic characteristics and levels of internet use.

4 Time spent online

As Australians grow more familiar with the internet—in particular, broadband internet—online activity is becoming an increasingly important and central part of day-to-day life. Australian internet users are spending more time online and are accessing the internet more frequently. The internet has led to changes in how consumers participate in activities such as communication, commerce, work and entertainment. Chapters four to six explore the increasing intensity of online activities in terms of both time spent online and the diverse range of pursuits now undertaken.

Figure 3 shows an increasing proportion of users reporting heavy internet use, while there was a concurrent reduction in medium and light internet users.

Figure 3: Internet usage levels over time, January–March 2006 to January–March 2008



Source: Roy Morgan Single Source, January 2006–March 2008, 14+ years old, sample=10,798. Note: excludes respondent category 'cannot say'.

4.1 Factors influencing the frequency of online activity

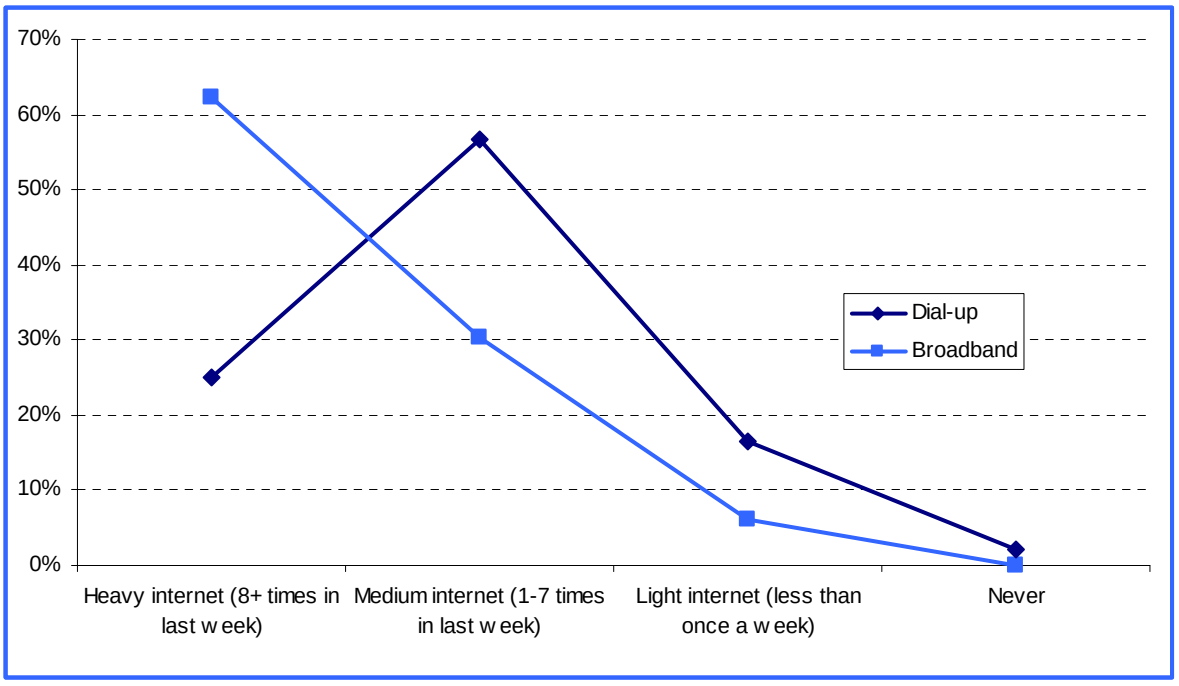
While there has been a rise in the number of household internet connections, there are a number of factors that have influenced the amount of time internet users spend online. Such factors examined in this report have been selected to give a broad scope of the socioeconomic and demographic influences. They are:

- type of internet connection;
- location of household (metropolitan versus non-metropolitan);
- age;
- gender;
- income; and
- education.

INTERNET CONNECTION

Research results revealed a relationship between the use of a broadband connection and heavy internet use, as shown in Figure 4 below. Internet users with broadband are more likely to be heavy internet users, with over half (62 per cent) recording heavy use (more than eight times a week). Internet users with dial-up services are more inclined to be medium internet users (1-7 times a week), with 57 per cent recording medium use.

Figure 4: Internet usage levels by type of internet connection, January to March 2008



Source: Roy Morgan Single Source, January–March 2008, 14+ years old, sample=3,380. Note: excludes respondent category 'cannot say'.

According to results from Nielsen Online, 56 per cent of dial-up internet users spend on average more than 10 hours per week on the internet, while 61 per cent of broadband users spend on average more than 10 hours per week on the internet.[5]

Patterns in the frequency of internet use by the type of internet connection are similar to those recorded internationally. According to the OECD's *Broadband and ICT Access and Use by Households and Individuals* Report, for example in France in 2006 seven out of 10 broadband users accessed the internet daily, compared with only three out of 10 dial-up users. The report also attributed the increasing time devoted to internet activities to broadband applications and services.[6]

LOCATION (METROPOLITAN / NON-METROPOLITAN)

The frequency of internet use differs according to the locality of the household. Internet users in metropolitan areas are likely to use the internet more frequently than those in non-metropolitan areas, with 44 per cent of metropolitan users compared to 34 per cent of non-metropolitan users recording heavy internet use.[7]

The differences in the time spent online between internet users living in metropolitan and non-metropolitan areas are also evident in the number of sessions per person recorded by Nielsen//NetRatings. Table 2 shows that during the quarter ending March 2007 metropolitan internet users had on average five more internet sessions than non-metropolitan users and spent 3.16 hours longer online.

Table 2: Metropolitan and non-metropolitan online activity, January to March 2007

Location	Pages per person	Sessions per person	Time per person (hours:mins:secs)
Metropolitan	3,347	80	45:42:57
Non-metropolitan	3,027	75	42:31:01

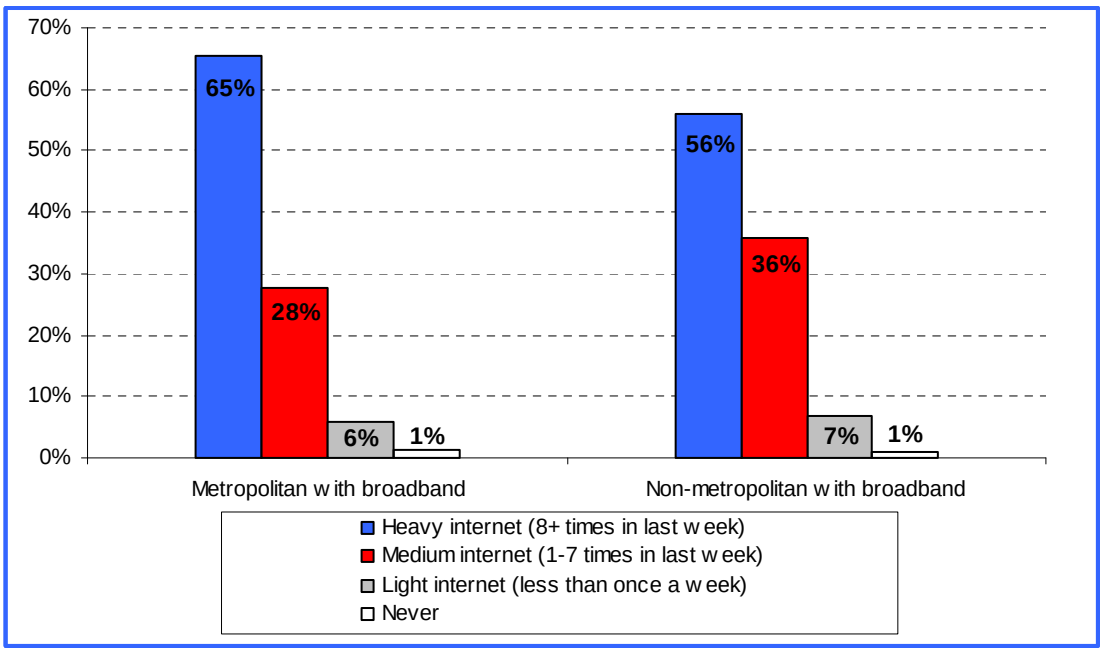
Source: Nielsen//NetRatings, NetView, home audience data from panel measurement, Australia, quarter ending March 2007

