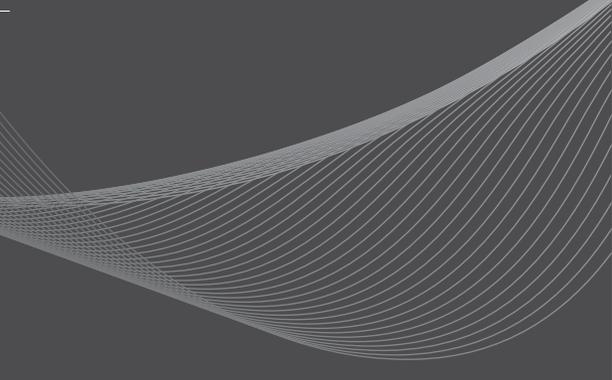# Chapter 3
Australia in the digital economy

Chapter summary

Defining the digital economy

The term 'digital economy' covers the global network of economic and social activities that are enabled by information and communications technologies such as the internet, mobile and sensor networks.[1] These networked digital technologies that include the internet and internet protocol (IP) are facilitating the transformation of traditional voice, data and media services by enabling the convergence of voice, data and video (triple play services) and networks.

Communication infrastructure developments in the area of fibre to the home (FTTH) will increasingly shape the ongoing evolution of high speed internet in Australia driving the development and expansion of the digital economy.

Equally important is the effective use of media and communications services for participation by Australian citizens in the digital economy and society. Digital media literacy is often defined as the ability to use, understand and create digital media in a variety of communications contexts and there is a growing interest in understanding the nature and levels of digital media literacy including drivers of, and barriers to participation.

Efforts to promote digital media literacy tend to emphasise the core competencies that reflect a combination of required skills, knowledge and attitudes characteristic of effective digital participation.

This chapter explores different facets of participation in digital communications by residential and business users.

Measuring the digital economy

In providing an overview of Australia in the digital economy, this chapter presents a range of information about the level of engagement in the digital economy by Australians. While information on infrastructure availability, connectivity and online behaviours is readily available, some insight into the impact of the digital economy can be obtained by examining available evidence on changing consumer and business communications behaviours. This includes the level and type of activities undertaken online, how organisations are applying digital technologies, the growth of digital services, and the value of economic activity undertaken online.

Growing evidence of the emerging digital economy

There is growing level of engagement with the digital economy by consumers and business in Australia. Approximately 88 per cent of Australians 14 years and over have used the internet at some point in their lives while 95 per cent of small and medium enterprises (SMEs) are connected to the internet. Australians increasingly spend more time online, spending on average 57 hours accessing the internet during the June quarter of 2009 compared with 47 hours during the June quarter of 2008.

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

Australians have an increasing level of online experience which is underpinning digital confidence and skills with 74 per cent of internet users having over three years' experience online, 57 per cent over five years' experience.

Online Australians are also viewing more online content. In total, Australian's viewed 46.6 billion web pages during the June quarter of 2009 compared with 38.9 billion web pages viewed during the same period in 2008. The participative web is also gaining in importance with 6.9 million and 6.7 million Australians accessing Facebook and YouTube respectively during the June quarter of 2009.

The growth of domain names is an indicator of the increasing online presence of Australians organisations with 1.42 million domain names registered under '.au' at June 2009 compared with 1.17 million at June 2008.

Digital communications such as the internet have facilitated the emergence of new industries based on online distribution of information and content and e-commerce. The online information services sector in Australia generated $1.37 billion in revenue in 2008–09 compared with $1.28 billion during 2007–08. The value of internet commerce was estimated to be $81 billion at June 2008.

Table 3.1 Key statistics

	2007–08	2008–09
Average number of hours spent online at home*	47 hours	57 hours
Average number of web pages viewed from home*	3,088	3,099
Terabits of data download*	55,434	99,993
SMEs selling goods and services online	57%	59%
SMEs banking online	83%	86%
Australians banking/shopping online**	63%	67%
Australians using the internet for entertainment purposes**	41%	46%
Australians partaking in blogging activities**	23%	27%
Domain names registered under '.au'***	1.17 million	1.42 million
Revenue generated by the online information services sector	$1.3 billion	$1.4 billion

*   Relates to June quarter.
** Percentages are of all internet users.
***Excludes '.gov.au'

Connectivity

Connectivity refers to the availability of digital communications networks and Australians having the resources to access digital communications services including broadband internet.

This chapter has focused on connectivity as represented by residential and business users' access and use of the internet. The availability of communications infrastructure supporting digital connectivity is outlined in Chapter 1.

Take-up of the internet by consumers in Australia

Approximately 88 per cent of Australians aged 14 years and over were estimated to have used the internet at sometime in their life, ranging from a low of 57 per cent of persons aged 65 years and over, to a high of 98 per cent of persons aged 14 to 17 years (Figure 3.1). Of Australians reporting having ever used the internet, approximately 52 per cent used the internet more than once a day and 13 per cent once a day at June 2009. This compared with 48 per cent and 13 per cent respectively for June 2008.

**Figure 3.1: Persons who have ever used the internet**
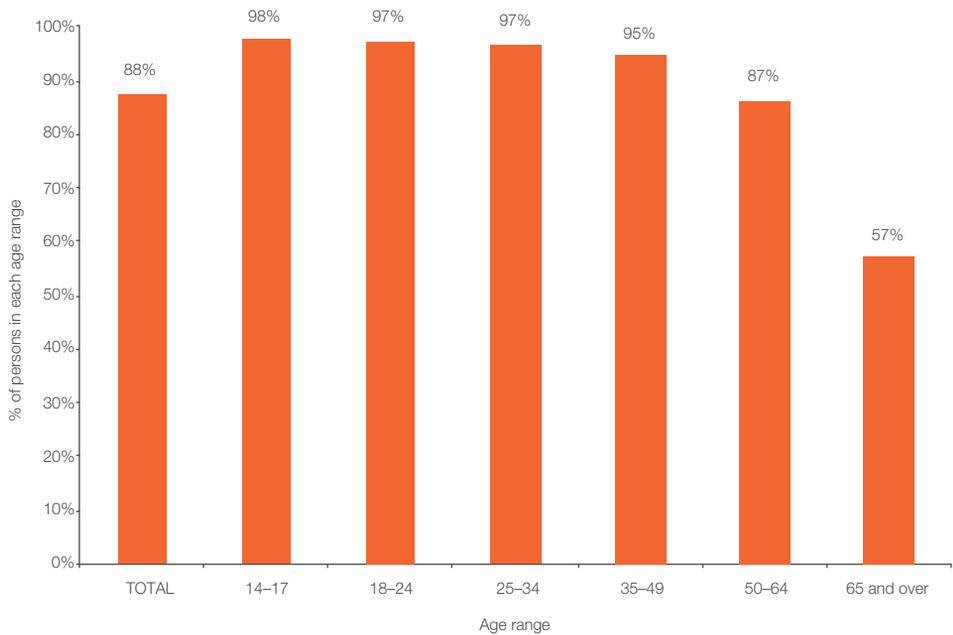
Source: Roy Morgan Single Source, June 2009.

There were an estimated 2.1 million Australians aged 14 and over who were estimated to have not ever used the internet, with 55 per cent of these persons aged 65 years and over (Figure 3.2). A further 1.3 million persons were infrequent internet users, having gone online less than once a month during the reporting period.

Twenty-three per cent of infrequent internet users were aged 35 to 49 years while 44 per cent were 50 years and over (22 per cent: 50 to 64 years and 22 per cent: 65 years and over).

Figure 3.2: Age profile of persons not online

- 65 years and over
- 50–64 years
- 35–49 years
- 25–34 years
- 18–24 years
- 14–17 years
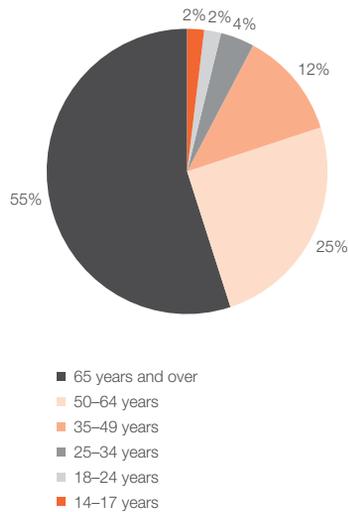
Source: Roy Morgan Single Source, June 2009.

