GOVERNMENT USE OF INFORMATION TECHNOLOGY *AUSTRALIA*

CONTENTS

■ For further information about these and related statistics, contact Annette Scott on Melbourne 03 9615 7977, or Client Services in any ABS office as shown on the back cover of this publication.

INTRODUCTION

This publication presents results, in respect of the 1997–98 financial year, from an Australian Bureau of Statistics (ABS) survey on the use of information technology and telecommunications (IT&T) by government organisations. This is the second ABS survey of IT&T use by government with the previous collection being conducted in respect of the 1993–94 financial year. The 1993–94 survey focused mainly on issues related to computer use, while the 1997–98 survey has collected a broader range of data with particular emphasis on Internet use by government organisations.

The 1997–98 results include statistics relating to a broader scope of government organisations than collected in the 1993–94 survey. Users should therefore exercise caution in comparing the results from the two surveys.

For details on the most recent issue of other ABS publications on the use and production of information technology and telecommunication goods and services in Australia, see paragraph 15 of the Explanatory Notes.

IT&T

IT&T in this publication refers to the services and technologies that enable information to be accessed, stored, processed, transformed, manipulated and disseminated, including the transmission or communication of voice and/or data, over a variety of transmission media. Transmission media include telephone, facsimile, Internet, data lines, satellite, microwave, radio, etc.

DEFINITION OF TYPE OF GOVERNMENT

Government organisations in the survey are classified by type of government. Federal departments and agencies are defined as Australian Government Departments, Australian Government Legislature, Courts, etc., Australian Government Industry and Marketing Boards and Australian Government Statutory Authorities. State/Territory departments and agencies are defined as State/Territory Government Departments, State/Territory Government Legislature, Courts, etc., State/Territory Government Industry and Marketing Boards and State/Territory Government Statutory Authorities including essential services agencies. Local government is defined as Local Government Authorities and Aboriginal and Torres Strait Islander Community Councils. Other government organisations are defined as Federal, State/Territory and local government organisations not included elsewhere, including government owned companies.

COMMENTS ON THIS PUBLICATION

The ABS welcomes comments and suggestions from users regarding data items for inclusion in future surveys. Comments should be addressed to the Director, Science and Technology Statistics Section, Australian Bureau of Statistics, PO Box 10 Belconnen, ACT, 2616 or phone Canberra 02 6252 5019.

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LIST OF TABLES

MAIN FEATURES

At the end of June 1998, an estimated 97% of all government organisations in Australia used personal computers (PCs).

Of the government organisations with PCs at the end of June 1998, nearly three-quarters had access to the Internet (73% of all organisations) and over two-thirds had local or wide area networks (69% of all organisations). A web site/home page was reported by 37% of all organisations.

Of the government organisations without Internet at the end of June 1998, 57% intended to obtain it within the next 12 months. With these organisations representing 15% of all government organisations the expected rate of Internet access for all government organisations by June 1999 was 88%.

Organisations intending to establish a web site/home page within the next 12 months comprised 52% of organisations without a web site/home page at the end of June 1998, and organisations intending to establish a Local Area Network/Wide Area Network (LAN/WAN) within the next 12 months comprised 21% of organisations without a LAN/WAN at the end of June 1998.

Of the other technologies surveyed the most common were barcoding/scanning systems, which were used by 33% of government organisations. A smaller number of organisations used video conferencing/teleconferencing (22%), Electronic Funds Transfer Point of Sale (EFTPOS) (14%) and kiosk facilities (8%).

Over half of government organisations with PCs but without Internet access at the end of June 1998 (55%) reported that they did not have the Internet because of 'costs'. A smaller proportion of organisations (39%) gave their reason as 'lack of skills or appropriate training' and 21% said the Internet was 'not suited to the nature of the organisation'.