The disparity between metropolitan and non-metropolitan online activity can be partly explained by the type of internet connection discussed previously, since metropolitan internet users are more likely to have a broadband connection than non-metropolitan users (46 per cent of users in major cities have broadband, compared with only 24 per cent of users in very remote areas).[8]

Research results from Roy Morgan Single Source also acknowledge this as a factor. A higher proportion (65 per cent) of broadband users in metropolitan areas are heavy internet users compared with those in non-metropolitan areas (54 per cent), as shown in Figure 5.

[5] Nielsen Online (2008) *The Australian Internet and Technology Report 2007–2008*, Edition 10, February.
[6] OECD (2007) *Broadband and ICT Access and Use by Households and Individuals Report*, December, pp.23, 29.
[7] Roy Morgan Single Source, January–March 2008, 14+ years old, sample=3,380.
[8] ABS (2006) *Patterns of Internet Access in Australia*, 8146.0.55.001.

Figure 5: Online activities of broadband users, January to March 2008

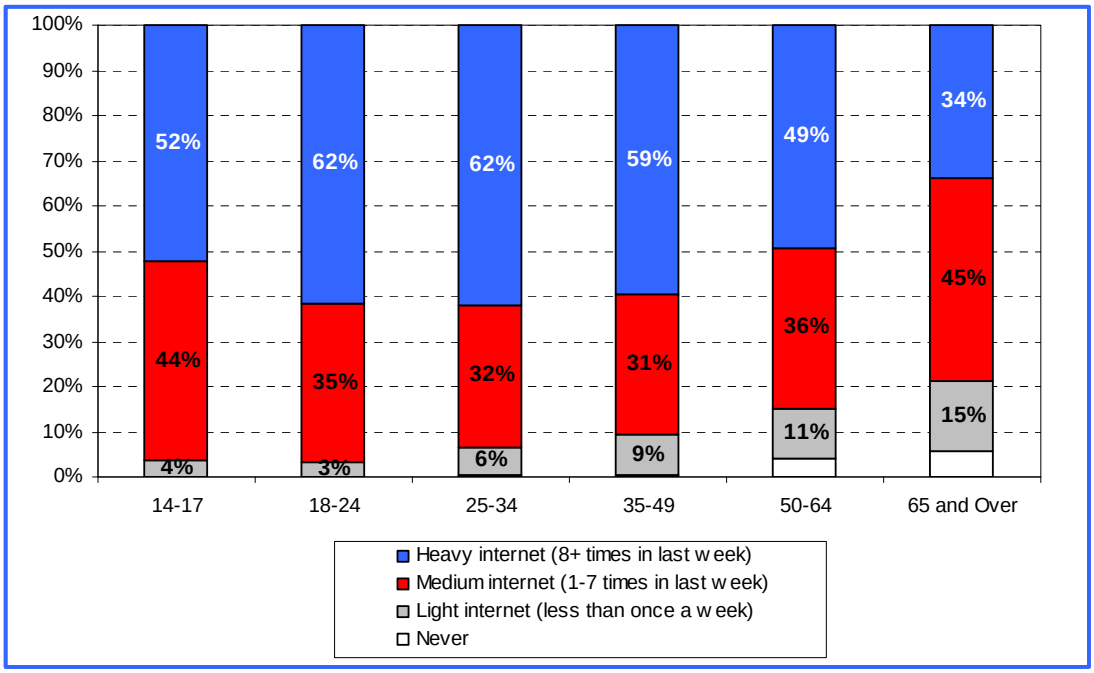


Source: Roy Morgan Single Source, January–March 2008, 14+ years old, sample=2,538. Note: excludes respondent category 'cannot say'.

AGE

Differences in the frequency of internet use by age are demonstrated in Figure 6 below. Data indicates that those in the 18–24 and 25–34 age groups are more likely to be heavy users of the internet, with 62 per cent recording heavy internet use. Internet users aged 35–49 years were similarly frequent internet users, with 59 per cent estimated to be heavy users.

Figure 6: Household internet usage levels by age, January to March 2008

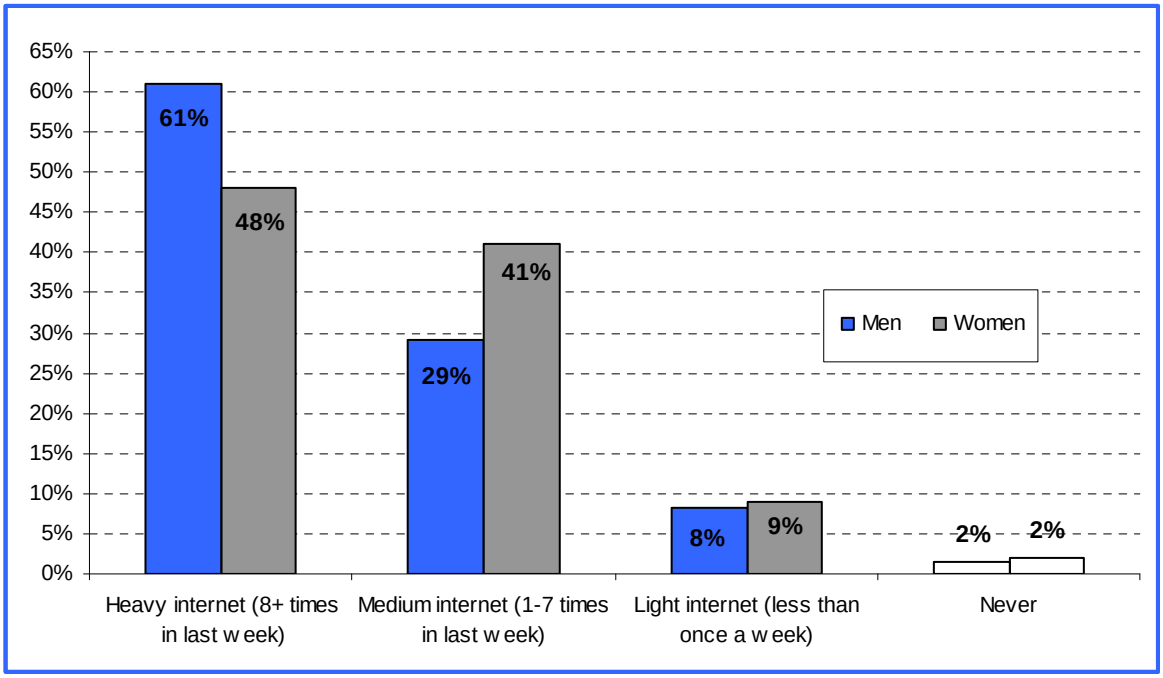


Source: Roy Morgan Single Source, January–March 2008, 14+ years old, sample=3,380. Note: excludes respondent category 'cannot say'.