Location of internet use

Australians are accessing the internet from multiple locations but the home and work environments remain the main sites for internet use (Figure 3.3). Ninety-four per cent of Australians who used the internet in June 2009 accessed the internet from home, compared with 46 per cent from work, 20 per cent from a friend's place and 14 per cent from an educational institution. Sites such as educational institutions featured as the second most frequently reported site of internet access for 14 to 24 year olds reflecting the fact that many of these internet users are in the process of completing studies. Home and work locations were also important in the frequency of internet use. Some 65 per cent of internet users at home or work went online from these locations at least once a day compared with 18 per cent of person using the internet from other locations.[2]

The increased availability of internet-enabled mobile phones is also changing the dynamics of internet use. Approximately two million persons in Australia aged 14 years and over had undertaken some form of activity online via using their hand held mobile during June 2009. This is approximately 14 per cent of Australians with a mobile phone.[3]

Business use of ICT

Australian businesses are playing a critical role in the development of the digital economy by applying information and communications technologies (ICT) to business operations and adopting electronic or e-business service delivery. SMEs account for nearly 99 per cent of all Australian businesses. As a result, SME innovation in the use of ICT, particularly the internet, has the potential for economy-wide benefits in the form of productivity growth and increased participation in the digital economy.[4]

As Figure 3.4 shows, SMEs use a wide range of ICT in their business operations with an estimated 95 per cent connected to the internet. While the use of internet enabled 3G mobiles has grown (52 per cent in 2008 increasing to 62 per cent in 2009), SME use of other key technologies has remained relatively stable since 2008.
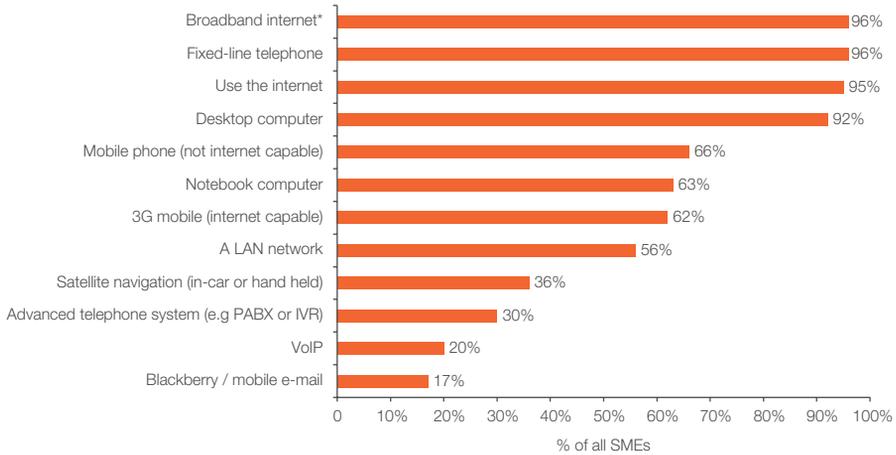
Figure 3.3: Sites where internet used
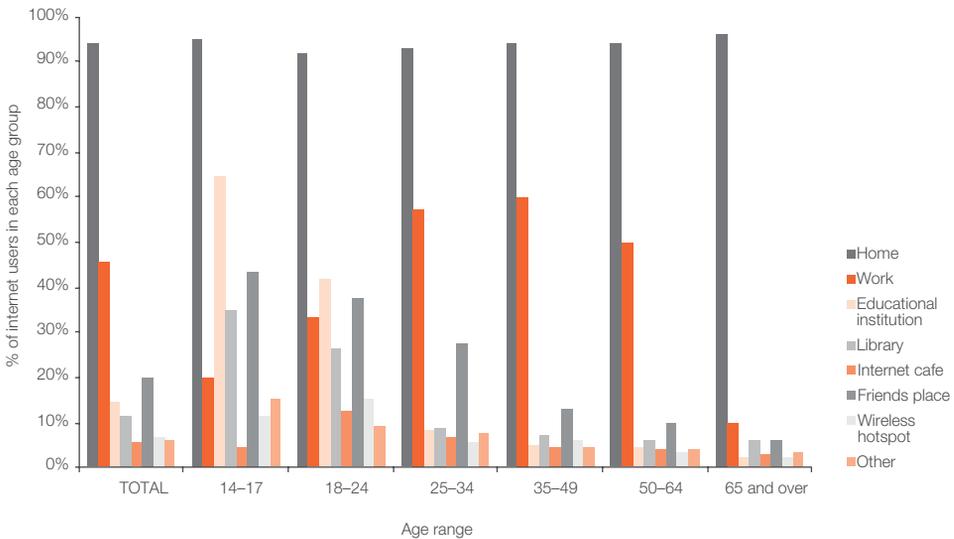
Source: Roy Morgan Single Source, June 2009.

2   Roy Morgan Single Source, June 2009.
3   Roy Morgan Single Source, June 2009.
4   The ACMA, *Convergence and Communications: Report 2: Take-up and Use of Communications by Small and Medium Enterprises,* March 2009.

Figure 3.4: SME use of selected ICT

Category	%
Broadband internet*	96%
Fixed-line telephone	96%
Use the internet	95%
Desktop computer	92%
Mobile phone (not internet capable)	66%
Notebook computer	63%
3G mobile (internet capable)	62%
A LAN network	56%
Satellite navigation (in-car or hand held)	36%
Advanced telephone system (e.g PABX or IVR)	30%
VoIP	20%
Blackberry / mobile e-mail	17%

% of all SMEs

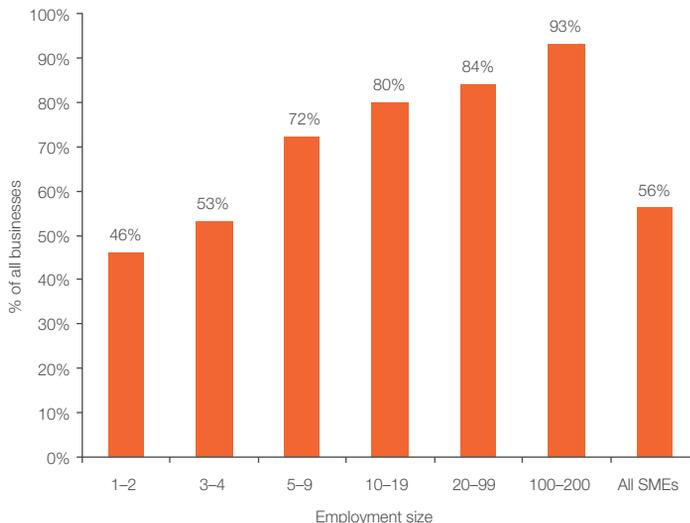*Note: SMEs were surveyed during the period 6 May to 10 June 2009.*
* Of all SMEs connected to the internet.
Source: Sensis e-Business Report – The Online Experience of Small and Medium Enterprises, August 2009.

Web-based services as a driver of increased participation

For many private and public organisations, websites are highly effective marketing and distribution tools that support transactions services and facilitate efficient and timely management of customer relations. Approximately 56 per cent of SMEs in Australia were estimated to have a website at April 2009 compared with 55 per cent at June 2008.

Figure 3.5: Website ownership by Australian SMEs

Employment size	% of all businesses
1–2	46%
3–4	53%
5–9	72%
10–19	80%
20–99	84%
100–200	93%
All SMEs	56%

Note: SMEs were surveyed during the period 6 May to 10 June 2009.
Source: Sensis e-Business Report – The Online Experience of Small and Medium Enterprises, August 2009.

The propensity for a business to have a website increased with employment size with 46 per cent of SMEs with one to two employees estimated to have a website compared with 93 per cent of businesses employing 100 to 200 employees (Figure 3.5).

Impact of websites on business effectiveness

Web-based service delivery has transformed business operations, contributing to broader organisational effectiveness. Approximately 71 per cent of SMEs with a website at June 2009 reported that having a website improved business effectiveness, compared with 65 per cent at June 2008. Figure 3.6 provides additional insights into the impact of websites on business effectiveness. Keeping people (customers) more informed, increased awareness of the business, exposure to a broader market and easier for people to access the business, were some of the benefits identified.

Growth in domain names

The growth of domain names is a further indication of the online presence of Australian business and organisations. Domain names are the online address details of businesses with a website. A domain name is important to business online presence and in many cases is the first thing potential customers or clients will encounter and remember when searching for information or services online.

Within Australia auDA (.au Domain Administration Ltd) administers the '.au' country code top-level domain name, covering the second-level domains of '.com. au', '.edu.au', '.org.au', 'asn.au' and 'id. au'. The Australian Government Information Management Office (AGIMO) administers the '.gov.au' domain.

At June 2009, there were approximately 1.42 million domain names registered under the second-level domains compared with 1.17 million at June 2008, an increase of 21 per cent.

Figure 3.6: Impact of websites on SME effectiveness
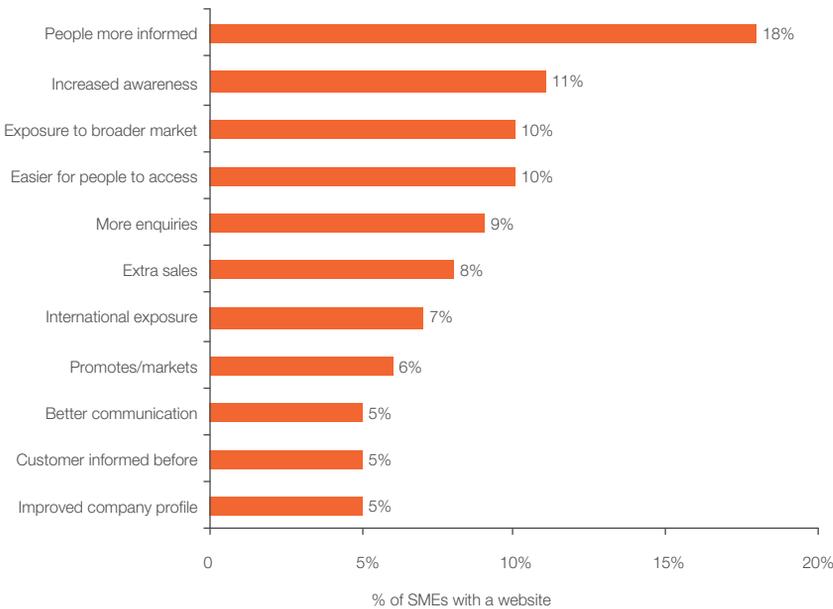
Note: SMEs were surveyed during the period 6 May to 10 June 2009.
*Source: Sensis e-Business Report – The Online Experience of Small and Medium Enterprises, August 2009.*