Email was used by 97% of government organisations with access to the Internet. Other uses of the Internet included receiving government forms/tenders (45%), marketing and promotional activities (31%), lodging government forms/tenders (28%) and placing purchase orders (18%). Invoices were sent via the Internet by 2% of organisations with Internet access and were received by 6% of organisations. Payments were made by 5% of organisations with access to the Internet and were received by 2% of organisations. Better access to information/services was named as a benefit of the Internet by 95% of organisations with Internet access.

At 30 June 1998, there were 543,000 persons employed in government organisations who used PCs at work, 38% of whom also had access to the Internet. Employees who used PCs comprised 65% of total employment in government organisations. There were 15,400 persons employed to provide in-house information technology and telecommunications (IT&T) support, comprising approximately 2% of total employment. On average, there were 27 PC users for every in-house IT&T support employee/contractor.

Total expenditure on IT&T by government organisations in 1997-98 was $3,317 million, of which $795 million (24%) was contract IT&T payments to external organisations and $788 million (24%) was wages and salaries of in-house IT&T employees. Of the IT&T contract payments to external organisations, 89% were made to the business sector and 11% to the public sector.

GOVERNMENT TYPE

Organisations in the survey were classified by type of government: Federal departments and agencies; State/Territory departments and agencies; local government and other government organisations. For explanation of units classified under each type of government see Explanatory Notes, paragraphs 4 and 5.

Government use of PCs was high for all levels of government, with 100% of Federal departments and agencies, 100% of State/Territory departments and agencies, 100% of local government and 94% of other government organisations using PCs at the end of June 1998.

Access to the Internet at the end of June 1998 was highest for Federal (100%), followed by State/Territory (85%), local (77%) and other government (60%). For State/Territory departments and agencies, Internet usage was 97% for those with 20 or more employees.

While 898 of all government organisations (37)% had a web site/home page at the end of June 1998 this varied with the level of government, with 89% of Federal, 61% of State/Territory, 28% of local government and 21% of other government organisations having a web site/home page.

SECTION 1

**PERSONAL COMPUTERS
(PCs) AND INTERNET
ACCESS**

GOVERNMENT USE OF INFORMATION TECHNOLOGY

Government use of PCs was high for all levels of government, with 100% of Federal and State/Territory departments and agencies, 100% of local government and 94% of other government organisations using PCs at the end of June 1998.

Access to the Internet at the end of June 1998 was highest for Federal departments and agencies (100%), followed by State/Territory (85%), local government (77%) and other government (60%). For State/Territory government, Internet usage was 97% for departments and agencies with 20 or more employees.

While 1,798 government organisations (73%) had access to the Internet, only 898 (37%) had a web site/home page at the end of June 1998. This varied with the level of government, with 89% of Federal, 61% of State/Territory, 28% of local government and 21% of other government organisations having a web site/home page.

Access to the Internet at the end of June 1998 by government organisations varied directly with the size of the organisation, with 56% of organisations employing 1–19 persons having Internet access, compared with 78% for organisations employing 20–99 persons. Larger organisations had even higher access to the Internet with the highest being those employing 5,000 or more persons (100% access).

1.1   GOVERNMENT USE OF PCS AND THE INTERNET

	PCs	LAN/ WAN	Internet access	Email access	Web browser access	Restricted browser access	Web site/ home page	Number of government organisations
	%	%	%	%	%	%	%	no.
Government type(a)								
Federal departments and agencies	100	99	100	99	100	22	89	159
State/Territory departments and agencies								
1–19 persons	100	62	62	62	62	**6	*31	186
20 or more persons	100	99	97	96	95	35	77	375
Total	*100*	*86*	*85*	*85*	*84*	*26*	*61*	*561*
Local government	100	84	77	76	73	17	28	682
Other government organisations	94	46	60	60	57	10	21	1 050
Employment size								
1–19 persons	95	41	56	56	55	10	20	1 092
20–99 persons	100	83	78	77	73	*6	31	585
100–499 persons	100	97	92	92	88	30	54	516
500–999 persons	100	100	95	95	95	43	71	119
1 000–4 999 persons	100	100	97	93	96	41	91	111
5 000 or more persons	100	100	100	100	100	50	100	28
Total	**97**	**69**	**73**	**73**	**71**	**16**	**37**	**2 452**

(a) For definition of Government type see Explanatory Notes paragraph 5.