GENDER

Gender differences are also evident when examining internet usage patterns. Figure 7 shows a higher proportion of males reporting heavy internet use (61 per cent) compared with females (48 per cent), while 41 per cent of females recorded medium use compared with males at 29 per cent.

Figure 7: Internet usage levels by gender, January to March 2008



Source: Roy Morgan Single Source, January–March 2008, 14+ years old, sample=3,380. Note: excludes respondent category 'cannot say'.

Data collected for ACMA by Woolcott Research identified that 62 per cent of males access their broadband service for more than one hour per day compared with 48 per cent of females.

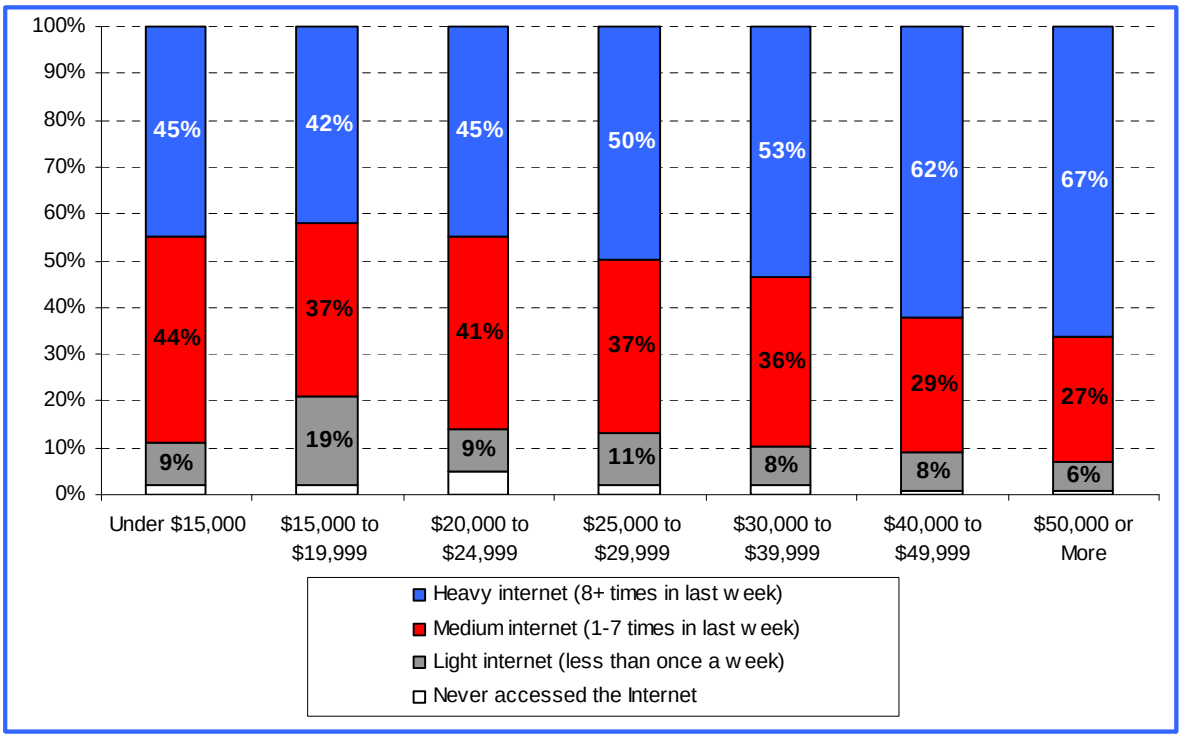
According to Nielsen Online, 60 per cent of males spend an average of more than 10 hours per week on the internet compared with 46 per cent of women.[9]

INCOME

The frequency of internet use differs according to a user's average annual income. Users in higher income brackets reported heavy internet use (more than eight times a week), with more than 60 per cent of internet users with an income of $40,000 or more recording heavy internet use. Internet users earning less than $15,000 recorded a fairly even distribution of heavy and medium internet use, at 45 and 44 per cent respectively (Figure 8).

[9] Nielsen Online (2008) *The Australian Internet and Technology Report 2007–2008*, Edition 10, February.

Figure 8: Internet usage levels by income range, January to March 2008

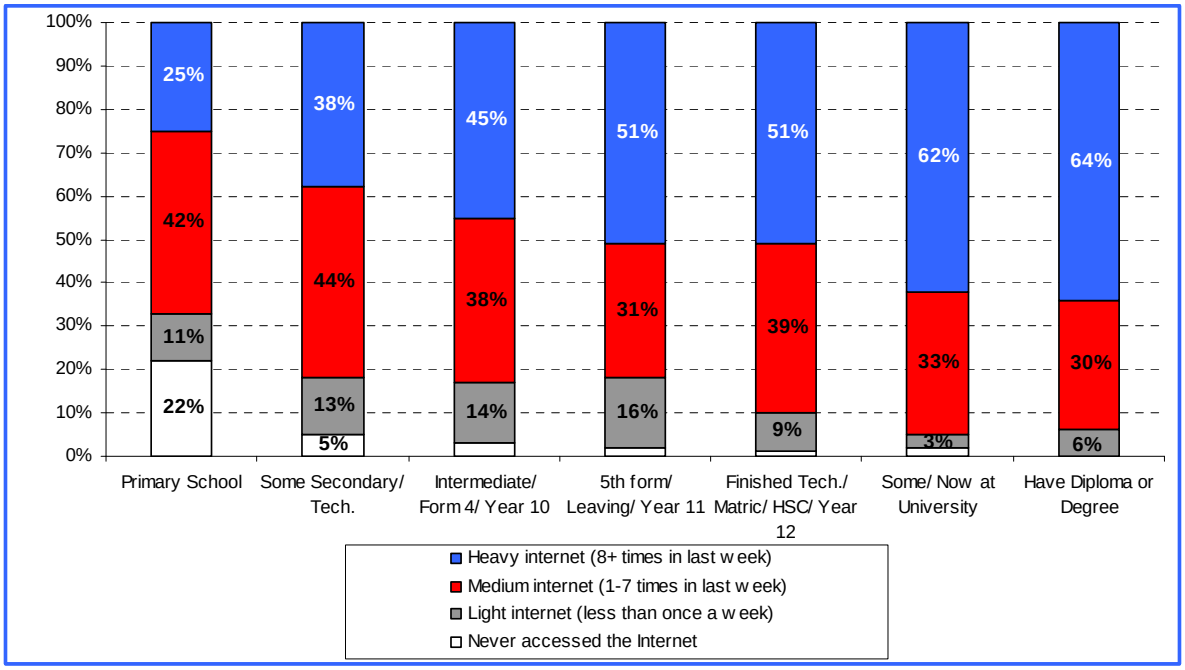


Source: Roy Morgan Single Source, January–March 2008, 14+ years old, sample=3,380. Note: excludes respondent category 'cannot say'.

LEVEL OF EDUCATION

As identified in ABS statistics, a consumer's use of the internet depends on his or her level of education. Research results from Roy Morgan Single Source indicate that the highest proportion of heavy internet users—64 per cent—holds a diploma or degree, and 62 per cent have some university education or attend university. In contrast, only 25 per cent of internet users with a primary school level of education are heavy internet users, as shown in Figure 9.