Figure 3.7: Number of '.au' domain names registered, 2002–03 to 2008–09*

millions
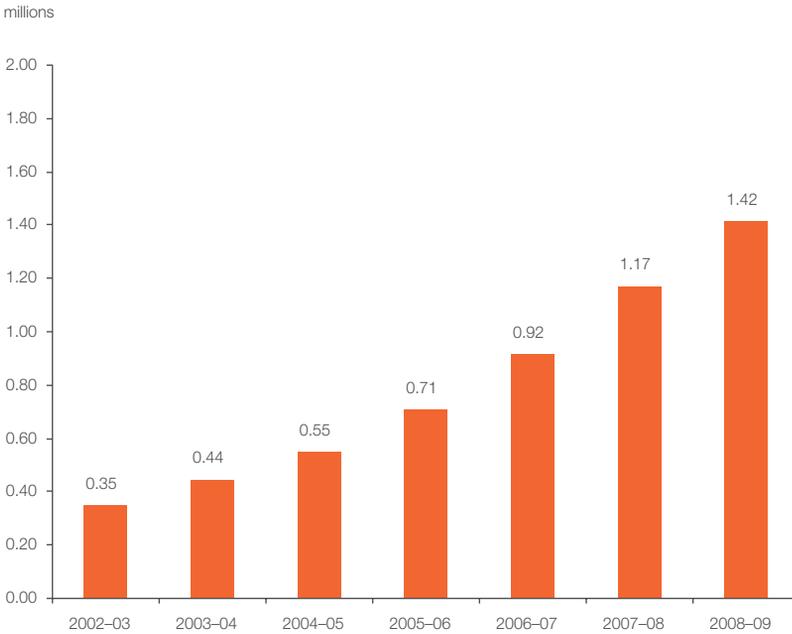
Excludes '.gov.au' domain names.
Source: auDA and Aus Registry.

The second-level domain of 'com.au' accounts for over 80 per cent of '.au' domains (excluding '.gov.au'). The second largest category was the '.net.au' domain, accounting for nearly 10 per cent of all '.au' domains with registrations for this domain increasing by 25 per cent since June 2008. The break down of second level domain name registrations is shown in Figure 3.8.

Figure 3.8: Breakdown '.au' second-level domains (2LDs), 30 June 2009

id.au
asn.au
org.au
net.au
com.au
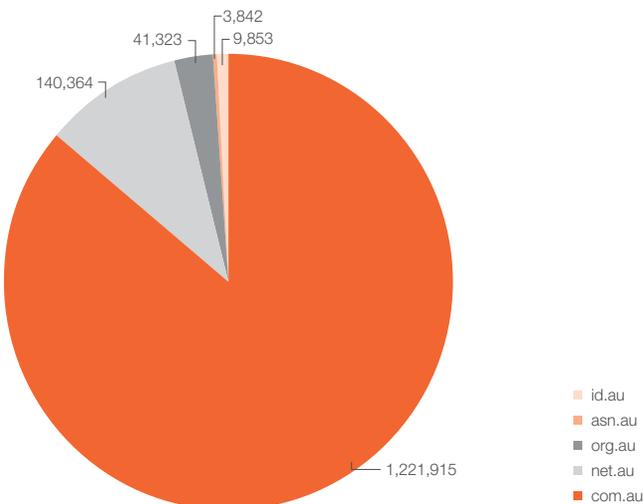
Excludes '.gov.au' domain names.
Source: auDA and Aus Registry.

International developments in domain names

The Internet Corporation for Assigned Names and Numbers (ICANN) is a not-for-profit corporation with participants from all over the world. Its responsibilities lie in coordinating the allocation and assignment of the sets of unique identifiers for the internet, namely, domain names within the Domain Name System (DNS), internet protocol (IP) addresses, autonomous system (AS) numbers, and protocol port and parameter numbers.

ICANN also coordinates the operation and evolution of the DNS root name server system and promotes competition and coordinates policy development related to these technical functions.

Issues presently being considered by ICANN are:

> the new generic top-level domain (gTLDs)

> internationalised domain names (IDNs) to allow the many people remaining disconnected because they do not use Latin script, to benefit from the internet

> Domain Name Servers Security Extensions (DNSSEC)

> growing misuse of the internet including increasing concerns over cyber-espionage and illicit content

> added support for the introduction of IPv6 as a result of internet growth

> trade mark protection issues.

Capability

Capabilities for the digital economy are understood as individuals and businesses having the skills, knowledge and understanding to effectively use digital communications and media. Evidence of the developing capabilities of Australian residential and business users in managing and navigating online activities is a steady increase in the experience of online users, the type and duration of online activity and traffic to a range of websites.

Intensity of internet use

Number of years online

In Australia there is a growing level of knowledge and experience with the online environment. Fifty-seven per cent of internet users in Australia have over five year's experience online (comprising 25 per cent with 10 or more years experience and 32 per cent with over five to nine years experience). A further 17 per cent were estimated to have three to five years experience online with seven per cent of the online population estimated to have gone online for the first time during the 2008–09 reporting period.

Younger and older internet users (14 to 17 year olds and people 65 years and over) were less likely to have more than five years experience online compared with other age groups, while internet users aged 18 to 34 years had the highest level of concentration of 'experienced' internet users, people with over five years experience online.

Figure 3.9: Length of time using the internet
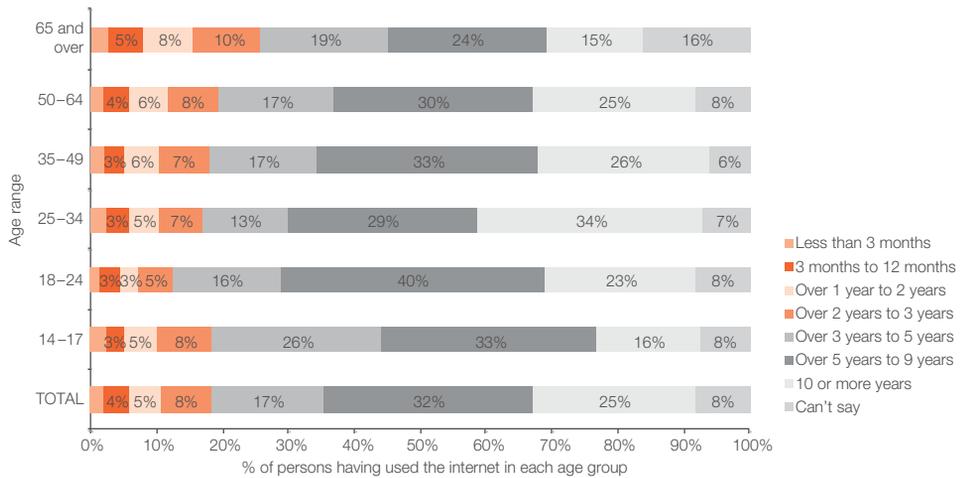
Source: Roy Morgan Single Source, June 2009.

## Growing online experience underpinning increased participation

Figure 3.10 explores the relationship between frequency and years of internet use. Approximately 90 per cent of internet users in Australia who currently use the internet more than once a day have over three years online experience (75 per cent with over five years experience), compared with 80 per cent for persons going online once a day and 71 per cent of those going online a few times a week. The representation of persons with over five years' experience online decreases as frequency of internet use declines.

Figure 3.10: Frequency and years of internet use
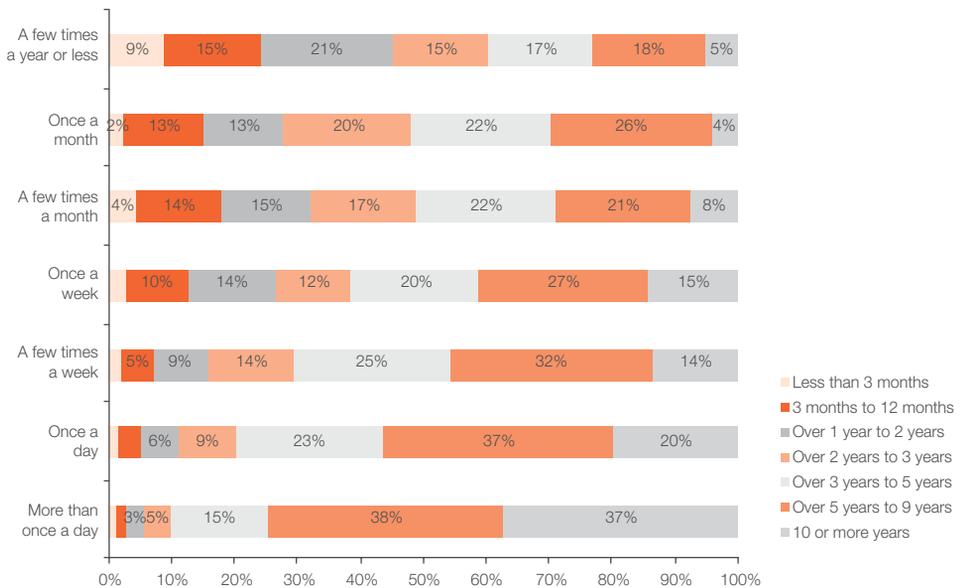
Excludes respondents reporting don't know.
Source: Roy Morgan Single Source, June 2009.

