

THE CURRENT STATE OF PLAY

2004



Australian Government

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Executive summary

Since the 1990s, the level of Internet access and online activities undertaken by Australians has grown rapidly. This is reflected by a range of data relating to Australia's progress in the information economy presented in this Current State of Play report.

The relatively high levels of online participation by the general population and businesses in Australia are attributable to a number of factors that characterise Australian society as well as other leading information societies around the world. These include high levels of literacy and disposable income, a well developed ICT infrastructure, and a strong commitment by all levels of government to promote online participation. These factors, together with Australians' enthusiasm for the uptake of new technologies, have positioned the country at the forefront of the emerging global information economy.

Highlights of Australia's progress in the information economy include:

Internet access and use by the general population and households

- At June 2004, 84 per cent of persons aged 16 years and over had Internet access from any site, compared with 64 per cent at June 2000.
- 61% of persons aged two years and over had Internet access via a home PC (up from 38 per cent in the 2nd Qtr 2000).
- 59 per cent of households had Internet access compared to 16 per cent in 1998.
- 10.4 million persons 14 years and over used the Internet during June 2004 compared to 7.6 million in June 2001, an increase of 37 per cent.
- Factors such as age, qualifications, employment status, occupation, personal income and family type are more likely to have an impact on levels of personal internet use than factors such as ethnicity.
 - Internet use is more prevalent amongst younger age groups, decreasing with age; 86 per cent of 14-17 year olds; 80 per cent of 18-24 year olds; 73 per cent of 25-39 year olds; 68 per cent of 40-54 year olds; and 33 per cent of persons 55 years and over. However, Internet access has increased in all age groups since June 2001, with the age group "55 years or more" recording the highest rate of growth in the period considered; approximately 65 per cent.
 - Persons with tertiary qualifications continue to have higher levels of Internet use; 88% of persons with a degree reporting using the Internet during March 2004.

- 77 per cent of persons in full-time employment used the Internet, compared to 68 per cent of those in part-time employment and 49 per cent of persons not working (unemployed, not in the labour force, etc).
- Internet use is strongly correlated to personal income levels; 83 to 90 per cent of persons with incomes of \$50,000 or more used the Internet during March 2004, compared to 60 to 74 per cent for persons with incomes of \$25,000-49,999 and 38 to 55 per cent for persons with incomes of \$10,000-24,999. The high level of internet use for persons with incomes less than \$10,000 per annum (61 per cent) can largely be attributed to persons attending school, TAFE or Tertiary institutions.
- 79 per cent of persons 14 years and over residing in families described as *Older Families*, comprising a parent/s and children aged 13-17 years only, used the Internet during March 2004, compared to 70 per cent of persons in *Young Families*, parent/s with children aged 0-12 years, 53 per cent of persons in a *Couples* only family and 38 per cent of *Singles*.
- 81 per cent of persons in government employment were estimated to have used the Internet in March 2004 compared to 76 per cent of persons employed in the private sector and 73 per cent of those self-employed.
- 66 per cent of males 14 years and over used the Internet in March 2004 compared to 58 per cent of females.
- There was negligible difference in levels of Internet use during March 2004 between persons born in Australia and those persons born overseas (62 per cent and 63 per cent respectively).

Internet access by businesses

- From June 2000 to June 2003, the percentages of businesses with PCs, businesses connected to the Internet and businesses with a web presence increased as follows:
 - businesses with PCs; from 63 per cent to 83 per cent;
 - businesses with Internet access; from 29 per cent to 71 per cent; and
 - businesses with a web presence: from 6 per cent to 23 per cent.
- Business connectivity increased to more than 80 per cent for business with five or employees and more than 90 per cent for businesses employing 20 or more employees.
- The property and business services (89 per cent of businesses) and the cultural and recreational services industries (81 per cent) had the highest proportion of businesses online.

Online activities

- The most common online activities undertaken by persons aged 14 years and over in Australia with Internet access at home, work, or other place of access in March 2004 were:
 - at home; electronic mail (84 per cent), general surfing (54 per cent) and searching for information on products (55 per cent);
 - at work; electronic mail (79 per cent), searching for information on products (54 per cent), and searching for information on a company (50 per cent); and
 - at other points of access; electronic mail (43 per cent), general surfing (26 per cent), and accessing education services (21 per cent).
- 36 per cent of home Internet users aged two years and over in Australia accessed government services online in June 2004 compared to 27 per cent in June 2002.
- Australian Bureau of Statistics (ABS) data shows that communication, accessing government online and procuring were the most common online activities reported by Australian businesses connected to the Internet; 94 per cent for communication at June 2002, 71 per cent accessing government online services and 39 per cent placing orders online at June 2003.

Broadband

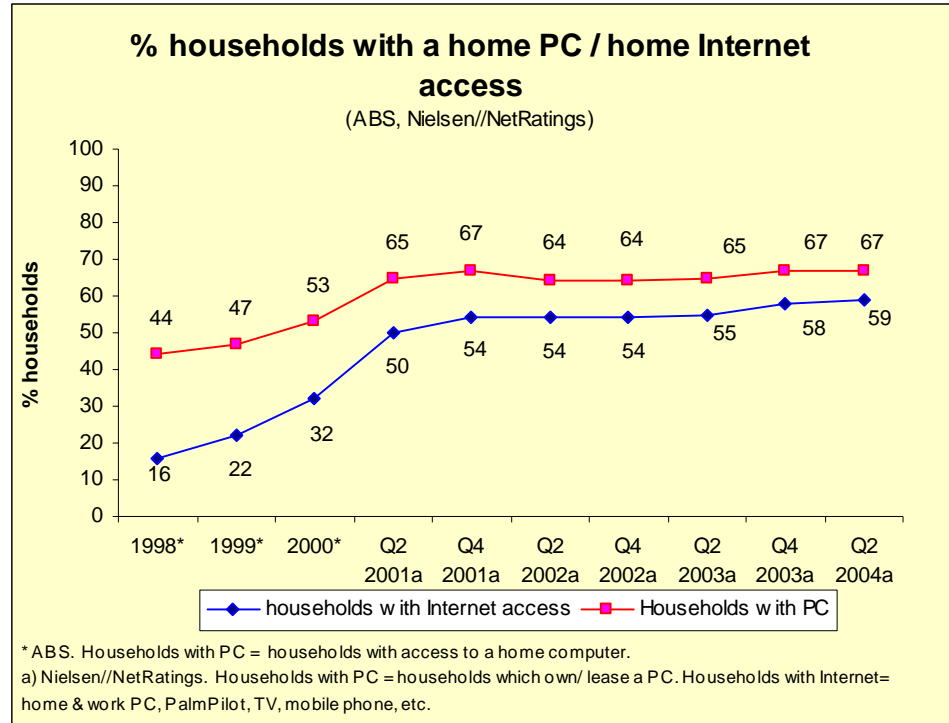
- 28 per cent of persons aged two years and over with Internet access at home used broadband technology in May 2004 (up from 5.2 per cent in June 2001). AC Nielsen more recently estimated that this had reached 40 per cent in September 2004.
- At May 2004, the Australian Capital Territory (ACT) had the highest percentage of home broadband users (44 per cent of home Internet users aged 2 years and over), followed by New South Wales (29 per cent), Victoria (27 per cent), Queensland (26 per cent), Western Australia (21 per cent), Tasmania (16 per cent), South Australia (15 per cent) and the Northern Territory (13 per cent).
- Faster download speed was the most often cited reason by home and small and medium enterprises (SMEs) broadband users for adopting broadband Internet.
- Cable was the most commonly used broadband technology in the home and DSL in businesses.
- Both home and business (SMEs) users of broadband Internet most frequently reported impacts from broadband usage relating to increased efficiency in the performance of online activities.

CHARACTERISTICS OF AUSTRALIANS ACCESSING THE INTERNET

Household and population use of the Internet

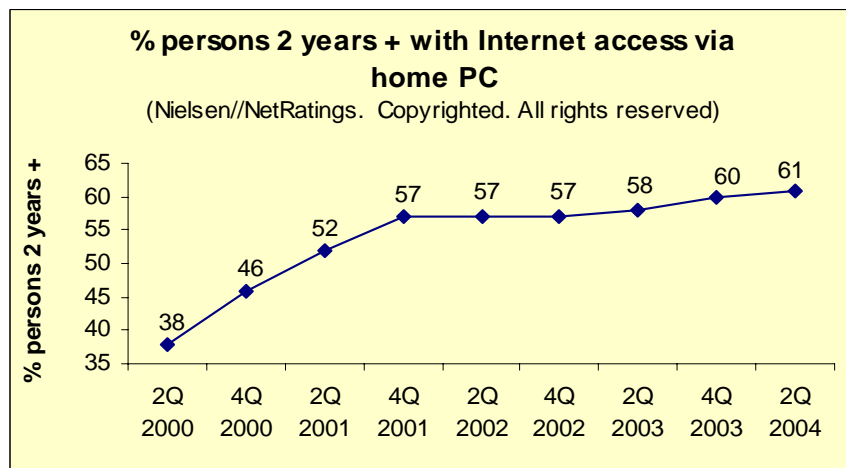
Households with PC and Internet access at home

Household levels of PC ownership and Internet access have slowly increased since the year 2000, with a slow down recorded for 2002. The plotted data indicates a degree of maturity in demand for both technologies (PCs and the Internet in the home). As the section on broadband adoption in Australia will show, this has direct implications for future growth in broadband Internet adoption.



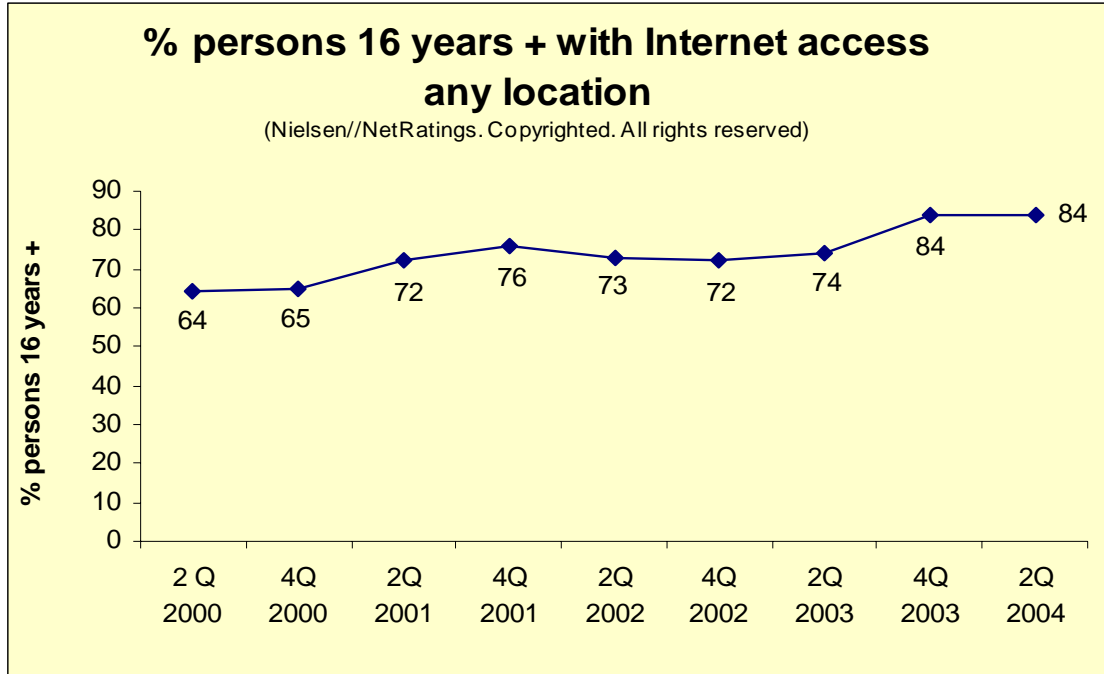
% of persons 2 years + accessing the Internet via home PC

The degree of maturity discussed above is also evident in the percentage of persons aged two years and older with Internet access via a home PC. After notable increases during 2000 and 2001, there was a marked slowing in growth in Internet adoption during 2003.



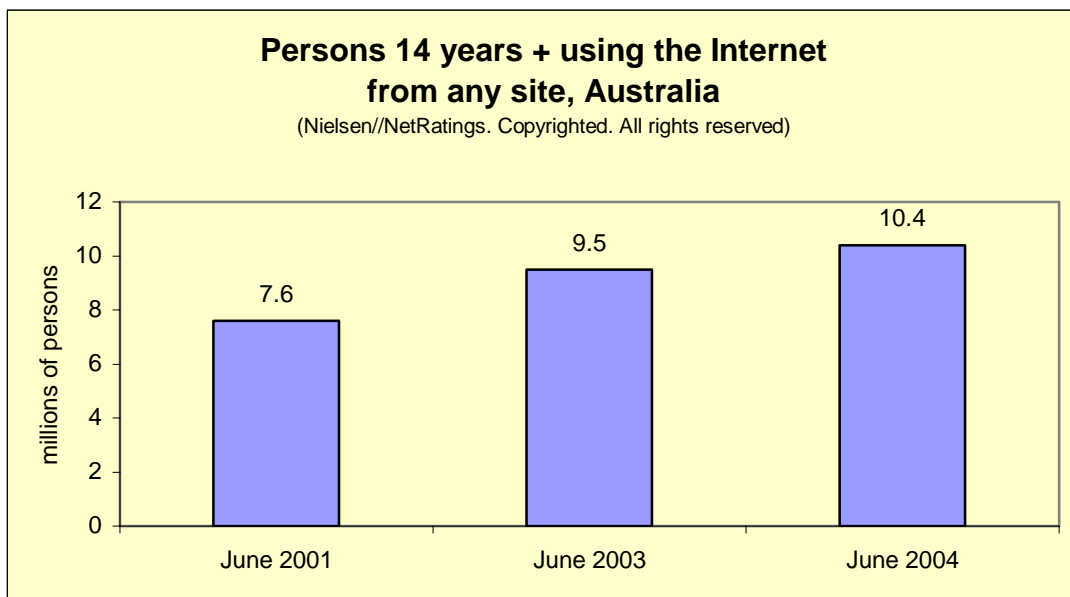
Persons 16 years + with Internet access at any location

The percentage of persons aged 16 years and over with Internet access from any site increased from 64 per cent in the 2nd Quarter 2000 to 84 per cent in the 2nd Quarter 2004.

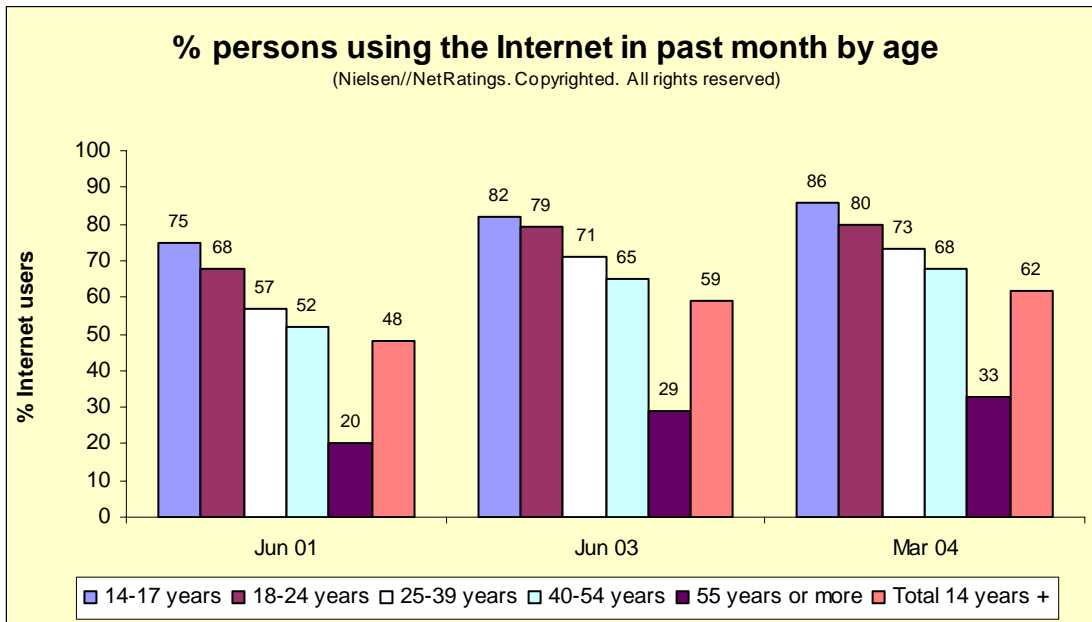


Persons 14 years + using the Internet

Approximately 10.4 million persons aged 14 years and over used the Internet from any site in Australia during June 2004, an increase of just over 9 per cent since June 2003 and 37 per cent since June 2001.



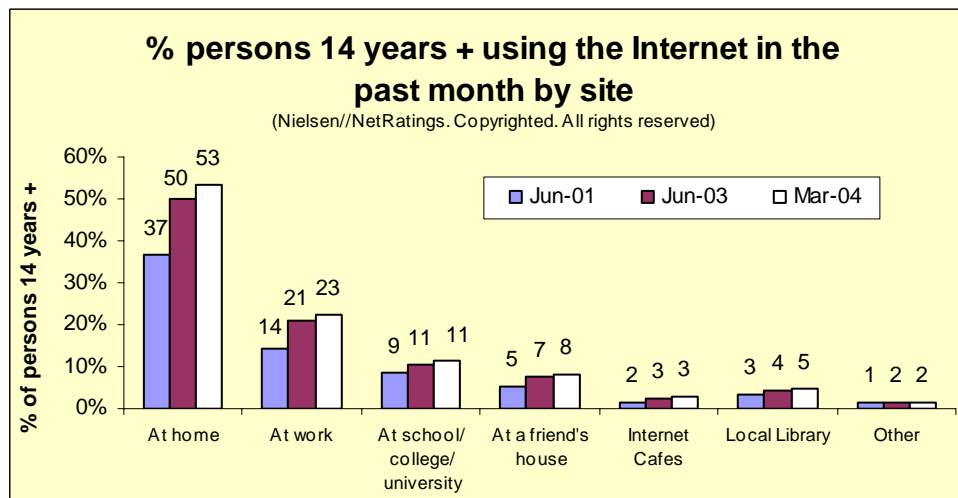
Age



Internet use is more prevalent amongst younger age groups, decreasing with age as shown the chart above. However, the data also shows that Internet access has increased in all age groups since June 2001, with the age group “55 years or more” recording the highest percentage increase in the period considered, from 20 per cent to 33 per cent.

Site of use

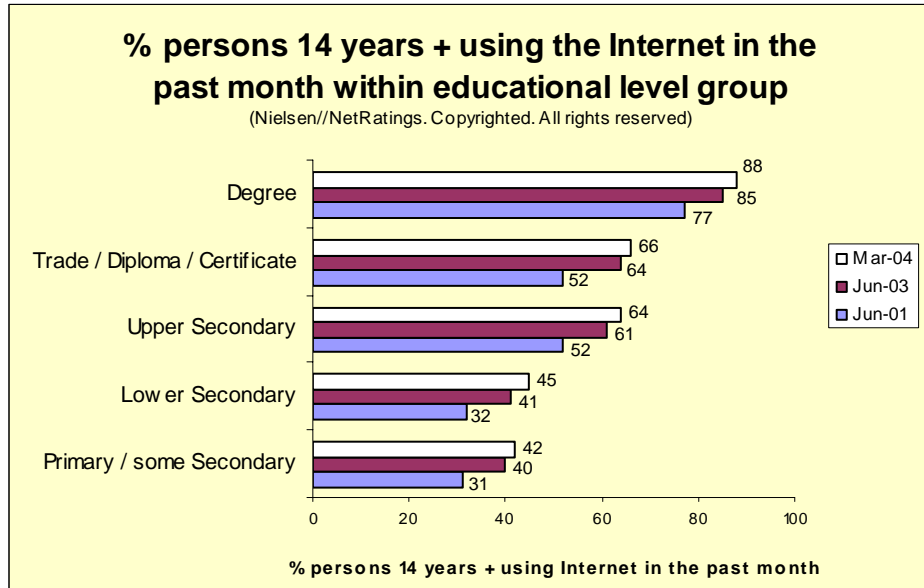
In March 2004, the home was the most frequently reported point of Internet use in Australia (53 per cent of persons 14 years and



older), followed by work (23 per cent), education institutions (11 per cent), a friend's house (8 per cent), local library (5 per cent), Internet cafes (3 per cent) and other locations (2 per cent).

