Australian Bureau of Statistics

2003–04 **8129.0**

BUSINESS USE OF INFORMATION TECHNOLOGY

AUSTRALIA

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CONTENTS

INQUIRIES

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NOTES

INTRODUCTION

This publication presents results from an Australian Bureau of Statistics (ABS) survey of Business Use of Information Technology (BUIT) conducted in respect of 2003–04.

CHANGES IN THIS ISSUE

The content of the BUIT survey changes each year to reflect the changing nature of information technology (IT) use by Australian businesses. As such, some of the content of this publication has changed compared to the previous issue. For example, information on IT security is not presented in this issue due to data on this topic not being collected in the 2003–04 survey, but additional data on broadband has been collected and is included. A chapter of international comparisons has also been included in this issue.

NUMBER OF BUSINESSES

The BUIT survey is not designed to provide high quality estimates of numbers of businesses for any of the output classifications (for example, state and territory or industry) and the estimated number of businesses in this publication are only included to provide contextual information for the user.

Estimates of the number of businesses operating in Australia can be derived from a number of sources within the ABS. They may relate to a particular point in time or may be presented as an average annual figure. However, these estimates will not always show the same results. Variations will occur because of differing data sources, differing scope and coverage definitions between surveys, as well as variations due to sampling and non-sampling error.

REVIEW OF BUIT SURVEY VEHICLE

The ABS is currently considering an Integrated Business Characteristics (IBC) collection vehicle proposal. It is envisaged that the integration of existing ABS collection activity in the field of business characteristics (in particular Innovation and Business Use of Information Technology) will yield an increase in the usefulness of these statistics to users. An IBC collection vehicle is expected to provide more coherent and consistent business characteristic statistics covering a range of variables, for the whole economy. A potential disadvantage of the IBC proposal could be a loss of detailed BUIT output every second year, although it is envisaged that core business use of IT data would continue to be available annually. The ABS will be consulting widely with users prior to any change to the range and frequency of BUIT data collection.

COMMENTS

If you wish to make comments and suggestions about the BUIT survey content or this publication, including the IBC proposal, please write to the Director, Innovation and Technology Statistics, Australian Bureau of Statistics, GPO Box K881, Perth, WA, 6842.

Dennis Trewin
Australian Statistician

LIST OF TABLES

CHAPTER 1 SUMMARY OF FINDINGS

INTRODUCTION

This chapter presents a summary of outputs from the 2003–04 Business Use of Information Technology (BUIT) survey and focuses on key indicators of computer use, Internet access, web presence and Internet commerce.

The content of the BUIT survey has changed over time with the focus moving from basic uptake of IT to measures of more sophisticated use of IT.

ADOPTION OF INFORMATION TECHNOLOGY

Between 2002–03 and 2003–04, there have been small increases in the proportion of businesses using a computer, accessing the Internet and having a web presence. While the proportion of businesses using a computer has remained around the same level for the last four years to 2003–04, the proportion of businesses with Internet use and web presence has continued to grow steadily.

BUSINESS USE OF SELECTED TECHNOLOGIES(a)

	1999–2000	*2000–01*	*2001–02*	*2002–03*(b)	*2003–04*
	%	%	%	%	%
Businesses with computer use	76	84	84	83	85
Businesses with Internet use	56	69	71	71	74
Businesses with web presence	16	22	24	23	25

(a) Proportions are of all businesses.
(b) Affected by TNTS - see Explanatory Note 10.

INTERNET ACCESS

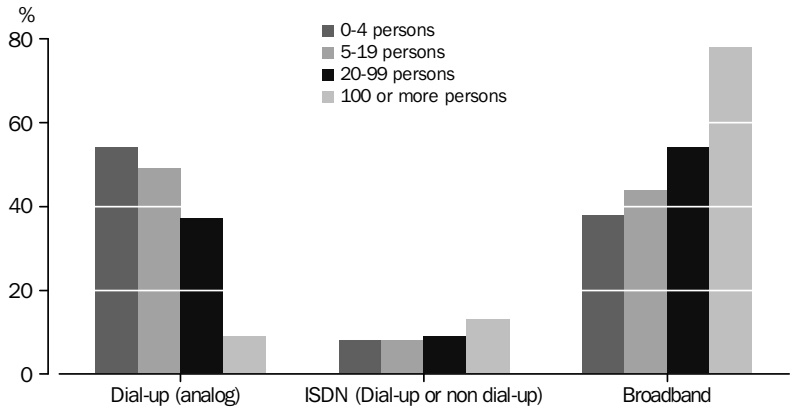
Businesses with Internet use during the year ended June 2004 were asked to identify the main type of connection used to access the Internet as at the end of June 2004. In previous surveys businesses were asked to identify all types of Internet connections used. Due to these changes, direct comparisons cannot be made with methods of Internet connection data resulting from the 2002–03 and 2003–04 surveys.

As at the end of June 2004, a higher proportion of businesses using the Internet were mainly using non-broadband connection types (58%) compared to broadband connection types (41%). Broadband is defined by the ABS as an 'always on' Internet connection with an access speed equal to or greater than 256Kbps. Non-broadband connection types consist of dial-up (analog) and both dial-up and non dial-up ISDN (Integrated Services Digital Network) connections.

Broadband connections were the most prevalent as the main type of Internet connection for businesses which employed 100 or more persons (78%) and 20–99 persons (54%). In contrast, the most common type of Internet connection for businesses which employed 0–4 persons and 5–19 persons was dial-up (analog) at 54% and 49% respectively.

INTERNET ACCESS *continued*

MAIN TYPE OF INTERNET ACCESS CONNECTION BY EMPLOYMENT SIZE(a), as at 30 June 2004



(a) Proportions are of all businesses in each employment size category with Internet use

Businesses using broadband as the main type of Internet connection were also asked to identify the main type of broadband connection used as at the end of June 2004. The most common broadband connection used was DSL (Digital Subscriber Line) with 67% of broadband users identifying this as the main type of broadband connection. The next most common main type of broadband connection was cable (28%) which includes Fibre Optic, Coaxial and Hybrid Fibre Coaxial cable.

The 2003–04 survey collected reasons why businesses with Internet access did not use a broadband connection as the main type of connection. Businesses could identify more than one reason. Lack of perceived benefit (32%) was the most common reason reported by businesses for not using broadband, followed by ongoing costs being too high (26%), start up connection costs being too high (24%), broadband being unavailable in the business location (23%) and hardware incompatible (4%). Broadband had not been considered by 18% of businesses with Internet access.

INTERNET COMMERCE

The 2003–04 survey measured the number of Australian businesses using the Internet or web to place and/or receive orders, with or without online payments, and the value of Internet or web orders received by businesses (Internet income). Caution should be used when interpreting values of Internet income, please refer to Explanatory Notes 12 to 16.

The proportion of businesses which reported placing orders via the Internet or web was 31% for 2003–04, an increase of 3 percentage points from the previous year. This growth is a continuation of the trend seen over recent cycles for this business practice.

Estimates for proportions of businesses which received orders via the Internet or web have demonstrated volatility over time. These data have been impacted by changes in question wording and processing procedures to better align with the evolving conceptual definition. The reporting of this item is also influenced by the availability of business management information and the relative rareness of this business event. See Explanatory Notes 12 to 16 for more information.

INTERNET COMMERCE *continued*

In this context, the slight decrease seen between 2002–03 and 2003–04 survey estimates for proportion of businesses which received orders via the Internet or web is negligible. Despite the proportion of business receiving Internet orders decreasing slightly, Internet income grew by 37% from $24 billion in 2002–03 to $33 billion in 2003–04.

ORDERS FOR GOODS AND SERVICES VIA THE INTERNET OR WEB(a)

		2000–01	*2001–02*	*2000–03*(b)	*2003–04*
Businesses which					
Placed orders via the Internet or web	%	20	25	28	31
Received orders via the Internet or web	%	9	6	13	12
Internet Income	$b	9	11	24	33

(a) Proportions are of all businesses.

(b) Affected by TNTS - see Explanatory Note 10.

CHAPTER 2 USE OF IT BY AUSTRALIAN BUSINESSES

BUSINESS SIZE

A strong relationship continues to exist between the employment size of a business and the likelihood that the business is using IT. As employment size increases, so does the proportion of Australian businesses making use of IT. For example, during the year ended June 2004 all businesses with 100 or more persons employed used computers, 99% used the Internet, while 83% had a web presence. A much lower level of IT adoption existed for businesses with 0–4 persons employed: 80% used computers, 67% used the Internet and only 16% had a web presence.