Figure 9: Internet usage by level of education, January to March 2008



Source: Roy Morgan Single Source, January–March 2008, 14+ years old, sample=3,380. Note: excludes respondent category 'cannot say'.

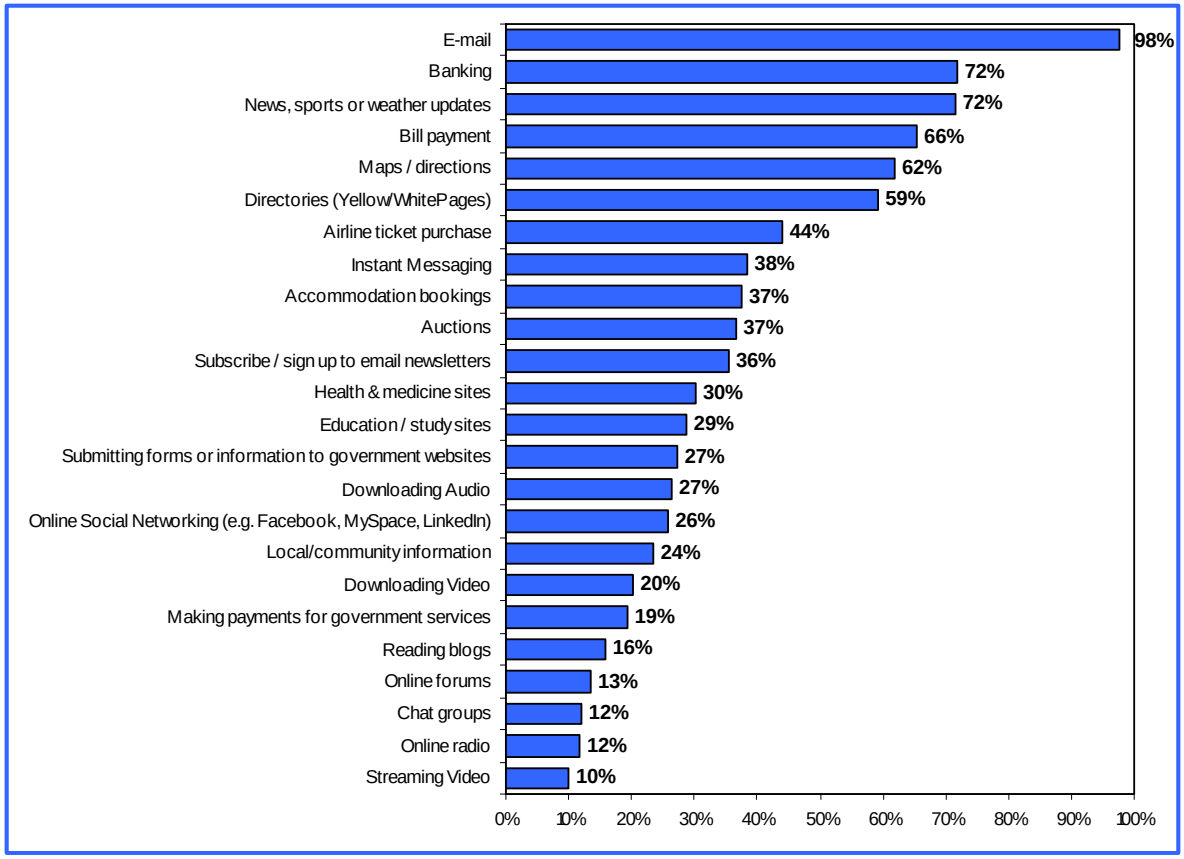
5 Online applications, content and media activity

The previous section demonstrated that consumers are spending more time on the internet but what are they doing online? This section outlines some of the major activities undertaken by Australian internet users.

5.1 Common internet applications

According to Nielsen Online, consumers most commonly use the internet for email, banking transactions, news and weather updates, and paying bills, as shown in Figure 10.

Figure 10: Activities performed online in the last four weeks, January to March 2008



Source: Nielsen Online (2008) The Australian Internet and Technology Report, *February, 16+ years old, sample=1,356, Multiple responses. Note: Chart displays activities with more than 10 per cent of respondents indicating internet use. Excludes 'Anything else' and 'None of the above'.*

The common internet applications identified by users are reinforced by an examination of the popular websites recorded in Australia by Hitwise in May 2008 (see Table 2).

Internet users highlighted email as their most common reason for using the internet—98 per cent use such a service.[10] This is demonstrated by the presence of three email services in the top 20 websites—mail.live.com, Yahoo! Mail and Gmail. Use of the internet for socialising and entertainment purposes is demonstrated through the popularity of websites such as Ninemsn, MySpace and Facebook, while the internet is also commonly used for shopping and paying bills through sites such as eBay and Commonwealth Bank NetBank. Wikipedia and Blogger are other popular websites that indicate the increasing popularity of user-generated content.

Table 2: Top 20 most popular websites based on Australian internet usage

1	Google Australia
2	mail.live.com
3	Ninemsn
4	Facebook
5	eBay
6	MySpace
7	Google
8	YouTube
9	Yahoo!
10	Wikipedia
11	Microsoft
12	Gmail
+13	Yahoo! Mail
14	Google Image Search
15	Commonwealth Bank NetBank
16	Microsoft Live Search
17	Ninemsn News
18	msn
19	Blogger
20	Bureau of Meteorology

Source: Hitwise, May 2008, based on market share of visits, <www.hitwise.com.au/datacenter/rankings.php>, accessed 27 June 2008.

[10] Nielsen Online (2008) *The Australian Internet and Technology Report,* February, 16+ years old, sample=1,356.

5.2 Factors influencing the use of internet applications

INTERNET CONNECTION

The type of internet connection used influences the activities consumers undertake. Those with broadband are more likely to use the internet for banking transactions and obtaining maps and directions than are dial-up users. They are also more likely to use the internet to obtain news and weather information and participate in online auctions. Table 3 demonstrates the activities with the largest points of difference between broadband and dial-up internet users.

Table 3: The difference in internet activities by internet connection, February 2008

	Broadband (per cent)	Dial up (per cent)	Percentage point difference
Banking	75	53	22
Maps/directions	64	47	17
News, sports or weather updates	73	58	15
Auctions	39	25	14
Making payments for government services	21	8	13
Subscribe/sign up to email newsletters	37	25	12
Online radio	13	2	11
Streaming video	11	0	11
Streaming audio	10	0	10
Reading blogs	17	7	10
Downloading video	22	12	10
Airline ticket purchase	45	35	10
Bill payment	68	58	10
Online social networking (e.g. Facebook, MySpace, LinkedIn)	27	18	9
Directories (Yellow/WhitePages)	60	52	8
Submitting forms or information to government websites	29	22	7
Voice over IP/internet telephony	9	2	7
Accommodation bookings	39	32	7
Adult services/websites	10	3	7
Local/community information	25	18	7
Gambling	10	3	7
Instant Messaging	39	33	6
Health and medicine sites	31	25	6
Education/study sites	29	35	–6

Source: Nielsen Online (2008) The Australian Internet and Technology Report, *February, 16+ years old, sample=1,356, Multiple responses. Note: Table displays activities with points of difference more than 5 per cent of use between broadband and dial-up users. Excludes 'Anything else' and 'None of the above'.*

LOCATION (METROPOLITAN / NON-METROPOLITAN)

The most popular uses of the internet in metropolitan and non-metropolitan areas are email, banking transactions, and accessing news and weather information[11] There are similar levels of usage for each of these activities.