Figure 3.11: Main reasons for not having internet at home
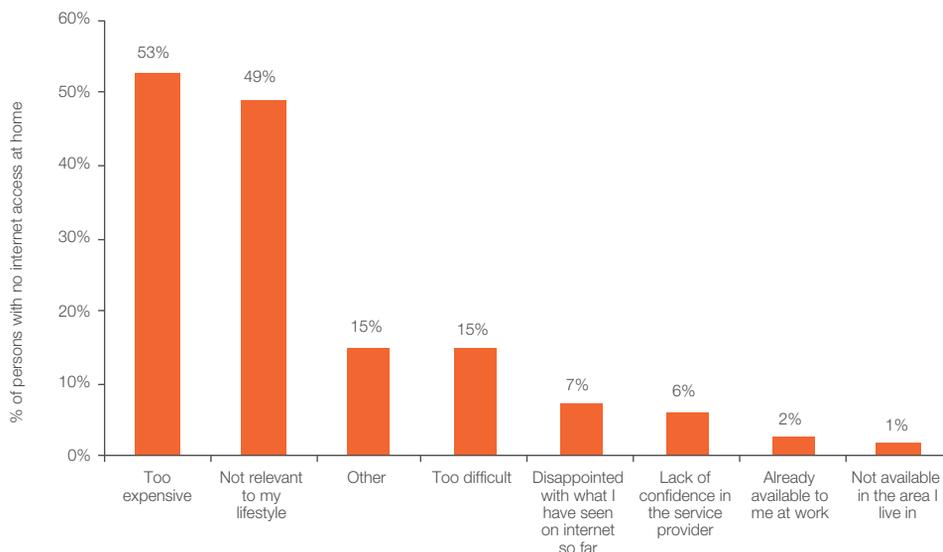
Source: Roy Morgan Single Source, June 2009.

Barriers to internet use

Despite a growing level of familiarity with the online environment in Australia, there are still a significant number of people in Australia who do not use the internet. Factors associated with cost and lifestyle were main reasons identified for not having an internet connection in the home (Figure 3.11).

Other factors were also identified as barriers to online participation. Eighty-two per cent of non-internet users reported that they found it difficult to keep up with the rapid pace of technology change and 34 per cent reported that, while they would like to use the internet they were intimidated by its complexity.[5]

Issues such as relevance and need were also major contributing factors in terms of businesses choosing not to connect to the internet. Of the estimated five per cent of SMEs not online, 58 per cent reported no need for the internet.[6]

Non-users and limited users of the internet and mobile phones

In addition to this quantitative analysis, the ACMA also commissioned qualitative research in 2008–09 to better understand the reasons for non-use or limited use of the internet and mobile phones among adult Australians, given the mass adoption and importance of these technologies. The study, based on 10 group discussions and six in-depth telephone interviews amongst adult non-users and limited users[7], found that:

> Non-users and limited users of digital media are largely associated with the internet. These adults consider that learning how to use the internet is more important than learning how to use new features on their mobile phone, in terms of enabling them to participate more effectively in society. Usage of different types of digital media is highly individualised and linked to particular motivations.

5   Roy Morgan Single Source, April 2008 to March 2009.

6   Sensis, Sensis e-Business Report – *The Online Experience of Small and Medium Enterprises, August 2009*.

7   The qualitative research was conducted for the ACMA by GfK BlueMoon in metropolitan, regional and remote areas of New South Wales, Victoria and Queensland. The sample took into consideration people's usage levels of digital media, their comfort with digital media and their life stage.

> When respondents discussed why their use of digital media was limited, they claimed that it was not a priority for them to purchase, understand and use new technology. Most of these limited users held the view that it was too difficult to change habits. For many using new digital media was regarded as involving a complete overhaul and change of lifestyle.

The research highlighted two key factors affecting individual's attitudes and behaviour towards digital media literacy—their existing competencies with using digital media and their level of motivation to become more literate with digital media.

Comparatively low competencies among non-users and limited users were evident where people were not required to use technology on a day-to-day basis. However, the key driver to digital media literacy was an individual's motivation to want to use the technology.

The findings indicate that one of the keys to motivating people to increase their digital media literacy is communicating the possible benefits of using digital media and being online.

Online activities of consumers

Frequency of internet use and level of online experience influences the type of activities undertaken online and the degree to which those services are used. Australians going online at least once a week undertook a wider range of activities online than infrequent internet users. Frequent internet users are more likely to be experienced online users with greater knowledge of available services online and therefore the associated benefits of accessing those services. They are also more likely to have developed the necessary level of skills and confidence in using these services over time, through a process of informal learning.[8] For example, frequent internet users were at least twice as likely to undertake online transactions compared with infrequent internet users.

Figure 3.12: Online activities by frequency of internet use
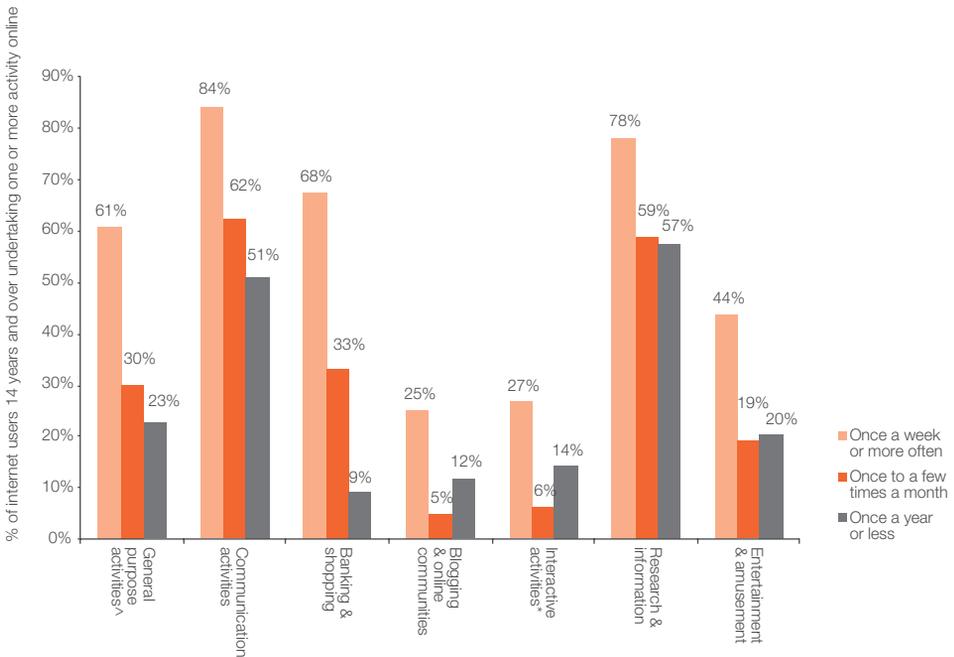
*Includes activities relating to general browsing and surfing and downloading software.
^Includes activities relating to entering competitions, registered at a website (name and other details).
Excludes respondents reporting don't know.
Source: Roy Morgan Single Source, June 2009.

8   The ACMA, *Australia in the Digital Economy, Report 1: Trust and confidence,* March 2009.

Trends in web traffic

Web traffic data collected by Nielsen Online also reflects the growing level of online activity in Australia, showing that Australians are spending more time online and viewing more web content.

During the June quarter of 2009, Australians using a broadband service from home viewed approximately 47 billion web pages—an average of 3,099 web pages per person. This compared with 39 billion web pages viewed during the same period in 2008—an average of 3,088 web pages per person.

The amount of time Australians spend online has also increased. During the quarter ending June 2009, home broadband internet users spent on average nearly 57 hours online compared to an average of 47 hours online at home during the same period in 2008—a 21 per cent increase in activity levels.

Table 3.2: Home broadband users, summary web activity

	June quarter 2008	June quarter 2009
No. of web pages viewed	38.9 billion	46.6 billion
Average no. of sessions online	80	88
Average no. of web pages viewed	3,088	3,099
Average time spent online (hrs:mins:secs)	46:40:40	56:37:36

Source: Nielsen Online.

Figure 3.13: Volume of data download via the internet
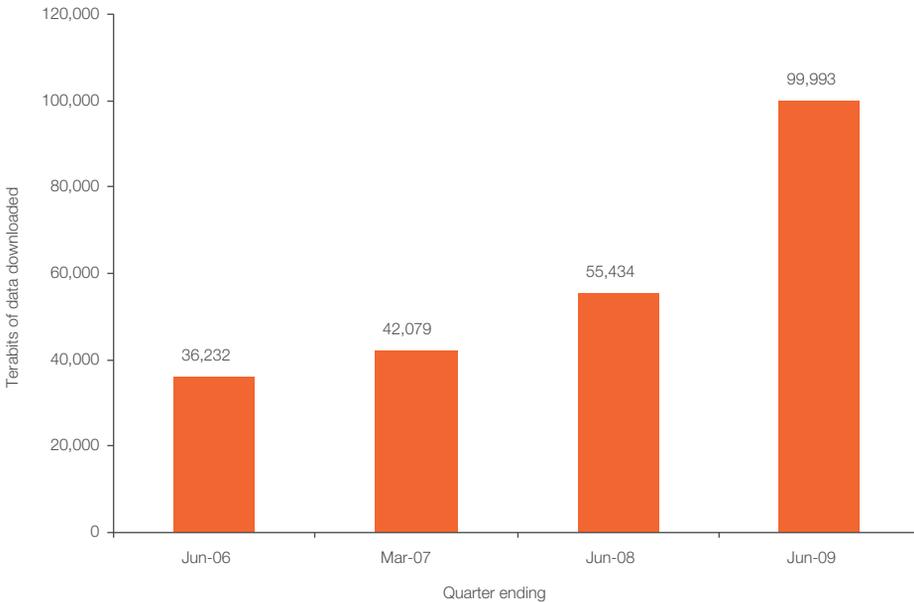
*Source: ABS, 8153.0–Internet Activity, Australia, June 2009.*

Volume of data downloaded

ABS statistics (Figure 3.13) relating to the volume of data downloaded via the internet also reflects the increasing intensity of online activity in Australia. During the June quarter of 2009, internet users in Australia were estimated to have downloaded 99,993 terabits of data compared with 55,434 terabits downloaded during the same period in 2008; an 80 per cent increase.