While use of computers and the Internet for businesses with 100 or more persons employed has been complete or near complete for a year or two (also 100% and 99% respectively, during the year ended June 2003), the proportion of these businesses with a web presence continues to grow with an increase of 3 percentage points from 2002–03 to 2003–04. In contrast, businesses with 0–4 persons employed increased the level of IT adoption for computer use and Internet use by 2 percentage points over the period, while a smaller increase of 1 percentage point was experienced for web presence. Proportions of businesses employing 5–19 and 20–99 persons also show increases of 2 percentage points for computer use but show larger increases for Internet use (4 and 3 percentage points respectively) and web presence (5 and 7 percentage points respectively).

As with employment size, a relationship exists between the total income of businesses and the use of IT. For example, 68% of businesses with income of $5 million or more had a web presence while only 12% of businesses with income less than $100,000 had a web presence.

INDUSTRY

During the year ended June 2004, the proportion of Australian businesses using IT varied considerably across industries. The proportion of businesses with computer use was lowest in the Accommodation, cafes and restaurants industry (72%). The industries with the highest proportion of businesses using a computer were Electricity, gas and water supply and Property and business services, 95% and 94% respectively. Web presence was highest in Cultural and recreational services (41%) and Wholesale trade (40%). Construction had the lowest proportion of businesses with a web presence (11%). The next lowest proportion of businesses with a web presence was 17% shared by Transport and storage, Communication services and Health and community services.

At the broad industry level, the highest increases in the proportions of IT adoption between 2002–03 and 2003–04 were experienced by: Electricity, gas and water supply and Health and community services for computer use (5 percentage points); Retail trade for Internet use (9 percentage points); and Manufacturing and Wholesale trade for web presence (7 percentage points for both).

INDUSTRY *continued*

Users interested in movements in industry statistics need to be aware that considerable compositional change may occur within an industry between surveys. Additionally, the level of IT usage may also vary with the nature and characteristics of contributing businesses. For example, between 2002–03 and 2003–04, estimates for Communication services show significant decreases in the proportions of businesses with computer use, Internet use and web presence of 7, 8 and 5 percentage points respectively. Communication services is comprised of Postal services, Courier services and Telecommunications services. For the 2003–04 survey, there was a relatively high number of births to the survey frame of Postal services and Courier services businesses with 0–4 persons employed. Consequently, the proportion of businesses in Communication services with 0–4 persons employed increased in comparison to other employment size ranges. This change has driven the decreases in proportions for Communication services, as businesses with low employment typically have lower levels of IT adoption.

REGIONAL DATA

Use of IT by businesses in capital cities was higher than other areas for computer use, Internet use and web presence. The proportions of businesses using computers, the Internet and having a web presence were 86%, 75% and 27% respectively for capital cities, compared to 83%, 71% and 21% respectively for other areas. Growth in these indicators from 2002–03 to 2003–04 is similar for capital cities and other areas.

In the sample design, the stratification for the three smaller states and territories (Tasmania, the Northern Territory and the Australian Capital Territory) is combined. This makes their data less reliable than for the larger states, as demonstrated by relatively high levels of standard errors for some characteristics of IT use within the smaller states and territories. On this basis, users should only make comparisons between regions or time periods for these states and territories with caution. Commentary in this section is confined to the five larger states (i.e. New South Wales, Victoria, Queensland, South Australia and Western Australia).

Of the five larger states, South Australia had the highest proportions of businesses with computer use (89%) and a web presence (28%), while Internet use was highest for Queensland (78%). The lowest proportions of business computer use and web presence were for Western Australia, 83% and 23% respectively. Victoria had the lowest proportions of businesses which used the Internet (71%).

South Australia had the largest increases in the proportions of businesses with computer use and Internet use (6 percentage points), while Queensland had the highest growth (5 percentage points) in the proportion of businesses with a web presence.

ORDERS FOR GOODS OR SERVICES VIA THE INTERNET OR WEB

The proportions referred to in this subsection relate to all Australian businesses. Further commentary pertaining to placing and receiving orders via the Internet or web by more narrowly defined populations (e.g. businesses with Internet access) is provided in chapters 3 and 4.

During 2003–04, the proportion of businesses placing orders via the Internet or web (31%) continued to steadily increase with a growth of 3 percentage points from 28% in 2002–03.

ORDERS FOR GOODS OR SERVICES VIA THE INTERNET OR WEB *continued*

The likelihood of a business placing orders via the Internet or web increases with the employment size of the business. For example, in 2003–04, 69% of businesses which employed 100 or more persons placed orders in this manner, compared to 27% of businesses which employed 0–4 persons. At the industry level, Property and business services had the highest proportion of businesses which placed orders via the Internet or web (46%), while Construction had the lowest (18%). These industry patterns are broadly consistent with 2002–03 findings.

Estimates for the five largest states show the proportion of businesses which placed orders via the Internet or web during 2003–04 was highest in Victoria and Queensland (both 33%), while South Australia had the highest level of receipt of orders (14%). Western Australia had the lowest proportion of businesses which placed and received orders via the Internet or web, 25% and 9% respectively.

Estimates for proportions of businesses which received orders via the Internet or web have demonstrated volatility over time. The slight decrease of 1 percentage point to 12% seen between 2002–03 and 2003–04 for the proportion of businesses which received orders via the Internet or web can be explained by a number of factors which include: changes to the survey instrument to better reflect the concept; adoption of more rigorous quality assurance procedures for this data during processing of the 2003–04 survey to ensure provider reporting was in line with survey definitions; and receipt of orders in this manner still being a relatively rare business event, which means it is not unusual for those businesses rotating into the survey sample to demonstrate different receipt of orders activity compared to those rotating out of the survey sample. For further explanation of these and other contributing factors, please refer to Explanatory Notes 12 to 16.

Although the proportion of businesses which received orders via the Internet or web generally tends to increase with employment size, receipt of orders in this way was slightly higher for those businesses which employed 20–99 persons (23%) than those which employed 100 or more persons (21%) during 2003–04. Businesses with 0–4 persons and 5–19 persons employed had much lower levels of Internet selling, 9% and 16% respectively. In 2003–04, the receipt of orders was most common in the Wholesale trade and Manufacturing industries (28% and 21% respectively). Health and community services reported the lowest proportion of businesses which received orders via the Internet or web (4%).

SOURCES OF IT SUPPORT

During the year ended June 2004, the most common source of IT support for businesses using computers was contractors or consultants (49%) followed by internal staff who were not IT specialists (45%). The likelihood that IT support was provided by specialist internal staff increased with the size of the business: proportions ranged from 4% for businesses with 0–4 persons employed to 55% for businesses with 100 or more persons employed. Note that businesses could identify more than one source of IT support.

2.1 BUSINESS USE OF SELECTED TECHNOLOGIES(a), by selected business characteristics

	NUMBER OF BUSINESSES (b)		BUSINESSES WITH COMPUTER USE		BUSINESSES WITH INTERNET USE	
	2002–03	*2003–04*	*2002–03*	*2003–04*	*2002–03*	*2003–04*
	'000	'000	%	%	%	%
Employment size						
0–4 persons	441	451	78	80	65	67
5–19 persons	190	201	92	94	81	85
20–99 persons	41	39	96	98	91	94
100 or more persons	8	7	100	100	99	99
Total income						
Less than $100,000	156	162	71	74	58	62
$100,000 to less than $1m	395	405	83	86	71	73
$1m to less than $5m	99	101	95	97	85	91
$5m or more	30	31	99	99	95	98
Industry(c)						
Mining	3	2	87	88	78	82
Manufacturing	58	57	84	88	73	76
Electricity, gas and water supply	1	1	90	95	79	84
Construction	101	108	77	78	61	63
Wholesale trade	42	44	88	91	79	86
Retail trade	114	119	78	81	60	69
Accommodation, cafes and restaurants	35	36	71	72	58	58
Transport and storage	34	35	82	83	67	66
Communication services	6	8	81	74	63	55
Finance and insurance	28	28	83	83	77	78
Property and business services	155	159	93	94	89	89
Health and community services	52	53	86	91	72	76
Cultural and recreational services	18	19	88	90	81	81
Personal and other services	33	31	72	76	58	60
State						
New South Wales	244	250	83	84	72	74
Victoria	178	183	82	85	70	71
Queensland	125	129	85	87	73	78
South Australia	43	43	83	89	70	76
Western Australia	63	65	84	83	73	72
Tasmania	12	12	83	89	63	74
Northern Territory	^ 4	^ 5	81	92	^ 66	82
Australian Capital Territory	11	^ 11	88	89	80	^ 78
Region						
Capital cities	469	486	84	86	73	75
Other areas	211	212	81	83	68	71
Total	**680**	**698**	**83**	**85**	**71**	**74**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

(a) Proportions are of all businesses in each category.