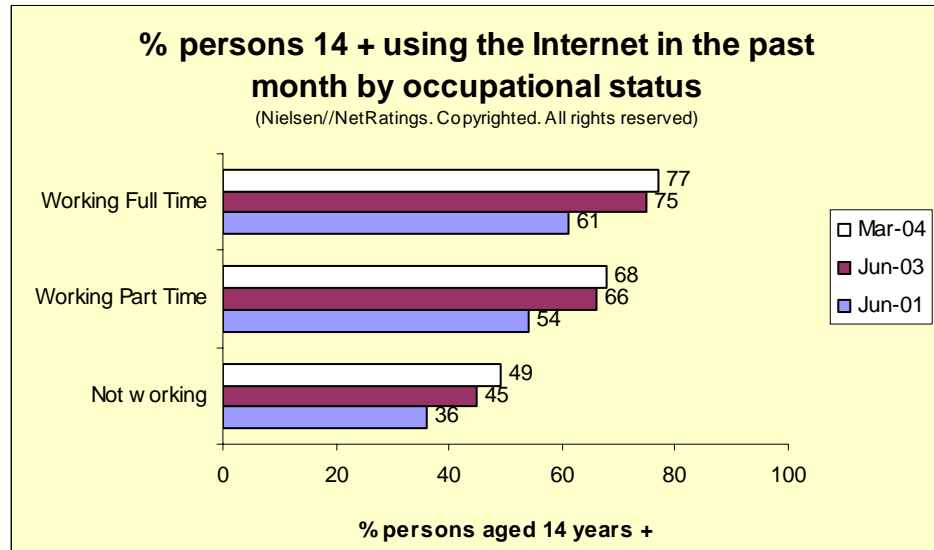
Highest education level achieved

A higher proportion of persons with tertiary qualifications use the Internet compared to persons with other educational qualifications. In March 2004, 88 per cent of persons with a degree had Internet access, compared with 66 per cent of persons with a diploma or certificate, and 42 per cent of persons with primary/some secondary education qualifications.



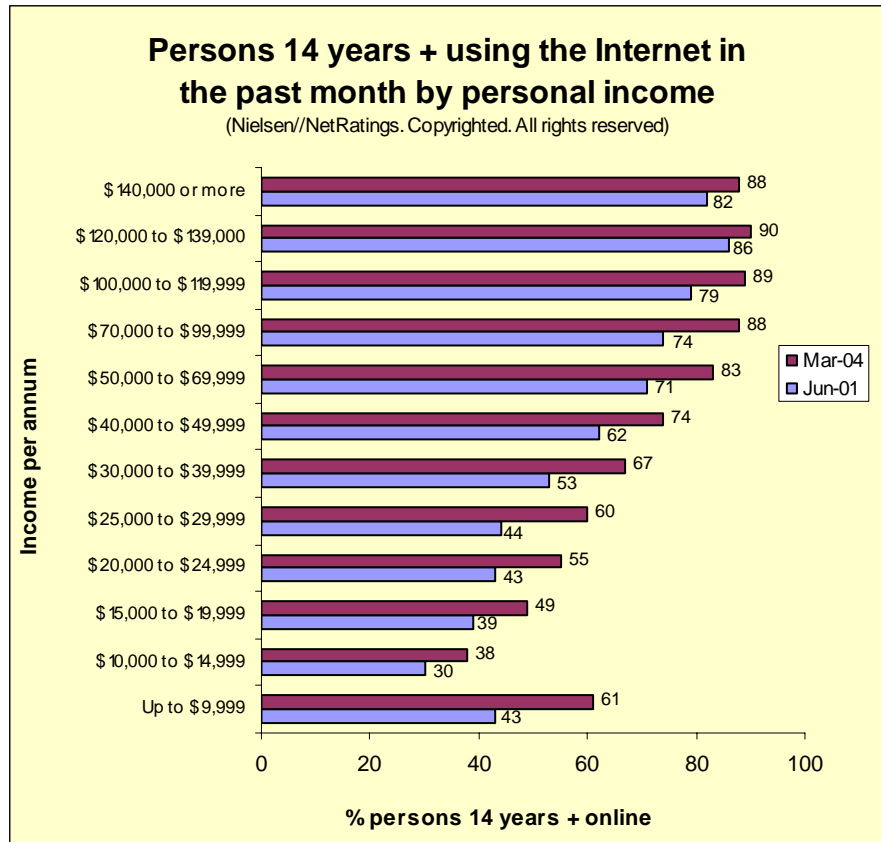
Employment status

Persons employed both full and part time have higher rates of Internet access than persons not working. Regardless of employment status, however, levels of Internet access have increased across all groups since June 2001.



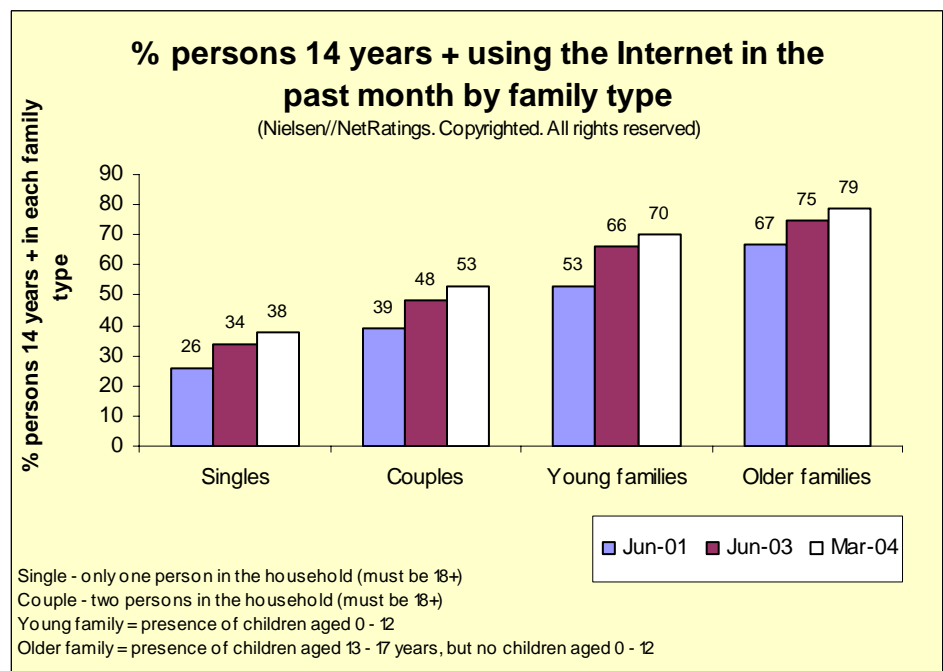
Personal income level

In addition to having higher educational qualifications and being employed, persons most likely to use the Internet are also those with higher incomes. In March 2004, Internet use ranged from 83-90 per cent for persons with annual incomes of \$50,000 or more, 55-74 per cent for persons with incomes of \$20,000-49,999 and 30-49 per cent for persons with incomes ranging from \$10,000-19,999. High levels of Internet use for persons earning less than \$10,000 per annum is attributable to large numbers of students in this category.



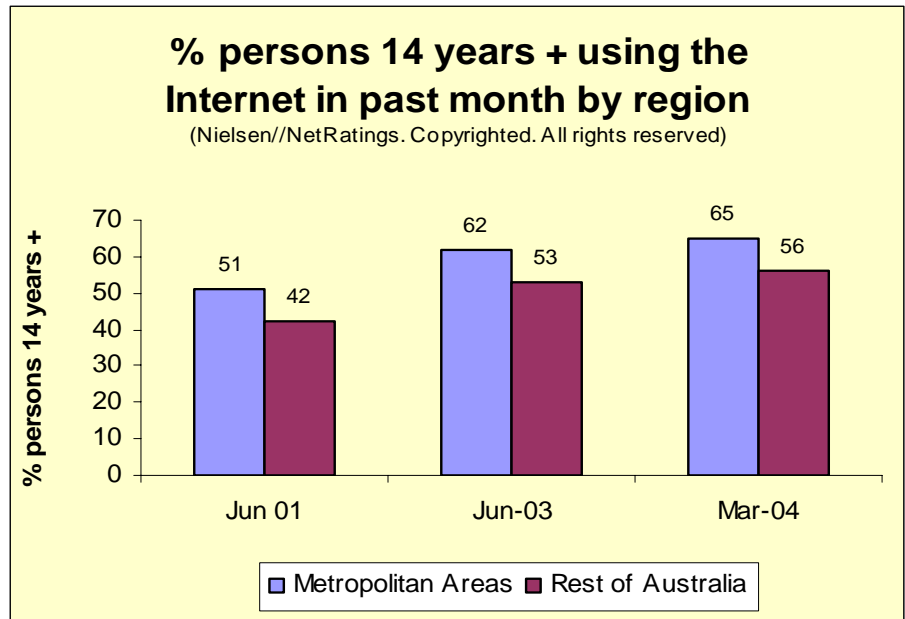
Family type

Persons aged 14 years and over were more likely to use the Internet if they were a member of an *Older* or *Younger* family than *Single* or a *Couple[s]* household. 79 per cent of persons in *Older families* used the Internet from any site during March 2004, compared to 70 per cent for persons in *Younger families*, 53 per cent for *Couples* and 38 per cent for *Singles*.



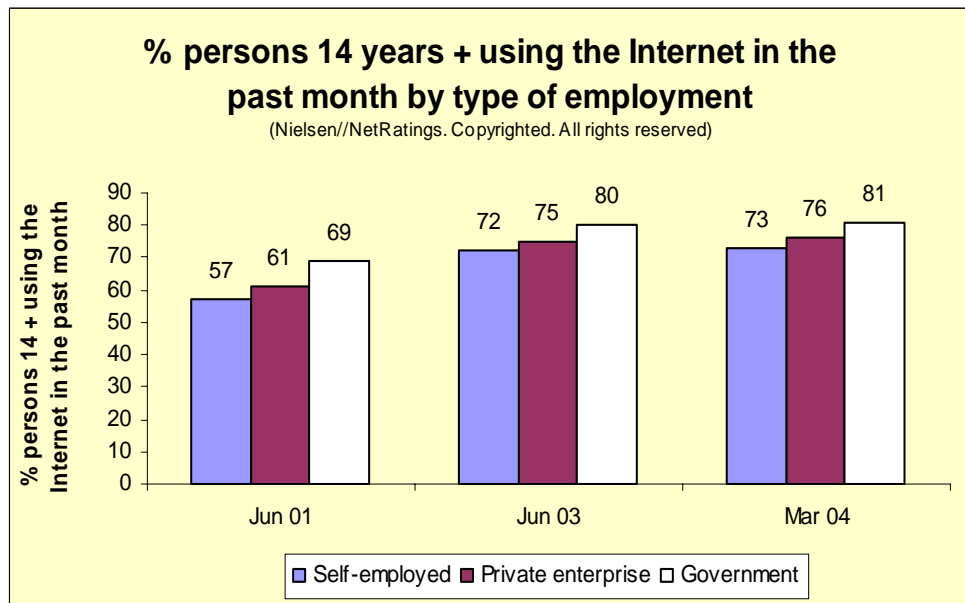
Region

Internet use has steadily increased in both metropolitan and other areas since 2001 (27 per cent for metropolitan areas and 33 per cent for non-metropolitan areas). The difference between Internet use in metropolitan areas and the rest of Australia has remained constant at nine percentage points since June 2001.



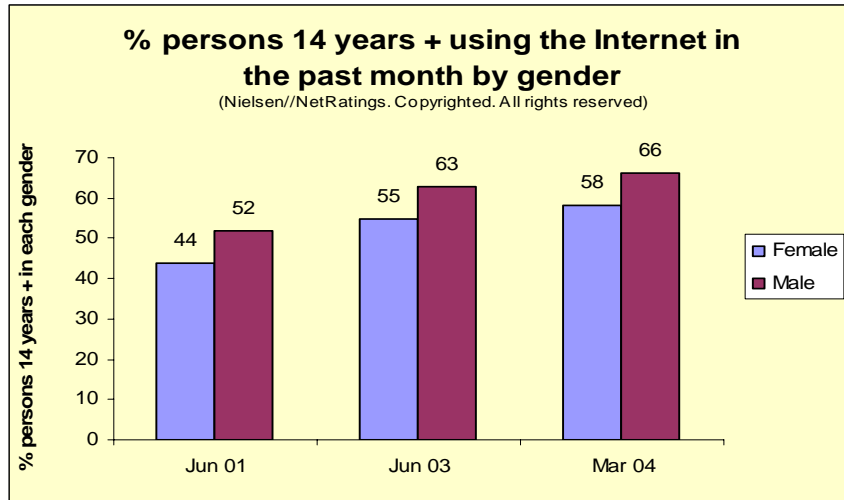
Employment type

Reflective of the nature of the work, a higher proportion (81 per cent) of government employees used the Internet in March 2004 compared to the proportion of private sector employees (76 per cent) and the self-employed (73 per cent) who used the Internet.



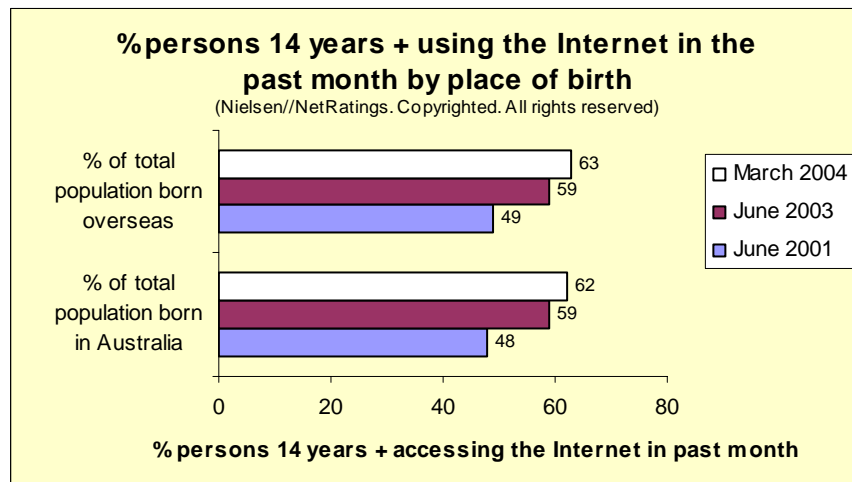
Gender

In March 2004, 66 per cent of males and 58 per cent of females in Australia used the Internet. Since June 2001, the proportion of females using the Internet has increased by 32 per cent compared to 27 per cent for males.

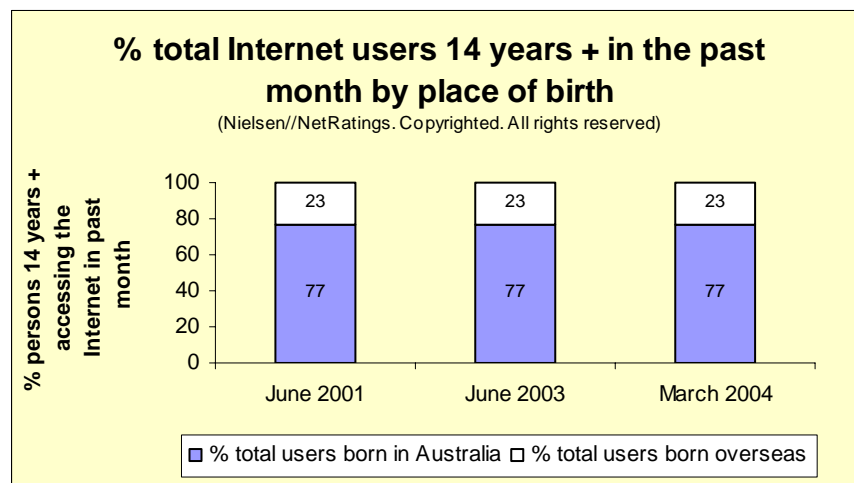


Place of birth

Place of birth, i.e. Australia or overseas, did not impact Internet use levels. In March 2004, 63 per cent of persons in Australia who were born overseas used the Internet compared to 62 per cent of persons who were born in Australia.

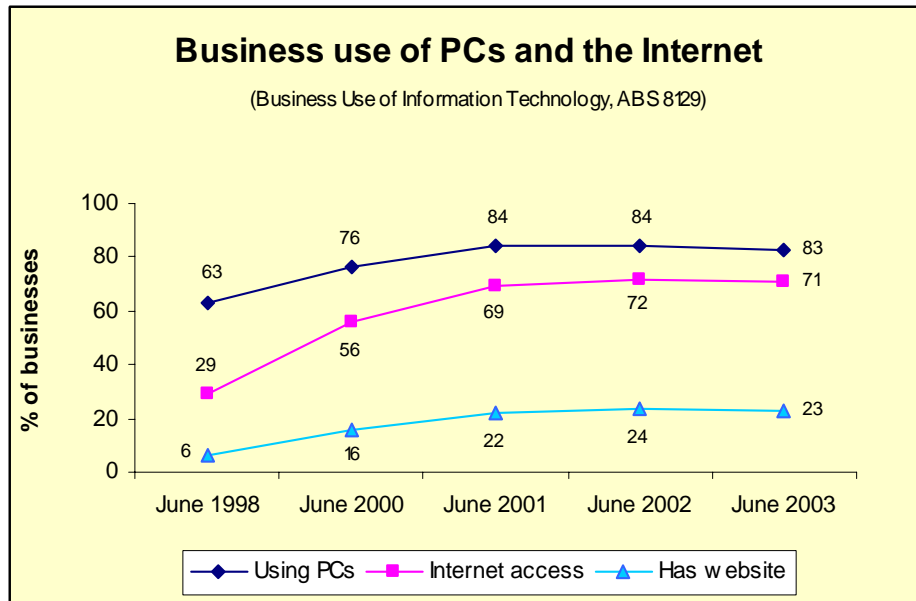


In March 2004, 77 per cent of total internet users were born in Australia and 23 per cent were born overseas. This percentage has remained unchanged since June 2001.