Online activities of business

The internet has led to changes in the way many SMEs communicate and conduct their business. Australian SMEs, like consumers, engaged in a wide range of activities online. However, communication, accessing information and transaction-based activities were again the primary online activities undertaken, which is consistent with results for the previous reporting period.

Figure 3.14: Activities undertaken by SMEs online
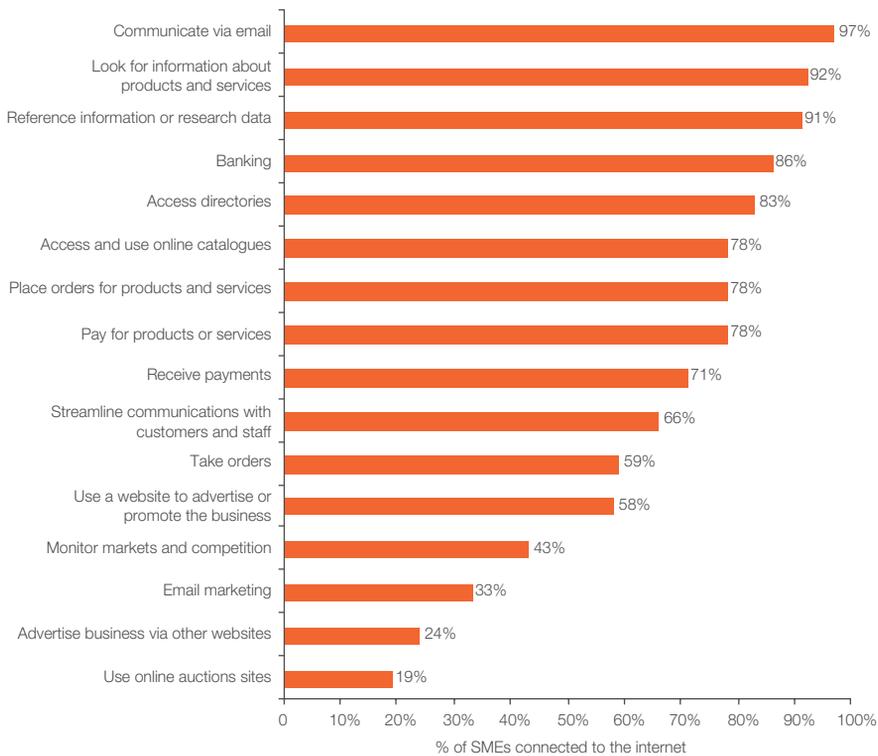
Note: SMEs were surveyed during the period 6 May to 10 June 2009.
Source: Sensis e-Business Report – The Online Experience of Small and Medium Enterprises, August 2009.

The growth of online commerce and industries

The increasing significance of the internet as a channel for business is further demonstrated by the growing value of goods and services sold online. The ABS estimates that during 2007–08, 24 per cent of businesses in operation generated income from the sale of goods and services online with total online sales estimated to be in the vicinity of $81 billion; a 42 per cent increase since June 2006 and a 238 per cent increase since June 2003. ABS estimates that 56 per cent of businesses in operation in Australia at June 2008 derived less than 10 per cent of their total goods and services income from sales via the internet. At the same time, 29 per cent of businesses derived between 10 and less than 50 per cent of total sales income from internet sales and a further 15 per cent derived more than 50 per cent of their total sales income from the internet. The ABS reported that the Information Media and Telecommunications Industry recorded the highest proportion of businesses (34 per cent) with more than 50 per cent of total sales income from internet sales.

This compared with 23 per cent for the Financial and Insurance Services industry, 22 per cent for the Professional, Scientific and Technical Services industry and 21 per cent for Rental, Hiring and Real Estate Services Industry.

The ABS uses the Organisation for Economic Co-operation and Development (OECD) definition of internet commerce as the basis for collecting data about the receipt of orders via the internet or web. The OECD defines an internet commerce transaction as "the sale or purchase of goods or services, whether between businesses, households, individuals, governments, and other public or private organisations, conducted over the Internet. The goods and services are ordered over the Internet, but the payment and the ultimate delivery of the good or service may be conducted on or off line".[9]

Figure 3.15: Impact of the internet: value of internet e-commerce
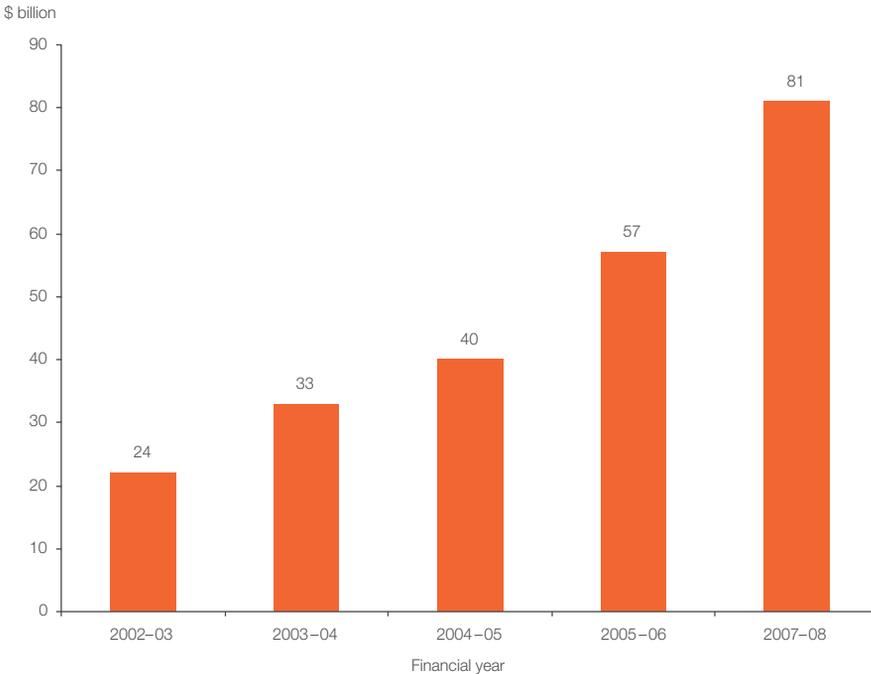
Note: Excludes the agricultural sector. Internet e-commerce is defined as the sale of goods and services via the internet whether or not paid for online.
Source: ABS, 8129.0—Business Use of Information Technology, 2007–08, 20 August 2009.

9   ABS. *8129.0—Business Use of Information Technology, 2007–08,* 20 August 2009.

Emergence of online digital content industries

The internet has facilitated the emergence of services and industries which support the development of online content and information sources.

In its review of the Australian and New Zealand Standard Industrial Classification (ANZSIC), the ABS has recognised the growing importance of technologies such as the internet in reshaping how industry operates and the service they provide to the economy. The ABS reported that 'new industries and activities have emerged and need to be reflected in the classification'. Examples of internet production and distribution activities identified by the ABS include internet book publishing, broadcasting, directory publishing, reference material publishing, and video broadcasting.[10]

While comprehensive data on this growing sector of the economy is not yet available from the ABS, research undertaken by IBIS*World*[11] provides some insight into the growing significance of elements of this sector in Australia, specifically the *online information services sector.*

This sector comprises businesses which are primarily involved in the storage and retrieval of information online and the provision of real-time internet search and data services (e.g. real time financial and economic data and online news services).[12] Examples of businesses operating in this sector in Australia include Sensis and Yahoo!7 Inc.

IBIS*World* estimates that during 2008–09 revenue for the online information services sector in Australia was approximately $1.37 billion compared with $1.28 billion for the previous reporting period; a seven per cent increase. Figure 3.16 provides historical data relating to the growth of this sector of the online economy.