(b) See Explanatory Notes 17 to 18.

(c) Prior to making comparisons between time periods for industry, please refer to chapter commentary.

2.1 BUSINESS USE OF SELECTED TECHNOLOGIES(a), by selected business characteristics *continued*

	BUSINESSES WITH WEB PRESENCE		BUSINESSES WHICH PLACED ORDERS VIA THE INTERNET OR WEB		BUSINESSES WHICH RECEIVED ORDERS VIA THE INTERNET OR WEB	
	2002–03	*2003–04*	*2002–03*	*2003–04*	*2002–03*	*2003–04*
	%	%	%	%	%	%
Employment size						
0–4 persons	15	16	24	27	11	9
5–19 persons	33	38	33	38	17	16
20–99 persons	51	58	41	43	23	23
100 or more persons	80	83	63	69	^25	^21
Total income						
Less than $100,000	11	^12	20	23	^8	^8
$100,000 to less than $1m	21	22	27	30	13	10
$1m to less than $5m	41	46	37	43	21	21
$5m or more	61	68	52	58	27	^25
Industry(b)						
Mining	31	36	28	34	^4	^6
Manufacturing	29	36	30	33	^24	^21
Electricity, gas and water supply	35	39	33	42	13	^12
Construction	11	11	14	18	^6	^6
Wholesale trade	33	40	36	40	29	^28
Retail trade	19	23	22	28	^9	^11
Accommodation, cafes and restaurants	29	29	17	^20	15	^12
Transport and storage	20	^17	23	^20	^12	^13
Communication services	22	^17	25	23	^11	^11
Finance and insurance	26	^27	33	^31	^11	*7
Property and business services	28	29	43	46	16	^13
Health and community services	16	17	25	29	^5	^4
Cultural and recreational services	37	41	31	44	^15	^17
Personal and other services	25	28	22	23	^11	^9
State						
New South Wales	24	24	28	31	13	12
Victoria	23	26	25	33	12	^12
Queensland	22	27	30	33	13	^13
South Australia	24	28	31	32	^17	^14
Western Australia	21	23	27	25	^15	^9
Tasmania	^19	^26	^24	^29	^16	^17
Northern Territory	*15	*21	^33	*43	*4	*14
Australian Capital Territory	^33	^21	^40	^37	*17	*12
Region						
Capital cities	25	27	29	33	14	13
Other areas	19	21	25	27	12	^10
Total	**23**	**25**	**28**	**31**	**13**	**12**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Proportions are of all businesses in each category.

(b) Prior to making comparisons between time periods for industry, please refer to chapter commentary.

2.2 SOURCES OF IT SUPPORT(a)(b), by employment size

		EMPLOYMENT SIZE				
		0–4 persons	*5–19 persons*	*20–99 persons*	*100 or more persons*	*Total*
Source of IT support(b)						
Non-IT specialist internal staff	%	46	43	42	^ 28	45
IT specialist internal staff	%	^ 4	^ 10	^ 15	55	7
Contractors or consultants	%	42	59	66	67	49
Other sources of IT support	%	10	^ 4	**4	^ 1	8
No IT support accessed	%	8	^ 4	*3	—	6
Businesses which used a computer	'000	**360**	**190**	**38**	**7**	**595**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

(a) Proportions are of all businesses with computer use during the year ended June 2004 in each employment size category.

(b) Businesses could identify more than one source of IT support.

CHAPTER 3 CHARACTERISTICS OF INTERNET AND WEB USE

TYPE OF INTERNET CONNECTION

In the 2003–04 survey, businesses which used the Internet were asked to identify the main type of Internet access: dial-up (analog); dial-up or non dial-up ISDN; or broadband. Businesses which identified broadband as the main connection type were also asked to report the main type of broadband connection. Businesses which did not identify broadband as the main connection type were asked to provide reasons for not using broadband.

As at the end of June 2004, a higher proportion of businesses were using non-broadband connections (58%) as the main type of Internet access than those using broadband connections (41%). Dial-up (analog) was the most common type of Internet connection for businesses with Internet use during 2003–04 (50%), while ISDN was the least common (8%).

Broadband connections were the most prevalent main type of Internet connection as at the end of June 2004 for businesses which employed 100 or more persons and 20–99 persons (78% and 54% respectively). In contrast, the main Internet connection type for businesses which employed 0–4 persons and 5–19 persons was dial-up (analog) at 54% and 49%, respectively.

Main type of broadband connection used

The most common type of broadband connection used to access the Internet as at the end of June 2004 was DSL (Digital Subscriber Line): 67% of businesses using broadband identified this as the main type. Cable was reported as the main broadband connection type by 28% of businesses using broadband, while wireless (including fixed wireless, mobile wireless and satellite) connections and other (e.g. frame relay, ATM) broadband connections were reported by a much smaller proportion of businesses using broadband.

DSL was the most common broadband connection type for businesses across all employment size categories at the end of June 2004. Businesses which employed 100 or more persons reported 'other' broadband connections as the second most common main broadband connection used to access the Internet (27%), while cable connections were the second most common for businesses in all other employment size categories.

Barriers to use of broadband

For businesses with non-broadband Internet access, the most commonly reported reason for not using a broadband connection as the main type of connection to access the Internet as at the end of June 2004 was a lack of perceived benefit (32%). This was followed by ongoing connection and usage costs being too high (26%), start up connection costs being too high (24%), unavailability of broadband in the business location (23%) and hardware incompatibility (4%). Note that businesses could identify more than one reason for not using broadband. Broadband had not been considered by 18% of businesses with Internet access.

Barriers to use of broadband continued

Lack of perceived benefit was the most common barrier to broadband use reported by businesses in each employment size category. Both start up connection costs and ongoing connection and usage costs were considered a barrier by a higher proportion of businesses with 0–4 persons employed (26% and 27% respectively) than businesses of other employment sizes. After lack of perceived benefit, the greatest barrier for businesses with 100 or more persons employed was unavailability of broadband in the business location which was reported by 26% of businesses in this employment size category.

The proportion of businesses in Other areas which identified unavailability of broadband in the business location as a barrier to broadband (35%) was more than double that of Capital cities (17%).

ELECTRONIC LODGEMENTS WITH GOVERNMENT

During the year ended June 2004, 46% of businesses with Internet use undertook electronic lodgements with government organisations via the Internet or web. This represents an increase of 2 percentage points from 44% during the year ended June 2003. Electronic lodgment of payments (e.g. for rates, licence fees) was the most common electronic lodgement activity during the year ended June 2004 with 28% of businesses using the Internet making payments to government in this way.

ORDERS FOR GOODS AND SERVICES VIA THE INTERNET OR WEB

The proportion of businesses with Internet use which reported placing orders for goods and services over the Internet during 2003–04 was 42%. This is over 2.5 times higher than the proportion of businesses which reported receiving orders. Given placement of orders via the Internet or web generally requires Internet access only, whereas receipt of orders often requires a web presence and additional support within the business, it is considered much easier to place an order than to receive an order. Therefore, the differences highlighted in these levels of usage are to be expected.

For the same period, 16% of businesses with Internet use indicated that orders had been received via the Internet or web. The proportion of businesses with Internet use which received orders via the Internet or web for goods or services during the year ended June 2004 has reduced slightly compared to the previous year. Refer to Explanatory Notes 12 to 16.

WEB PRESENCE AND FEATURES

As at 30 June 2004, approximately 25% of Australian businesses reported having a web presence, either with their own web site or a presence on another entity's web site. Businesses with a web presence were asked to indicate the features of their web presence. The web features listed in table 3.6 are presented in ascending order of sophistication. Differences in web features across employment sizes of businesses were more significant as features increased in sophistication. While approximately 7% of all businesses with a web presence reported the capability for secure access or transactions, the proportion was 17% for businesses employing 100 or more persons. Similarly, while integration with back end systems was reported as a web feature by 13% of all businesses with a web presence, the proportion of businesses with 100 or more persons employed which reported this feature was 21% compared to 9% of businesses with 0–4 persons employed.