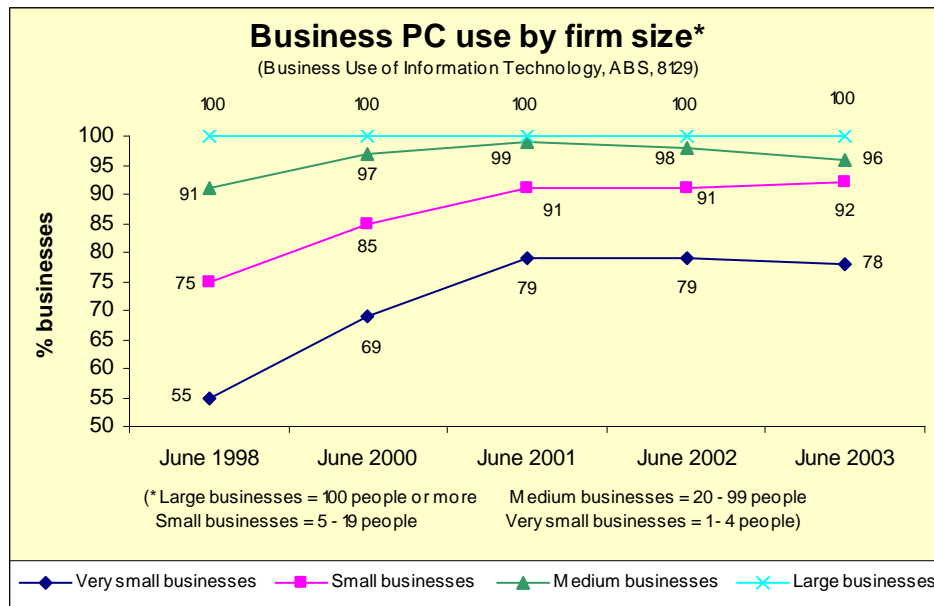
Business use of the Internet

83 per cent (564 400) of all business in Australia used a PC at June 2003, and about 71 per cent (483 000) of all employing businesses were connected to the Internet; 23 per cent (156 400) of businesses also had a website. The slight

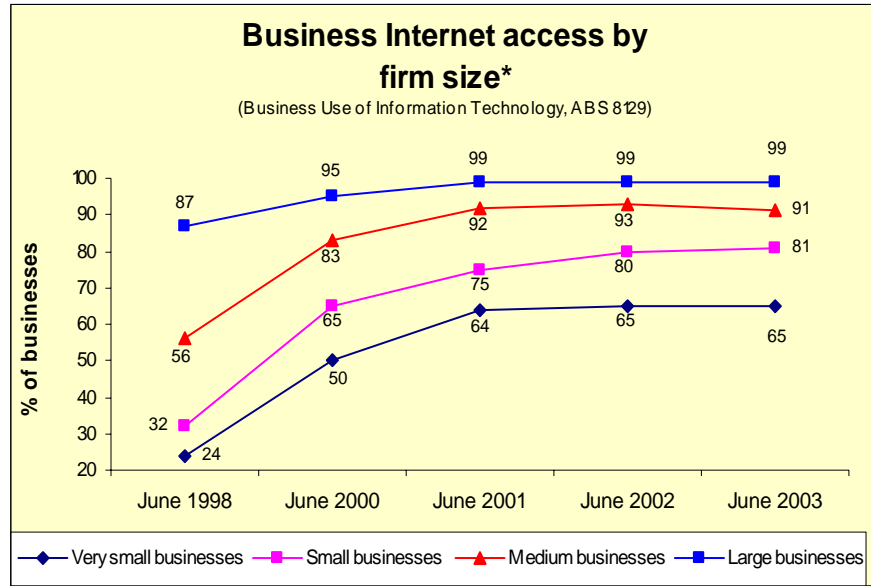


variation in the percentage of businesses online from June 2002 to June 2003 was the result of a number of factors including; ABS moving to use Tax ABN data to update its business sample frames, the number of new businesses identified growing faster than the number of business becoming connected to the Internet and sampling error. However, in absolute terms, the actual number of employing businesses connected to the Internet increased by several thousand in the period, June 2002 to June 2003.

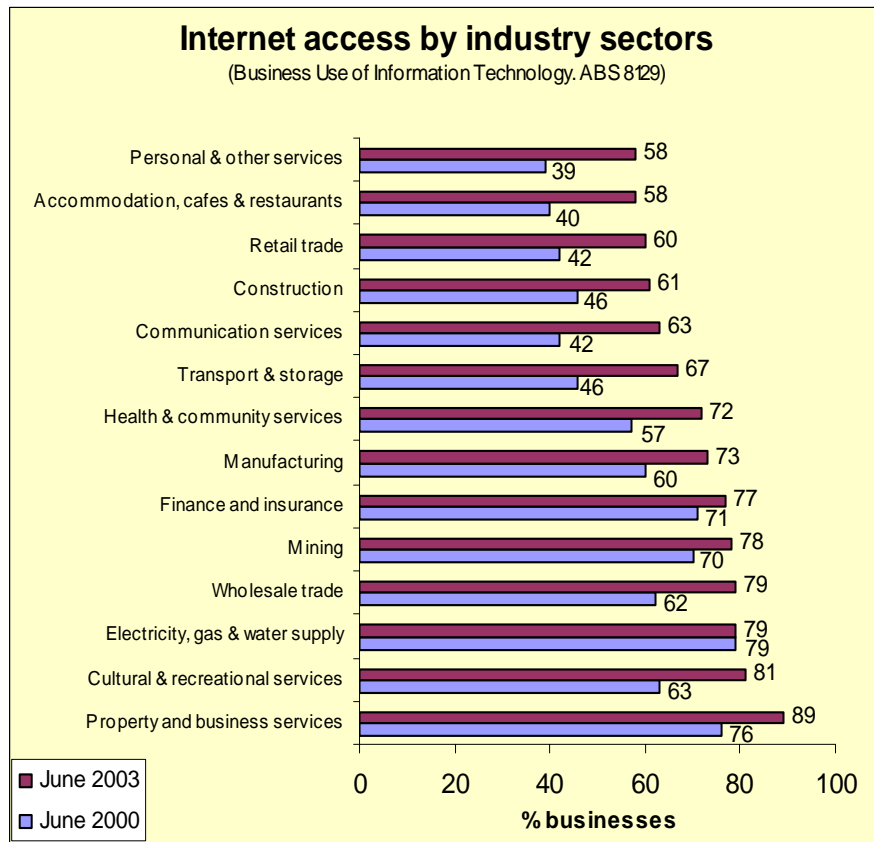
While all categories of businesses recorded high levels of PC usage, PCs were less ubiquitous in micro businesses, those employing less than 5 persons. The graph to the right shows that since June 2001, levels of PC usage have been fairly constant.



Levels of businesses Internet connectivity mirror data relating to PC usage. While all types of business recorded very high levels of Internet use, connectivity amongst micro businesses was significantly below levels for small, medium and larger businesses. As with PC usage, levels of business Internet use have remained fairly static since June 2001.



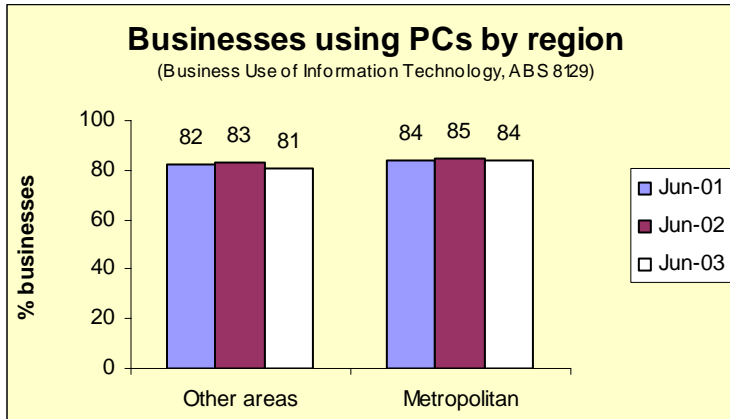
The Property and business services industry had the highest level of Internet access at June 2003. Other industries such as Cultural and recreational services (from 63 per cent to 81 per cent), Wholesale trade (from 62 per cent to 79 per cent), Manufacturing (from 60 per cent to 73 per cent), Health and community services (from 57 per cent to 72 per cent), Transport and storage (from 46 per cent to 67 per cent), Communication services (from 42 per cent to 63 per cent), Construction (from 46 per cent to 63 per cent), Retail trade (from 42 per cent to 60 per cent), Accommodation, cafes and restaurants (from 40 per cent to 58 per cent) and Personal and other services (from 39 per cent to 58 per cent) recorded significant increases in Internet usage. The ABS' industry classification *Communication services* covers businesses primarily involved in telecommunication, postal or courier services.



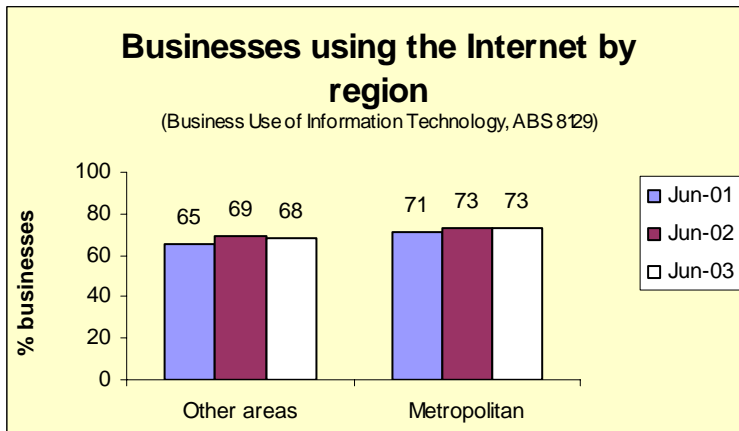
Business use of selected technology by region

In general, the location of a business (i.e. metropolitan versus non-metropolitan) had minimal impact on selected technological outcomes.

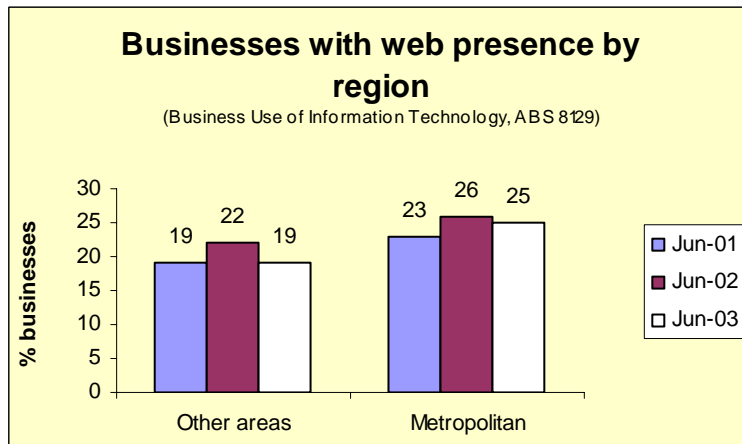
PC usage by businesses in metropolitan (capital cities) areas was on par with usage in other areas (84 and 81 per cent respectively) and the level of PC usage has remained fairly static for business in both regions since June 2001.



Internet usage by businesses has increased marginally in capital cities (from 71 per cent to 73 per cent) and in other areas (from 65 per cent to 68 per cent) in the two years to June 2003.



While the level of business web presence is lower than PC and Internet use in both regions, a slightly higher proportion of businesses in capital cities had a web presence compared to business in other areas.



ONLINE ACTIVITIES & E-SERVICE CAPABILITY

Online activities of individuals

The table lists the top 10 online activities performed by persons aged 14 years and over at home, work or other points of Internet access (e.g. library, Internet café', etc).

Nielsen//NetRatings: top 10 online activities at home/ work /other in March 2004*			
	Home usage	Work usage	Other
<i>Online activity</i>	%	%	%
Electronic mail	84	79	43
Searching for information on products	55	54	18
General surfing	54	29	26
Checking account balances	48	34	
Downloading software/files	45	36	15
Seeking Travel information	40	26	
Transferring funds between accounts	39	28	
Paying bills online	36		
Searching for information on a company	34	50	12
Accessing News and Current Affairs	34	32	10
Accessing education services		26	21
Playing games			15
Participating in interactive discuss.			14
Job hunting			11

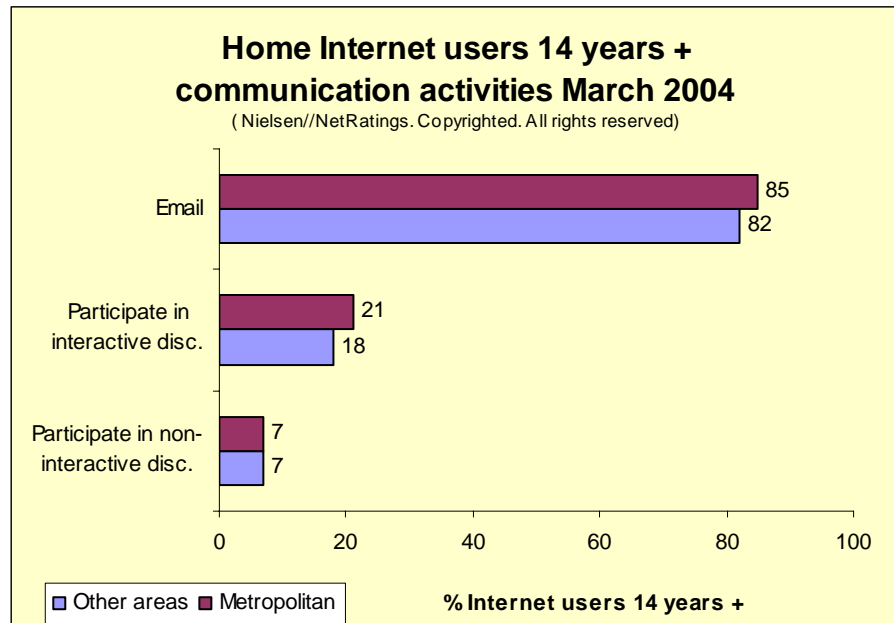
*Figures relate to online activities undertaken in the 3 months to March 2004.

Electronic mail was the most popular online activity for persons aged 14 years and over in Australia at home, work, or other sites of access (eg. library, Internet café) in March 2004, consistently leading other categories of online activity in Australia. General surfing featured strongly at all points of access, and activities of financial nature such as checking account balances, transferring funds between accounts, and paying bills online were performed by a substantial proportion of users at home and work, but by a smaller proportion of users at other locations. While home and work Internet users' top online activities patterns were similar, the list of top online activities for Internet users at other points of access introduced other activities such as playing games, participating in interactive discussions, and job hunting. Other points of access include school/college/university, a friend's house, Internet cafes, and local libraries.

A selection of online activities undertaken from home are examined further in the following pages where they are graphically presented on the basis of a metropolitan / non-metropolitan disaggregation. No historical data is presented for online activities by site of access because AC Nielsen has only recently begun collecting data on online activities by site of access (home, work and elsewhere). Data is also presented relating to the online activities of business.

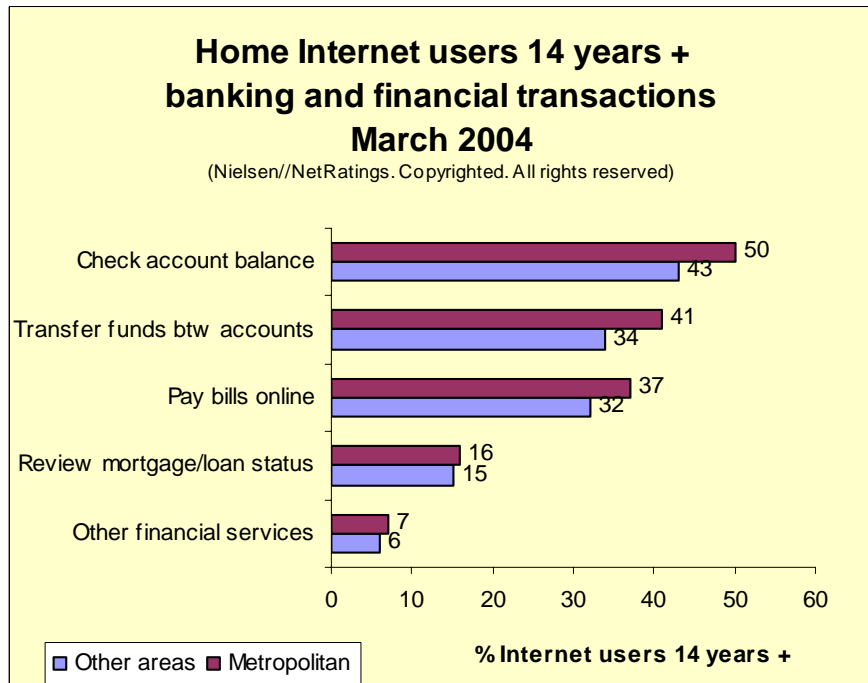
Communication

In March 2004, 85 per cent of home Internet users in metropolitan areas used electronic mail compared to 82 per cent of users in other areas. Metropolitan users also had a greater proportion (21 per cent) of Internet users participating in interactive discussion than other areas (18 per cent). Metropolitan users also had a greater proportion (7 per cent) of Internet users participating in non-interactive discussion than other areas (7 per cent).



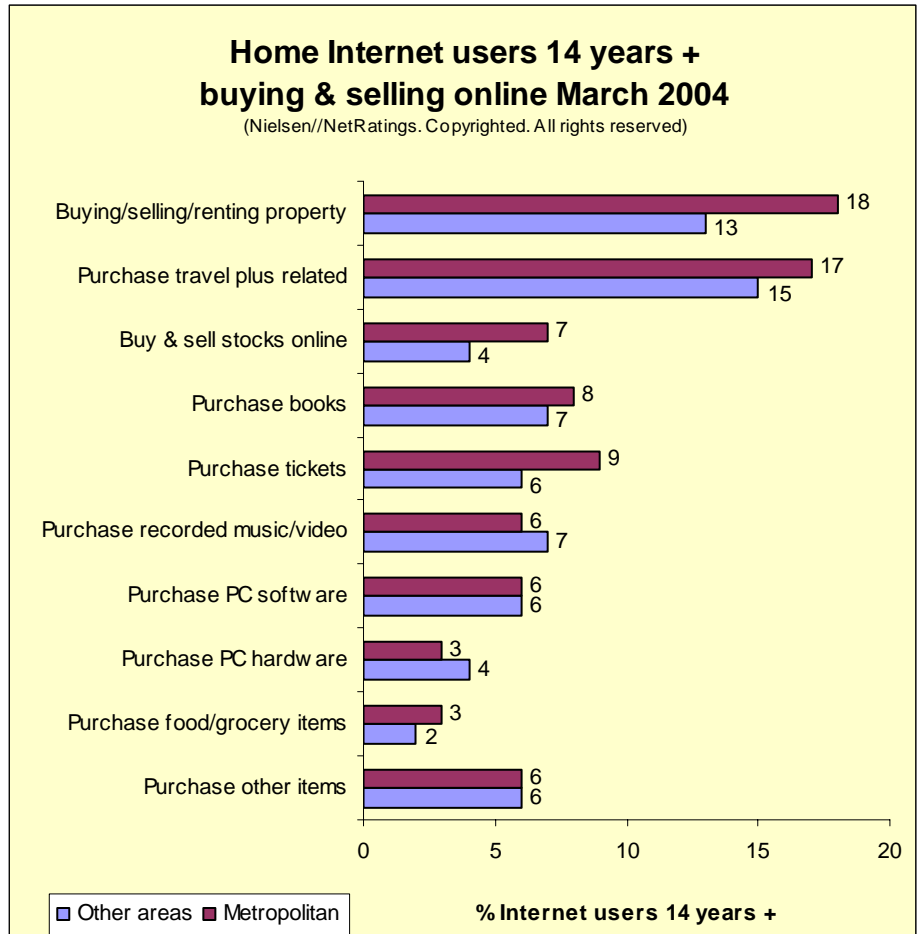
Banking and finance

Financial transactions accounted for a sizeable level of online activity in the home. The most popular activities were checking account balances (50 per cent of home Internet users), transferring funds between accounts (41 per cent), and paying bills online (37 per cent). A slightly higher proportion of home Internet users in metropolitan areas undertook online banking related activities compared to home Internet users in other areas.



Buying and selling

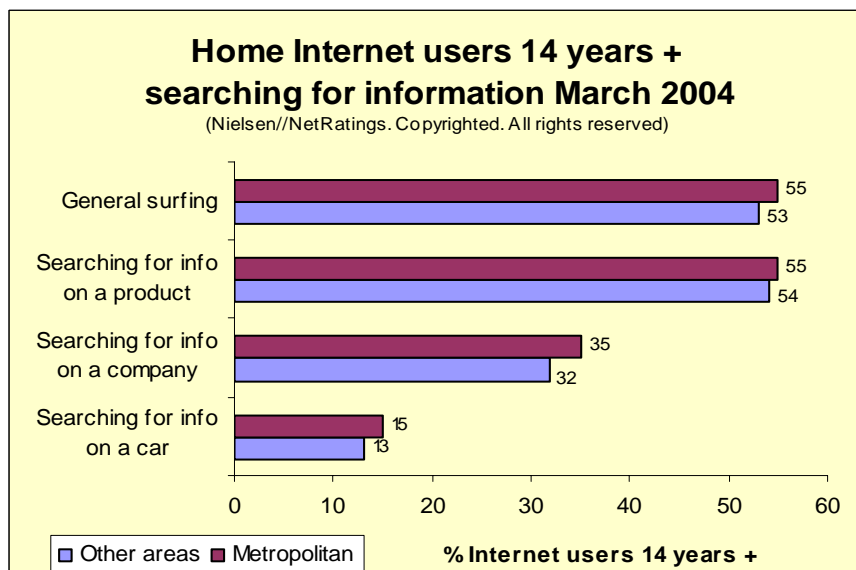
In March 2004, a range of goods and services were purchased or ordered online, the most popular of these are outlined in the chart to the right. In metropolitan areas, activities relating to buying, selling or renting property were very popular, accounting for 18 per cent of home Internet users. Other significant online shopping activities included purchasing travel related services (17 per cent), purchasing tickets (9 per cent), buying books (8 per cent) and buying /selling stocks or shares (7 per cent). In other



areas, purchasing travel related services was the top online activity (15 per cent), ahead of activities relating to buying, selling or renting property (13 per cent), purchasing recorded music / videos (7 per cent) and books (7 per cent).