Figure 3.16: Growth of the online information services sector
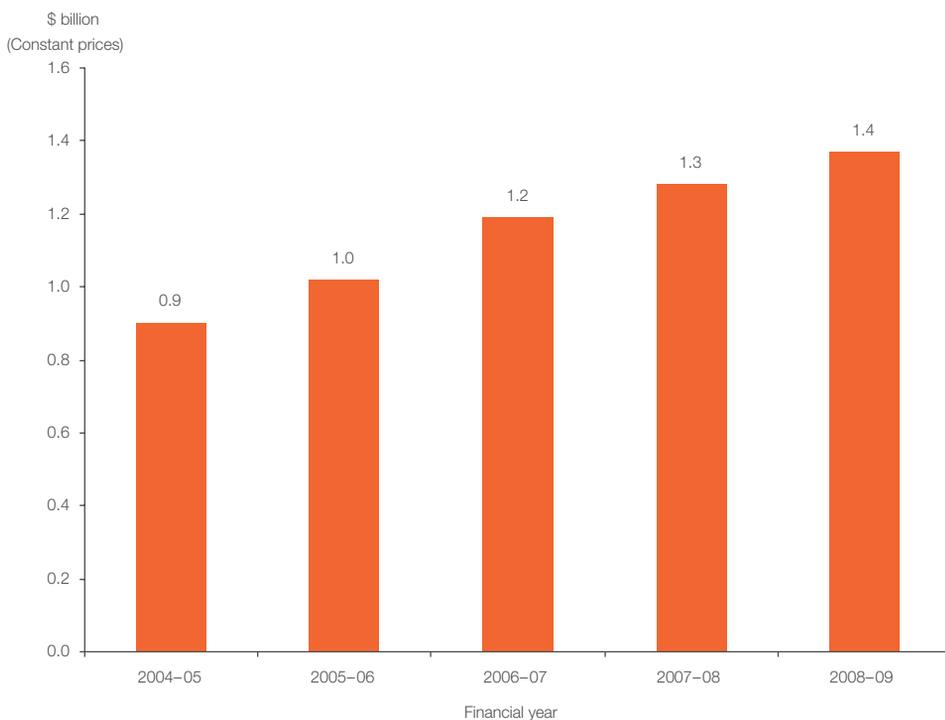
Note: Excludes user generated online content sites.
Source: IBISWorld Industry Report. Online Information Services in Australia, 1 May 2009.

10   ABS, 1291.0—Australian and New Zealand Standard Industrial Classification, 2006.
11   *IBISWorld. Online Information Services in Australia,* 1 May 2009.
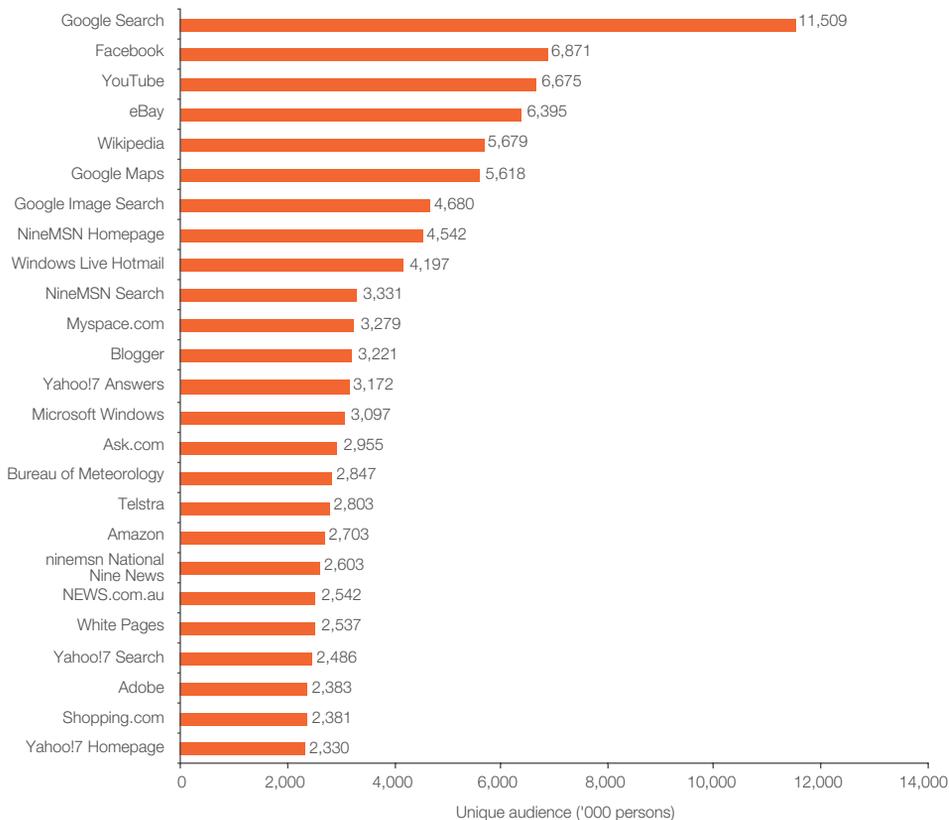12   Excludes libraries.

Confidence

A developing confidence in the digital economy is evident from the number of Australians engaging at a range of levels in participation, creation and management of their online experience.

Websites visited

Additional insight into the online habits of consumers and the services and organisations driving online participation can be gained from analysing web traffic data. Figure 3.17 presents data on the top 25 websites visited by home internet users during the June quarter of 2009. Sites associated with search engines, location services (maps), news and information continue to attract the most online traffic, however, participative websites relating to social networking and user generated content (UGC) are attracting increasing volumes of web traffic.

The more popular participative websites such as Facebook and MySpace accounted for 6.9 million and 3.3 million users respectively during the June quarter of 2009. Sites such as YouTube, allowing the uploading of professional and non-professional video based content to the web, accounted for 6.7 million users in Australia during the same period. Nielsen Online identifies nine or 10 dedicated social networking or UGC websites (*member communities*) accessed by online Australians although many organisations are now incorporating participative web elements into their own web service delivery strategies.

Figure 3.17: Top 25 websites visited by internet users in Australia

Website	Unique audience ('000 persons)
Google Search	11,509
Facebook	6,871
YouTube	6,675
eBay	6,395
Wikipedia	5,679
Google Maps	5,618
Google Image Search	4,680
NineMSN Homepage	4,542
Windows Live Hotmail	4,197
NineMSN Search	3,331
Myspace.com	3,279
Blogger	3,221
Yahoo!7 Answers	3,172
Microsoft Windows	3,097
Ask.com	2,955
Bureau of Meteorology	2,847
Telstra	2,803
Amazon	2,703
ninemsn National Nine News	2,603
NEWS.com.au	2,542
White Pages	2,537
Yahoo!7 Search	2,486
Adobe	2,383
Shopping.com	2,381
Yahoo!7 Homepage	2,330

Note: Relates to users of a home broadband service during June quarter 2009.
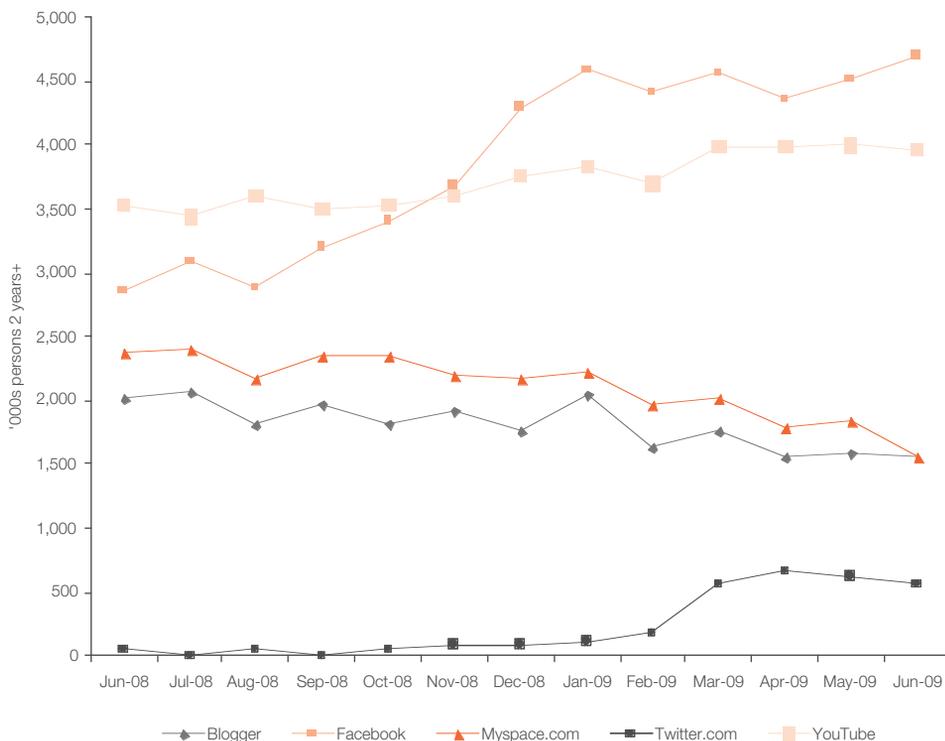*Source: Nielsen Online.*

Participative web: social networking and user generated content

In response to the growing popularity of social networking sites, public and private sector organisations in Australia are assessing the potential for harnessing social networking channels for organisational purposes.

Businesses are seeking to use social network channels, augmenting their existing marketing and service delivery strategies, by tapping into the growing social networking audience and by applying participative web principles to their own business operations. This has encompassed strategies such as utilisation of podcasting, RSS (really simple syndication), Wikis, online-video and corporate blogging.[13] In Australia, approximately 31 per cent of SMEs connected to the internet allow their staff to access social networking sites from work.[14]

Figure 3.18 provides an overview of Australian traffic to a selection of main-stream social networking sites over the past year. While the popularity of sites such as Facebook and YouTube is evident the dynamic nature of the social networking environment is demonstrated by the emergence of relatively new services such as Twitter over the past year in terms of capturing the attention of online Australians. Twitter is described as a micro-blogging service which enables the sending and receipt of short text messages (tweets).

Figure 3.18: Monthly web traffic to selected social networking sites, Australia

Note: Relates to users of a home broadband service.
Source: Nielsen Online.