3.1 MAIN TYPE OF INTERNET CONNECTION(a)(b), by employment size

		EMPLOYMENT SIZE				
		0–4 persons	*5–19 persons*	*20–99 persons*	*100 or more persons*	*Total*
Dial-up (analog)	%	54	49	37	^ 9	50
ISDN (Dial-up or non dial-up)	%	^ 8	^ 8	^ 9	^ 13	8
Broadband	%	38	44	54	78	41
Businesses which used the Internet	'000	**303**	**171**	**36**	**7**	**518**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

(a) Proportions are of all businesses which used the Internet during the year ended June 2004 in each employment size category.

(b) Businesses identified the main type of Internet connection used as at 30 June 2004.

3.2 MAIN TYPE OF BROADBAND CONNECTION(a)(b), by employment size

		EMPLOYMENT SIZE				
		0–4 persons	*5–19 persons*	*20–99 persons*	*100 or more persons*	*Total*
DSL (Digital Subscriber Line)	%	60	76	76	^ 54	67
Cable	%	36	^ 20	^ 16	^ 17	28
Any wireless(c)	%	*2	*2	*4	*2	^ 2
Other Broadband	%	**1	*1	*5	^ 27	^ 2
Businesses which used a broadband connection	'000	**115**	**75**	**20**	**6**	**215**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Proportions are of all businesses which used broadband as the main type of Internet connection as at 30 June 2004 in each employment size category.

(b) Businesses identified the main type of broadband connection used as at 30 June 2004.

(c) Includes fixed wireless, mobile wireless and satellite.

3.3 BARRIERS TO USE OF BROADBAND(a)(b), by employment size

		EMPLOYMENT SIZE				
		0–4 persons	*5–19 persons*	*20–99 persons*	*100 or more persons*	*Total*
Unavailable in business location	%	23	22	^ 23	*26	23
Start up connection costs too high	%	26	21	^ 17	*9	24
Ongoing connection and usage costs too high	%	27	22	^ 25	*15	26
Business's hardware incompatible	%	^ 4	^ 4	*8	^ 20	^ 4
Lack of perceived benefit	%	32	34	^ 28	^ 28	32
Other reasons	%	^ 4	*4	*5	*20	^ 4
Not considered	%	17	^ 19	^ 21	*15	18
Businesses with non-broadband connection	'000	**189**	**96**	**17**	**^ 2**	**303**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Proportions are of all businesses which did not use a broadband connection as the main type of Internet connection as at 30 June 2004 in each employment size category.

(b) Businesses could identify more than one barrier.

3.4 BARRIERS TO USE OF BROADBAND(a)(b), by capital cities/other areas

		REGION		
		Capital cities	*Other areas*	*Total*
Unavailable in business location	%	17	35	23
Start up connection costs too high	%	26	21	24
Ongoing connection and usage costs too high	%	27	23	26
Business's hardware incompatible	%	^ 3	^ 6	^ 4
Lack of perceived benefit	%	36	25	32
Other reasons	%	^ 5	^ 3	^ 4
Not considered	%	19	^ 16	18
Businesses with non-broadband connection	'000	**199**	**104**	**303**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

(a) Proportions are of all businesses which did not use a broadband connection as the main type of Internet connection as at 30 June 2004 in each region.

(b) Businesses could identify more than one barrier.

3.5 SELECTED BUSINESS INTERNET ACTIVITIES(a), by employment size

		EMPLOYMENT SIZE				
		0–4 persons	*5–19 persons*	*20–99 persons*	*100 or more persons*	*Total*
Electronic lodgements with government organisations(b)	%	43	45	63	77	46
Electronic lodgement of						
Taxation forms(c)	%	23	23	45	66	26
Claims for grants or benefits	%	*2	^3	^5	*12	^2
Applications for licenses or permits	%	^7	^7	^10	^12	7
Payments	%	28	28	33	^33	28
Placed orders for goods or services	%	39	45	46	70	42
Received orders for goods or services	%	13	19	25	^21	16
Businesses which used the Internet	'000	**303**	**171**	**36**	**7**	**518**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Proportions are of all businesses which used the Internet during the year ended June 2004 in each employment size category.

(b) Businesses could identify more than one activity.

(c) Excludes electronic lodgement of taxation forms undertaken on behalf of the business by accountants or tax agents.

3.6 SELECTED BUSINESS WEB FEATURES(a)(b), by employment size

		EMPLOYMENT SIZE				
		0–4 persons	*5–19 persons*	*20–99 persons*	*100 or more persons*	*Total*
Inquiry or contact facility	%	88	90	93	96	90
Online ordering	%	^16	^22	^21	^21	19
Shopping cart facilities	%	*2	*4	*6	^5	^3
Online payment capabilities(c)	%	^7	^8	^9	^11	^8
Capability for secure access or transactions	%	*5	^7	^10	^17	^7
Account information	%	*4	^4	*7	^9	^5
Facility to track orders	%	**2	*3	*5	^6	^3
Personalised page for repeat customers	%	*2	*2	*6	^5	^3
Automated link with back end systems	%	*9	^16	^13	^21	^13
Businesses which had a web presence	'000	**70**	**77**	**22**	**6**	**175**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Proportions are of all businesses which had a web presence as at 30 June 2004 in each employment size category.

(b) Business could identify more than one feature.

(c) Online payments capabilities for goods and services irrespective of whether ordered via the Internet or web.

CHAPTER 4 RECEIVING ORDERS VIA THE INTERNET OR WEB

DEFINING INTERNET COMMERCE

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 (more broadly referred to as Internet or web selling). This definition reads "An Internet transaction is the sale or purchase of goods or services, whether between businesses, households, individuals, governments, and other public or private organisations, conducted over Internet-protocol based networks. The goods and services are ordered over those networks, but the payment and the ultimate delivery of the good or services may be conducted on or off line ".

Over several cycles of the BUIT survey, the definition of "order" has been progressively refined and now includes those transactions where the final commitment to purchase occurs via the Internet or web only. Survey questions used to collect these data have evolved over the last few years, and while care is taken to address the impact of these changes, there may be varying impacts on final estimates.

There continues to be measurement issues associated with Internet income. As a consequence of this refinement over several survey cycles, caution should be used when interpreting values of Internet income or making observations about change over time. Further information can be found in Explanatory Notes 12 to 16.

VALUE OF INTERNET INCOME

The 2003–04 survey measured the number of Australian businesses using the Internet or web to receive orders, with or without online payment, and the value of income earned from Internet or web orders received by businesses (Internet income).

The estimated value of Internet income for the year ended 30 June 2004 was $33 billion. This represented approximately 2.0% of total income for all businesses surveyed, and approximately 7.2% of total income reported by those businesses surveyed who received orders via the Internet or web during the period. The proportion of Australian businesses receiving orders via the Internet or web was 12%. In comparison, for the year ended 30 June 2003, Internet income was approximately 1.4% of total income for all businesses surveyed, and approximately 4.9% of total income reported by those businesses surveyed who received orders via the Internet or web during the period.

Of the 84,000 businesses estimated to be receiving Internet income in 2003–04, 44% generated 5% or more of their total income in this manner. Businesses with 0–4 persons employed were more likely to receive a higher percentage of their total income from orders via the Internet than larger businesses. Of businesses with 0–4 persons employed and which received orders via the Internet or web, 58% indicated earning 5% or more of their total income in this way while 18% earned less than 1%. Each of the other employment size categories had much greater proportions of businesses with Internet income being less than 1% of their total income. For example, 42% of businesses which employed 100 or more persons and received orders via the Internet or web had Internet

VALUE OF INTERNET INCOME *continued*

income of less than 1% of their total income, compared to 38% for which Internet income was 5% or more of their total income.

BUSINESS SYSTEMS SUPPORTING RECEIPT OF ORDERS

Businesses which received orders via the Internet or web were asked to identify ways in which these orders were received. Businesses could identify more than one way of receiving orders. Email not linked to a web site was the most common method (81% of businesses received orders in this way). Orders received via an email linked to a web site was reported by 30% of businesses, 15% of businesses received orders through a web site online order form and 6% received orders through a web site shopping cart facility.

Businesses which received orders via the Internet or web were also asked to specify types of automated links between systems used to receive orders and other business systems as at 30 June 2004. Of these businesses, 86% indicated their systems used to receive orders did not have automated links to any other business system. The most common automated links reported were links to invoicing and payment systems of the business and links to suppliers' business systems (6% each).