The largest differences between the online behaviours of metropolitan and non-metropolitan internet users is in the area of obtaining maps and directions (11 percentage points), paying bills (10 percentage points) and purchasing airline tickets (nine percentage points). Internet users in non-metropolitan areas are more likely to participate in Instant Messaging and more likely to use online auctions than are metropolitan dwellers.

AGE

Age is a determining factor in the activities consumers choose to perform online. Email is the most common application across all age groups. Streaming videos and banking online feature in the top five activities of all age groups, and participating in auctions features in the top 10.

Internet users aged between 16 and 24 years are the most likely group to use the internet for entertainment, while those aged between 25 and 34 also recorded a high level of use of social and entertainment applications. A high proportion of users over the age of 45 use the internet to submit forms or information to government websites; this activity is recorded in the top 10 of all three age group segments, as shown in Table 4.

Table 4: The top ten activities performed by age group, February 2008

	16–24	25–34	35–44	45–54	55–64	65+
1	email	email	email	email	email	email
2	Accommodation bookings	Streaming video	Streaming video	Banking	Banking	Streaming video
3	Streaming video	Banking	Banking	Streaming video	Streaming video	Banking
4	Banking	Auctions	Gambling	Gambling	Auctions	Gambling
5	Streaming audio	Gambling	Auctions	Auctions	Gambling	Auctions
6	Gambling	Chat groups	Chat groups	Chat groups	Chat groups	Chat groups
7	Auctions	Accommodation bookings	Accommodation bookings	News, sports or weather updates	Online forums	Submitting forms or information to government websites
8	Downloading podcasts	Online forums	Online forums	Online forums	News, sports or weather updates	News, sports or weather updates
9	Buying airline tickets	Streaming audio	Buying airline tickets	Buying airline tickets	Submitting forms or information to government websites	Online forums
10	Downloading vodcasts	Voice over IP/internet telephony	News, sports or weather updates	Submitting forms or information to government websites	Online social networking (e.g. Facebook, MySpace, LinkedIn)	Online social networking (e.g. Facebook, MySpace, LinkedIn)

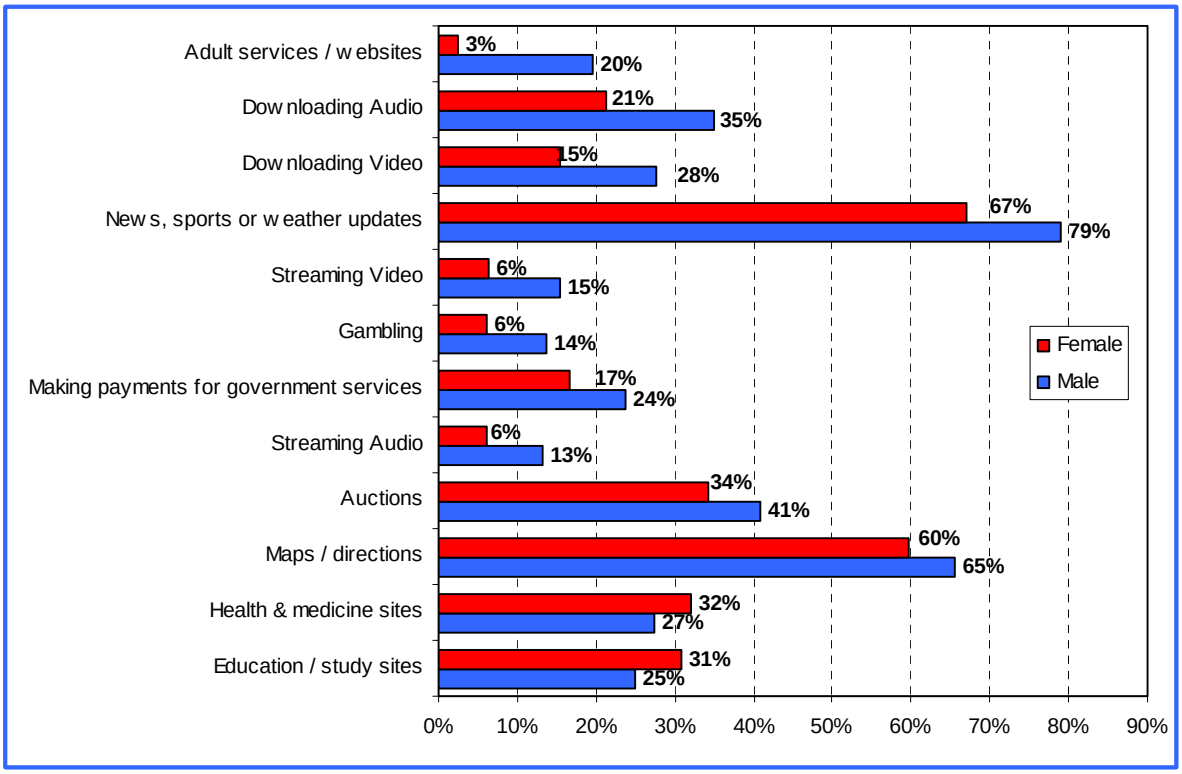
Source: Nielsen Online (2008) The Australian Internet and Technology Report, *February, 16+ years old, sample=1,356, Multiple responses. Note: Excludes 'Anything else' and 'None of the above'.*

[11] Roy Morgan Single Source, January–March 2008, 14+ years old, sample=3,380.

GENDER

Gender is another factor influencing applications used on the internet. The frequency of common activities such as email, paying bills and banking is similar between males and females, as shown in Figure 12. However, males recorded higher levels of use for adult services, downloading audio and video, news and weather information, and streaming videos.

Figure 12: Differences between internet applications by gender, February 2008



Source: Nielsen Online (2008) The Australian Internet and Technology Report, *February, 16+ years old, sample=1,356, Multiple responses. Note: Excludes 'Anything else' and 'None of the above'. Chart displays activities with points of difference more than 5 per cent of use between male and female users.*

Females are more likely than males to use the internet for accessing health and medicine information, and education and study sites. Females also recorded a higher level of use of online social networking—27 per cent compared to 23 per cent of males.

6 Impact of internet activity

The internet has influenced the day-to-day activities of many Australians. Chapter six examines the impact of the internet on a number of key areas including:

- growth in e-commerce and financial transactions;
- changing communication patterns; and
- entertainment.