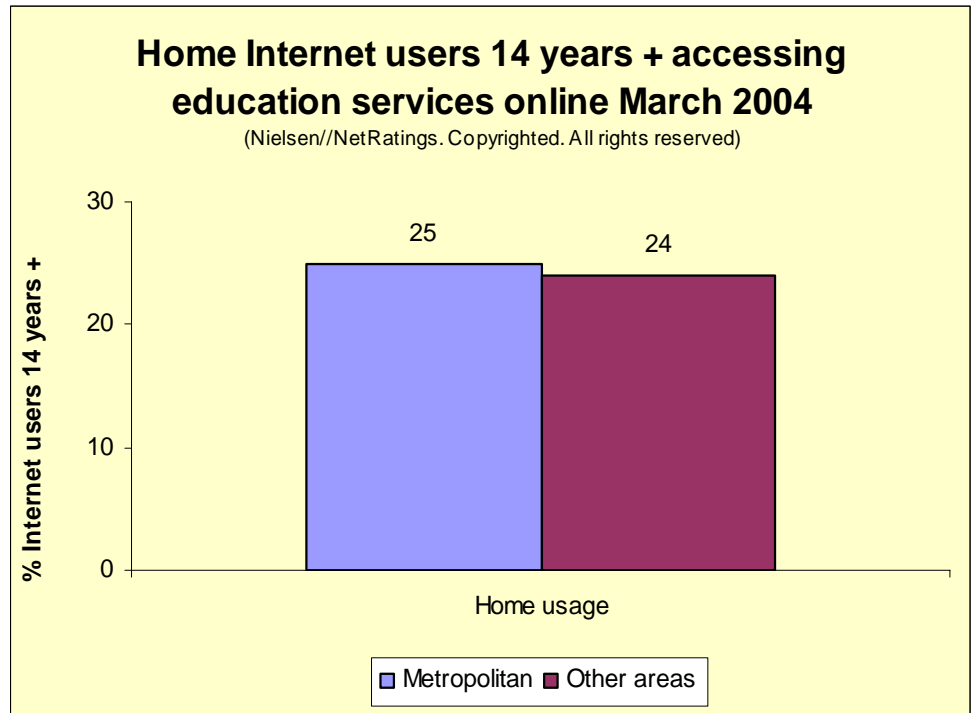
Searching for information

General surfing and searching for product information were the most frequently reported activities relating to searching online for information amongst home Internet users in metropolitan and other areas.

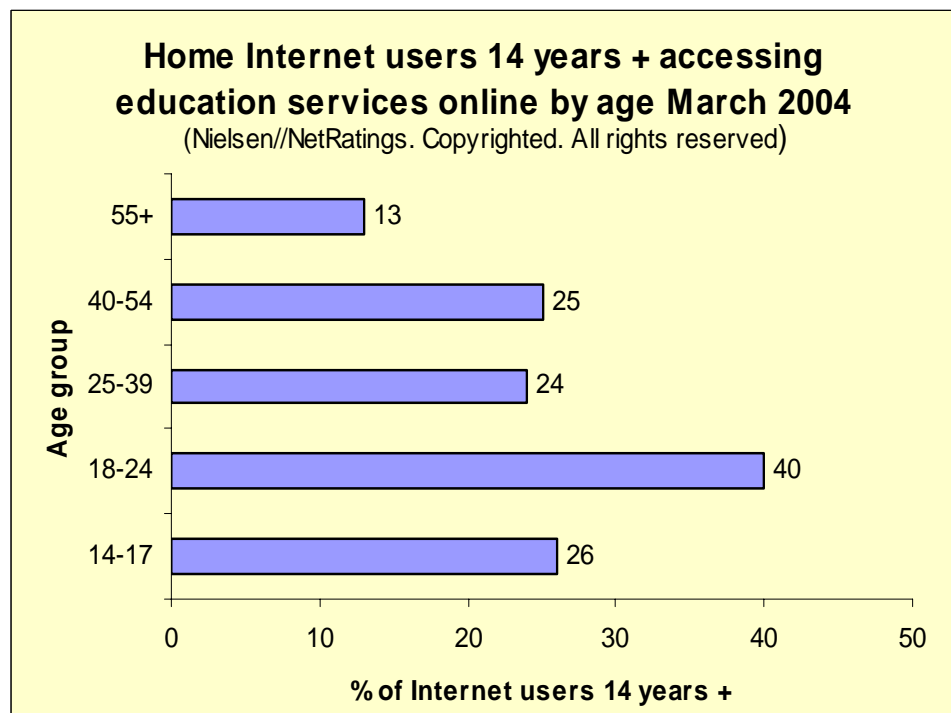


Education services

In March 2004, 25 per cent of home Internet users accessed online educational services from home. Levels of participation in online education were similar between metropolitan and non-metropolitan regions; 25 per cent and 24 per cent respectively of home Internet users in each region.

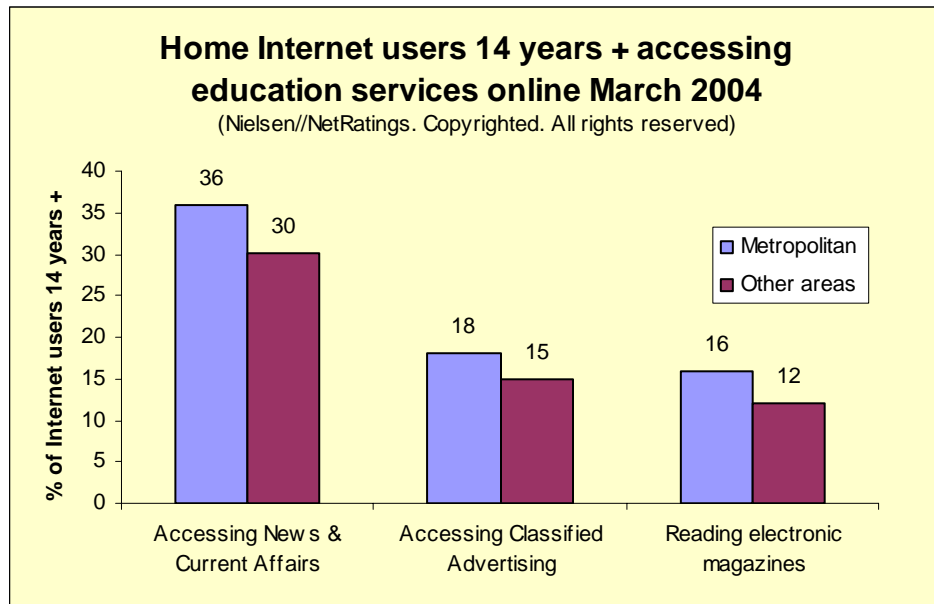


Given the growing interest in online education, an age profile of online education users is provided in the chart to the right. Home Internet users aged 18-24 years of age had the highest level of usage of online education services, 40%, compared to 26 per cent for 14-17 year olds, 25 per cent of 40-54 year olds, 24 per cent of 25-39 year olds and 13 per cent of home Internet users aged 55 years or more.



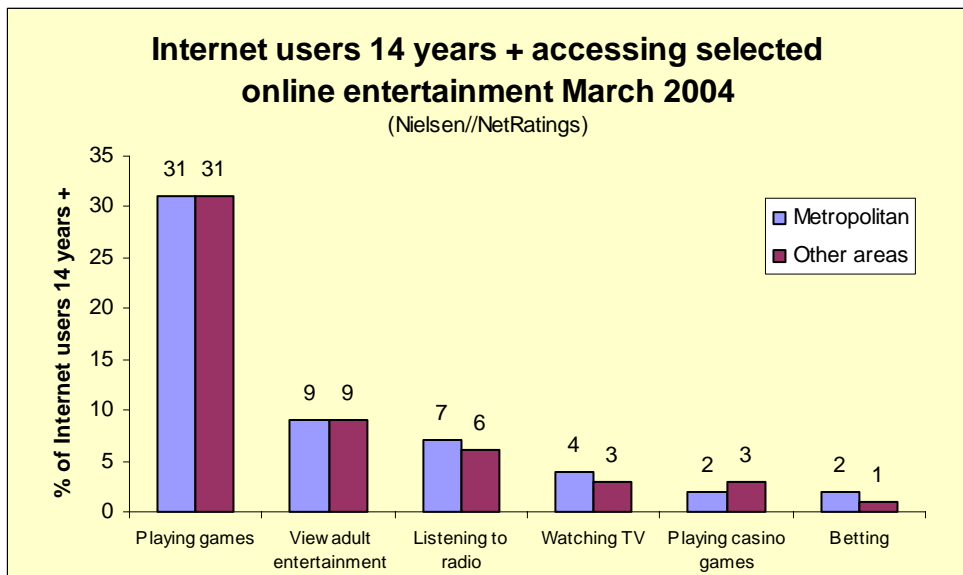
Keeping informed

Within the home, accessing online news and current affairs was the most frequently reported online activity relating to keeping informed for metropolitan and non-metropolitan home Internet users (36 and 30 per cent respectively).



Entertainment

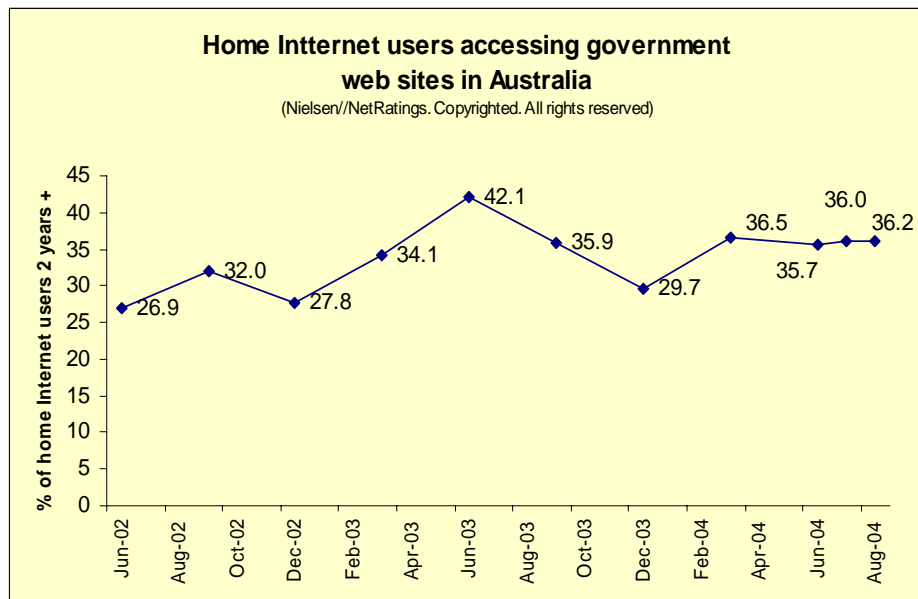
For home Internet users in metropolitan and non-metropolitan areas (other areas), playing online games at home was the most frequently reported activity relating to entertainment; 31 per cent respectively.



E- government

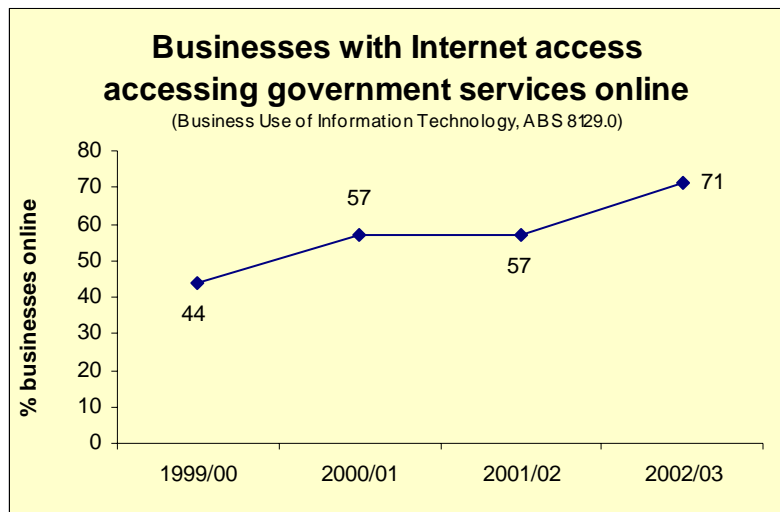
E-government is recognised as “a catalyst for the development of the Information Economy by delivering critical services online. E-government facilitates access to information resources, programs and services with an emphasis on the added efficiency dividend derived by consumers from being able to access online services without restrictions of time or place and public sector agencies able to deliver services more efficiently and cheaply.”¹ E-government activity in Australia has been growing steadily in the last few years, with governments at federal, state and local level rising to the challenges posed by the new online operating environment created with the advent of the Internet. Both government and the general community in Australia have become increasingly familiar with the benefits of government online. Australia today, is a world leader in terms of the number of Internet users accessing government web sites.

Home Internet users - The percentage of home Internet users accessing government websites increased from approximately 27 per cent in June 2002 to about 36 per cent in June 2004. During June 2004, Internet users accessing government websites did so an average of four times, spending an



average of 25 minutes visiting e-government sites.

Business – The percentage of online businesses accessing government services online increased from 44 per cent at June 2000 to 71 per cent at June 2003.

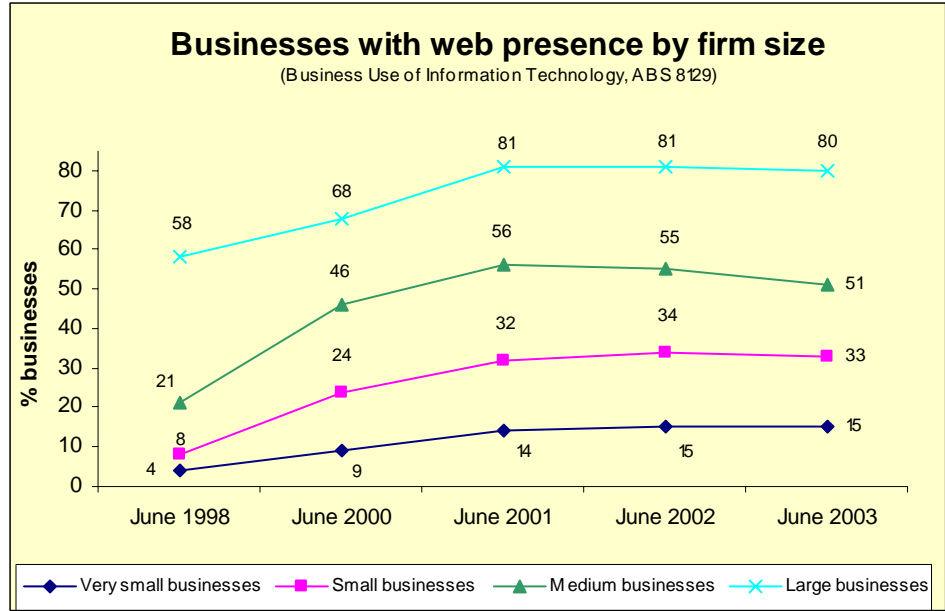


¹P.46, 2003 Information Economy Index, NOIE.

Business e-service delivery

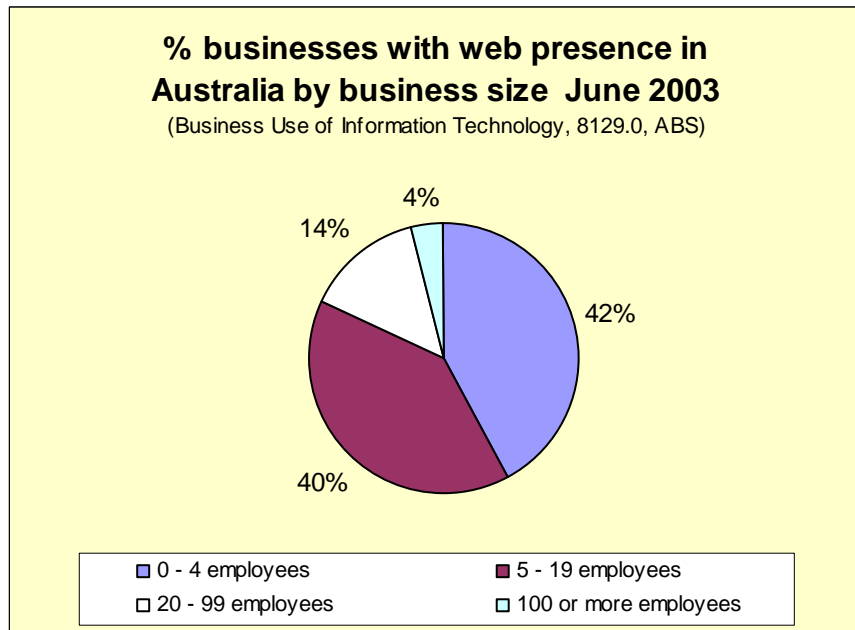
Web presence by size and industry sector

In many cases the business or organisational web site will be the first “port of call” for prospective users of online services. AC Nielsen estimated that 55 per cent of home Internet users during March 2004 went online for information relating to a product or service. ABS data shows that like PC and

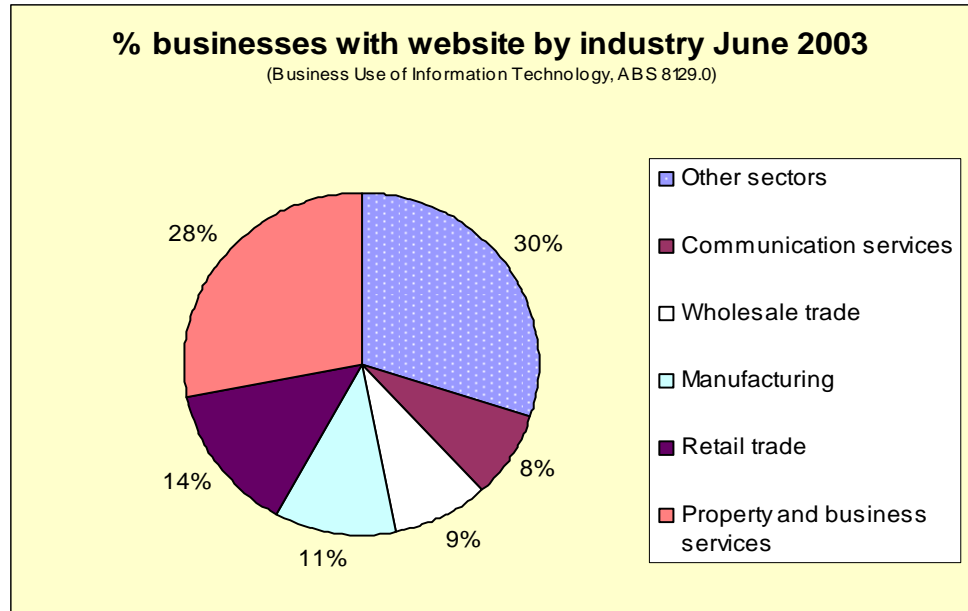


Internet usage, whether a business has a web presence is directly linked to the size of the business and the industry or sector of operation. At June 2003, the ABS reported that 80 per cent of large businesses had a web presence, compared to 51 per cent of medium businesses, 33 per cent of small businesses and 15 per cent of very small or micro businesses. However, in absolute numerical terms, small businesses, as a result of their larger numbers, accounted for the majority of businesses with a web presence.

At June 2003, 82 per cent of businesses with a web presence were small businesses, employing less than 20 persons, while 14 per cent of businesses with a web presence had 20-99 employees and 4 per cent 100 or more employees.



At June 2003, the Property and business services industry accounted for 28 per cent of businesses with a web presence in Australia, followed by Retail trade (14 per cent), Manufacturing (11 per cent), Wholesale trade (9 per cent), and Communication services (8 per cent).

