

# FEATURE ARTICLE - Use of Information Technology in Western Australia

## INTRODUCTION

Information technology (IT) is having a significant impact on the way Australians undertake their work, do business and interact socially. Personal computers and the Internet have combined to create a global information economy, with ever expanding opportunities to communicate, gather information, transact business and provide essential services nationally and internationally. Through the use of information technologies, the barriers of isolation and distance, once significant factors for a State the size of Western Australia, are being broken down.

Western Australia is at the national forefront of IT access and use. An increasing number of Western Australians now use information technologies from home to undertake work activities, learn, make financial transactions, shop or for entertainment. Western Australian businesses are also well placed to use information technologies to expand their market opportunities, both locally and internationally.

This article examines the uptake and use of information technology by three sectors of the Western Australian economy – people, businesses and farms.

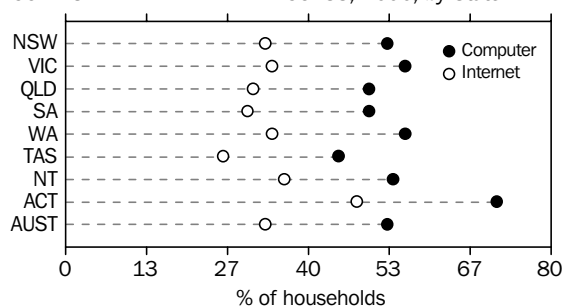
## PEOPLE'S USE OF INFORMATION TECHNOLOGY

In 2000, more Western Australian adults accessed a computer or the Internet at home than at any other place. Over half (56%) of Western Australian households had access to a computer at home while just over one third (34%) had home Internet access in 2000. Within those households, there were 685,000 adults (or 51% of all adults) who actually used the home computer and 420,000 adults (32% of all adults) who accessed the Internet from home. Also, 198,000 children aged 5 to 14 years (73% of all children in that age group) used a computer at home, while 75,900 (28%) accessed the Internet from home.

### Are there more households with access to IT?

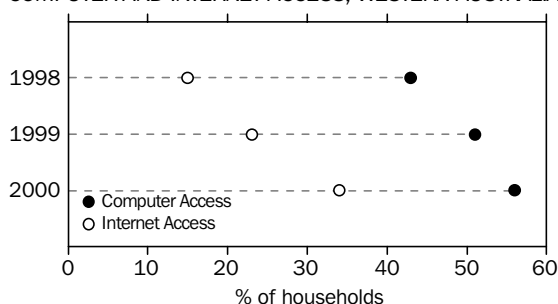
Significant rates of growth over recent years in the number of households with IT have brought Western Australian households to the national forefront in terms of home IT access.

COMPUTER AND INTERNET ACCESS, 2000, by State



Since 1998, the number of Western Australian households with home computer access has increased by 35%, compared with 24% nationally. In both Western Australia and nationally, the number of households with home Internet access has more than doubled since 1998, (148% and 115% respectively). The majority of the increase in home Internet access in Western Australia and Australia occurred during 2000.

COMPUTER AND INTERNET ACCESS, WESTERN AUSTRALIA



## FEATURE ARTICLE - Use of Information Technology in Western Australia *continued*

What types of households have access to IT?

The presence of children, the income and location of the household appeared to influence the decision about whether or not Western Australian households acquired a home computer or Internet access.

In 2000, 79% of 'couples with dependants' households had home computer access and 52% had Internet access. This compared with 47% and 30% (respectively) for 'couples without dependants' and 29% and 16% for 'single person' households. Overall, households with children under 18 years of age were much more likely to have home access to a computer and the Internet than households without children in that age group.

Households with higher incomes were also more likely to have home computer and Internet access. In 2000, home computer and Internet access rates ranged from 30% and 14% (respectively) for households with an income below \$25,000 to 83% and 62% (respectively) for households with incomes of \$75,000 or more.

Also, households in regional Western Australia were less likely to have home computer and Internet access than those in the Perth metropolitan area.