OTHER TECHNOLOGIES

At the end of June 1998, 33% of government organisations used barcoding/scanning systems and 22% used video conferencing/teleconferencing. A smaller number of organisations offered kiosk facilities (8%) and interactive voice response (IVR, 5%).

While only 14% of all government organisations offered EFTPOS facilities, usage was highest in local government where 30% of organisations offered the facility. Use in Federal and State/Territory departments and agencies was lower with 6% and 17% of organisations respectively offering EFTPOS facilities.

For most of these technologies, usage increased with employment size. Of those government organisations with 1–99 employees, 15% had barcoding/scanning systems, 2% had IVR, 19% had video conferencing/teleconferencing, 6% had EFTPOS and 6% had kiosk facilities. In contrast, of those organisations with 1,000 or more employees, 84% had barcoding/scanning systems, 28% had IVR, 61% had video conferencing/teleconferencing, 24% had EFTPOS and 19% had kiosk facilities.

1.2   OTHER TECHNOLOGIES USED BY GOVERNMENT

	Barcoding/ scanning systems	Interactive voice response	Video conferencing/ teleconferencing	EFTPOS	Kiosk
	%	%	%	%	%
Government type(a)					
Federal departments and agencies	43	12	51	6	*17
State/Territory departments and agencies	49	10	27	17	12
Local government	50	5	*7	30	9
Other government organisations	13	**2	25	*4	*4
Employment size					
1–19 persons	10	**1	20	*3	*5
20–99 persons	24	*5	16	*11	*7
100–499 persons	68	6	22	30	12
500–999 persons	84	23	22	53	16
1 000–4 999 persons	83	22	57	25	19
5 000 or more persons	89	50	79	21	18
Total	**33**	**5**	**22**	**14**	**8**

(a) For definition of Government type see Explanatory Notes paragraph 5.

INTENTIONS TO ADOPT
SELECTED TECHNOLOGIES

Of the 654 government organisations without access to the Internet at the end of June 1998, intention to acquire it within the next financial year was highest among local government (73%). Of those State/Territory departments and agencies without Internet access, 42% intended to acquire it before July 1999.

The number of government organisations without a home page/web site at the end of June 1998 was 1,554. Of these, over half of State/Territory and local government organisations (62% and 54% respectively) intended to establish one by July 1999. All Federal departments and agencies without a web site/home page intended to establish one by July 1999.

For the 756 government organisations without a LAN/WAN at the end of June 1998, intentions to establish one were low for all types of organisations, with only 27% of local and 22% of other government organisations without a LAN/WAN intending to establish one by July 1999.

1.3 INTENTIONS TO ADOPT SELECTED TECHNOLOGIES

	Without Internet access in 1997–98 which intend to acquire it within 12 months	Number of government organisations without Internet access	Without a web site/home page in 1997–98 which intend to establish one within 12 months	Number of government organisations without a web site/home page	Without LAN/WAN in 1997–98 which intend to establish one within 12 months	Number of government organisations without a LAN/WAN
	%	no.	%	no.	%	no.
Government type(a)						
Federal departments and agencies	..	—	100	*17	..	—
State/Territory departments and agencies	*42	*82	62	216	n.p.	*76
Local government	73	154	54	490	*27	108
Other government organisations	54	418	47	831	22	571
Employment size						
1–19 persons	47	479	39	869	16	642
20–99 persons	86	127	65	405	*54	*98
100–499 persons	69	*40	70	235	*34	*16
500–999 persons	100	*6	77	35	..	—
1 000–4 999 persons	100	3	90	10	..	—
5 000 or more persons	..	—	..	—	..	—
Total	**57**	**654**	**52**	**1 554**	**21**	**756**

(a) For definition of Government type see Explanatory Notes paragraph 5.