BENEFITS OF AND BARRIERS TO RECEIPT OF ORDERS VIA THE INTERNET OR WEB

For businesses receiving orders via the Internet or web in 2003–04, being able to achieve faster business processes and improved quality of customer service were the two most commonly reported benefits, at 48% and 43% respectively. Businesses could identify more than one benefit of receiving orders via the Internet or web. Approximately 16% of businesses receiving orders via the Internet or web indicated they did not achieve any benefits.

In 2003–04, faster business processes was the most common benefit of receiving orders via the Internet or web reported by businesses which employed 0–4 persons and 5–19 persons (52% and 45% respectively). For businesses which employed 20–99 persons and 100 or more persons, the most common benefit reported was improved quality of customer service (47% and 73% respectively).

Reasons why businesses did not receive orders via the Internet or web in 2003–04 were collected from businesses which used the Internet or had a web presence but did not receive orders in this way. Businesses could identify more than one barrier to receiving orders via the Internet or web. The most common barrier reported was goods or services produced by the business being unsuitable (60%), followed by a preference to maintain the current business model (41%) and a lack of customer demand (17%). This ranking was consistent across each employment size category.

4.1 INTERNET INCOME AS A PERCENTAGE OF TOTAL INCOME(a)(b), by employment size

		EMPLOYMENT SIZE				
		0–4 persons	*5–19 persons*	*20–99 persons*	*100 or more persons*	*Total*
Less than 1%	%	^ 18	^ 37	^ 37	^ 42	28
1% to less than 5%	%	^ 24	^ 34	^ 26	*20	28
5% to less than 50%	%	48	^ 26	^ 35	*24	38
50% or more	%	*10	*3	**2	**14	^ 6
Number of businesses	'000	**41**	**33**	**9**	^ **2**	**84**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Proportions are of all businesses which received orders via the Internet or web during 2003–04 in each employment size category.

(b) Estimates related to Internet income should be used with caution. See Explanatory Notes 12 to 16.

4.2 METHOD OF RECEIVING ORDERS AND SUPPORTING BUSINESS SYSTEMS(a)

		Total
Method of receiving orders via Internet or web(b)		
Email not linked to web site	%	81
Web site with linked email facility	%	30
Web site with online order form	%	^ 15
Web site with shopping cart	%	^ 6
Other	%	*1
Automated links between systems used to receive orders and other business systems(c)		
Suppliers' business systems	%	^ 6
Customers' business systems	%	^ 2
Own business systems for reordering replacement supplies	%	*2
Own business systems for invoicing and payment	%	^ 6
Own business systems for production or service operations	%	*2
Own business systems for logistics, including electronic delivery	%	^ 2
Own business systems for marketing operations	%	*2
No automated links with other business systems	%	86
Businesses which received orders via the Internet or web	'000	**84**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Proportions are of all businesses which received orders via the Internet or web during 2003–04.

(b) Businesses could identify more than one method.

(c) Businesses were asked to identify all automated links.

4.3 BENEFITS OF RECEIVING ORDERS VIA THE INTERNET OR WEB(a)(b), by employment size

		EMPLOYMENT SIZE				
		0–4 persons	*5–19 persons*	*20–99 persons*	*100 or more persons*	*Total*
Improved quality of customer service	%	^ 41	^ 42	^ 47	73	43
Lower transaction costs	%	^ 28	^ 23	^ 33	^ 36	27
Increased sales	%	^ 24	^ 29	^ 34	*21	27
Increased number of customers	%	^ 17	^ 29	^ 29	*19	^ 23
Faster business processes	%	52	^ 45	^ 42	^ 68	48
Keeping pace with competitors	%	^ 35	^ 37	^ 45	^ 65	38
Any benefits achieved (c)	%	85	84	75	95	84
No benefit achieved	%	^ 15	^ 16	^ 25	*5	^ 16
Businesses which received orders via Internet or web	'000	**41**	**33**	**9**	**^ 2**	**84**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Proportions are of all businesses which received orders via the Internet or web during 2003–04 in each employment size category.

(b) Businesses could identify more than one benefit.

(c) Includes "other" category which is not listed separately.

4.4 BARRIERS TO RECEIVING ORDERS VIA THE INTERNET OR WEB(a)(b), by employment size

		EMPLOYMENT SIZE				
		0–4 persons	*5–19 persons*	*20–99 persons*	*100 or more persons*	*Total*
Goods or services produced by the business unsuitable	%	60	60	61	58	60
Lack of customer demand	%	15	20	^ 18	^ 14	17
Security concerns	%	^ 9	^ 7	^ 7	*5	8
Costs to develop and maintain the technology too high	%	13	^ 12	^ 12	*8	13
Lack of skilled employees to develop, maintain and use the technology	%	12	^ 13	^ 12	*3	12
Timing, e.g. technology currently under development or in future work program	%	^ 4	^ 6	^ 8	*9	^ 5
Prefer to maintain current business model, e.g. face to face interaction	%	42	39	38	^ 28	41
Businesses with Internet use or web presence which did not receive orders	'000	**265**	**139**	**27**	**6**	**437**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Proportions are of all businesses with Internet use or a web presence, but did not receive orders via the Internet or web, during 2003–04 in each employment size category.

(b) Businesses could identify more than one barrier.

CHAPTER 5 INTERNATIONAL COMPARISONS

INTRODUCTION

This chapter presents some comparisons of business use of IT for Australia and selected other countries. Results from the 2003–04 BUIT survey are included in table 5.1; all other data are provided courtesy of the Organisation for Economic Co-operation and Development (OECD). These data were originally published in the *OECD Information Technology Outlook 2004* (available from the publications section of the OECD web site <www.oecd.org>).

In recent years there has been considerable progress in the measurement of IT use and e-commerce by National Statistical Offices, particularly through efforts of the OECD and the *Working Party on Indicators for the Information Society*. Although there are differences in the scope and content of surveys covering these topics, some comparisons between Australian statistics and those of other countries can be made. Users should also be aware of the variation in time periods. More information about the differences in sources of data are shown in Explanatory Notes 20 to 22.

In OECD countries, use of the Internet is now widely diffused among businesses. However, despite high Internet access levels, there is relatively little implementation of ICT-enabled integrated business processes or adoption of more sophisticated online activities, for example, taking orders online or automated integration of systems with other internal business systems.

INTERNET USE AND INTERNET COMMERCE

The proportions of businesses using the Internet and participating in Internet commerce for selected countries are shown in table 5.1. In most cases, these proportions are of all employing businesses which employed ten or more persons. The proportion of businesses using the Internet range from 63.4% (United Kingdom) to 96.0% (Finland). Australia's level of Internet use is toward the upper end of the range at 90.2%.

In comparison to the levels of Internet connectivity, the proportions of businesses placing or receiving orders via the Internet or web are relatively low. Proportionally, more businesses use the Internet or web to place orders rather than to receive orders. In general, across the number of countries included in table 5.1, the proportion of businesses which receive orders via the Internet is approximately half the proportion of businesses which place orders via the Internet. Australia's proportion of businesses placing and receiving orders via the Internet were also towards the upper end of the range. However, these rankings are significantly affected by the timing differences in these data. For example, Australia's proportion of businesses receiving orders via the Internet or web in 2001 was only 9.0%.

Having high levels of Internet usage within a country does not necessarily result in the country having strong Internet commerce activity. For example, Sweden has a relatively high proportion of businesses with Internet access (95.2%) but has a low proportion of businesses receiving orders via the Internet (13.5%).

BUSINESS SYSTEM INTEGRATION

One measure of e-business sophistication is the effective application of business system integration which includes automated links between systems for receiving orders via the Internet and other business systems (including those of suppliers and customers). This is an area where national statistical agencies are just beginning to develop measures and therefore the availability of official figures on the intensity of these e-business applications is low. The ABS has only collected these types of data for the last two BUIT surveys (for which 2003–04 findings are presented in table 4.2).

Business system integration is an aspect of e-business where businesses can potentially reap the benefits of sophisticated IT usage in terms of cost and time. As such, it was considered important to present, in this publication, data that provide the largest number of countries for comparison. The *OECD Information Technology Outlook 2004* presents some information about business system linkages which was sourced from the *Business in the Information Age, International Benchmarking Study (IBS) 2003* conducted on behalf of the Department of Trade and Industry in the United Kingdom. This is available from <www.ukonlineforbusiness.gov.uk/benchmarking2003>. For this study, a sample of employing businesses was asked to identify which internal systems were currently linked or intended to be linked to online ordering. The results from this study are presented in table 5.2.