### WESTERN AUSTRALIAN HOUSEHOLDS WITH COMPUTER AND INTERNET ACCESS, 2000

	<i>Computer</i>	<i>Internet</i>
	(%)	(%)
<b>Family type</b>		
Couple without dependants	47	30
Couple with dependants	79	52
Single parent	59	26
Single person	29	16
Other	60	36
<b>Households</b>		
Without children under 18	44	28
With children under 18	75	46
<b>Household income</b>		
Less than \$25,000	30	14
\$25,000 to \$49,999	52	28
\$50,000 to \$74,999	69	44
\$75,000 or more	83	62
<b>Region</b>		
Metropolitan area	58	37
Outside metropolitan area	49	27
<b>Total</b>	<b>56</b>	<b>34</b>

## FEATURE ARTICLE - Use of Information Technology in Western Australia *continued*

### PEOPLE'S USE OF INFORMATION TECHNOLOGY

#### Why don't households have access to IT?

Of the 309,000 Western Australian households without a computer in 2000, most reported the main reasons as either no need for a computer (37%), high costs (26%), or lack of interest in computers (17%). Non-metropolitan households were more likely than metropolitan households to cite high costs as a reason (35% compared with 22%).

Similar reasons were given by the 459,000 Western Australian households which did not have Internet access in 2000. The proportions, however, were more equally divided between lack of interest (23%), high costs or no use for the Internet (both 21%). Non-metropolitan households were more likely than metropolitan households to consider no use for the Internet as a reason (26% compared with 19%).

In both single parent households and households with children under 18 years of age, high costs were by far the main reason for being without IT access.

#### Who uses IT at home and how often?

For Western Australian adults who accessed IT from home in 2000:

- age was a notable factor, with those adults aged 18–24 years much more likely to have used a computer or to have accessed the Internet (67% and 41% respectively) than those aged 55 years or more (25% and 13% respectively);
- males were slightly more likely than females to have done so;
- those on higher incomes were more likely to have done so;
- adults with higher levels of qualification were more likely to have accessed IT. For example, those with a Bachelors degree (56%) were more than twice as likely to have accessed the Internet than those whose highest level of qualification was to complete secondary school (24%); and
- those employed were almost twice as likely to have accessed IT compared with the unemployed. For example, 38% of employed adults accessed the Internet from home compared with 20% of unemployed adults.

For Western Australian children aged 5–14 years who accessed IT from home:

- the proportion who accessed IT increased with age. Computer and Internet access ranged from 63% and 14% respectively of 5–8 year olds, to 77% and 30% (respectively) of 9–11 year olds and to 82% and 44% (respectively) of 12–14 year olds; and
- between the sexes, there was little difference in the proportion who accessed IT.

A higher proportion of children than adults used a computer at home whereas similar proportions of children and adults accessed the Internet

For those who accessed the Internet at home, 88% of adults and 80% of children aged 5–14 years did so at least once a week. A third of adults who accessed the Internet at home did so every day, compared with only 8% of children aged 5–14 years.

## FEATURE ARTICLE - Use of Information Technology in Western Australia *continued*

How do we use IT at home?

More Western Australian adults reported using their home computer for work related purposes (52%) than for any other purpose in 2000. Two in every five of these adults either had a home based business or had an agreement with their employer to work from home on an ongoing basis.

### HOME COMPUTER ACTIVITIES: Western Australian Adults, 2000(a)

Activity	(%)
Work related purposes	52
Personal or family correspondence	46
Learning or study activities	43
Playing games	39
Keeping personal or family records	35
Hobbies	19
Other purposes	5

(a) Percentages are of all adults using a computer at home.

Most Western Australian adults accessed the Internet at home to use email or chat sites (70%) or for general browsing (56%).

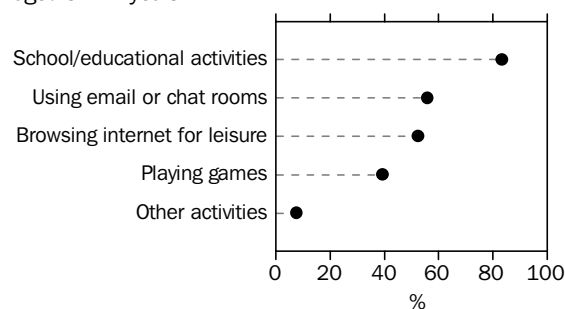
### HOME INTERNET ACTIVITIES: Western Australian Adults, 2000(a)

Activity	(%)
Using email or chat sites	70
General browsing	56
Finding information relating to work	35
Finding information relating to studies	27
Finding information on goods or services	27
Finding technical information, patches or software	17
Playing games	10

(a) Percentages are of all adults accessing the Internet at home.