SECTION 2   GOVERNMENT USE OF THE INTERNET

PERIOD IN WHICH INTERNET ACCESS GAINED

Over half of government organisations with access to the Internet at June 1998 had gained access before July 1997. About 42% of all government organisations had gained access prior to July 1997, and another 31% gained access during 1997–98. A further 15% of government organisations were intending to gain access to the Internet during 1998–99, lifting the expected rate of access to 88% of government organisations by June 1999. Based on intentions reported at June 1998, it is estimated that at June 1999, 91% of State/Territory departments and agencies and 94% of local government organisations would have had access to the Internet.

Based on reported intentions, 77% of government organisations with 1–19 employees would have had Internet access at the end of June 1999. Nearly all (98%) government organisations with 20 or more employees are expected to have had Internet access at the end of June 1999.

2.1   PERIOD IN WHICH INTERNET ACCESS FIRST GAINED

	First gained access prior to 1 July 1997	*First gained access from 1 July 1997 to 30 June 1998*	*Intend to gain access between 1 July 1998 and 30 June 1999*	*Total number of government organisations*
	%	%	%	no.
Government type(a)				
Federal departments and agencies	84	*16	—	159
State/Territory departments and agencies	61	24	**6	561
Local government	43	35	16	682
Other government organisations	26	34	21	1 050
Employment size				
1–19 persons	25	31	21	1 092
20–99 persons	38	40	19	585
100–499 persons	63	29	*5	516
500–999 persons	79	16	*5	119
1 000–4 999 persons	79	18	3	111
5 000 or more persons	100	—	—	28
Total	**42**	**31**	**15**	**2 452**

(a) For definition of Government type see Explanatory Notes paragraph 5.

USE OF INTERNET

Email

Virtually all government organisations used the Internet for email (97%). The proportion of organisations using the Internet for email did not vary greatly with the type of government organisation.

Sales of goods and services over the Internet

Of the 1,798 government organisations with access to the Internet at the end of June 1998, 18% used the technology to place purchase orders and 4% to receive sales orders. Invoices were sent via the Internet by 2% of organisations with Internet access and were received via the Internet by 6%. While 5% of organisations with access to the Internet made payments over the Internet only 2% received payments over the Internet.

Other uses of the Internet Government organisations with Internet access made significant use of the Internet for receiving (45%) and lodging (28%) government forms. The Internet was also used for marketing and promotional activities (31% of government organisations with Internet access). This was more prevalent in Federal departments and agencies, where 50% carried out marketing and promotional activities, compared with 45% of State/Territory and 24% of local government organisations. Relatively minor use was made of the Internet for coordinating delivery arrangements (7% of organisations with Internet access).

2.2   GOVERNMENT ORGANISATIONS WITH INTERNET ACCESS AT 30 JUNE 1998: USE OF THE INTERNET FOR SELECTED BUSINESS ACTIVITIES, BY GOVERNMENT TYPE(a)

	Federal departments and agencies	State/Territory departments and agencies	Local government	Other government organisations	Total
Marketing and promotional activities (%)	50	45	24	22	31
Placing orders (%)	33	18	*16	15	18
Receiving orders (%)	*12	5	**1	*4	4
Sending invoices (%)	n.p.	1	1	**3	*2
Receiving invoices (%)	*4	*9	7	*4	6
Making payments (%)	**7	*4	*2	*7	5
Receiving payments (%)	n.p.	2	1	**2	*2
Coordinating delivery arrangements (%)	5	7	*9	*5	7
Lodging government forms/tenders (%)	23	20	48	20	28
Receiving government forms/tenders (%)	20	27	65	48	45
Email (%)	99	97	96	98	97
Other transactions (%)	*13	16	*17	18	17
Number of government organisations with Internet access (no.)	159	479	528	632	1 798

(a) For definition of Government type see Explanatory Notes paragraph 5.