6.1 Changes to consumer behaviour

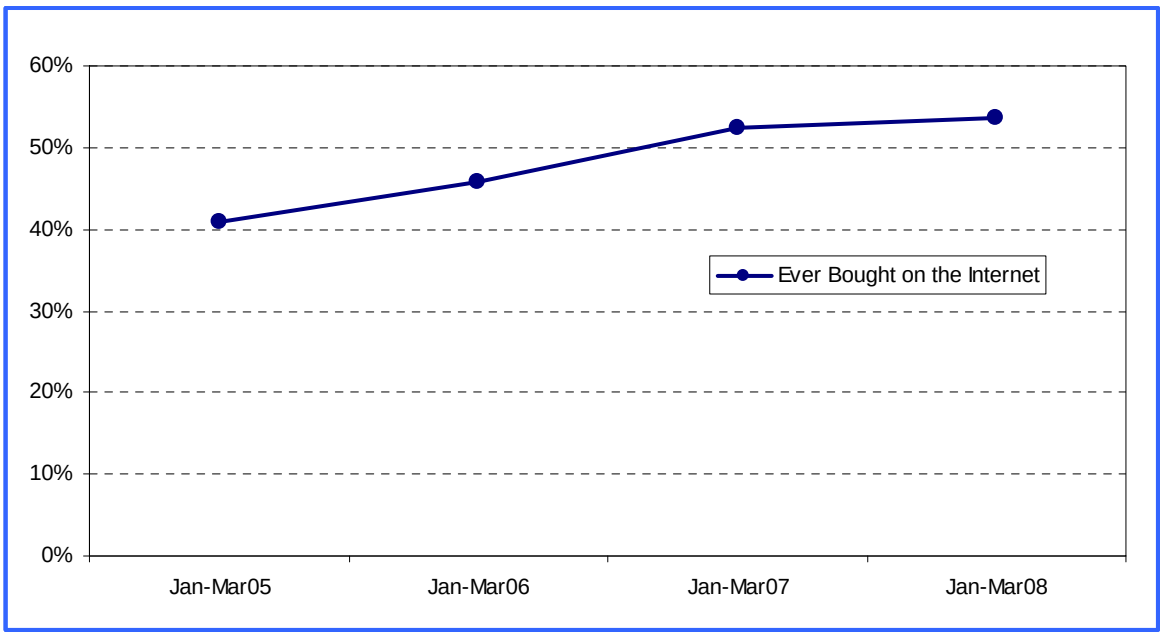
One of the main changes to consumers' behaviour as a result of the internet has been their ability to purchase products online. Paying bills, purchasing airline tickets and booking accommodation are some of the most popular activities performed on the internet (see Figure 10).

The use of the internet for online purchases has become extensive. In 2006–07, the ABS reported that, of the estimated 11.3 million internet users who accessed the internet from any location, 61 per cent did so to purchase or order goods and services for private purposes. A higher proportion of people in Tasmania (68 per cent), the Northern Territory (66 per cent) and the Australian Capital Territory (73 per cent) used the internet to purchase or order goods and services for private purposes.[12]

According to Roy Morgan Single Source, of the internet users accessing the internet in the quarter ending March 2008, 54 per cent bought a product online.[13] This increased from 46 per cent for the same quarter in 2006, as shown in Figure 13.

[12] ABS, *8146.0 Household Use of Information Technology, 2006–07.*
[13] Roy Morgan Single Source, January–March 2008, 14+ years old.

Figure 13: Purchased a product on the internet: January–March 2005 to January–March 2008



Source: Roy Morgan Single Source, January 2006–March 2008, 14+ years old, sample=14,359. Note: excludes respondent category 'cannot say'.

Of the internet users who indicated they had purchased a product on the internet, the following items in Table 5 were bought in the previous three months.

Table 5: Items directly bought online in the previous three months, January to March 2008

Items bought online	% of respondents who bought a product in this category within the last three months
Travel (tickets/accommodation)	28
Other	17
DVDs/videos	16
Books/magazines/newspapers	16
Gifts	15
None in the last three months	15
Toys or games	13
Computer software	13
Other clothing/shoes	13
Other entertainment (e.g. shows, events)	13
Music to download	12
Sports equipment/clothing	10
CDs/tapes	9
Computer hardware	9
Communications equipment (e.g. mobile phone, fax, pager)	4
Shares or financial information	4
Supermarket shopping	3
Alcohol (e.g. wine, beer, spirits)	2
Adult entertainment	2
Cannot say	1

Source: Roy Morgan Single Source, January–March 2008, 14+ years old, sample=1,796, Multiple responses.

As shown in Table 5, items purchased most frequently in the previous three months were travel items, highlighting the internet as a significant medium for the travel industry.

Internet users were asked whether the internet had changed their frequency of shopping in stores. In the quarter ending March 2008, 10 per cent of internet users said they now shop in stores less often.[14] This was an increase of four per cent since the same quarter in 2006.[15]

This is consistent with changes internationally. According to the OECD, there was a 25 per cent increase between 2000 and 2006 of buying and ordering tickets or goods and services on the internet.[16]

Internet users are also starting to do their grocery shopping online, with 17 per cent of users who access the internet at home considering this activity.[17]

FREQUENCY OF ONLINE PURCHASES

According to Roy Morgan Single Source, from the quarter ending March 2006 to the same quarter ending March 2008, internet users who have never purchased a product online decreased from 50 to 41 per cent.

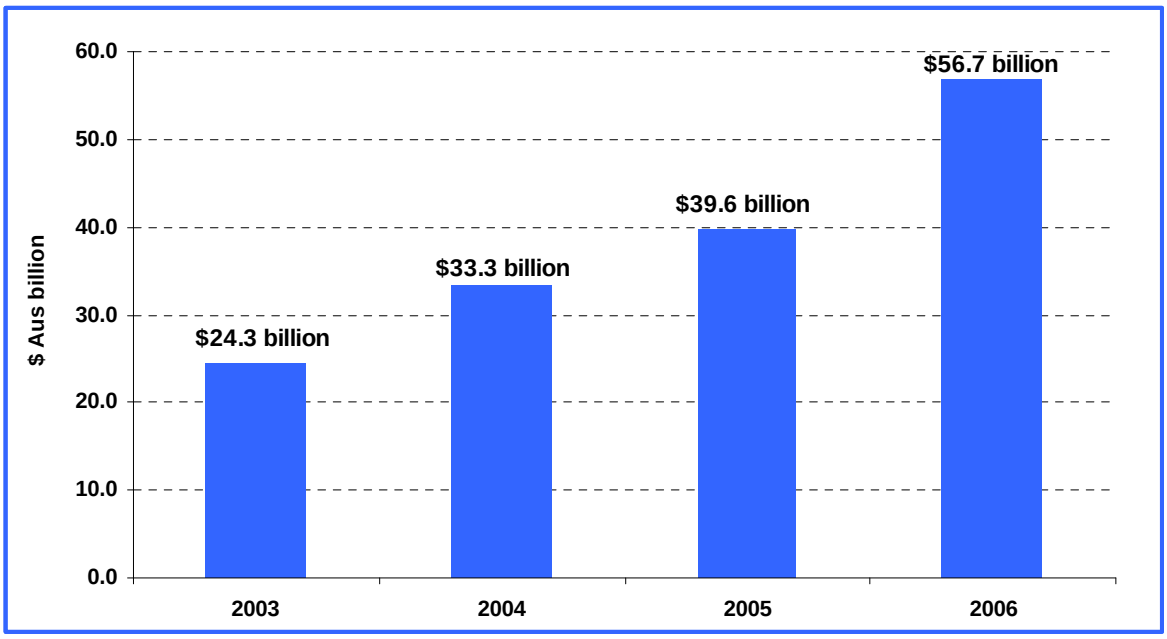
Despite the increase in the number of internet users who have purchased a product online, the quality of online security is regarded as a barrier to the online retail market in Australia. According to a recent study by Leading Edge, consumers' lack of interest in shopping online is due to concerns over the return policies of online retailers and logistics such as delivery charges. Other online shoppers cited slow Australian download speeds. The survey also found that Australians who shop online do so at popular retailers set up specifically for online shopping, such as eBay.[18] Data from Roy Morgan also suggests that consumers are concerned about the quality of online security when purchasing products online—66 per cent of internet users are uncomfortable providing their credit card details over the internet.[19]

VALUE OF E-COMMERCE

With the number of Australians purchasing products online increasing, ABS data demonstrates that the value of e-commerce is growing steadily over time (see Figure 14).