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13   e-Marketer, *Social Networking Ad Spending: A brighter outlook next year,* July 2009.
14   Sensis e-Business Report – *The Online Experience of Small and Medium Enterprises*, August 2009.

Social network audience profile

Social networking sites have a relatively wide appeal enabling internet users from diverse socio-economic and demographic backgrounds to interact online and to build new and complementary social channels to those existing offline. Figure 3.19 provides an age profile of internet users in Australia accessing the more main stream social networking channels.

A wide range of age groups accessed one or more of the social networking sites identified during the June quarter of 2009.

Internet users aged 35 to 49 years tended to account for the single largest group of social networkers for three of the five sites identified in addition to accounting for the second largest audience for the other two sites. People aged 50 years and over were the single largest group for one of the sites identified and the second largest group for three sites. Younger adults, specifically people aged 18 to 24 years, generally had the lowest level of representation on social networking sites.

Further analysis of social networking website traffic reveals the highly interconnected nature of the social networking environment with anywhere from 68 to 78 per cent of persons currently accessing Blogger, MySpace, Twitter or YouTube also visiting Facebook.[15]

Figure 3.19: Profile of internet users in Australia accessing social networking sites

% of home broadband users 2 years+

- 2–17 years
- 18–24 years
- 25–34 years
- 35–49 years
- 50 years and over
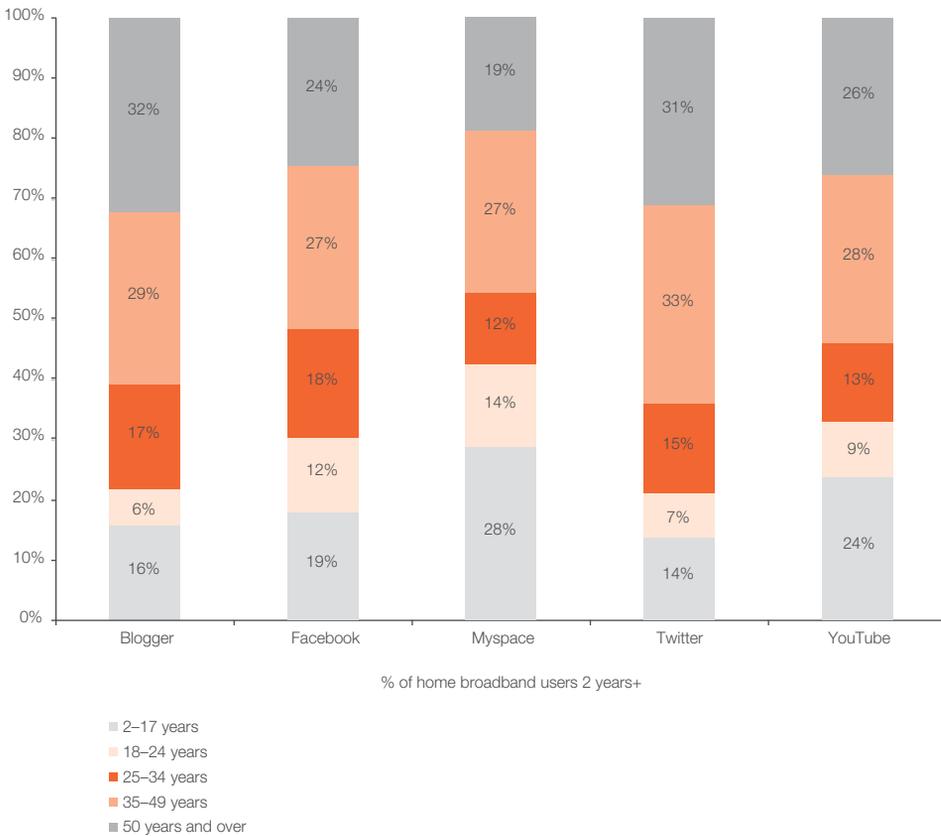
Note: Relates to home users of a home broadband service during June quarter 2009.
Source: Nielsen Online, June Quarter 2009.

15   Nielsen Online, June quarter 2009.

Social networking activities

Social networking sites provide opportunities for engaging in interactive discussion, the sharing of opinions and user generated content. However, many users of these sites adopt more passive behaviours, preferring instead to read and view material prepared by others.

As Figure 3.20 shows, the most common activity undertaken via social networking sites was reading or adding comments to other people's online journals or blogs, accounting for 45 per cent of persons accessing social networking sites. This was followed by establishing a personal space friends can access (a profile); 41 per cent, viewing or contributing to online forums (38 per cent), reading or commenting to online newspaper blogs (27 per cent), creating an online journal or blog (17 per cent) and participating in online virtual communities (16 per cent).

A higher proportion of younger internet users were involved in the creation of online journals and participating in virtual communities. Older internet users were more engaged in reading or providing comments to online newspaper blogs and other online forums.

Figure 3.20: Activities undertaken via social networking sites, Australia
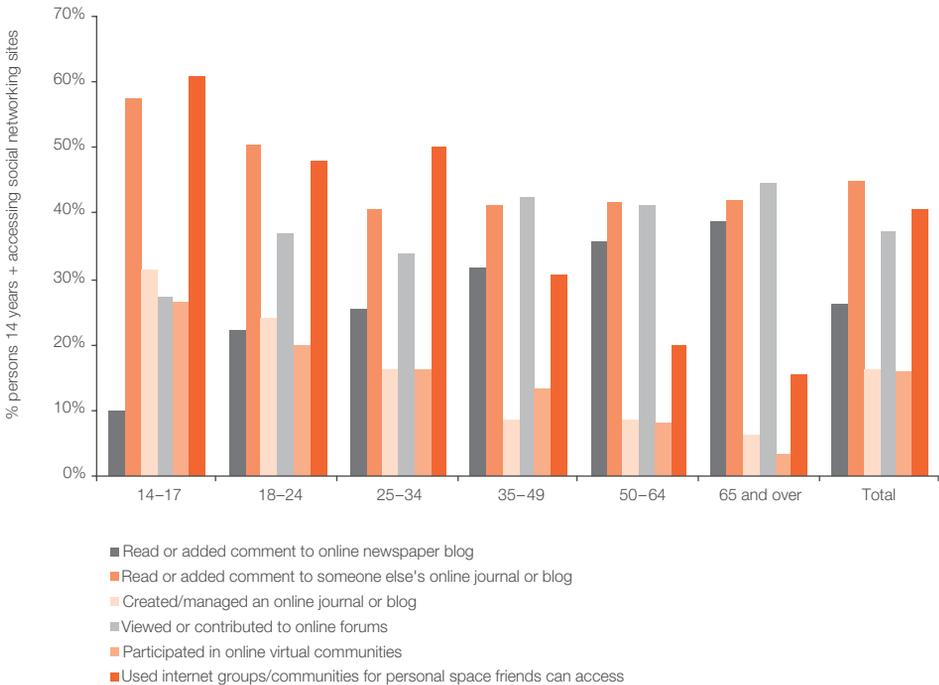
Source: Roy Morgan Single Source, June 2009.

Risk mitigation in the online environment

While Australian internet users overwhelmingly see the internet as having affected their lives positively, they still have concerns about the potential for the internet to negatively affect their privacy and security. Sixty per cent of Australians were concerned about the potential for technology to breach their privacy and 70 per cent were not comfortable with providing their credit card details online.[16]

Experience with online security breaches and risk mitigation by adult internet users

The level of personal experience with serious e-security breaches amongst adult home internet users is comparatively small compared with the number of persons that go online each month in Australia. The most common e-security breach identified related to having some form of malware (virus, worm, Trojan horse, etc) infect the household computer; 33 per cent of adult internet users (Figure 3.21).

A further 13 per cent reported being exposed to inappropriate or illegal content, while just over three per cent of adult internet users discovered that their credit card or other personal details had been used without authorisation. Just over two per cent of adults internet users reported responding to unsolicited emails and providing either personal information or money.

Australian adult home internet users utilised a number of measures to reduce the risk of e-security breaches including downloaded software updates, running virus scans, accessing only trusted websites and changing passwords. Seventy-eight per cent of adult home internet users regularly loaded protective software updates to their computer or made use of automatic updates, 70 per cent reported running frequent virus scans, 67 per cent only surfed on 'trusted' websites while 31 per cent changed their passwords frequently. Many e-commerce users also felt that it was the responsibility of e-commerce merchants—businesses providing e-commerce options to customers—to protect their personal information.[17]

Figure 3.21: E-security breaches and risk mitigation strategies
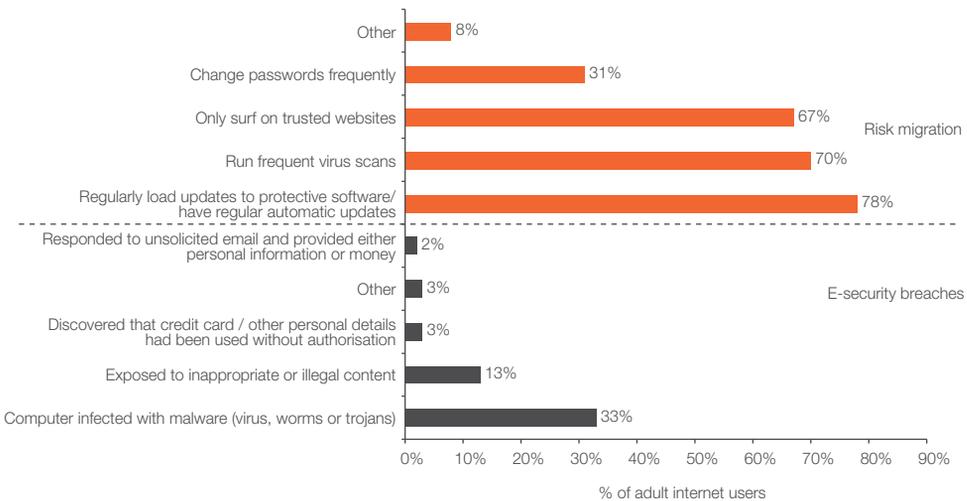
Source: ACMA commissioned consumer survey, April 2009.