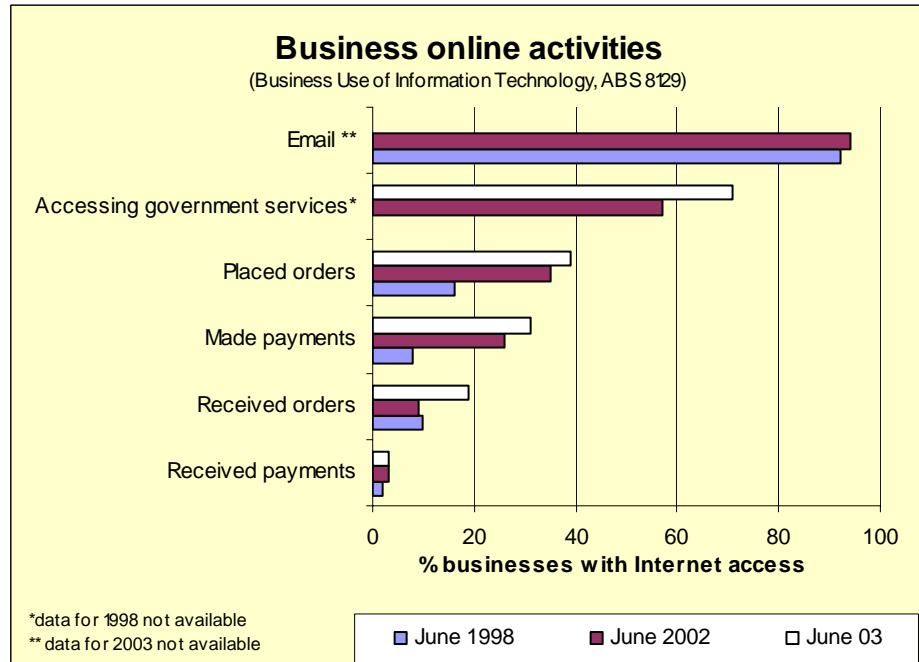


Business online activities

Communication is one of the most frequently reported online activities for businesses (94 per cent of businesses at June 2002 —still higher than any other activity for at June 03).

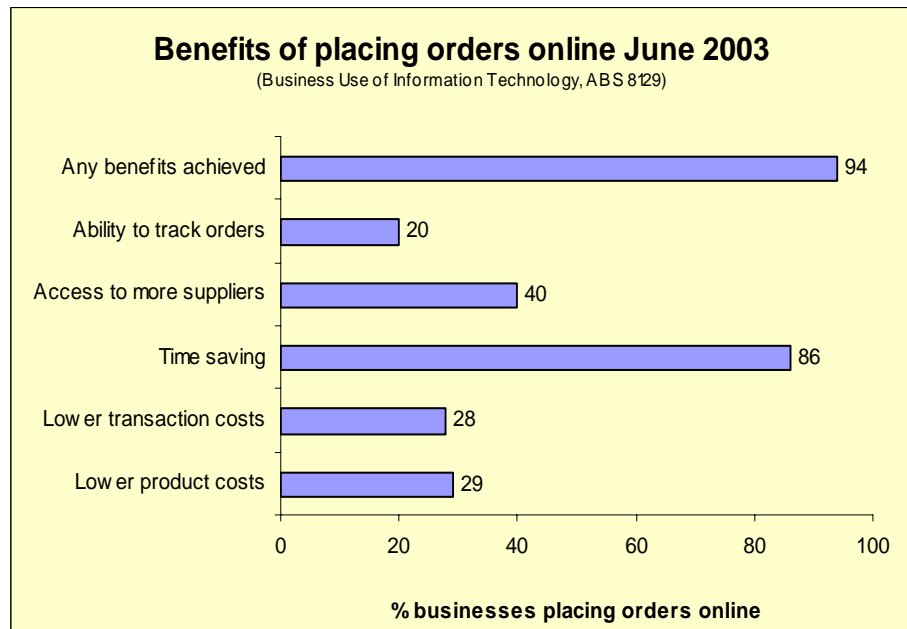
Businesses are increasingly appreciating the benefits of accessing government services online (from 57 per cent at June 02 to 71 per cent at June 2003) while e-commerce activities such as placing

orders online (from 16 per cent at June 98 to 39 per cent at June 2003), making payment online (from 8 per cent to 31 per cent), and receiving orders online (from 10 per cent to 19 per cent) have all recorded significant in online business participation.



Benefits of businesses placing orders online

At June 2003, 94 per cent of businesses placing orders online considered the activity as beneficial to business operations; *time saving* (86 per cent), being the most evident benefit, followed by *access to more suppliers* (40 per cent), *lower product costs* (29 per cent) and *lower transaction cost* (28 per cent).



ADOPTION OF BROADBAND

Two types of metrics can be used to formulate an overview of broadband adoption in Australia. These are:

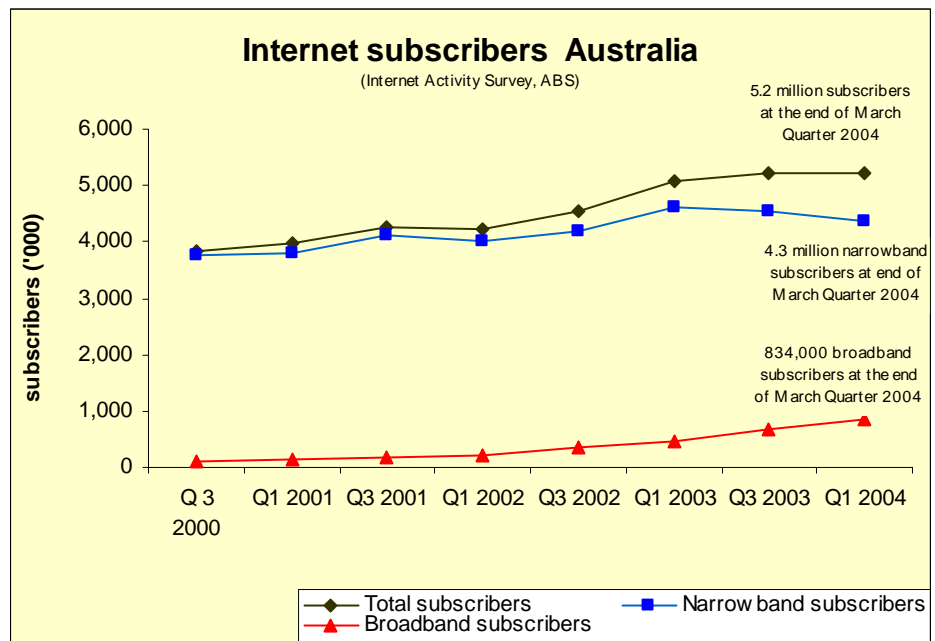
1. counts of subscribers: active subscribers are defined as subscribers having accounts with ISPs who have accessed the Internet or paid for access to the Internet during the reference period. Counts of subscribers are not the same as counts of people or organisations with Internet access. Subscriber metrics are usually disaggregated by two broad sectors; households and business / government on the basis of the type of charge plan.
2. Estimates of persons or organisations with Internet access. These estimates are usually derived via sample surveys and depending on the sample size have a level of variability (standard error) associated with an individual estimate.

These two sources of broadband data can be used simultaneously to validate market directions (the shift from narrowband to broadband for instance), but subscriber metrics are not a substitute for detailed household or business sector surveys. Subscriber counts are accounting or billing points, and they provide only a limited picture of Internet and more specifically broadband adoption in Australia in what is essentially a supply side view of broadband take-up. Subscriber metrics do not provide important information relating to issues such as the actual number of broadband users, their characteristics (demographic, socio-economic, employer size, sector of operation, etc), factors influencing decisions to adopt broadband, nor the impact of broadband on day-to-day online activities.

Internet subscribers

According to the ABS, at the end of March 2004 there were approximately 5.2 million Internet subscribers in Australia; 4.5 million households and 740 000 business and government subscribers. Broadband subscribers (access speed greater than or equal to 256kps) accounted for 16 per cent of total subscribers during this period. Overall the total number of

Internet subscribers increased by less than 0.5 per cent since September 2003, while the number of broadband subscribers increased by 27 per cent, clearly demonstrating



the continuing shift from narrowband to broadband services. The following set of data provides an overview of broadband adoption and the characteristics of broadband usage in Australia using household and business data collected via ABS, Sensis and AC Nielsen household and business surveys.

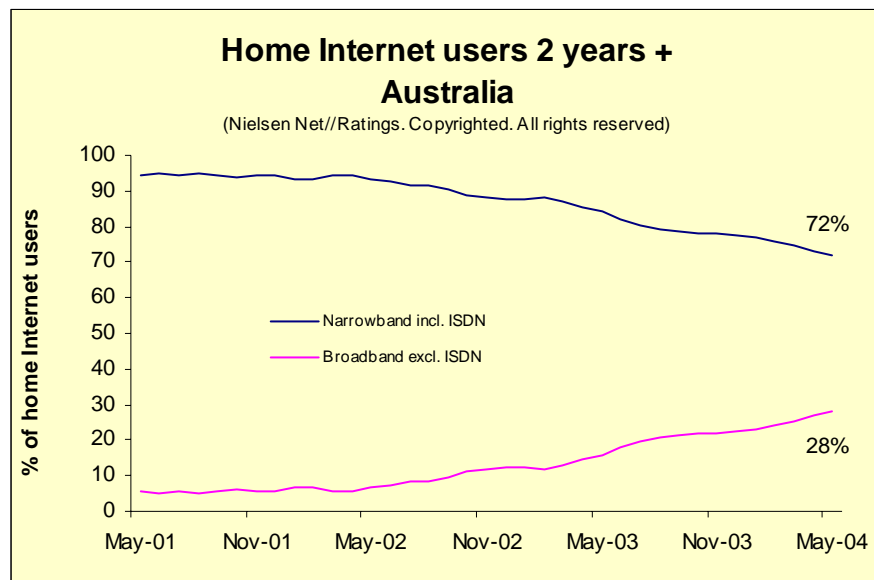
Broadband versus narrowband home Internet users

Using the previous picture of home Internet adoption as our backdrop, the next question to address is the proportion of home Internet users who are broadband users and how the relativities between broadband and narrowband are changing over time. Again, AC Nielsen data provides an interesting picture of Australian trends, complemented by data from seven other countries. These statistics form an interesting comparison and the charts present a vivid, graphic view of where Australian broadband adoption has progressed to relative to these other countries. The AC Nielsen data used in these charts following refers to the proportion of home Internet users aged two years and over and as such represents the totality of home Internet users for all practical purposes. Any Internet user under this age would be a rarity and accordingly would not have a statistically significant presence.

The shift from broadband to narrowband use in Australian homes

The chart for **Australia** shows substantial change in the division between broadband and narrowband home Internet users in the three years from May 2001 to May 2004.

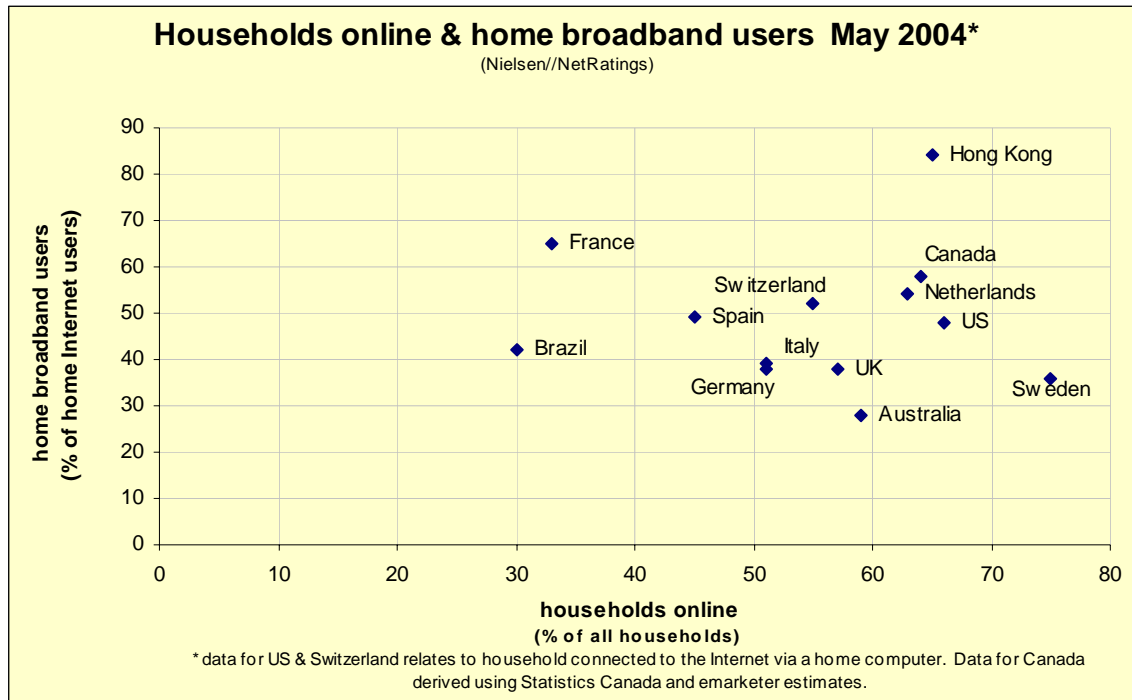
The rate of change has in fact accelerated in the latter twelve months to twice the rate of the two years from May 2001 to May 2003. There was an 8 percentage point change over the first two years compared to a 16 percentage point change in the latter twelve months. At May 2004 approximately 28 percent of home Internet users were



connected to broadband compared to 72 per cent narrowband (at May 2004, 0.9 per cent of users connected via ISDN). Given the increasing availability of broadband services and recent DSL price declines, it would be reasonable to expect the rate of change to accelerate further over the next twelve months. In the first quarter of 2004, 52 per cent of all Australian households had Internet access².

² Global Internet Trends; Quarter 1, 2004 – Nielsen//NetRatings

International benchmarking

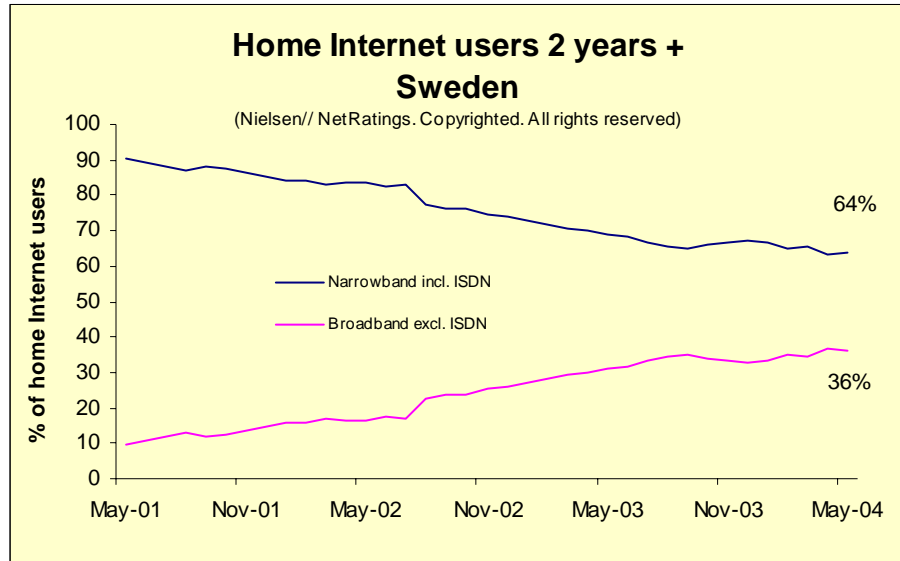


According to AC Nielsen nearly 30 per cent of home Internet users in Australia used broadband services, compared with Hong Kong at the other end of the broadband adoption scale, where 84 per cent of home Internet users accessed the Internet via high speed services in May 2004. However, in Australia over recent years there has been a surge in broadband take up rates which has been fuelled by a number of market factors including the sustained migration from narrowband to broadband,³ increased roll out of broadband infrastructure, the declining cost of broadband, and a growing desire by online Australians to greatly improve the efficiency or “effectiveness” of their day-to-day Internet activities. These factors in concert will be a major driving force in shifting Australia to a more equal footing with broadband leaders in the coming few years.

As the chart above shows, Australia’s level of household connectivity in May 2004 was nearly 60 per cent, in line with leading nations such as Sweden (75 per cent), the US (66 per cent), Hong Kong (65 per cent), Canada (64 per cent) and the Netherlands (63 per cent). All these countries, with the exception of Sweden, had significantly higher levels of home broadband penetration. However, other countries with higher broadband adoption levels such as France, Spain and Italy, had significantly lower levels of general household connectivity. The following section explores the consumer broadband market for a selection of countries in more detail, focusing in particular on the gradual, or in some cases, dramatic, shift from narrowband to broadband.

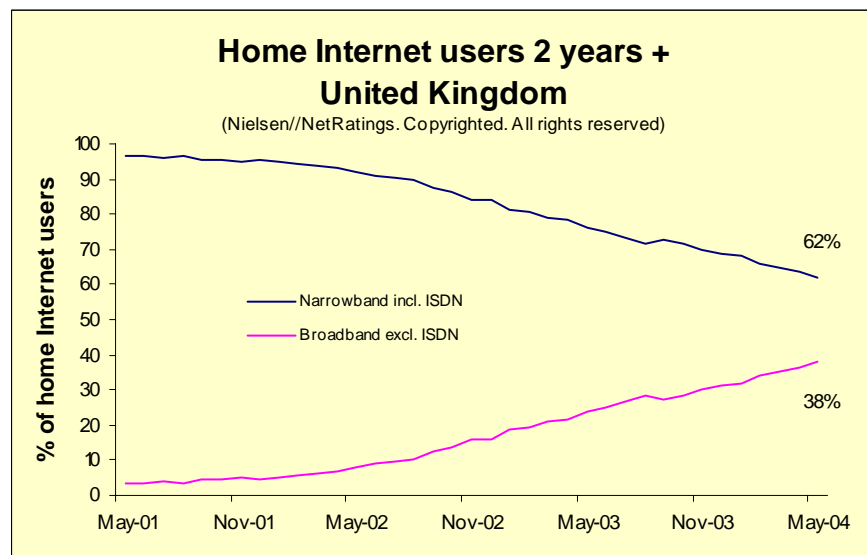
³ See Current State of Play 2003 <http://www2.dcita.gov.au/ie/publications/2004/01/csop/e-service#broadband>

Data for **Sweden** shows that home broadband use compared to narrowband is in the order of ten percentage points ahead of Australia. Approximately 36 percent of home Internet users were connected via broadband in May 2004 (the ISDN component accounted for about 3.5 per



cent of users). The rate of change over the three years to May 2004 has been more constant compared to Australia. According to OECD research⁴, Sweden was an early leader in the take-up of broadband networks having the third highest penetration in the OECD by June 2001. Two years later, in June 2003, Sweden had the seventh highest penetration of broadband access in the OECD. The early take-up of broadband coincided with Sweden having one of the lowest broadband access prices in the OECD in 2001. In the first quarter of 2004 about 64 per cent of Swedish households had Internet access⁵.