2.3   GOVERNMENT ORGANISATIONS WITH INTERNET ACCESS AT 30 JUNE 1998: USE OF THE INTERNET FOR SELECTED BUSINESS ACTIVITIES, BY EMPLOYMENT SIZE

	1–99 persons	100–499 persons	500–999 persons	1 000– 4 999 persons	5 000 or more persons	Total
Marketing and promotional activities (%)	26	35	46	52	43	31
Placing orders (%)	15	20	25	23	14	18
Receiving orders (%)	*4	*4	4	9	—	4
Sending invoices (%)	*2	n.p.	3	5	n.p.	*2
Receiving invoices (%)	*7	5	7	8	n.p.	6
Making payments (%)	*5	*4	5	6	—	5
Receiving payments (%)	*2	n.p.	n.p.	5	—	*2
Coordinating delivery arrangements (%)	*3	*11	16	9	14	7
Lodging government forms/tenders (%)	21	41	40	29	32	28
Receiving government forms/tenders (%)	44	51	42	40	29	45
Email (%)	97	97	97	95	93	97
Other transactions (%)	18	*13	20	17	14	17
Number of government organisations with Internet access (no.)	1 071	477	114	108	28	1 798

BENEFITS OF THE INTERNET

Of those organisations with access to the Internet at the end of June 1998, almost all (95%) identified 'better access to information/services' as a benefit of the Internet. A lower proportion of organisations identified benefits such as 'reduced business costs' (39%), 'broader client exposure' (37%), 'improved customer satisfaction' (36%) and 'facilitates doing business across time zones' (23%).

'Broader client exposure' was more often reported as a benefit by Federal departments and agencies (66%) than by State/Territory (51%) or local government (25%). 'Improved customer satisfaction' was reported as a benefit by 54% of Federal, 46% of State/Territory, and 38% of local government organisations with access to the Internet. Only 1% of organisations with access to the Internet at the end of June 1998 reported 'no benefits' to Internet use.

2.4   GOVERNMENT ORGANISATIONS WITH INTERNET ACCESS AT 30 JUNE 1998: BENEFITS OF INTERNET USE

	Reduced business costs	Broader client exposure	Better access to information/ services	Facilitates doing business across time-zones	Improved customer satisfaction	Number of government organisations with Internet access
	%	%	%	%	%	no.
Government type(a)						
Federal departments and agencies	44	66	99	46	54	159
State/Territory departments and agencies	43	51	98	24	46	479
Local government	47	25	96	16	38	528
Other government organisations	28	29	90	22	24	632
Employment size						
1–19 persons	32	34	93	28	32	613
20–99 persons	28	25	94	11	28	458
100–499 persons	53	44	96	21	45	477
500–999 persons	54	44	99	26	49	114
1 000–4 999 persons	42	52	98	38	43	108
5 000 or more persons	43	61	100	46	43	28
Total	**39**	**37**	**95**	**23**	**36**	**1 798**

(a) For definition of Government type see Explanatory Notes paragraph 5.

LIMITATIONS TO GREATER
INTERNET USE

Of those government organisations with access to the Internet at the end of June 1998, 43% reported 'security concerns' as a limitation to greater use of the Internet. The proportion of organisations with Internet access reporting 'security concerns' as a limitation was similar for Federal (50%), State/Territory (50%) and local government (51%). Other limitations identified by government organisations included 'technical difficulties' and 'costs' (both 40%), 'lack of skills or appropriate training' (33%) and 'not suited to the nature of the organisation' (4%). Only 19% of government organisations with Internet access identified 'no limitations'.

Of government organisations with access to the Internet with 1–99 employees, 39% reported 'lack of skills or appropriate training' as a barrier to greater use of the Internet, 37% reported 'costs', 31% reported 'technical difficulties' and 27% reported 'security concerns'. In contrast, for government organisations with access to the Internet and 1000 or more employees, 76% reported 'security concerns' as a barrier to greater use, 66% reported 'technical difficulties', 45% reported 'costs' and only 25% reported 'lack of skills or appropriate training'.