16   Roy Morgan Single Source, June 2009.

17   *Nigel Phair, 2008 Consumer Trust and Confidence Online Survey.*

A survey commissioned by the ACMA showed that many Australians felt that they had sufficient knowledge to protect themselves against online security breaches. When asked whether they agreed or disagreed with the specific statement, *I know enough about online security to protect myself and my computer,* 49 and 17 per cent of adult internet users either agreed or strongly agreed with the statement. This compared with 27 per cent who either disagreed (22 per cent) or strongly disagreed (five per cent) with the statement (Figure 3.22).

Figure 3.22: *'I know enough about online security to protect myself and my computer',* adult internet users in Australia

- Strongly agree
- Agree
- Neither disagree nor agree
- Disagree
- Strongly disagree
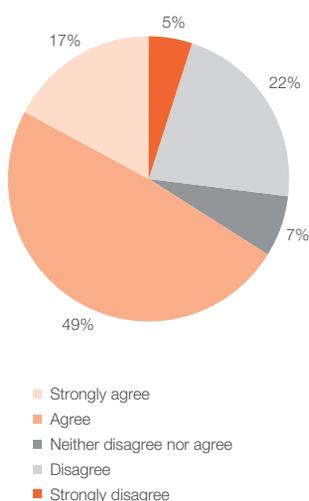
Source: ACMA commissioned survey, April 2009.

Use of personal information

Use of digital media and communications increasingly requires providing or sharing personal information. As a result, the ability for online users to control how they share their personal information is an important element of digital media literacy.

In March 2009, the ACMA commissioned qualitative research to better understand attitudes towards disclosure of personal information when using digital media and communications, awareness of and perceived severity of risks, and risk mitigation strategies.[18]

The study, based on eight group discussions[19], found:

> Australians are generally well informed about both risks to their online privacy and strategies to protect their personal information.

> There is an acceptance among Australians that using digital media and communications (online) means sharing personal information.

> There is awareness of two broad types of information disclosure online. Firstly, there is 'transactional provision of information' where disclosure of personal information is necessary to obtain a good or service that the provider requires. Secondly, there is 'networking or social provision' where information is provided within an online community in order to share and exchange opinions, beliefs and details of activities. In both situations, disclosure of information is assessed based on the balance of benefits versus risks.

> There is a good awareness of the risks inherent in the provision of personal information online. Any disclosure of personal information carries an inherent risk of that information being used in a way that was unintended and may result in an adverse outcome.

> Severity of these risks is assessed taking into account perceived likelihood and severity of consequences.

Users in the study were employing two broad categories of risk mitigation strategies:

1 Active strategies which are characterised by individuals making deliberate decisions about their online behaviour that assist to protect security of personal information. Examples of active strategies include password management, managing email addresses and spam.

18 The ACMA, *Exploration of Australians' attitudes towards the use of personal information in the context of digital media and communications consumption*, June 2009.

19 The qualitative research that was commissioned by the ACMA from TNS social research was conducted in metropolitan and regional areas of New South Wales, Victoria and Queensland, and metropolitan areas in Western Australia, South Australia and Northern Territory. Selection of focus group participants took into consideration people's digital media usage levels, their online disclosure of personal information and their life stage.

2   Judicious use of credit cards and alternative payments facilities; control on who can access personal information on social networking sites; managing personal information they share on social networks or online forms.

In terms of sources of information, family and friends (informal sources) play a key role in learning risk minimisation strategies. Work and formal education (through children) are indirect providers of information and skills in relation to risks and risk minimisation strategies.

Young people's understanding and experience of online risks

As with Australian adults, awareness of online risks and associated risk mitigation strategies for young people is critical to building trust and confidence in the online environment.

In July 2009 the ACMA published its The *Click and Connect—Young Australians' Use of Online Social Media* report which presented key findings from qualitative and quantitative research into issues currently facing young people online; including their understanding and experiences of online risks and ways they manage those risks. This research was commissioned to help shape safety messages and materials for children, young people, teachers and parents as part of the ACMA's national cybersafety program.

Awareness of risks associated with use of internet and social networking services

Approximately 97 per cent of 16 to 17-year-olds claim to use at least one social networking service. Most young people are going online to connect with their real world friends, with 17 per cent of 12 to 17-year-olds using online social networking to build networks of new friends. Children and young people have a high level of awareness of cybersafety risks and the key messages for staying safe online. Seventy-five per cent of children surveyed claim they know not to give out their address or phone number online and remember key safety messages such as 'people aren't always who they say they are.' Children and young people also have a high awareness of cybersafety risks and identify activities such as 'posting personal information' as high risk behaviour.

The tendency toward risky behaviour rises with age. Of online social networkers aged 16 to 17 years:

> 61 per cent report accepting 'friend requests' from people they didn't know.

> 78 per cent claim to have personal information, such as a photograph of themselves, on their social networking profile pages.

Parents' knowledge of cybersafety risks, and communication with children

Approximately 78 per cent of parents report having a 'high' level of knowledge of online risks. Parents report communicating 'frequently' with their children about internet use and the risks associated with stranger contact and claim a relatively high knowledge of their children's behaviour online, especially when their child is among the younger age groups. However, as children age, parents reported less active monitoring of their internet use. Other than their parents, children were likely to go to their siblings to discuss cybersafety issues. Young people aged 12 to 17 years are most likely to go to another friend for advice.

Children's experience with cyberbullying

The study found the children's experience of cyberbullying increased with age. Cyberbullying is experienced by just one per cent of eight to nine year olds but increased to 19 per cent of 16 to 17-year-olds social networking online. Seventy-two per cent of children surveyed told their parents about the bullying while 50 per cent knew how to block the bully's messages. Less than 10 per cent of children and young people surveyed admitted any involvement in cyberbullying of another person.

SME concerns with e-commerce

While the majority of SMEs engaged in some form of online commerce, many SMEs expressed concerns about e-commerce. However, the level of concern has declined marginally since the previous reporting period (Figure 3.23). These concerns generally related to security, lack of skills and associated technical costs of introducing e-commerce.

At April 2009, 43 per cent of online SMEs connected to the internet were concerned about the risk of people hacking into business computer systems (46 per cent at April 2008), a further 21 per cent reported the lack of expertise and knowledge within the business in relation to computers (26 per cent at April 2008), while 19 and 18 per cent respectively reported cost related factors. These included the cost and time associated with introducing new technology to support the use of e-commerce and the cost of hardware and software (25 and 20 per cent respectively for 2008).

A small proportion of SMEs also identified concerns associated with the lack of personal engagement with customers and perceived customer reluctance to adopt e-commerce (10 per cent at April 2009 compared to 13 per cent at April 2008). These findings are consistent with other research which indicates that only 30 per cent of internet users in Australia felt comfortable with giving their credit card details over the internet[20] even though many Australians purchased goods or services online.

Figure 3.23: SME major concerns with e-commerce
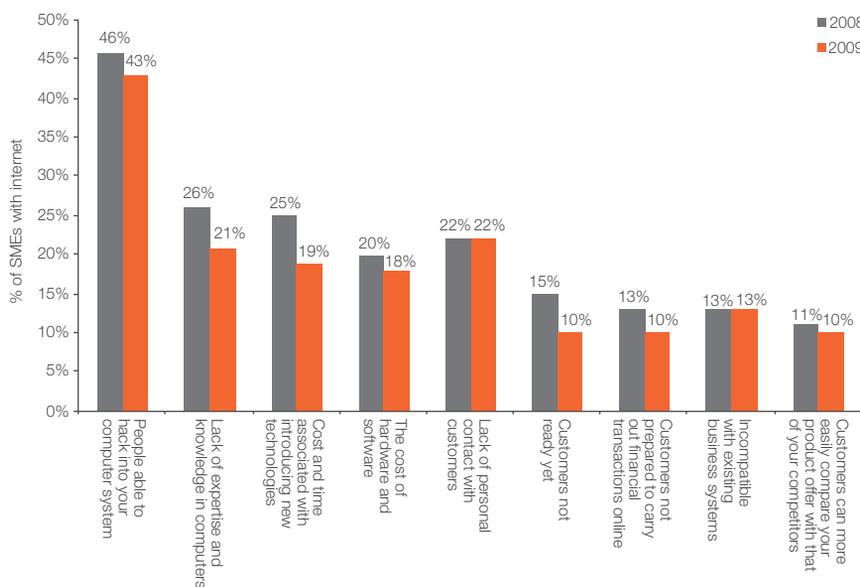
Source: Sensis e-Business Report – The Online Experience of Small and Medium Enterprises, August 2009.

Further information

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Organisations

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> IBIS*World* www.ibisworld.com.au

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20   Roy Morgan Single Source, April 2008 to March 2009.