Data for the **United Kingdom** shows that it is now ahead of Sweden with about 38 per cent of its home Internet users connecting via broadband in May 2004 (the ISDN component at May 2004 was 5.4 per cent). Its progress relative to Sweden shows an accelerated rate of change over the three years to May 2004. According to



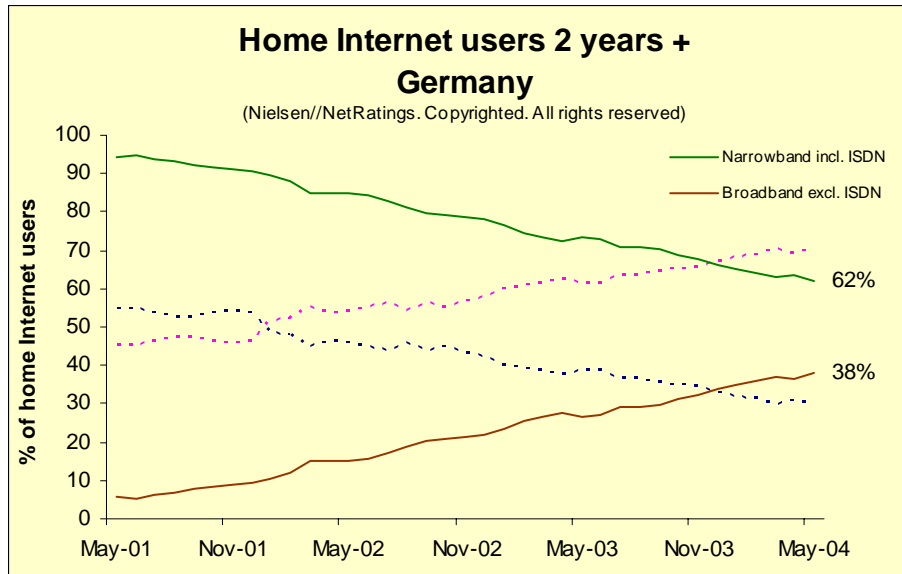
OECD research¹, the United Kingdom is one of the OECD countries in which commercial broadband access over power lines is available. In August 2003, Scottish and Southern

⁴ DSTI/ICCP/TISP(2003)8/FINAL – see <http://www.oecd.org/dataoecd/58/17/32143101.pdf>

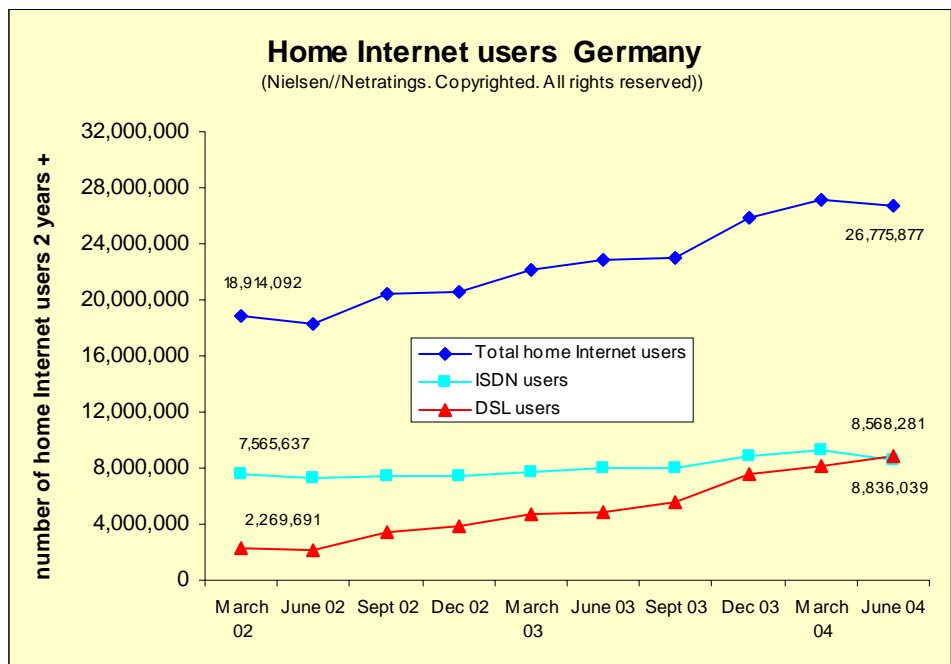
⁵ Global Internet Trends: Quarter 1, 2004 – Nielsen//NetRatings.

Electric launched a commercial trial of broadband services in Winchester using power line communications technology. A symmetrical 1 Mbps service is available for US\$48 per month. The availability of technologies such as fixed wireless and power-lines adds to the UK government's aim of promoting consumer choice at the retail level through the provision of a variety of technologies and suppliers to stimulate competition and lower prices, as well as broadband market regulation, including local loop unbundling and shared access. In the first quarter of 2004, 43 per cent of UK households had Internet access⁶.

Data for **Germany** shows a similar degree of progress to broadband at home as for the UK—38 per cent. It should be noted that Germany had 32 per cent of home Internet users connecting via ISDN in May 2004. This is quite a significant proportion and if included in the broadband aggregate it would show Germany reaching the 50–50 point in broadband adoption in January 2002—the dotted lines in the chart.



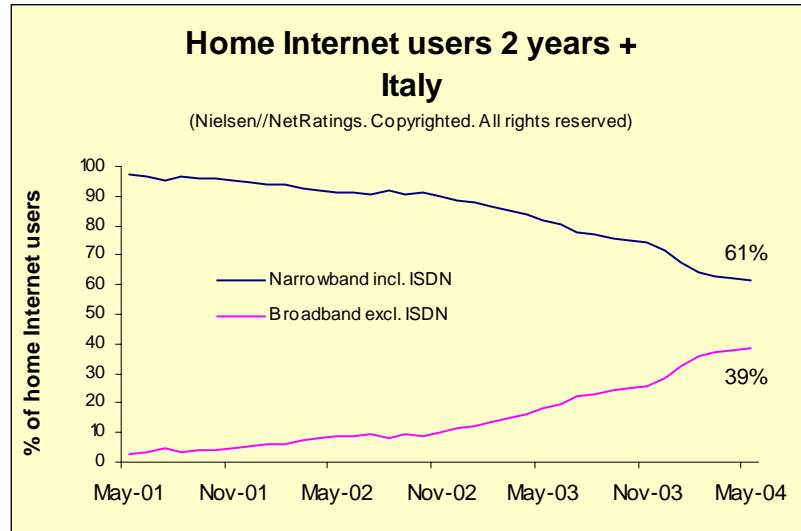
The German home ISDN market has been a mature market for sometime. While in absolute terms ISDN continues to grow in countries where it is well established (increasing by 13 per cent in Germany during the period March 2002 to June 2004) ISDN's share of German home Internet users has fallen



⁶ Global Internet Trends; Quarter 1, 2004 – Nielsen//NetRatings

from 40 per cent to 32 per cent during this same period. Nevertheless, DSL is growing vigorously in Germany, with the number of persons using DSL services from home increasing by 289 per cent during this same period, accounting for 33 per cent of all persons using the Internet at home in Germany in June 2004. ISDN because of its price and wider availability is now marketed as a stepping stone to broadband services such as DSL.⁷

Data for **Italy** indicates that at May 2004 about 39 percent of home users connected via broadband (there were 5.3 per cent using ISDN in May 2004). It is evident that the rate of change to home broadband access has accelerated considerably in 2004. According to a press release in February this year by the



Minister for Innovation and Technologies⁸, Italy now has one of the fastest rates of broadband growth in Europe: in one year, the number of households with broadband Internet connections has almost tripled. The growth of digital subscriber lines (DSL) in Italy is forecast to outstrip the rest of Europe.

According to the press release, the high growth recorded in Italy is an outcome of the strategy to modernise the country technologically. "The Italian policy emphasises the need for a holistic approach that aims not only at expanding the infrastructure, but also at creating conditions conducive to the production of content and services that will encourage users to adopt it". By the first quarter of 2004 about 41 per cent of Italian households had Internet access⁹.

⁷ <http://www.iht.com/articles/89815.html>

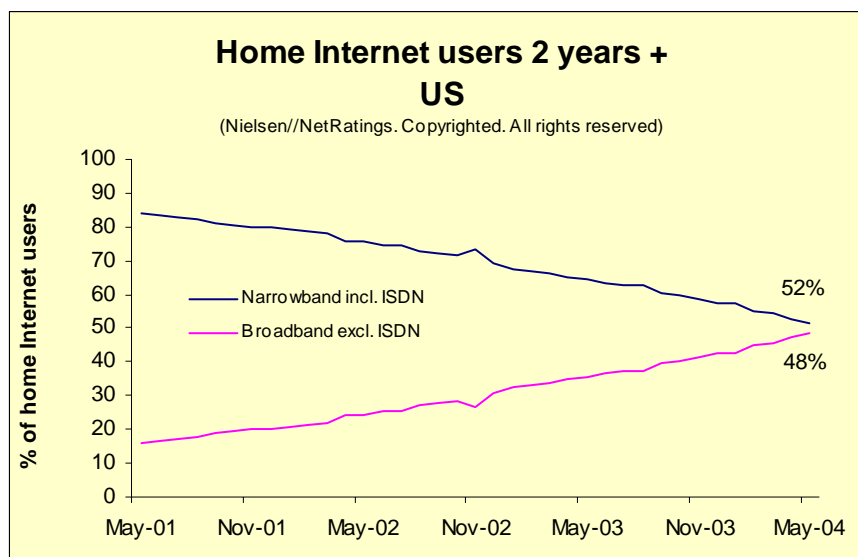
⁸ http://www.innovazione.gov.it/eng/comunicati/2004/2004_02_21a.shtml

⁹ Global Internet Trends; Quarter 1, 2004 – Nielsen//NetRatings

Data for the **United States (US)** reveals a relatively constant rate of change over the three years from May 2001. At May 2004 the US was approaching an equal number of broadband and narrowband home Internet users (only about 0.4 per cent of home users connected via ISDN). According to the OECD¹⁰, in 2003 several diverse trends were occurring in the pricing of broadband access in the United States. Incumbent telecommunication carriers, responding to the market lead of cable companies and the emergence of

smaller players using fixed wireless broadband in specific markets, implemented a number of significant changes to their pricing structures. The most obvious change was the introduction of reduced prices for DSL services. Other changes included raising or

lowering threshold offers to either make these offers more competitive against higher speed cable modem services (*i.e.* raising baseline speeds) or to introduce greater segmentation into the market (*i.e.* lower speed baseline offers). A third trend was to offer bundles of services such as discounts for taking telephony and DSL services together or even free additional WiFi services for subscribers. About 66 percent of US households had Internet access by the first quarter of 2004 according to Nielsen//NetRatings.



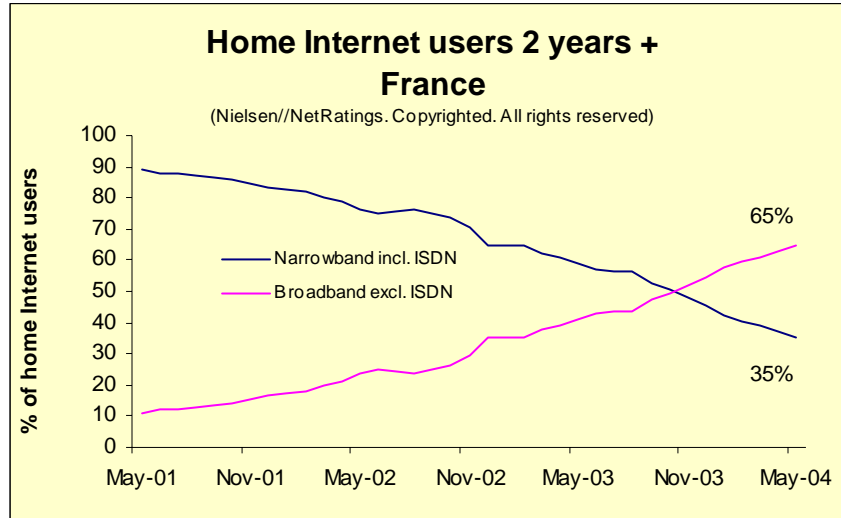
Data for **France** indicates that it crossed over to majority broadband use in October-November 2003. In May 2004 about 65 per cent of home users were connected via broadband (heavily dominated by DSL). The ISDN component in home Internet use was small at about 1.3 per cent of users in May 2004. According to OVUM¹¹, “you can now get broadband in France for half what you would pay in the UK”. Research by Analysis¹² also indicates that “over the last 18 months, the DSL market in France has become one of most competitive in Europe. The entrance of infrastructure-based operators using local loop unbundling has created a competitive market both at the wholesale and retail levels. This in turn has allowed a variety of ISPs to emerge with differentiated offers, encouraging innovation and competition in the market”.

¹⁰ ¹⁰ DSTI/ICCP/TISP(2003)8/FINAL – see <http://www.oecd.org/dataoecd/58/17/32143101.pdf>

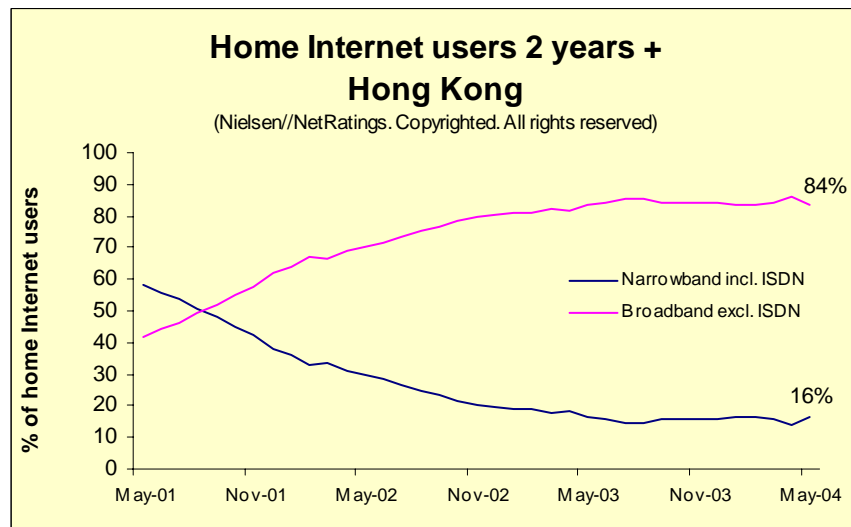
¹¹ <http://www.ovum.com/go/content/c.43215>

¹² http://www.analysis.com/default_acl.asp?Mode=article&iLeftArticle=1506&m=rhs&n

While France appears to be considerably ahead of Australia in broadband adoption, it is worth noting that 52 per cent of all Australian households had Internet access in the first quarter of 2004 compared to just 28 per cent of French households¹³.



Data for **Hong Kong** indicates a mature home broadband market with cross over to majority broadband occurring around October 2001. In May 2004 approximately 84 per cent of home users connected to the Internet with broadband (ISDN accounted for about 9 per cent of



home user access). According to a 2002 ITU survey report¹⁴, Hong Kong was also one of the first economies to launch broadband services—in May 1998. The ITU also indicated that wealth is a significant factor in the general level of Internet use, Hong Kong being the second wealthiest nation in the Asia Pacific (behind Japan). Wealth and the city's high density population are key factors contributing to Hong Kong's high level of broadband adoption. The 2002 ITU report (p.3) suggested that, "entry level dial-up and broadband Internet subscription plans would only consume 0.2 per cent and 1.1 per cent of monthly income respectively. Virtually all of Hong Kong's households could afford a dial-up Internet subscription and three-quarters could afford broadband". Affordability is evidently not the only determinant. In the first quarter of 2004 about 62 per cent of Hong Kong households had Internet access¹⁵.

¹³ Global Internet Trends; Quarter 1, 2004 – Nielsen//NetRatings

¹⁴ Broadband as a Commodity: Hong Kong, China Internet case study May 2003 (see http://www.itu.int/ITU-D/ict/cs/hongkong/material/CS_HKG.pdf)

¹⁵ Global Usage Trends, Quarter 1, 2004 – Nielsen//NetRatings

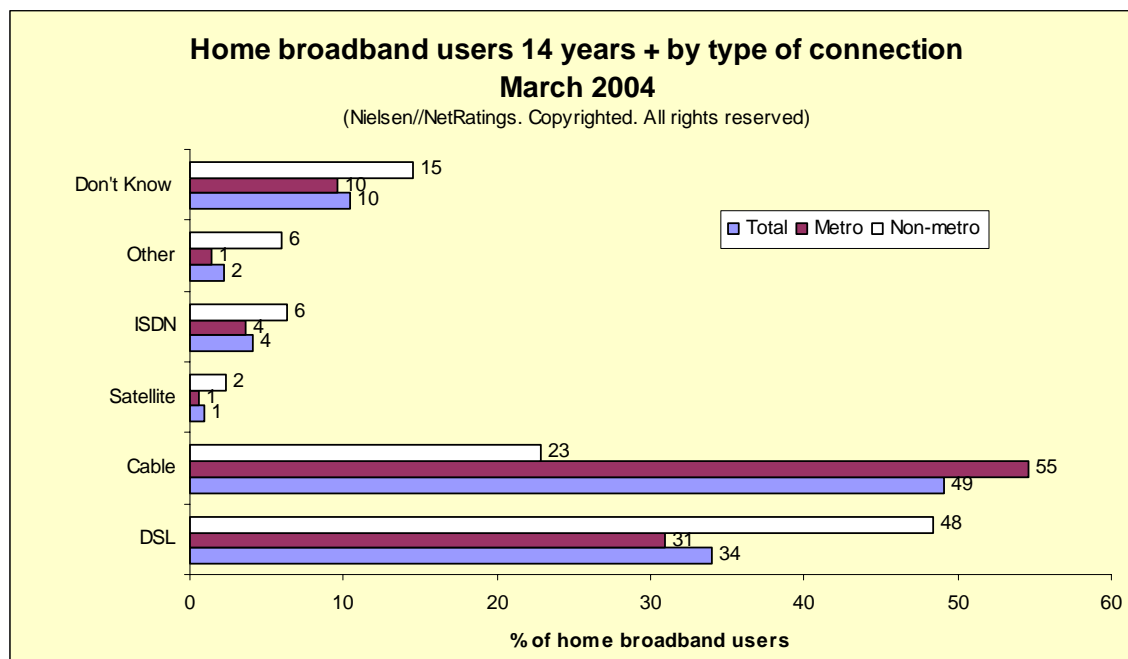
While a number of other countries could be covered in some detail it is not the intention of this article to present a comprehensive international account of broadband adoption at home but rather to demonstrate the diversity of broadband adoption levels that exist and some of the many reasons for this. It is also apparent from the above that the situation within and between countries is changing rapidly. In considering broadband trends, the general level of home Internet use evident in each country should also be taken into account.

The following sections of this report explore in more depth the characteristics of broadband adoption in Australia, focusing on technology used, factors driving broadband adoption and the impact of broadband on individual and organisation online activities. While not complete, the data presented aims to provide a general over view of developments.

Characteristics of Australia's broadband markets: household sector

Type of broadband connection

Data from Nielsen//NetRatings indicates there were approximately 1.8 million home broadband users 14 years and over (including a small number of ISDN users) at March 2004. The chart below shows the proportion of home broadband users 14 years and over by type of service at March 2004.



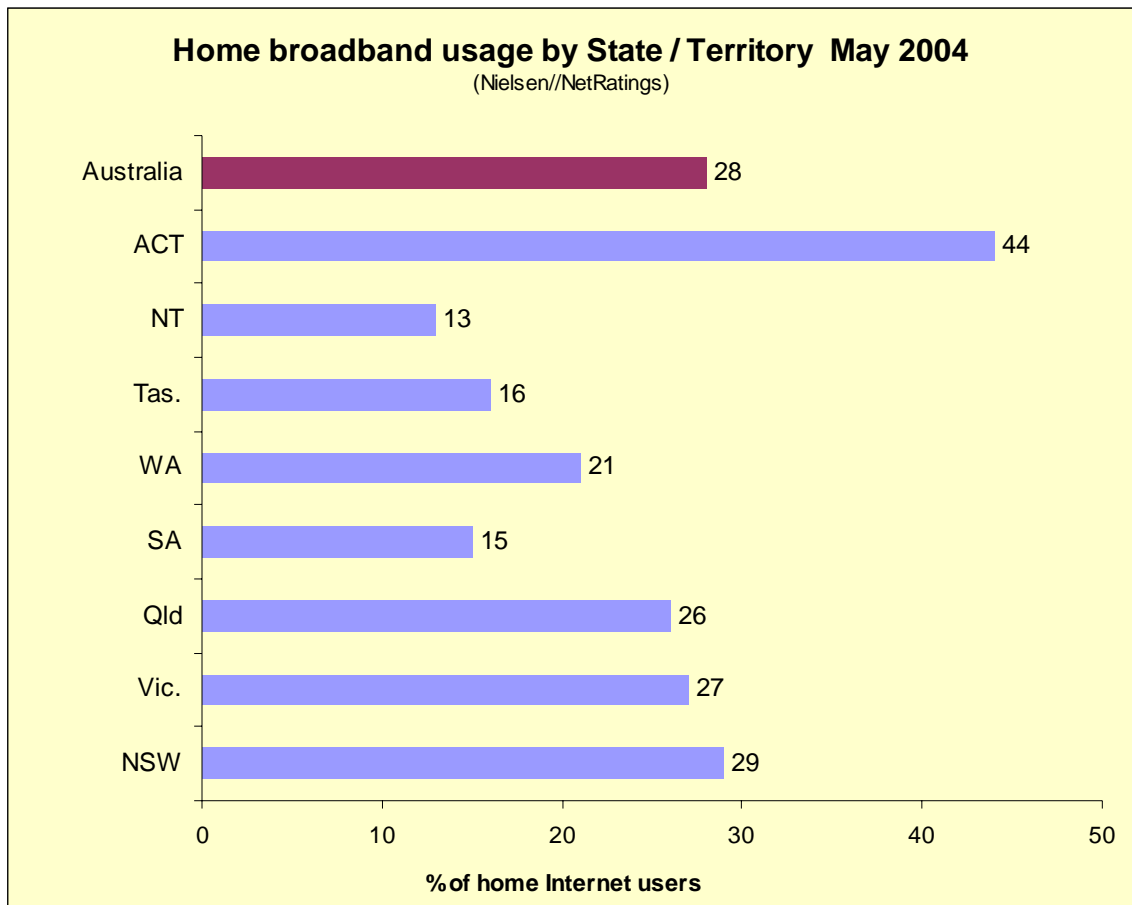
The chart shows that the greatest proportion of users connect via a cable service (49 per cent) followed by DSL (34 per cent). However, DSL is the predominant connection type for residents in non-metropolitan areas (that is, outside of the capital cities in each State or Territory). About 48 per cent of home users in regional areas connected via DSL compared to 31 per cent of home Internet users in metropolitan regions.