For children in Western Australia, most used the home computer for school or educational activities (86%) and playing games (82%) whereas those accessing the Internet mostly did so for school or educational activities (83%).

### HOME INTERNET ACTIVITIES, Western Australian children aged 5 - 14 years



Percentages are of children who accessed the Internet at home

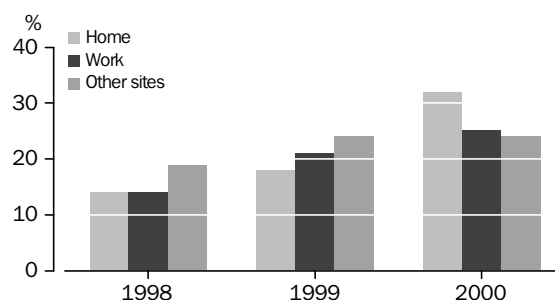
## FEATURE ARTICLE - Use of Information Technology in Western Australia *continued*

### PEOPLE'S USE OF INFORMATION TECHNOLOGY

#### Where else are people using IT?

Home is now the site at which Western Australian adults are most likely to access IT. Growth in both computer use and Internet access by Western Australian adults has been strong over recent years at both work and home.

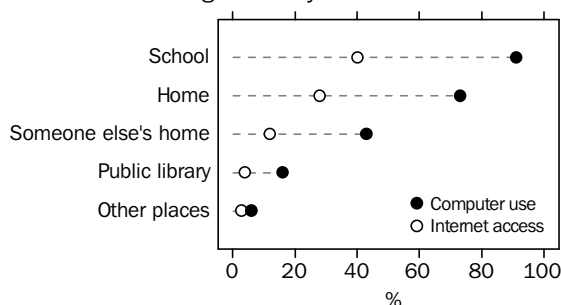
ADULT INTERNET ACCESS, WESTERN AUSTRALIA



At the workplace, 46% of all Western Australian adults used a computer and 25% accessed the Internet at the workplace in 2000. Outside of home or work, the most popular sites of Internet access for Western Australian adults were a neighbour or friend's home, a tertiary institution or a public library.

Most children aged 5–14 years used IT at school during the 12 months to April 2000. A very high proportion (91%) used a computer at school while 2 in every 5 children accessed the Internet there. These results reflect steps by Western Australian schools to integrate new learning technologies into school curriculums. Their own home and someone else's home were also popular sites of IT use for children aged 5–14 years.

SITE OF INFORMATION TECHNOLOGY USE, Western Australian children aged 5 - 14 years



Percentages are of all children in this age group.

#### Are people using internet commerce?

Adults have begun to use the Internet to shop, manage their own personal finances and to access government services. However, using the Internet for these types of transactions is still far less popular than more familiar and established methods.

The proportion of adults who paid bills or transferred funds via the Internet in 2000 was 13%, a significant jump from 3% in 1999 (an increase of 134,000 adults). This compares, in 2000, with more than half of Western Australian adults (54%) who paid bills or transferred funds via phone, 72% who paid bills or withdrew funds via Electronic Funds Transfer at Point of Sale (EFTPOS) and almost four out of every five (79%) who transferred or withdrew funds via Automatic Teller Machines.

Internet shopping (purchasing or ordering goods or services for private purposes over the Internet) is not a common activity, although it does appear to be growing in popularity. In 1999, only 5% of Western Australian adults were Internet shoppers, compared to 8% in 2000. In 2000, the national figure was 7%. During 2000, the average amount spent on Internet shopping was \$600 for each Internet shopper in Australia.

## FEATURE ARTICLE - Use of Information Technology in Western Australia *continued*

Adults on higher incomes were more likely to use Internet commerce. Adults whose personal income was \$40,000 or more were more than twice as likely to use the Internet to pay bills and transfer funds (23%) or to shop (16%) than those whose income was less than \$40,000 (where the rates were 10% and 7% respectively).