5.1 BUSINESSES USING THE INTERNET AND INTERNET COMMERCE(a)(b), Australia and selected countries

PROPORTION OF BUSINESSES USING THE INTERNET		PROPORTION OF BUSINESSES PLACING ORDERS VIA THE INTERNET OR WEB		PROPORTION OF BUSINESSES RECEIVING ORDERS VIA THE INTERNET OR WEB	
Country	%	Country	%	Country	%
Finland	96.0	Sweden	59.3	Netherlands	36.0
Sweden	95.2	Switzerland	54.0	Denmark	24.1
Denmark	94.8	Finland	52.2	Austria	21.5
AUSTRALIA	90.2	Denmark	46.5	Ireland	21.3
Canada	89.0	Canada	43.0	AUSTRALIA	19.2
Czech Republic	86.4	AUSTRALIA	41.8	Norway	17.2
Austria	84.9	Netherlands	40.0	Finland	16.8
New Zealand	84.0	Germany	38.0	Germany	15.9
Germany	83.9	Ireland	38.0	Sweden	13.5
Ireland	82.8	Austria	31.6	Canada	13.0
Spain	82.5	Norway	29.5	Luxembourg	11.8
Norway	82.0	New Zealand	28.0	New Zealand	11.0
Netherlands	79.0	Luxembourg	22.8	United Kingdom	10.3
Luxembourg	78.2	Czech Republic	21.6	Greece	8.9
Switzerland	78.0	United Kingdom	20.8	Czech Republic	7.9
Italy	74.3	Portugal	12.2	Portugal	6.5
Portugal	72.0	Greece	10.8	Italy	3.8
Greece	64.4	Italy	7.3	Spain	2.4
United Kingdom	63.4	Spain	6.6	Switzerland	na

na not available

(a) Australian data in this table are from the 2003–04 BUIT survey, however, the scope has been adjusted to provide estimates for businesses with 10 or more persons employed only.

(b) All other data in this table have been provided courtesy of the OECD. For most estimates, the reference period is 2001 and the scope is businesses with 10 or more persons employed. Please refer to Explanatory Notes 20 to 21 for more detailed information about the reference period, scope and source for each country.

5.2 AUTOMATED LINKS BETWEEN SYSTEMS USED TO RECEIVE ORDERS AND OTHER BUSINESS SYSTEMS(a)(b), Australia and selected countries, 2003

	Invoicing systems	*Stock control systems*	*Production/service operation systems*	*Marketing operations*
	%	%	%	%
Australia	13	12	9	8
Canada	18	14	15	13
France	8	7	6	5
Germany	13	11	10	9
Ireland	16	13	12	11
Italy	8	7	6	6
Japan	18	16	10	8
Korea	8	10	9	6
Sweden	19	14	15	9
United Kingdom	13	10	10	8
United States	13	9	12	10

(a) All data, including for Australia have been provided courtesy of the OECD and are sourced from the International Benchmarking Study, 2003 conducted on behalf of the Department of Trade and Industry, United Kingdom. For more information see Explanatory Note 22.

(b) Proportions are of all employing businesses.

EXPLANATORY NOTES

INTRODUCTION

1 This publication presents results from the 2003–04 Business Use of Information Technology (BUIT) survey. This survey measured the use of computers, Internet and web technologies by Australian businesses. It also collected data relating to ordering of goods and services via the Internet or web and supporting business systems.

2 Since 1999–2000, the BUIT survey has been conducted on an annual basis. Prior to this, the BUIT survey was conducted twice, initially in respect of the 1993–94 financial year and then for 1997–98. The survey has a set of core items for which data is collected each year. The remainder of survey content is dynamic and is updated each survey cycle to reflect emerging and changing uses of IT.

SCOPE AND COVERAGE

3 The scope of the BUIT survey is all employing businesses in Australia with the exception of businesses classified to:

- SISCA 3000 General Government
- SISCA 6000 Rest of the world
- ANZSIC Division A Agriculture, Forestry and Fishing
- ANZSIC Division M Government Administration and Defence
- ANZSIC Division N Education
- ANZSIC Sub-division 97 Private Households Employing Staff
- ANZSIC 9610 Religious organisations

4 The frame for the BUIT survey, like most ABS economic collections, is taken from the ABS Business Register. The register provides a list of employing businesses, primarily based on registrations to the Australian Taxation Office's (ATO) Pay As You Go Withholding (PAYGW) scheme. The frame is updated quarterly to take account of new businesses, businesses which have ceased employing, changes in employment levels, changes in industry and other general business changes. Businesses which have ceased employing are identified when the ATO cancels their Australian Business Number (ABN) and/or PAYGW registration. In addition, businesses with less than 50 employees which did not remit under the PAYGW scheme in each of the previous five quarters are removed from the frame. The estimates in this publication include an allowance for the time it takes a newly registered business to get on to the survey frame.

CHANGES TO THE ABS BUSINESS REGISTER

5 The introduction of The New Tax System (TNTS) has a number of significant implications for ABS business statistics. These are discussed in *Information Paper, Improvements in ABS Economic Statistics [Arising from the New Tax System]* (cat. no. 1372.0). The replacement of the Group Employer registration process by PAYGW registration resulted in a number of changes to most business survey frames. The changes included the statistical units model; update of industry for some businesses by the ATO; and availability of different measures of business size.

STATISTICAL UNITS DEFINED ON THE ABS BUSINESS REGISTER

6 The ABS uses an economic statistics units model on the ABS Business Register to describe the characteristics of businesses, and the structural relationships between businesses. The units model is also used to break groups of related businesses into relatively homogenous components that can provide data to the ABS.

STATISTICAL UNITS DEFINED ON THE ABS BUSINESS REGISTER *continued*

7 In mid 2002, to better use the information available as a result of The New Tax System (TNTS), the ABS changed its economic statistics units model. The new units model allocates businesses to two sub-populations. The vast majority of businesses are in what is called the ATO Maintained Population, while the remaining businesses are in the ABS Maintained Population. Together, these two sub-populations make up the ABS Business Register population.

ATO MAINTAINED POPULATION

8 Most businesses and organisations in Australia need to obtain an ABN, and are then included on the ATO Australian Business Register. Most of these businesses have simple structures; therefore the unit registered for an ABN will satisfy ABS statistical requirements. For these businesses, the ABS has aligned its statistical units structure with the ABN unit. The businesses with simple structures constitute the ATO Maintained Population, and the ABN unit is used as the statistical unit.

ABS MAINTAINED POPULATION

9 For the population of businesses where the ABN unit is not suitable for ABS statistical requirements, the ABS maintains its own units structure through direct contact with each business. These businesses constitute the ABS Maintained Population. This population consists typically of large, complex and diverse businesses. The new statistical units model described below covers such businesses.

Enterprise Group: This is a unit covering all the operations in Australia of one or more legal entities under common ownership and/or control. It covers all the operations in Australia of legal entities which are related in terms of the current Corporations Law (as amended by the Corporations Legislation Amendment Act 1991) including legal entities such as companies, trusts, and partnerships. Majority ownership is not required for control to be exercised.

Enterprise: The enterprise is an institutional unit comprising (i) a single legal entity or business entity, or (ii) more than one legal entity or business entity within the same Enterprise Group and in the same institutional sub-sector (i.e. they are all classified to a single Standard Institutional Sector Classification of Australia sub-sector).

Type of Activity Unit (TAU): The TAU is comprised of one or more business entities, sub-entities or branches of a business entity within an Enterprise Group that can report production and employment data for similar economic activities. When a minimum set of data items are available, a TAU is created which covers all the operations within an industry sub-division (and the TAU is classified to the relevant sub-division of the ANZSIC). Where a business cannot supply adequate data for each industry, a TAU is formed which contains activity in more than one industry sub-division. Where a TAU has significant activity in more than one industry, the ABS will 'split' the TAU to maintain industry homogeneity.

IMPACT ON BUIT OF CHANGES ARISING FROM TNTS

10 The changes arising from the TNTS were introduced to the BUIT survey for the 2002–03 reference year. The main effect of the introduction of the new ABS business register, for the BUIT survey, was a changed population from which the survey frame was drawn. The changes to the population resulted in a high survey rotation rate which in turn impacted on the accuracy of estimates for 2002–03. Users are cautioned against making comparisons between 2002–03 and subsequent estimates with those for earlier periods. For more information, please contact the person named on the front of this publication.