[14] Roy Morgan Single Source, January–March 2008, 14+ years old, sample=3,380.
[15] Roy Morgan Single Source, January–March 2008, 14+ years old, sample=2,991.
[16] OECD (2007) *Broadband and ICT Access and Use by Households and Individuals Report*, December, p.23.
[17] Roy Morgan Single Source, January-March 2008, 14+ years, sample=3,380
[18] Carrie LaFrenz (2008) *Aussie Retailers Shun Online Shopping*, AAP Finance News Wire, 1 April.
[19] Roy Morgan Single Source, January–March 2008, 14+ years, sample=3,380.

Figure 14: Value of e-commerce, 2003–06



Source: ABS, Business Use of Information Technology 2003–06, financial year ending June. *ABS cat. no. 8129.0 Note: e-commerce refers to selling goods or services online.*

6.2 Changes to social interaction

The internet has become a significant social medium, with the majority of users identifying email and socialising as some of its main uses. Instant Messaging and online chat rooms have been established since the 1990s and, more recently, blogs have provided a new form of communication for internet users. Voice over Internet Protocol (VoIP) has emerged as a new platform for fixed communications and a potential substitute for public switched telephone network (PSTN) fixed-voice services.[20]

SOCIAL NETWORKING SITES

Social networking communities provide internet users with a means to network, communicate and socialise online. An array of alternative online communities has developed; these are outlined in Table 6.

[20] ACMA (2007) *The Australian VoIP Market: The Supply and Take-up of VoIP in Australia*, December.

Table 6: Examples of popular social networking sites

MySpace	• Has more than 100 million users. • Many users are in their teens and 20s. • Has registered 2.2 million bands, 8,000 comedians and thousands of filmmakers. Users can post profiles and decorate them with photos, music, videoclips, blogs and links. • On a typical day, 230,000 users sign up. [21]
Facebook	• Has more than 70 million active users. • Facebook's fastest-growing demographic is those aged 25 years and above. [22] • There were 141,000 Australian users in mid-2007; however, this figure has since grown significantly, in line with international trends. [23]
LinkedIn	• Is an online network of more than 20 million experienced professionals from around the world, representing 150 industries. [24]
Bebo	• Has a network of more than 40 million members worldwide. • Is the third-biggest social networking site in the US, while comScore ranked it as the second most visited site in the UK. • Users each view an average of 78 pages per day. [25]

According to Nielsen's *Consumer Generated Media Report*, 56 per cent of online Australians have browsed other consumers' online profiles within the last 12 months and 44 per cent have actively updated their own profile. A larger proportion of users, 40 per cent, nominated Facebook as their 'main' online profile used in the last three months, while 33 per cent nominated MySpace.[26]

Virtual worlds have also become a tool for large-scale social interaction. Virtual worlds such as Second Life and virtual gaming worlds such as World of Warcraft offer internet users an avenue for socialising as well as entertainment and gaming. Five per cent of internet users from Nielsen Online regularly participate in online multiplayer games or virtual worlds, while five per cent said they had played online console games.[27]

[21] (2006), *MySpace Cowboys*, 29 August, <money.cnn.com/magazines/fortune/fortune_archive/2006/09/04/8384727/index.htm>.
[22] Facebook Press Room, <www.facebook.com/press/info.php?statistics>, accessed 12 May 2008.
[23] (2007) *Facebook Users Listed for Search*, 2 October, <www.australianit.news.com.au/story/0,24897,22515342-24169,00.html>.
[24] LinkedIn, <www.linkedin.com/static?key=company_info>, accessed 12 May 2008.
[25] (2008) *AOL Acquires Bebo Social Network*, 13 March, <http://news.bbc.co.uk/1/hi/business/7294174.stm>.
[26] Nielsen Online (2008) *Consumer Generated Media Report: Separating Hype From Reality*, First Edition, January, p.41.
[27] Nielsen Online (2008) *The Australian Internet and Technology Report*, February, 16+ years old, sample=1,356.

World of Warcraft exceeded nine million worldwide subscribers in mid-2007.[28] Similarly, Second Life has more than seven million worldwide subscribers, with Australian users comprising almost three per cent of the total 'population' (placing Australia 11th on the global league table of user countries). Many Second Life residents are aged between 18 and 34 years.[29]

Online social networks are providing internet users with a platform to meet new people and date. According to Nielsen, eight per cent of internet users have used an online dating website.[30]

The internet has also led to changes in the social behaviour of household internet users. Roy Morgan Single Source found five per cent of internet users go out with friends less often since they began using the internet.[31]

INSTANT MESSAGING

Instant Messaging (IM) is another popular internet communication channel. IM software allows users real-time messaging communications via the internet. According to Nielsen Online, 38 per cent of internet users participate in IM regularly.[32]

In a Nielsen//NetRatings research study of major IM platforms[33], 41 per cent of the panel used an IM program in the quarter ending March 2007. On average, an IM user engaged in 17 sessions, and spent six hours and 17 minutes on IM during the quarter ending March 2007.

BLOGS

Blogs have become another medium through which individuals interact and communicate. According to Nielsen Online, 16 per cent of internet users regularly read blogs, and five per cent have created or maintain their own blog.[34]

According to data collected in Nielsen's *Consumer Generated Media Report January 2008*, 16 per cent of Australian internet users are 'bloggers' and 48 per cent have read content from a blog, with nearly 20 per cent reading them on a daily basis.[35]

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[28] (2007) *World of Warcraft Hits NIne Million Subscribers,* 24 July, <www.gamasutra.com/php-bin/news_index.php?story=14811>.

[29] (2007) *Kelly Services Enters 'Second Life' Virtual Community*, 26 July, <www.ferret.com.au/c/Kelly-Services/Kelly-Services-enters-second-life-virtual-community-n674233>.

[30] Nielsen Online (2008) *The Australian Internet and Technology Report,* February, 16+ years old, sample=1,356.

[31] Roy Morgan Single Source, January–March 2008, 14+ years, sample=3,380.

[32] Nielsen Online (2008) *The Australian Internet and Technology Report,* February, 16+ years old, sample=1,356.

[33] MSN Messenger, Yahoo! Messenger, Google Talk, ICQ, AOL Instant Messenger.

[34] Nielsen Online, *The Australian Internet and Technology Report,* February 2008, 16+ years old, sample=1,356.

[35] Nielsen Online (2008) *Consumer Generated Media Report: Separating Hype From Reality*, First Edition, January, p.89.

VoIP

VoIP is a voice technology that involves the encoding of voice communications into internet protocol (IP) packets for transmission over IP-based infrastructure (such as the internet). It generally offers cheaper voice carriage than PSTN services.

While the widespread uptake of VoIP is still in its early stages, awareness of VoIP is relatively high. Research conducted by Woolcott for ACMA found that 81 per cent of internet households, when prompted with brand names such as Skype, were aware of VoIP services.[36]

Roy Morgan Single Source data shows that 69 per cent of internet users were aware of VoIP. Of those, 18 per cent already use the service. [37]

Internet users with broadband access were more likely to use VoIP than consumers with dial-up access—24 per cent of broadband users compared to nine per cent per cent of dial-up users.[38]

6.3 Changes to media and information use

Internet users report a reduction in their use of traditional forms of media for entertainment and information, such as watching television, listening to the radio, and reading magazines and newspapers. The internet has enabled users to engage in traditional media activities online; for example, downloading music and videos for personal viewing.