2.5 GOVERNMENT ORGANISATIONS WITH INTERNET ACCESS AT 30 JUNE 1998: FACTORS WHICH LIMIT GREATER USE OF THE INTERNET

	Not suited to nature of the organisation	Technical difficulties(a)	Costs	Lack of skills or appropriate training	Security concerns	No limitations	Number of government organisations with Internet access
	%	%	%	%	%	%	no.
Government type(b)							
Federal departments and agencies	2	49	30	26	50	*25	159
State/Territory departments and agencies	*6	43	37	20	50	23	479
Local government	*3	45	44	31	51	12	528
Other government organisations	*5	32	42	48	29	21	632
Employment size							
1–19 persons	*6	26	32	41	20	31	613
20–99 persons	*3	37	44	36	37	*13	458
100–499 persons	2	52	49	29	63	13	477
500–999 persons	8	52	29	14	60	19	114
1 000–4 999 persons	7	66	43	26	76	8	108
5 000 or more persons	n.p.	68	54	21	75	n.p.	28
Total	**4**	**40**	**40**	**33**	**43**	**19**	**1 798**

(a) Includes bandwidth and other technical difficulties.

(b) For definition of Government type see Explanatory Notes paragraph 5.

BARRIERS TO ACQUIRING
INTERNET ACCESS

Of the 594 government organisations with PCs but no Internet access, 55% identified 'costs' as a barrier to acquiring Internet access, 39% reported 'lack of skills or appropriate training' as a barrier and 21% reported that the Internet was 'not suited to the nature of the organisation'.

2.6 GOVERNMENT ORGANISATIONS WITH PCs BUT WITHOUT INTERNET ACCESS AT 30 JUNE 1998: BARRIERS TO ACQUIRING INTERNET ACCESS

	Not suited to nature of the organisation	Costs	Lack of skills or appropriate training	Other(a)	Government organisations with PCs but no Internet access, as a percentage of all organisations with PCs	Number of government organisations with PCs but no Internet access
	%	%	%	%	%	no.
Government type(b)						
Federal departments and agencies	..	..	..	..	..	..
State/Territory departments and agencies	*47	*53	n.p.	*24	*15	*82
Local government	*15	46	*24	52	23	154
Other government organisations	*18	58	49	31	36	357
Employment size						
1–19 persons	*23	66	44	23	41	419
20–99 persons	**15	*26	*32	60	22	127
100–499 persons	n.p.	*41	n.p.	67	*8	*40
500–999 persons	n.p.	n.p.	—	100	*5	*6
1 000–4 999 persons	—	n.p.	n.p.	100	3	3
5 000 or more persons	..	..	..	..	..	..
Total	**21**	**55**	**39**	**35**	**25**	**594**

(a) Includes technical difficulties, security concerns, or other concerns.

(b) For definition of Government type see Explanatory Notes paragraph 5.

WEB SITE MAINTENANCE

Of the nearly 900 government organisations with a web site/home page, 47% were maintained internally by their organisation while 18% were maintained by another organisation. The remaining organisations (35%) maintained their web site/home page using both internal and external support.

Maintaining the web site/home page internally was the most popular option for Federal and local government with 52% of Federal departments and agencies and 55% of local government organisations with a web site/home page maintained internally to the organisation. For State/Territory departments and agencies, 46% used a combination of internal and external maintenance, making that the most popular option.

2.7   ARRANGEMENTS FOR MAINTAINING WEB SITE/HOME PAGE

	Maintained internally to this organisation	Maintained by an external organisation or individual	Maintained both internally and externally to this organisation	Number of government organisations with a web site/ home page
	%	%	%	no.
Government type(a)				
Federal departments and agencies	52	*15	32	142
State/Territory departments and agencies	33	21	46	345
Local government	55	10	35	192
Other government organisations	57	*22	21	220
Employment size				
1–19 persons	47	*27	*26	223
20–99 persons	30	*27	43	180
100–499 persons	58	8	33	281
500–999 persons	40	16	45	85
1 000–4 999 persons	46	12	41	101
5 000 or more persons	50	18	32	28
Total	**47**	**18**	**35**	**898**

(a) For definition of Government type see Explanatory Notes paragraph 5.