SURVEY METHODOLOGY

11 The 2003–04 BUIT survey was conducted by mail. It was based on a random sample of approximately 9,000 businesses which was stratified by industry, state/territory and number of employees. All manufacturing businesses with 500 or more employees and all other businesses with 200 or more employees were included in the sample.

ORDERS FOR GOODS AND SERVICES VIA THE INTERNET AND INTERNET INCOME

12 The concept of Internet income presented in this publication relates to income resulting from orders received via the Internet or web for goods or services, where an order is a commitment to purchase. Like previous surveys, the 2003–04 BUIT survey has highlighted issues which affect the quality and interpretation of estimates of Internet income and the proportion of businesses receiving orders for goods and services via the Internet or web. Readers should consider these issues when using these estimates.

13 The ABS uses the Organisation for Economic Co-operation and Development (OECD) definition of an Internet commerce transaction and therefore measures the income resulting from Internet orders for goods and services. For the purposes of the BUIT survey, this definition has been refined to only include orders (and resultant income) where the commitment to purchase is made via the Internet or web. An important element of the definition remains that payment and the ultimate delivery of the good or service is not relevant, that is, either or both may be conducted off line. ABS experience in collecting data for receipt of orders and Internet income continue to highlight the difficulty of defining an Internet commerce transaction in a way which is understood by businesses and suits all forms of Internet commerce. For instance, for some businesses, the Internet transaction initiates and completes the purchase, while for others the Internet transaction finalises details of a purchase which was initiated by a non-Internet based agreement or contract.

14 Over several cycles of the BUIT survey, the definition of "order" has been progressively refined and now includes those transactions where the final commitment to purchase occurs via the Internet or web only. While care is taken to address the impact of these changes, there may be impacts on final estimates of proportions of businesses receiving orders via the Internet or web. Factors influencing the accuracy of estimates include more stringent application of the definition through better question wording and improvements in ABS quality assurance procedures during survey processing. Final estimates of proportions of businesses receiving orders via the Internet or web are also subject to variations in reporting by businesses, such as redevelopment of web functionality, which can limit receipt of orders during the reference period or abandonment of this e-business process. Amongst businesses, the receipt of orders via the Internet or web is still a relatively rare event, therefore, changes in the sample such as rotation can have a significant impact on estimates.

15 Some orders for goods and services are initiated over the Internet and are then subject to ongoing payments. Ongoing payments may occur over a long period of time and via non-Internet based media. For consistency in compiling the income measure and to ensure that it covers all income flowing from the initial order over the Internet, the ABS would ideally like to include ongoing payments via the Internet, but recognises that most businesses are unable to track these payments. Survey estimates for the 2003–04 survey and previous collections may be understated due to this measurement issue.

16 As in previous surveys, many businesses surveyed in the 2003–04 survey did not maintain records on the basis of the Internet income measure described in paragraph 13 and therefore needed to estimate its value. For some large businesses, the estimation of Internet income continues to be difficult and in some instances responses were inconsistent with those of previous surveys. While the ABS has reduced this error through analysis of responses and consultation with businesses, this form of error cannot be completely eliminated.

COMPARABILITY OF BUSINESS COUNTS

17 Business counts shown in this publication may vary from other ABS sources. This reflects the differences in the scope and methodology between the BUIT survey and other ABS business surveys.

COMPARABILITY OF BUSINESS COUNTS *continued*

18 The BUIT survey is not designed to provide high quality estimates of numbers of businesses for any of the output classifications (for example, state and territory or industry) and the estimated number of businesses in this publication are only included to provide contextual information for the user.

OUTPUT CLASSIFICATIONS

19 For output purposes, businesses are classified to employment and income size groups based on actual data reported in the survey. For other output groups (industry, State or Territory, capital city/other areas) the classification is drawn from information held about the business on the ABS Business Register. The head office location of a business determined the State or Territory or region the business was classified to.

COMPARISONS WITH OTHER COUNTRIES

20 For table 5.1, data for other countries has been provided courtesy of the OECD and were originally sourced from individual country reports to the OECD. With the exception of Australian data, all other data was published in the *OECD Information Technology Outlook 2004*.

21 There are different reference periods and scope for the data included in the table and these are:

- Australian data are from the 2003–04 BUIT survey and the scope has been adjusted to show estimates for businesses with 10 or more employees. See paragraph 3 for more information about BUIT scope.
- In European countries, except in the Netherlands and the United Kingdom, the estimates refer to orders received and placed over the Internet during 2001 while use of the Internet refers to the beginning of 2002. Only enterprises with ten or more employees in the Business Sector excluding Statistical Classification of Economic Activities in the European Community (NACE) activity E (Electricity, Gas and Water Supply), NACE activity F (Construction) and NACE activity J (Financial Intermediation) are included. Source for these data is the Eurostat community survey on enterprise use of ICT. All other countries, except if differently stated, refer to enterprises at the beginning of 2001 for Internet use while purchases and sales refer to 2000.
- For the Netherlands and United Kingdom, estimates for use, orders received and placed refer to Internet and other computer-mediated networks.
- For Switzerland, estimates refer to 2000 and include Industry, Construction and Services.
- For Canada, estimates refer to 2002 and include the industrial sector.
- For New Zealand, estimates refer to 2001 and include enterprises with more than ten employees in all industries except Electricity, Gas and Water; Government Administration and Defence; and Personal and Other Services.

22 For table 5.2, all data have been provided courtesy of the OECD and are from the *Business in the Information Age, International Benchmarking Study (IBS) 2003* conducted on behalf of the Department of Trade and Industry in the United Kingdom. This survey was conducted by computer assisted telephone interviewing in May to July 2003 across 11 countries and included 8,000 employing businesses in the sample. For the data presented in table 5.2, businesses were asked to identify which internal systems were currently linked or intended to be linked to online ordering systems.

RELATED PUBLICATIONS

23 The most recent issue of other ABS publications on the use and production of

RELATED PUBLICATIONS *continued*

information and communication technologies in Australia are listed below:

Government Technology, Australia, 2002–2003 (cat. no. 8119.0)
Household Use of Information Technology, Australia, 2002 and 2003 (cat. no. 8146.0)
Information and Communication Technology, Australia, 2002–2003 (cat.no. 8126.0)
Innovation in Australian Business, 2003 (cat. no. 8158.0)
Internet Activity, Australia, September 2004 (cat. no. 8153.0)
Use of Information Technology on Farms, Australia, 2002–03 (cat. no. 8150.0)

ABS WEB SITE

24 The summary of findings from this publication are published on the ABS web site <www.abs.gov.au>. Other information relating to information and communication technologies can be found on the web site, see the Information Technology Home page under Themes/Industry.

DATA AVAILABLE ON REQUEST

25 As well as the statistics included in this publication, the ABS may have relevant data available on request. The availability of more detailed data are subject to confidentiality and quality checks. Inquiries should be made to the National Information and Referral Service on 1300 135 070.

ROUNDING

26 Estimates of proportions shown in the tables are rounded to a percentage point.

27 Where figures have been rounded, discrepancies may occur between the sum of the component items and the total. In addition, percentages have been calculated using the unrounded figures.

COMMENTS

28 The ABS welcomes comments and suggestions from users regarding future surveys of IT use by businesses. These comments should be addressed to the Director, Innovation and Technology Business Statistics Centre, Australian Bureau of Statistics, GPO Box K881, Perth, WA, 6842.

ABBREVIATIONS

ABS	Australian Bureau of Statistics
ANZSIC	Australian and New Zealand Standard Industrial Classification
ATM	asynchronous transfer mode
ATO	Australian Taxation Office
DSL	digital subscriber line
ICT	information and communication technology
ISDN	integrated service digital network
IT	information technology
Kbps	kilobits per second
OECD	Organisation for Economic Co-operation and Development
PAYGW	pay-as-you-go withholding
RSE	relative standard error
SISCA	Standard Institutional Sector Classification of Australia
TNTS	The New Tax System

TECHNICAL NOTE

DATA QUALITY

INTRODUCTION

1 When interpreting the results of a survey it is important to take into account factors that may affect the reliability of the estimates. Estimates in this publication are subject to both non-sampling and sampling errors.

NON-SAMPLING ERRORS

2 Non-sampling errors may arise as a result of errors in the reporting, recording or processing of the data and can occur even if there is a complete enumeration of the population. These errors can be introduced through inadequacies in the questionnaire, treatment of non-response, inaccurate reporting by respondents, errors in the application of survey procedures, incorrect recording of answers and errors in data capture and processing.