TRADITIONAL FORMS

Internet users in the Roy Morgan Single Source study were asked if their online activities have changed their previous behaviour:

- Internet users reported watching television less often—nearly a quarter of household users now watch less television, with this proportion increasing since the quarter ending March 2006.
- Internet users now read magazines and newspapers less. In the quarter ending March 2008, 18 per cent said they read magazines less often and 17 per cent read newspapers less often.
- Internet users now listen to the radio less often, with this proportion increasing since the quarter ending March 2006.

[36] Woolcott Research (2007) *Telecommunications Usage and Expectations*, April: total respondents, n=1,600.
[37] Roy Morgan Single Source, January–March 2008, 14+ years, sample=3,380.
[38] Woolcott Research (2007) *Telecommunications Usage and Expectations*, April: total respondents, n=1,600.

The decrease in the number of internet users reading traditional magazines and newspapers may be partly explained by the large proportion who now access news, sports and weather information online (73 per cent), as highlighted in Nielsen Online's study.[39] Listening to the radio less often may also be due to consumers using the internet to stream or download podcasts of radio stations—12 per cent of internet users access online radio and five per cent download podcasts.[40]

The changing use of traditional forms of media consumption is also recorded in the CCi Digital Futures Report. The study found that, on average, internet users now spend about one-third less time watching television and listening to the radio,—approximately seven hours per week. Internet users also recorded a decrease in the time they spent reading newspapers.[41]

In France, the OECD reported that the number of people watching television or listening to the radio via a computer was increasing, especially in younger age groups. In Great Britain, between 2000 and 2006 there was an 18 per cent increase in the number of adults playing or downloading music and a 16 per cent increase in the number of adults listening to web radio or watching television on the internet.[42]

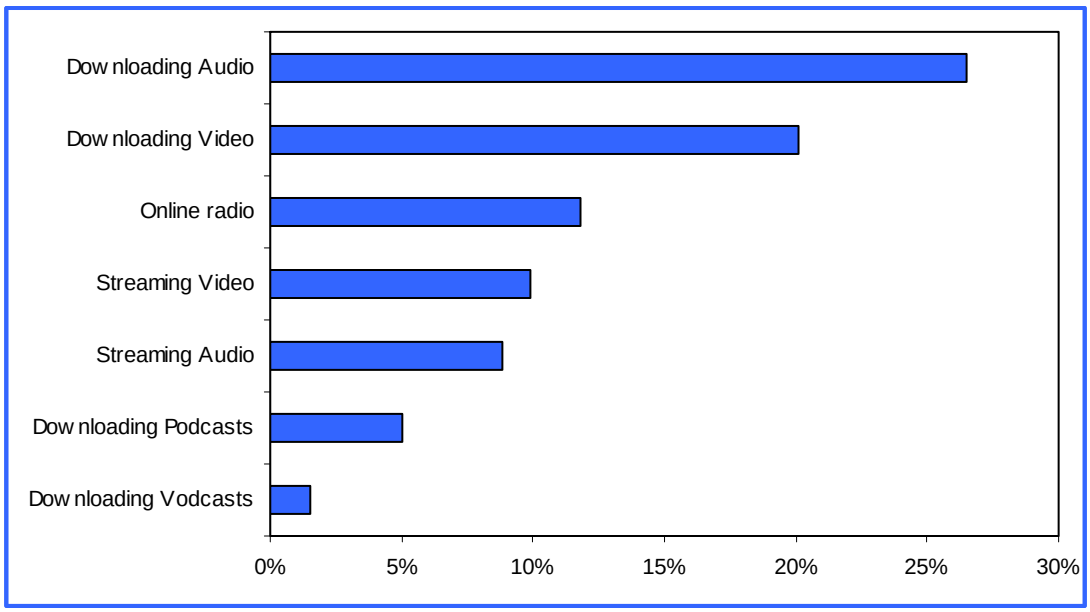
ONLINE ENTERTAINMENT

The internet is also used for entertainment—downloading and streaming music, videos, television and radio are common online activities.

The popularity of audio and video downloads is highlighted by the fact that, according to Hitwise, in May 2008 the eighth most popular website was YouTube. Every minute, ten hours of video are uploaded to the site.[43] Figure 15 below demonstrates the online media activities performed by internet users.

[39] Nielsen Online (2008) *The Australian Internet and Technology Report,* February, 16+ years old, sample=1,356.
[40] Nielsen Online (2008) *The Australian Internet and Technology Report,* February, 16+ years old, sample=1,356.
[41] CCi Digital Futures (2008) *The Internet in Australia,* July.
[42] OECD (2007) *Broadband and ICT Access and Use by Households and Individuals Report*, December, pp.23, 26.
[43] YouTube Fact Sheet, <www.youtube.com/t/fact_sheet>, viewed 28 May 2008.

Figure 15: Proportion of internet users engaging in online media activity, February 2008



Source: Nielsen Online, February 2008, 16+ years old, sample=1,356, multiple responses.

File-sharing networks that use peer-to-peer (P2P) protocols have enabled consumers to download music and video and distribute them over the internet. P2P enables broadband users to share files rather than downloading them from a centralised point. P2P is most commonly used for transferring music and video files. Some Instant Messaging and VoIP applications, such as MSN Messenger and Skype, also use P2P protocols. In 2006, it was reported that P2P protocols were responsible for more than half of global internet traffic.[44] Nielsen//NetRatings research showed that nine per cent of internet users used P2P in the quarter ending March 2007.[45]

[44] Current estimates are that P2P internet traffic is between 60 per cent (CNet (2006), *MPAA Sues Newsgroup, P2P Search Sites*, 23 February, http://news.com.com/MPAA+sues+newsgroup%2C+P2P+search+sites/2100-1030_3-6042739.html) and 72 per cent (<www.computerworld.com.au/index.php/id;75779762;fp;2;fpid;4, 30/5/2006>) of total global internet traffic.

[45] The following P2P clients were tracked by Nielsen//NetRatings—LimeWire, eMule, BearShare, BitComet and Shareza Gnutella. Data is from the quarter ending March 2007.

7 Conclusion

Many Australian households are now connected to the internet, with an ever-increasing number opting for broadband—shown by a steady rise in broadband adoption and simultaneous decrease in dial-up internet access since March 2003.

Australian household internet users are accessing the internet more frequently, with an increasing number recording heavy internet use. While there is no single profile of a heavy internet user, households with a broadband connection, in metropolitan areas, aged between 18 and 34 years, with higher levels of education and on higher incomes are more likely to be heavy internet users. Males are also more likely than females to be heavy internet users.

The internet, particularly broadband with its higher speeds, is a critical tool in the digital economy that affects how Australians perform day-to-day activities. The internet is a medium that facilitates new ways of communicating, and accessing information, financial tools and entertainment. Broadband has led to an increase in the frequency of these applications, with its speed allowing for an increased variety of activities.

The internet allows for improved interaction via email, telephony and social networking; creativity through the use of user-generated content sites; financial transactions through the purchase of goods or services and banking transactions; and general knowledge via search tools and general browsing.

Five of the most popular online activities cover these areas. Similar levels of use were recorded for them across the socioeconomic and demographic areas studied, while differences appeared in the activities performed less frequently. Younger consumers used the internet for more entertainment activities than any other age group.

Since the development of the internet, traditional forms of entertainment are being used less while new forms of online entertainment, such as downloading videos, podcasts, music and television, are more common in Australian households.