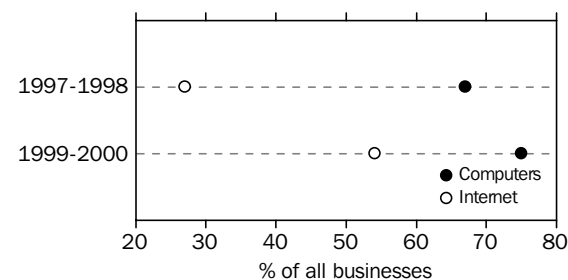
There were 165,000 Western Australian adults (12% of all adults) that had accessed Government services (Federal, State or local) via the Internet for private purposes during 2000. The most common purposes were paying bills (41% of adults accessing Government services), taxation information or services (28%) and employment information or services (23%).

### USE OF INFORMATION TECHNOLOGY BY BUSINESS

#### Are more businesses using IT?

The number of Western Australian businesses using IT is growing strongly, particularly the number with Internet access. At the end of June 2000, 75% of Western Australian businesses were using computers (up from 67% two years ago) while 54% had Internet access (double the proportion at the end of June 1998). Just under 1 in 5 businesses (19%) at the end of June 2000 had a Web site or home page, while 16% of businesses had dedicated IT staff within their organisation.

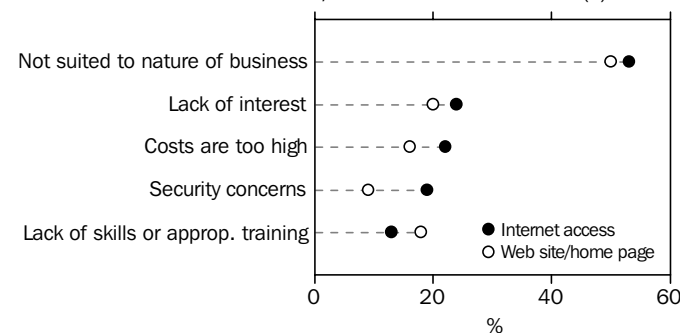
#### WESTERN AUSTRALIAN BUSINESSES USING INFORMATION TECHNOLOGY



#### Why don't businesses use IT?

There were 14,000 businesses in Western Australia not using a computer at the end of June 2000. The most commonly cited reason was that computers were not suited to the nature of the business (41%). A third reported lack of skills or appropriate training as another significant barrier. Among businesses with computers, over half of those without either Internet access or a Web site or home page reported that these technologies were not suited to the nature of the business. Security concerns, while an important issue for businesses without Internet access (19%), were considered a relatively minor barrier to having a Web site or home page (9%).

#### BARRIERS TO INTERNET ACCESS/WEB SITE OR HOME PAGE(a)



(a) WA businesses with a computer but without Internet access/Website or home page.

## FEATURE ARTICLE - Use of Information Technology in Western Australia *continued*

### USE OF INFORMATION TECHNOLOGY BY BUSINESS

What type of businesses use IT?

The use of IT by business varies markedly depending on the characteristics of the business.

*IT use by industry*

By the end of June 2000, rates of both computer and Internet use by Western Australian businesses varied considerably across industries and sometimes disproportionately within industries. Rates of computer use in Mining, Manufacturing, Communication and Property and business services were over 80%, while Mining (81%) and Property and business services (76%) recorded correspondingly high rates of Internet access. Although high in computer use, the Communication services industry recorded one of the lowest rates of Internet access at 44%, due mainly to low rates within the Postal and courier services component which more than offset the very high rates within the Telecommunications services component. The Finance and insurance industry also had a high rate of Internet access, which was similar to the rate of computer use within the industry.