It should be appreciated that the above figures will differ slightly to data presented on a subscriber basis - the accounting point for services provided as opposed to persons using those services. According to the ABS¹⁶, in the September quarter 2003, about 54 per cent of non-dial up subscribers had a DSL connection (including business and government entities). The ratio of household subscribers to business and government subscribers is about 6.5 to 1.

¹⁶ ABS catalogue 8153.0 Internet Activity, September 2003

Broadband use at the State and Territory level

Consistent with significantly higher levels of Internet adoption in general, the Australian Capital Territory was estimated to have the highest level of broadband usage in Australia; 44 per cent compared to the national average of 28 per cent. With the exception of South Australia (15 per cent) and the Northern Territory (13 per cent), broadband usage in the home for the other states did not vary significantly, ranging from 21 per cent for Western Australia to 26, 27 and 29 per cent respectively for Queensland, Victoria and New South Wales.

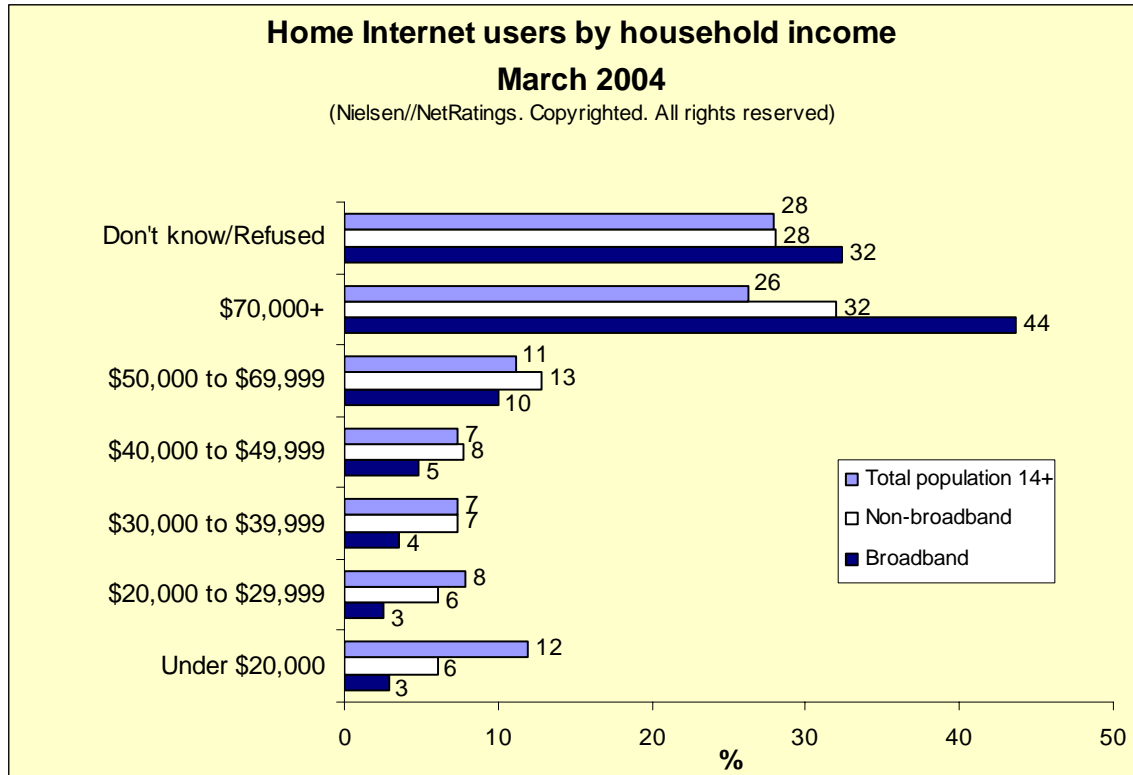


Selected characteristics of home broadband users

The following set of metrics presented provides an overview of households with home broadband users, focusing specifically on household income and family type. The decision to connect to Internet at home is predominantly shaped by the disposable income of a household (determined by the occupation of the head of household or parents in general) and the presence of school aged children or children participating in tertiary or TAFE level education. Therefore, it is logical to examine the distribution of broadband household on the basis of these key variables.

Household income

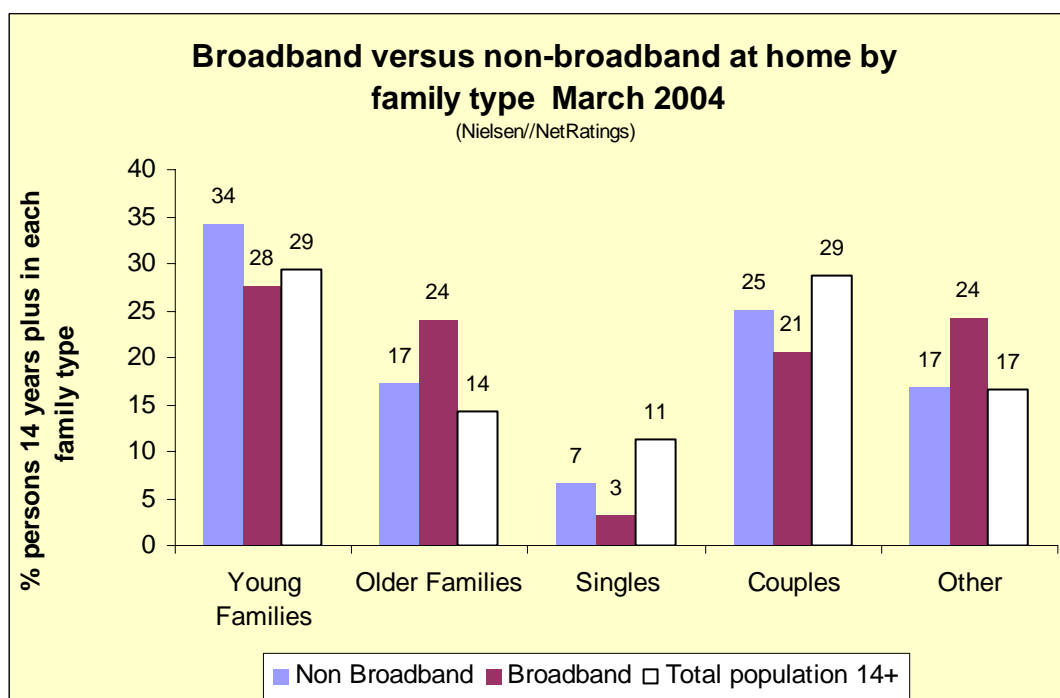
In looking at broadband adoption by the household income of users, the main finding is that 44 per cent of all home broadband users are in households earning in excess of \$70 000 per year. A further 32 per cent did not state an income and the remaining 24 percent (allowing for rounding error) are distributed across lower income ranges. The distribution of non-broadband home Internet users is similarly heaped (skewed) towards the high income end but less so than for broadband. For comparative purposes the chart also shows the distribution of household incomes for all Australians 14 years and over. While 26 per cent of persons live in upper income households, 32 per cent of non-broadband and 44 per cent of broadband users are from these upper income households – notwithstanding the substantial number who didn't provide income details.



Household family type

Compared to household income, there is more of an even distribution of home broadband users across family types. Twenty eight per cent of home broadband users resided in households comprising “young families,” compared to 24 per cent in “older families,” 21 per cent in households comprising “couples,” 24 per cent in “other families” and 3 per cent in single person households.

Home internet users in “young families” were more likely to be using narrowband services compared to broadband (34 per cent in comparison with 28 per cent for broadband), whereas home Internet users in “older families” and “other” families were more likely to be using broadband services compared to narrowband (24 per cent compared to 17 per cent respectively for both family types).



In examining the issue of broadband adoption in the home it is also important to examine the factors influencing an individual’s decision to choose broadband over narrowband services and whether consumer expectations match up with the reported impacts of broadband on day-to-day online activities. The next section of Current State of Play examines two set of data collected by AC Nielsen for home broadband users during the 6 months to March 2004:

- reasons for using broadband in the home; and
- impact of broadband on home Internet use.

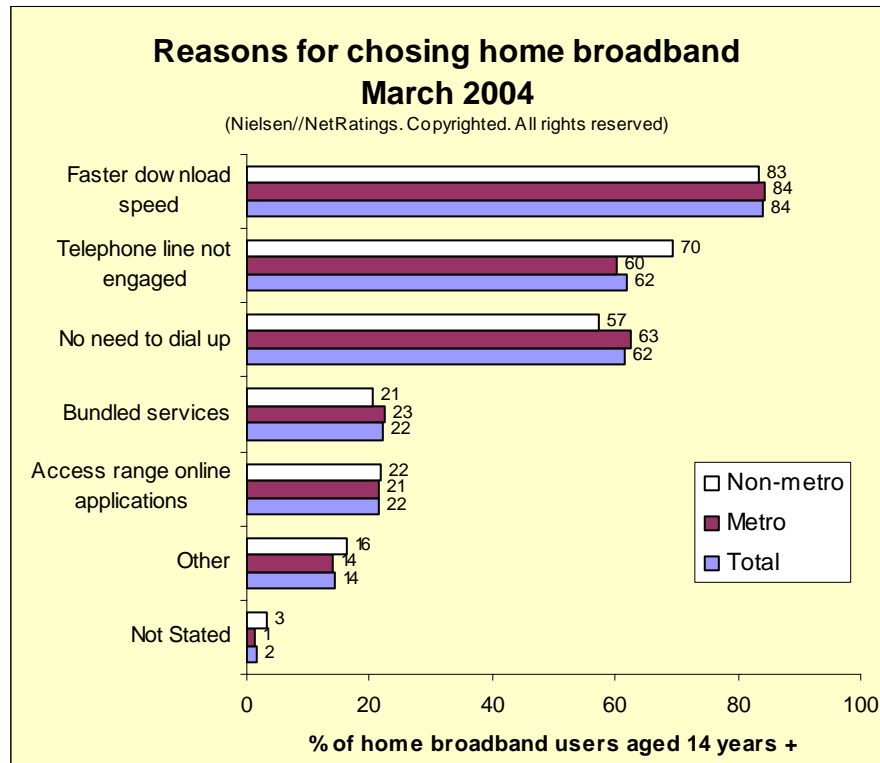
Reason for adopting broadband

The desire for increased efficiency in undertaking online activities is one of the main factors in influencing the decision to adopt broadband in the home. This was the most frequently reported reason for home broadband users in metropolitan and non-metropolitan areas (84 per cent and 83 per cent respectively).

Rather than there being a single “killer application” for broadband, these statistics indicate that faster download speed (which underpins greater efficiency) is the predominant expectation of users in adopting broadband.

Download speed is not only an issue for performing file downloads but also affects the speed with which

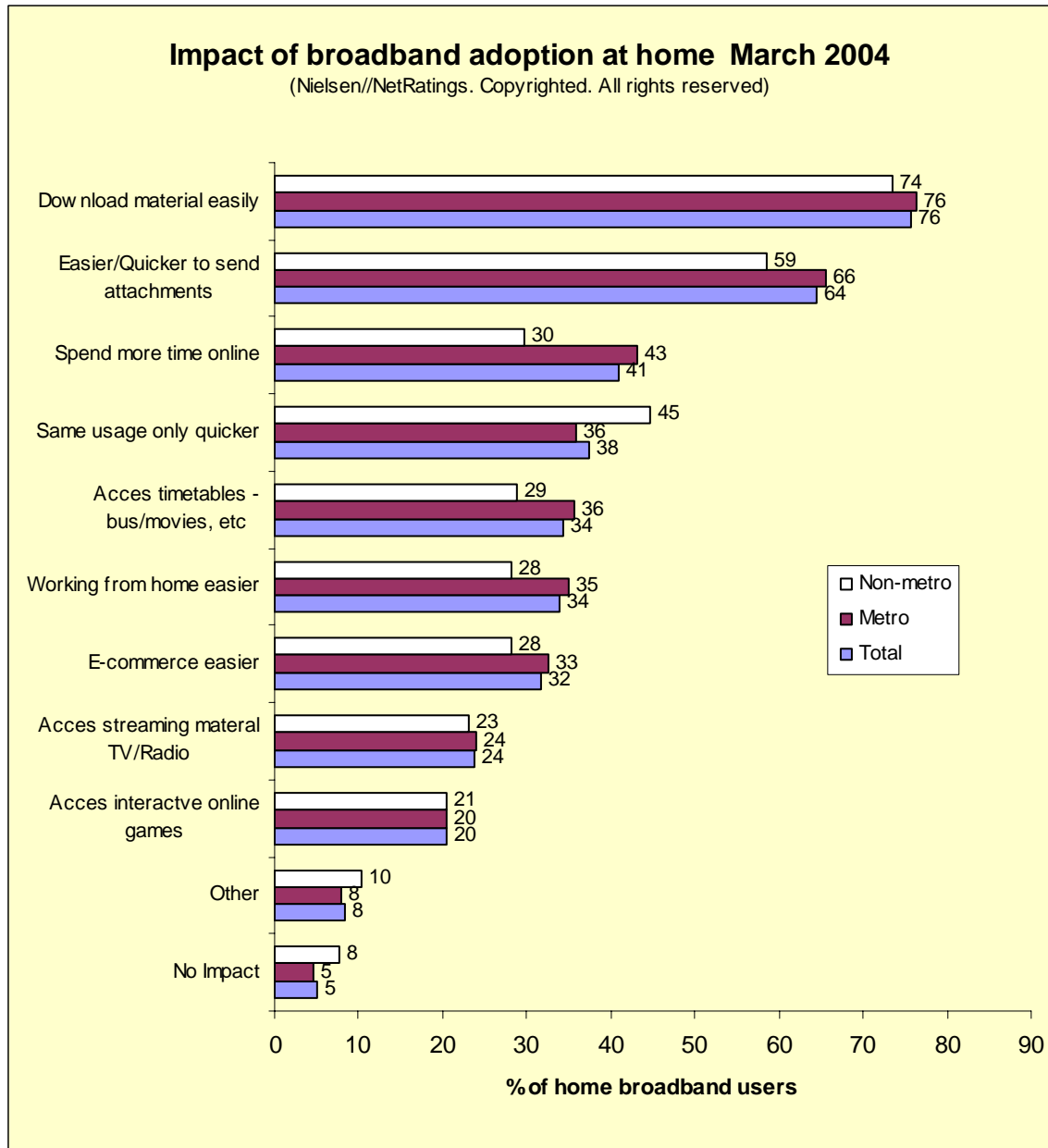
the users can navigate the web (i.e. look at search results, open web pages or deal with interactive web pages), and undertaking online activities such as banking, bill payment, shopping and playing games. Users also saw advantages in being able to dispense with the need to dial-up and in freeing up the home telephone line. The latter was a little more of an issue for non-metropolitan users.



Impact of using broadband at home

For metropolitan and non-metropolitan broadband users the overwhelming impact of broadband is clearly positive, significantly improving the effectiveness of Internet use. The data below shows a strong positive correlation between expectations of broadband and the realities or impact of broadband on online activities. This is evident from the very small proportion of users who saw “no impact” from using broadband at home. Downloading material and sending attachments was made much easier for the majority of users. A significant proportion (41 per cent) of users were inclined to spend more time online although this was less noticeable in non-metropolitan areas than in the cities.

Bearing in mind that a little over one third of Internet users aged 14 years and over engages in e-commerce, it is important to see that about 32 per cent of home broadband users found “e-commerce easier”. This implies that the finding is close to unanimous. Between metropolitan and non-metropolitan home broadband users there was consistency in the perceived benefits of using broadband to access the Internet at home.

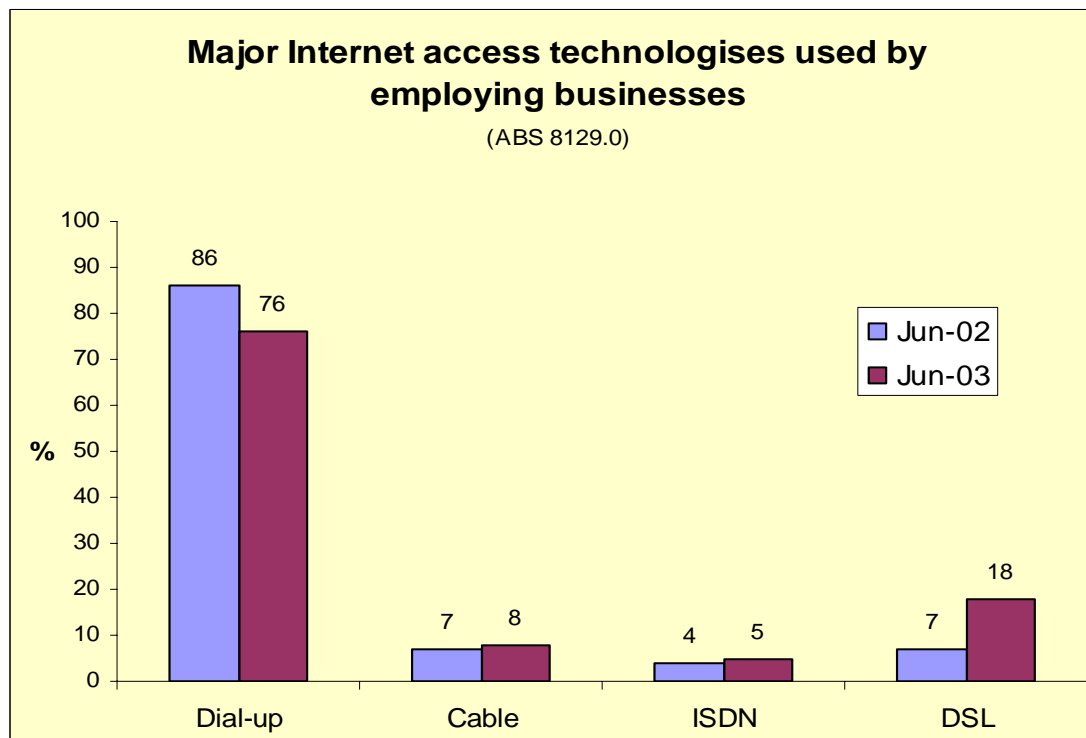


Characteristics of Australia's broadband markets: business sector

Type of broadband connection

ABS statistics indicate that employing businesses (currently numbering about 680 000) have demonstrated substantial growth in Internet adoption since June 1998. Internet use has grown from 29 per cent of businesses in 1998 to 71 per cent in June 2003. This figure significantly increases to 81 per cent for businesses employing five or more persons. In terms of broadband adoption, the ABS' Business Use of Technology report states that, "between June 2002 and June 2003 there was an increase in the proportion of businesses accessing the Internet by Digital Subscriber Line (DSL), from 7 per cent to 18 per cent, and a decrease in dial-up via modem, from 86 per cent to 76 per cent"¹⁷. In addition to the figures shown opposite, both "wireless" and "other high speed" access methods were at about 1 per cent. These findings are also supported by ABS subscriber data which showed that at March 2004 there were 225 000 business and government subscribers to broadband services (services offering speeds of 256kps or more), an increase of 34 per cent since September 2003.¹⁸

As small businesses constitute the overwhelming majority of total businesses in Australia the graph below represents technologies predominantly adopted by small businesses and does not include other technologies used mainly by large businesses such as ATM and Frame Relay. The use of "other high speed technologies" by large businesses, however, is evident as represented in the graph in the following page.