SECTION 3   STAFF USE OF INFORMATION TECHNOLOGY

TECHNOLOGY USER RATIOS

At the end of June 1998, there were 507,000 PCs being used by government organisations and 543,000 government employees with authorised access to use them, representing 65% of all government employees. This comprised approximately 6 PCs for every 10 persons employed. The ratio of PCs to PC users was less than one (9 PCs for every 10 PC users). Of those staff using PCs, 209,000 (38%) used the Internet, comprising 25% of persons employed at the end of June 1998.

Staff use of PCs was highest amongst Federal departments and agencies, with 94% of employees having access to a PC. This proportion was lower in State/Territory departments and agencies and local government with 68% of State/Territory government employees and 49% of local government employees using PCs.

Use of the Internet varied greatly across government types, with 51% of Federal, 24% of State/Territory and 15% of local government employees using the Internet.

The highest incidence of staff use of PCs occurred in government organisations employing 1,000–4,999 persons, where 73% of persons employed used PCs. Staff use of computers was lowest for organisations employing 20–99 persons where 47% of employees used PCs. There were, however, 9 PCs for every 10 PC users in these organisations.

The proportion of staff using the Internet was lowest in organisations with 5000 or more employees, where 15% of persons used the Internet. In these large organisations, Internet users comprised only 24% of PC users. These lower rates are partly due to the nature of field services provided by these organisations. The highest Internet use occurred in organisations employing 1–19 persons, where 38% of employees had access to the Internet and Internet users comprised 54% of PC users.

3.1 TECHNOLOGY USER RATIOS

	PCs	PC users	Internet users	PCs per PC user	Internet users/ PC users	PCs/total employment	PC users/ total employment	Internet users/total employment
	'000	'000	'000	no.	%	no.	%	%
Government type(a)								
Federal departments and agencies	164	137	74	1.20	54	1.13	94	51
State/Territory departments and agencies	231	259	92	0.89	36	0.61	68	24
Local government	60	66	20	0.91	30	0.45	49	15
Other government organisations	51	81	23	0.63	28	0.30	47	13
Employment size								
1–19 persons	5	6	3	0.90	54	0.63	70	38
20–99 persons	13	14	8	0.94	54	0.44	47	25
100–499 persons	73	72	43	1.02	60	0.63	62	37
500–999 persons	53	56	23	0.95	42	0.64	67	28
1 000–4 999 persons	166	183	81	0.91	44	0.66	73	32
5 000 or more persons	197	213	51	0.92	24	0.57	62	15
Total	**507**	**543**	**209**	**0.93**	**38**	**0.61**	**65**	**25**

(a) For definition of Government type see Explanatory Notes paragraph 5.

SECTION 4 INFORMATION TECHNOLOGY EMPLOYMENT

TECHNOLOGY EMPLOYMENT
RATIOS

Employees providing in-house or external information technology and telecommunications (IT&T) services accounted for only 1.9% of total employment of government organisations at the end of June 1998.

Federal departments and agencies had the highest proportion of IT&T employees (4.6%), compared with less than 2% for all other types of government. IT&T support was also highest for Federal government, with an IT&T employee/contractor for every 16 PC users. In contrast there was one IT&T employee/contractor for every 29 PC users in local government, and one for every 32 PC users in State/Territory departments and agencies.

The proportion of IT&T employees to total employment did not vary greatly with the size of the organisation, ranging from 1.4% for organisations employing 20–99 persons, to 2.1% for organisations employing 1,000–4,999 persons.

Support for PC users was highest in smaller government organisations. The number of PC users to IT&T employee/contractors was 23 in organisations employing 1–19 persons and 22 in organisations employing 20–99 persons, compared with 29 in organisations employing 500–999 persons and those employing 5,000 or more persons.