### WESTERN AUSTRALIAN BUSINESSES: Use Of Information Technology By Industry, 2000

Industry	Computer use (%)	Internet access (%)
Mining	87	81
Manufacturing	84	68
Construction	72	47
Wholesale trade	71	39
Retail trade	71	44
Accommodation, cafes and restaurants	65	38
Transport and storage	59	45
Communication services	84	44
Finance and insurance	77	75
Property and business services	88	76
Health and community services	79	49
Cultural and recreational services	75	46
Personal and other services	59	36
<b>All industries(a)</b>	<b>75</b>	<b>54</b>

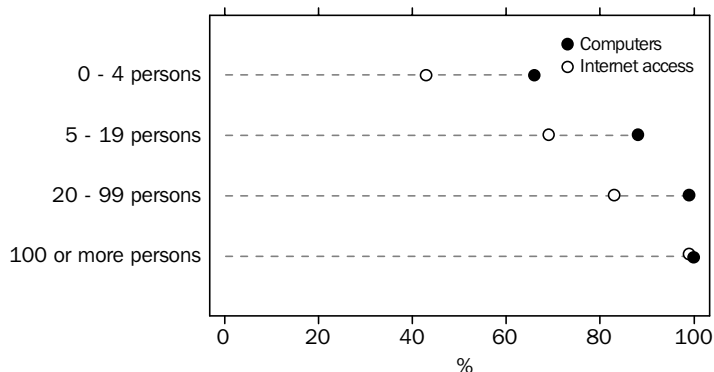
(a) Total includes Electricity, gas and water supply, for which figures are not publishable.

## FEATURE ARTICLE - Use of Information Technology in Western Australia *continued*

### IT use by business size

The proportion of Western Australian businesses which had used computers or accessed the Internet increased markedly with the size of the business. At the end of June 2000, two thirds of those business employing fewer than 5 persons used a computer compared with virtually all businesses employing 20 or more persons. The rate of businesses with Internet access ranged from 43% in businesses employing less than 5 persons to over 80% for those employing 20 or more persons (99% for businesses with 100 or more persons).

USE OF INFORMATION TECHNOLOGY BY BUSINESS SIZE



### Are we doing business over the internet?

Conducting business over the Internet is a relatively new area of activity. Western Australian businesses are using the Internet for buying or selling related activities and on-line banking at rates comparable to businesses nationally. Of Western Australian businesses with Internet access, 16% used it only for email and/or information searches, compared with 20% nationally.

Businesses which used the Internet, including the Web, to facilitate business processes such as the buying or selling of goods and services, banking, recruitment or company promotion have been labelled 'Internet business active'. Excluded from this group were businesses which used the Internet only for email or information searches. At the end of June 2000, 47% of all Western Australian businesses were 'Internet business active', compared with 46% nationally.

Businesses which received income from goods or services that were ordered via the Internet or a Web site are said to be 'Internet commerce active'. At the end of June 2000, 7% of all Western Australian businesses were 'Internet commerce active', compared to 6% nationally.

Of those Western Australian businesses with access to the Internet at the end of June 2000:

- 29% were engaged in activities associated with selling goods or services, including receiving orders, sending invoices, and providing after sales service (28% nationally);
- 26% used it for activities associated with buying goods or services, such as ordering supplies, purchasing information on-line or receiving invoices (24% nationally); and
- 42% used it for banking (36% nationally).

### USE OF INFORMATION TECHNOLOGY ON FARMS

#### Are more farms using IT?

Almost three in five (59%) of the 14,038 Western Australian farms with an estimated value of agricultural operations (EVAO) of \$5,000 or more, owned or used a computer in March 1999. This represented a 21% increase over the number of farms using a computer at March 1998 (49%), and was significantly higher than the Australian figure of 49% for March 1999.



## FEATURE ARTICLE - Use of Information Technology in Western Australia *continued*

### USE OF INFORMATION TECHNOLOGY ON FARMS

#### Are more farms using IT? *continued*

More Western Australian farms were also accessing the Internet. At March 1999, 18% of Western Australian farms were using the Internet, a significant increase on the 10% recorded at March 1998. Nationally, the rates of Internet access were almost the same for both periods.

#### How are farms using IT and at what cost?

For Western Australian farms accessing the Internet at March 1999, the majority (81%) did so only from home, with just 15% of farms doing so only at a site away from home. A high proportion (73%) of farms with Internet access used it more frequently than once a week, while a quarter of farms accessing the Internet did so daily.

For the year ending March 1999, the cost of Internet access was high for Western Australian farms. The State had the largest proportion of farms in the highest cost bracket, with 22% paying more than \$500 each year for access. More than half (56%) of farms paid more than \$250 a year in access costs, compared with 34% nationally.