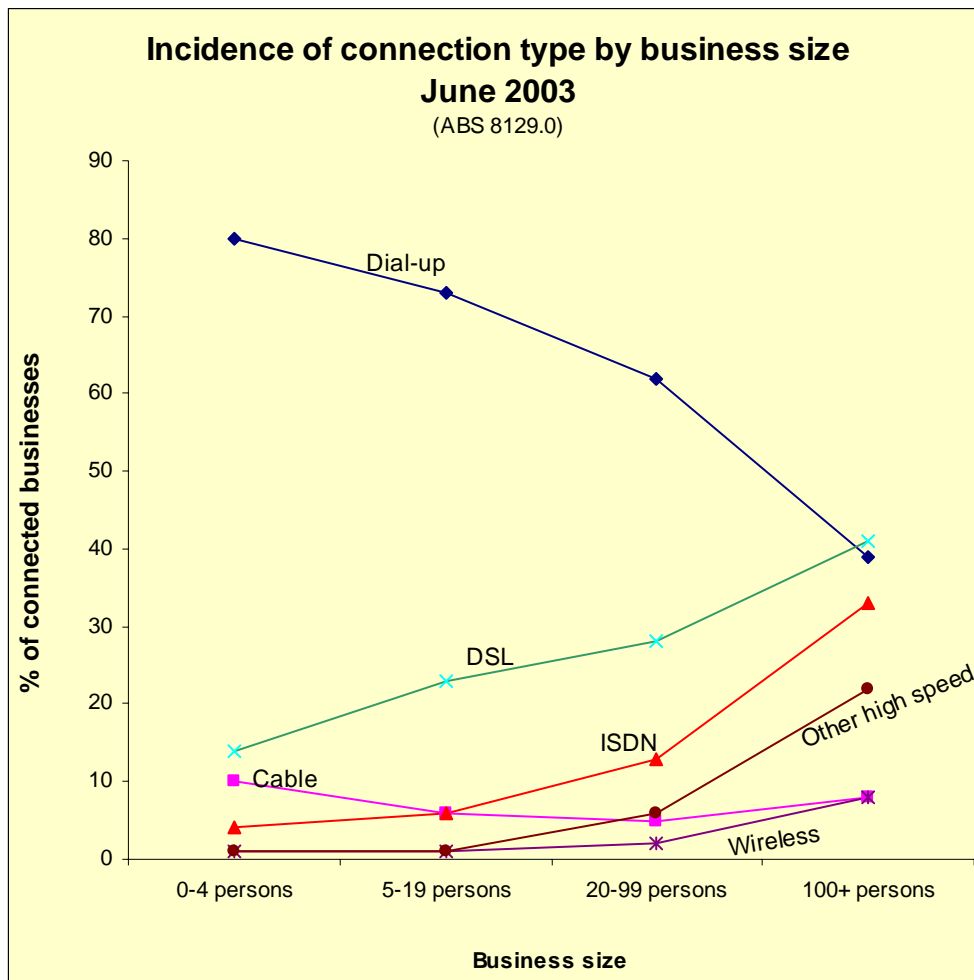


¹⁷ P .3, ABS 2002-2003 Business Use of Information Technology 8129.0

¹⁸ ABS Internet Activity Survey

Employer size

On a business employment size basis, ABS data shows that as business size increases there is a reduced incidence of dial-up usage for those that are Internet connected and an increased incidence of broadband usage. About 80 per cent of connected businesses with 0–4 employees used dial-up (whether or not they also used other connection types) compared to 73 per cent for those with 5–19 employees, 62 per cent for those with 20–99 employees and 39 per cent for those with 100 employees or more. Conversely, as business size increases so too does the incidence of each of the broadband technologies (as shown in the accompanying chart), with the exception of cable.

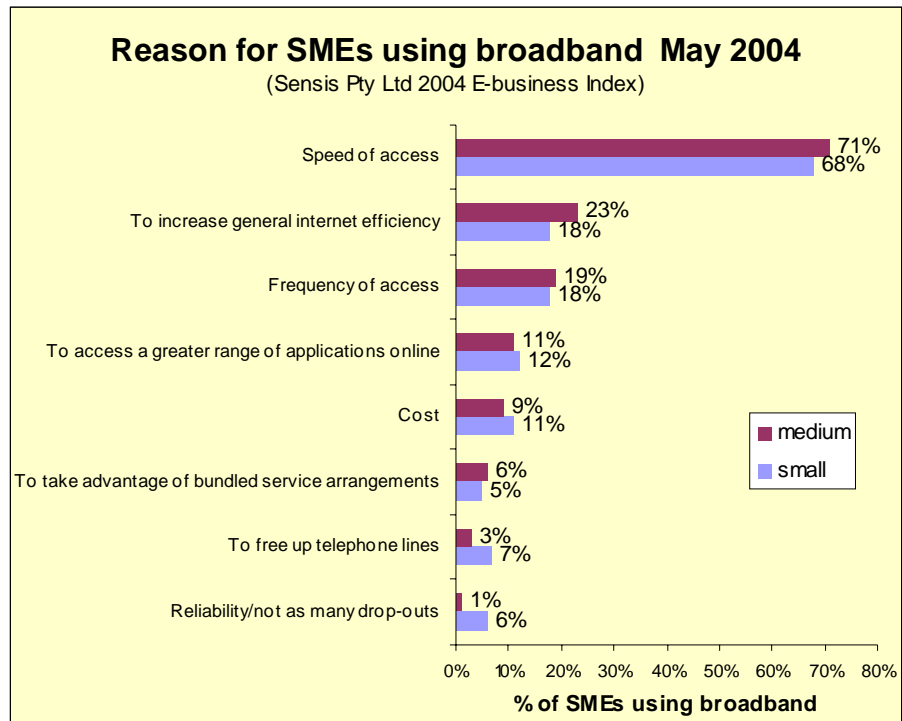


A business' decision to adopt broadband may be based on one or more considerations relating to efficiency, speed of access and/or cost. The following set of data, sourced from Sensis' annual SME E-business Survey (the E-business Index) relates to:

- reasons for SMEs choosing broadband; and
- impacts of broadband on SMEs operations.

Reason for adopting broadband

As with home broadband users, the desire for increased efficiency in undertaking online activities was a major factor in influencing SMEs to adopt broadband Internet; and this was consistent for medium and small businesses. Seventy one per cent of medium sized businesses (employing 20–200 persons) and 68 per cent of small businesses (employing 1–19 persons) using broadband at May 2004 reported that speed of access was the main reason for adopting broadband. Perhaps an indication of declining broadband charges and the growing recognition of broadband Internet as a foundation of effective e-business, is that cost was not identified as a significant factor in influencing broadband adoption (reported by only 11 per cent of small businesses and 9 per cent of medium sized businesses using broadband at May 2004).



Price update

A recent press release by Telsyte¹⁹ states that:

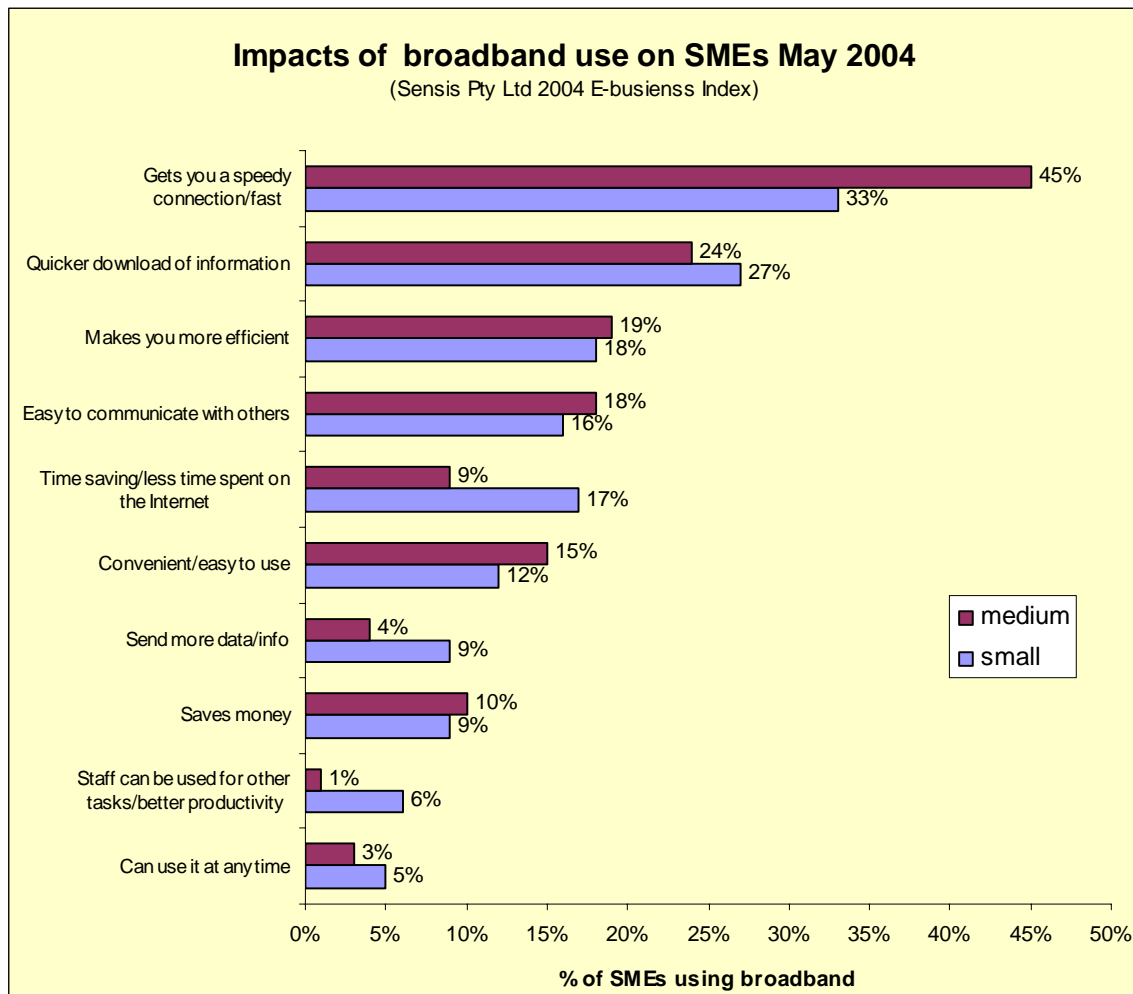
“ADSL prices have decreased between the start of the Broadband price war (Feb 2004) and April 2004. On average, the median price of an SME ADSL plan has decreased by 17.22 per cent, while the median price of a residential ADSL plan has decreased by 0.79 per cent. The pricing information for April 2004 shows that while the base price for a 256 Kbps/64 Kbps residential ADSL service starts at \$19.95 including GST, once you add a typical 500 MB of monthly usage the lowest monthly cost was \$29.95 including GST, with the average price being \$73.30 including GST per month. For exactly the same service and usage, the highest cost plan (base price, plus excess usage fees) in the market was \$519.95 including GST per month. For the lowest cost (tariff) 256 Kbps/64 Kbps residential ADSL services where 1000 MB of monthly usage occurs, in April 2004 the lowest monthly cost was \$29.95 including GST, with the average price being \$108.27 including GST per month. For exactly the same service and usage, the highest cost plan (base price, plus excess usage fees) in the market was a staggering \$1014.95 including GST per month.”

¹⁹ http://www.telsyte.com.au/releases/telsyte_broadband_wars_may_04_pr.htm

Impact of broadband on SME use of the Internet

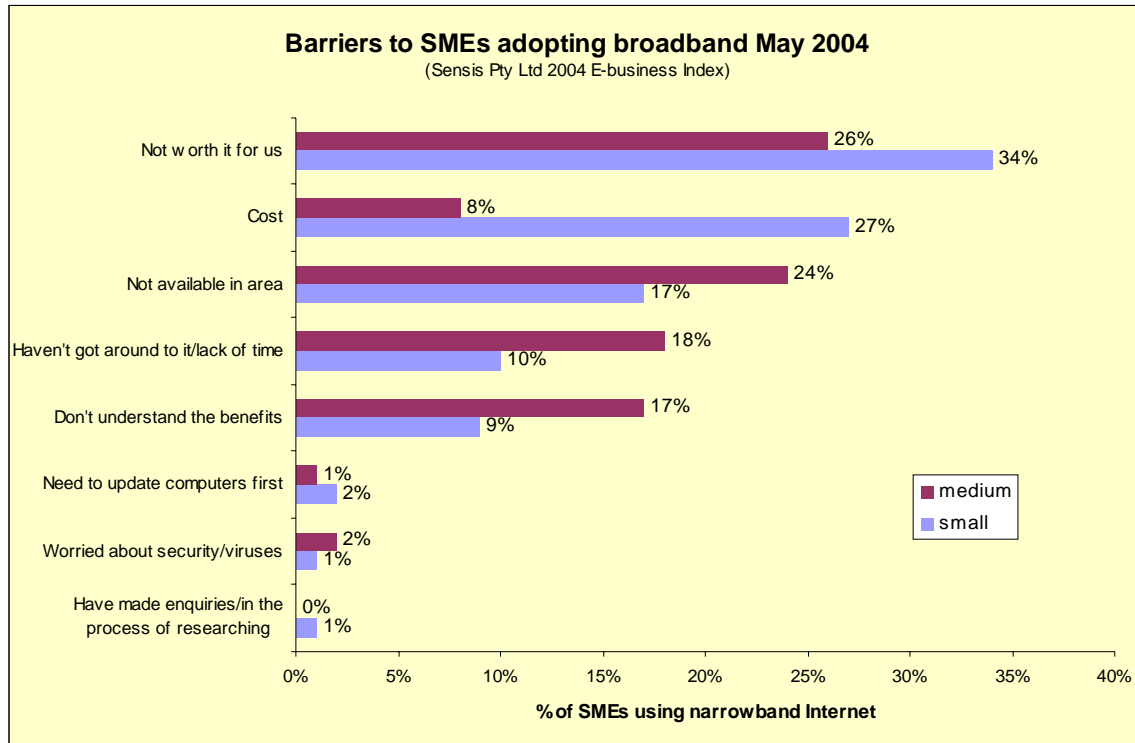
The chart below shows that the main impacts experienced by broadband SME users included faster connection speeds and faster downloads. Given that “time is money”, there were also a significant number of responses indicating that broadband improves efficiency, makes it easier to communicate with others and requires less time spent on the Internet.

While there is less emphasis in the responses on money savings, better staff utilisation or improved productivity, it is clear that these response categories have considerable overlap with speed and efficiency categories that were significantly reported against. In addition, the survey questions were designed to provide general impressions in the main rather than rigorous proof of cost benefits and productivity pay-offs. Overall the data obtained shows that 75 per cent of businesses using broadband reported a positive impact from broadband use, 23 per cent reported no real impact and only 1 per cent reported a negative impact.



Intentions and barriers to using broadband

In relation to businesses that had not connected to broadband, Sensis found that about 43 per cent of narrowband Internet users intended to adopt broadband and about 10 per cent were unsure.



For businesses that did not intend to adopt broadband, the main reasons related to costs and the lack of an identified business benefit (i.e. a firm business case). Smaller businesses in particular reported that broadband was “not worth it for us” or that “cost” was a barrier. There were a substantial number of businesses reporting that broadband was not available in their area—24 per cent of medium sized businesses and 17 per cent of the smaller ones.

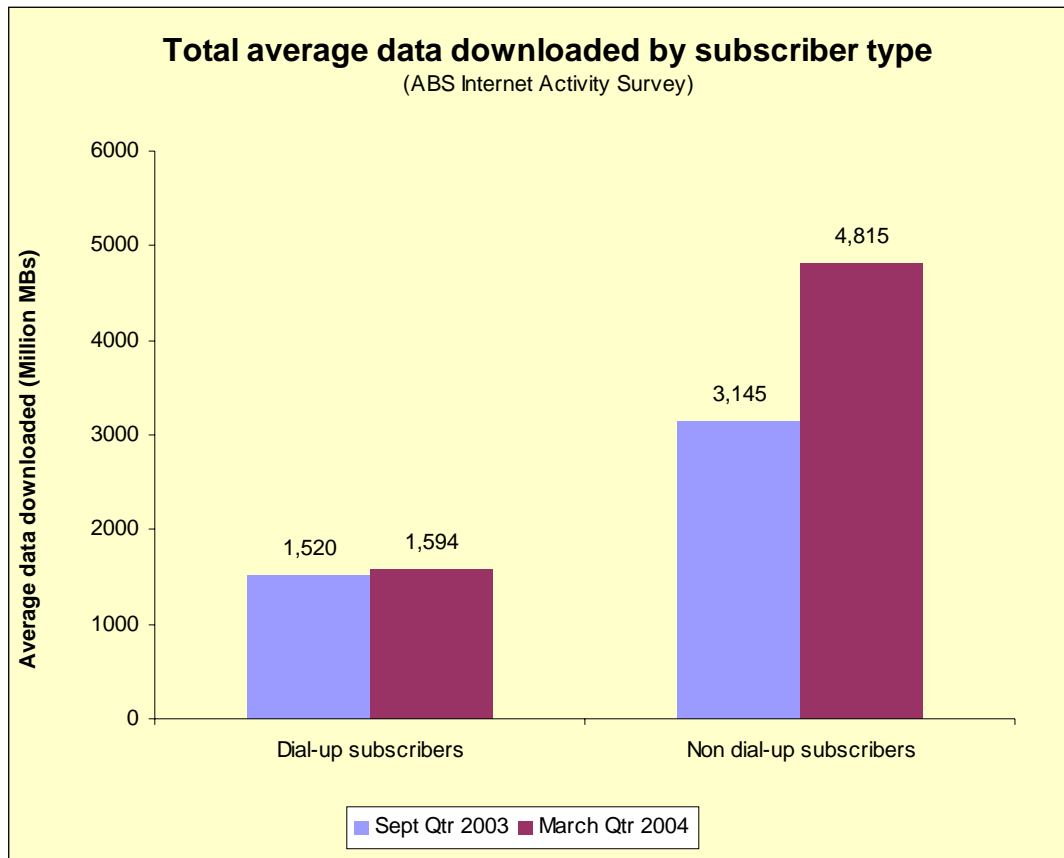
A considerable number of businesses had not properly considered a broadband alternative judging by the proportion who reported that they “haven’t got around to it/lack of time” and “don’t understand the benefits”. Security concerns did not appear to represent a significant barrier in these statistics.

Evidence of the impact of broadband on online activities is discussed in the final section of Current State of Play, which presents data on the volume of data downloaded by dial-up and non-dial up subscribers. The data is sourced from the ABS Internet Activity Survey.

Broadband effects on data volumes downloaded by all subscribers

Subscribers not using dial-up are increasing their level of activity faster than subscribers using dial-up. Evidence that broadband users are indeed realising the benefits of improved speed and download time are demonstrated in ABS statistics²⁰.

ABS data collected from the Internet Activity Survey shows that during the March quarter of 2004, non dial-up subscribers downloaded 4.8 billion megabytes of data, compared to 3.1 million megabytes during the September quarter of 2003, an increase of 56 per cent compared to an increase of only 5 per cent for dial-up subscribers in the same period.



²⁰ ABS catalogue 8153.0, Internet Activity

Contact Details

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