3 The extent to which non-sampling error affects the results of the survey is difficult to measure. Every effort is made to reduce non-sampling error by careful design and testing of the questionnaire, efficient operating procedures and systems, and the use of appropriate methodology.

4 The BUIT survey is dynamic in nature and the concepts measured are subject to evolution and refinement over time. This results in regular changes to questions used to measure the various attributes and features of IT use. The potential impact of these changes on survey outputs are assessed during questionnaire testing and where these changes impact on data continuity, they are referred to in the publication commentary or Explanatory Notes.

5 The 2003–04 survey had a response rate of approximately 93%; this was above the target response rate.

SAMPLING ERROR

6 The difference between estimates obtained from a sample of businesses, and the estimates that would have been produced if the information had been obtained from all businesses, is called sampling error. The expected magnitude of the sampling error associated with any estimate can be estimated from the sample results. One measure of sampling error is given by the standard error (SE) which indicates the degree to which an estimate may vary from the value that would have been obtained from a full enumeration (the 'true' figure). There are about two chances in three that a sample estimate differs from the true value by less than one standard error, and about nineteen chances in twenty that the difference will be less than two standard errors.

7 In this publication, sampling variability is measured by the relative standard error (RSE) which is obtained by expressing the SE as a percentage of the estimate to which it refers. The RSE is a useful measure in that it provides an immediate indication of the sampling error in percentage terms, and this avoids the need to refer also to the size of the estimate.

8 To illustrate, the estimated percentage of businesses with a web presence is 25% and the RSE is 3.4%, giving a standard error of 0.8 percentage points (3.4% of 25%). Therefore, there would be about two chances in three that, if all units had been included in the survey, a figure in the range of 24.2% to 25.8% would have been obtained, and 19 chances in 20 (i.e. a confidence interval of 95%) that the figure would have been within the range of 23.4% to 26.6%. For more information about RSEs for estimates presented in this publication, please telephone the contact shown on the front page.

SAMPLING ERROR *continued*

9 Most published estimates have RSEs less than 10%. Estimates that have a RSE between 10% and 25% are annotated with the symbol '^'. These estimates should be used with caution as they are subject to sampling variability too high for some purposes. Estimates with an RSE between 25% and 50% are annotated with the symbol '*', indicating that the estimates should be used with caution as they are subject to sampling variability too high for most practical purposes. Estimates with an RSE greater than 50% are annotated with the symbol '**' indicating that the sampling variability causes the estimates to be considered too unreliable for general use.

10 The sampling variability for estimates at the state/territory or industry level is higher than that for Australian level aggregates. Within states/territories, the sampling variability, and therefore the RSEs of estimates for Tasmania, Northern Territory and the Australian Capital Territory are higher than for other states. Survey estimates for these states should therefore be viewed with more caution than those for other states.

11 Estimates of RSEs for the key indicators in this publication are shown in the following table:

RELATIVE STANDARD ERRORS OF BUSINESS USE OF TECHNOLOGIES, by selected business characteristics

	Number of businesses	*Businesses with computer use*	*Businesses with Internet use*	*Businesses with web presence*	*Businesses which placed orders via the Internet or web*	*Businesses which received orders via the Internet or web*
	%	%	%	%	%	%
Employment size						
0–4 persons	1.4	1.2	1.6	6.4	4.5	9.2
5–19 persons	2.9	0.8	1.3	4.7	4.7	8.2
20–99 persons	5.2	0.6	2.5	5.3	6.7	9.8
100 or more persons	7.7	—	1.0	3.7	5.0	14.3
Total Income						
Less than $100,000	3.8	2.4	3.2	12.0	8.6	16.3
$100,000 to less than $1m	1.8	0.9	1.4	5.4	4.3	8.7
$1m to less than $5m	4.2	0.8	1.4	5.3	5.6	8.9
$5m or more	5.6	0.5	0.9	4.5	5.5	10.9
Industry						
Mining	2.3	2.5	3.1	8.0	8.6	24.5
Manufacturing	1.9	2.6	3.7	8.1	8.8	11.6
Electricity, gas and water supply	2.7	2.1	3.7	8.9	8.4	19.4
Construction	0.8	1.9	2.6	8.9	7.1	12.5
Wholesale trade	2.0	2.3	3.1	8.6	8.6	11.9
Retail trade	1.3	2.6	3.5	9.1	8.3	14.2
Accommodation, cafes and restaurants	1.7	3.2	4.3	7.9	10.2	13.0
Transport and storage	1.5	2.4	3.8	11.5	10.4	13.1
Communication services	1.5	3.0	4.4	10.5	9.1	14.1
Finance and insurance	5.0	3.0	3.7	11.7	10.8	27.3
Property and business services	1.7	1.5	2.2	9.4	6.7	16.9
Health and community services	0.7	1.5	2.5	9.0	6.9	21.6
Cultural and recreational services	1.9	2.4	3.3	7.8	7.6	14.6
Personal and other services	1.5	3.1	4.4	8.2	9.5	16.0
State						
New South Wales	1.1	1.3	1.8	6.1	5.4	9.9
Victoria	0.9	1.6	2.4	7.2	5.9	12.0
Queensland	1.6	1.6	2.2	7.7	6.8	12.7
South Australia	1.7	1.9	3.3	8.7	8.2	13.6
Western Australia	1.4	2.3	3.2	8.8	9.1	15.1
Tasmania	7.8	3.9	6.9	17.1	16.1	24.2
Northern Territory	19.3	2.8	5.9	33.8	26.2	46.7
Australian Capital Territory	10.7	7.4	10.5	21.3	21.4	29.6
Region						
Capital cities	1.4	0.9	1.3	3.9	3.6	6.7
Other areas	2.9	1.4	2.0	6.9	5.8	10.2
Total	**0.6**	**0.7**	**1.1**	**3.4**	**3.0**	**5.6**

— nil or rounded to zero (including null cells)

GLOSSARY

Back end systems	Computer systems (e.g. for accounting, stock control or ordering) used to manage non-Internet aspects of a business.
Broadband	Defined by the ABS as an 'always on' Internet connection with an access speed equal to or greater than 256Kbps.
Cable	Describes those technologies including coaxial cable, fibre optic cable and hybrid fibre coaxial cable which are capable of transmitting data at speeds of up to 2Gbps.
Dial-up (analog)	Connection to the Internet via modem and dial-up software utilising the public switched telecommunications network.
DSL (Digital Subscriber Line)	More properly referred to as xDSL as this covers several digital technologies (e.g. Asymmetric DSL or ADSL and Symmetric DSL or SDSL) for fast two-way data connections over the public switched telecommunications network.
Fixed Wireless Internet access	Point to point microwave link, generally building to building or tower to building which allows subscribers within the receiving building to access the Internet. Sender and receiver must be within line of sight and no more than 22km apart.
ISDN (Integrated Services Digital Network)	A digital access technique for both voice and data. Digital alternative to an analog public switched telephone service and carries data or voltages consisting of discrete steps or levels, as opposed to continuously variable analog data. ISDN enables digital transmission over the public switched telecommunications network.
Internet	A world-wide public computer network. Organisations and individuals can connect their computers to this network and exchange information across a country and/or across the world. The Internet provides access to a number of communication services including the World Wide Web and carries email, news, entertainment and data files.
Internet Income	Income resulting from orders received via the Internet or web for goods or services.
Order	A commitment to purchase goods or services.
Mobile Wireless Internet access	Mobile Internet access via 'hotspots' using a microwave connection often referred to as WiFi. Most commonly utilised by laptop users although it is also becoming increasingly popular within homes and businesses with multiple PCs.
Non dial-up	Refers to permanent and 'always on' connections to the Internet.
Satellite/communications satellite	A satellite stationed in geosynchronous orbit that acts as a microwave relay station, receiving signals sent from a ground based station, amplifying them, and retransmitting them on a different frequency to another ground-based station. Satellites can be used for high-speed transmission of computer data.
Secure access/transactions	A web site has a capability for secure access or transactions when it allows customers to submit orders for goods, requests for services and credit/debit card details over a secure link that cannot be accessed by unauthorised persons. Secure Sockets Layer (SSL) is a common protocol used in this type of web site as it enables encryption of data such as credit card details and customer information sent over the Internet.
Web presence	Web presence includes a web site, home page or presence on another entity's web site. A web site or home page is an electronic document that is accessed via a unique address on the World Wide Web. The document provides information in a textual, graphical or multimedia format. Web presence excludes online listings, e.g. Yellow pages.
Wireless	Includes fixed wireless, mobile wireless and satellite Internet connections.

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