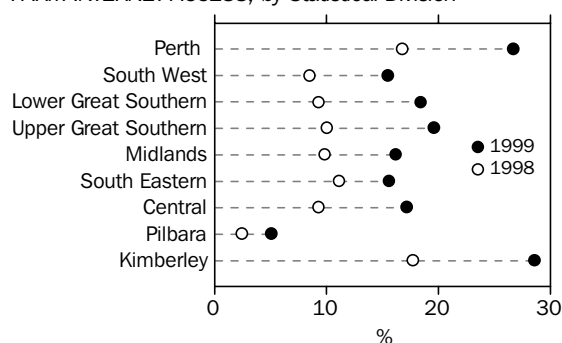
#### What type of farms use IT?

Farm use of IT varied considerably depending on the location, size or industry of the farm.

#### IT use by region

Significant disparity existed amongst the rates of farm computer use and Internet access in different regional areas of the State at March 1999.

FARM INTERNET ACCESS, by Statistical Division



#### IT use by industry

The highest proportion of farms using a computer at March 1999 were in the Poultry farming industry and in farms not classified to an agricultural industry (i.e. where the main source of income is from a non-agricultural activity). The Poultry farming industry also had the highest proportion of farms using the Internet. However, only 1% of all Western Australian farms are in this industry. The lowest proportion of farms using the Internet occurred in the Grain, sheep and beef cattle farming industry. Three quarters of all farms in Western Australia belong to this industry.

## FEATURE ARTICLE - Use of Information Technology in Western Australia *continued*

### WESTERN AUSTRALIAN FARMS USING A COMPUTER AND THE INTERNET, By Broad Farm Industry(a) 1998/99

Industry	Total farms	Farms using a computer	Farms using the Internet
	no.	(%)	(%)
Horticulture and fruit growing	2 041	59	23
Grain, sheep and beef cattle farming	10 700	59	17
Dairy cattle farming	436	57	18
Poultry farming	158	65	28
Other livestock farming	313	59	23
Other crop growing	98	*34	**19
Other(b)	292	69	*26
<b>All farms - WA</b>	<b>14 038</b>	<b>59</b>	<b>18</b>

(a) Percentages are of all Western Australian farms in each industry

(b) Relates to establishments with an EVAO of \$5,000 or more but which are classified to a non-agricultural ANZSIC class

#### *IT use by farm size*

Use of computers and the Internet was most likely amongst the larger farms. Of farms with an EVAO of \$1m or more, 82% used a computer and 32% accessed the Internet. This compares with farms with an EVAO less than \$25,000, where only 32% used a computer and 15% accessed the Internet.

#### Are farms using internet commerce?

A small proportion (4% or 554 farms) of all Western Australian farms shopped on the Internet at some time during the year to March 1999. This translates to 22% of farms which had Internet access actually using the Internet to purchase or order goods. These proportions correspond almost exactly to national figures.

Due to the small number of farms shopping over the Internet (nationally 5,608 farms) State data relating to the characteristics of these farms and the features of purchases/orders made are not available. However Australian figures show that in the 12 months to March 1999:

- for farms with Internet access, just over a third of those with an EVAO under \$25,000 shopped on the Internet. This may be due to the presence of a large number of farms with non-agricultural activity within this group. For all other EVAO size groups, the proportion of farms who shopped on the Internet varied little, ranging from 16% to 20%;
- around 24% of farm Internet shoppers spent over \$1000 on their purchases/orders, while just under half spent \$250 or less;
- computer software (41% of farm Internet shoppers), and books/magazines (36% of farm Internet shoppers) were the most popular types of purchases/orders, while 20% of Australian farm Internet shoppers used the Internet to purchase or order agricultural-related products such as farm machinery, materials and livestock; and
- around 71% of farm Internet shoppers paid for their purchases/orders on-line.

#### REFERENCES

Household Use of Information Technology, Australia (Catalogue No. 8146.0)

Children's Participation in Cultural and Leisure Activities, Australia (Catalogue No. 4901.0)

Business Use of Information Technology, Australia (Catalogue No. 8129.0)

Use of Information Technology on Farms, Australia (Catalogue No. 8150.0)