4.1 TECHNOLOGY EMPLOYMENT RATIOS

	IT&T employees	IT&T employees/ total employment	PC users per in-house IT&T employee	PC users per in-house IT&T employee/contractor
	'000	%	no.	no.
Government type(a)				
Federal departments and agencies	6.7	4.6	21	16
State/Territory departments and agencies	5.7	1.5	47	32
Local government	1.8	1.4	37	29
Other government organisations	1.1	0.6	75	62
Employment size				
1–19 persons	*0.1	*1.7	46	23
20–99 persons	0.4	1.4	35	22
100–499 persons	2.2	1.9	35	24
500–999 persons	1.5	1.9	36	29
1 000–4 999 persons	5.3	2.1	36	25
5 000 or more persons	5.8	1.7	37	29
Total	**15.4**	**1.9**	**36**	**27**

(a) For definition of Government type see Explanatory Notes paragraph 5.

SECTION 5 GOVERNMENT EXPENDITURE ON INFORMATION TECHNOLOGY

IT&T EXPENDITURE

Total expenditure on information technology and telecommunications (IT&T) by government organisations during 1997–98 was $3,317 million. State/Territory ($1,369 m) and Federal departments and agencies ($1,424 m) accounted for 84% of this expenditure while the remaining expenditure occurred in local ($346 m) and other ($178 m) government organisations.

IT&T expenditure by organisations with 1,000–4,999 employees comprised 37% ($1,232 m) of IT&T expenditure by all government organisations, while expenditure on IT&T by organisations employing 5,000 or more employees was 35% ($1,166 m) of total IT&T expenditure.

Contract IT&T payments to external organisations were $795 million (24%) of total IT&T expenditure by government organisations in 1997–98. Wages and salaries of in-house IT&T employees accounted for a further $788 million or 24% of IT&T expenditure.

Payments to external organisations for contracting of IT&T services were highest for State/Territory departments and agencies where they comprised 30% ($408 m) of their total IT&T expenditure. In contrast local government organisations spent 15% ($51 m) of their total IT&T expenditure on contract IT&T payments to external organisations.

Contract IT&T payments to external organisations were higher for larger organisations (1,000 or more employees) where they accounted for 25% ($590 m) of IT&T expenditure compared with 17% ($18 m) for organisations with fewer than 100 employees.

5.1 IT&T EXPENDITURE

| | Contract IT&T payments to external organisations | | | Wages & salaries of in-house IT&T employees | Other IT&T operating expenses | Total IT&T operating expenses |
| | Payments for non-ongoing services | Payments for ongoing services | Total | | | |
	$m	$m	$m	$m	$m	$m
Government type(a)						
Federal departments and agencies	133	160	293	381	749	1 424
State/Territory departments and agencies	72	336	408	284	677	1 369
Local government	19	33	51	77	218	346
Other government organisations	18	25	43	45	90	178
Employment size						
1–19 persons	1	*4	5	*4	*21	29
20–99 persons	2	11	13	18	48	79
100–499 persons	45	63	108	102	256	466
500–999 persons	21	57	78	76	190	344
1 000–4 999 persons	77	228	305	287	640	1 232
5 000 or more persons	96	189	285	301	579	1 166
Total	**242**	**553**	**795**	**788**	**1 734**	**3 317**

(a) For definition of Government type see Explanatory Notes paragraph 5.

IT&T EXPENSE RATIOS   The average IT&T expenditure per employee was $4,000, which represented $6,100 per PC user.

Federal departments and agencies had the highest expenditure per employee ($9,800). Expenditure per employee by State/Territory departments and agencies and local government organisations were $3,600 and $2,600 respectively. This expenditure reflects the higher staff use of computers in Federal departments and agencies.

The highest IT&T expenditure per employee was $4,900 for organisations with 1,000–4,999 employees, which represented $6,700 per PC user. The lowest IT&T expenditure per employee was $2,600 for organisations employing 20–99 persons, which represented $5,600 per PC user.

5.2   IT&T EXPENSE RATIOS

	IT&T expenses per person employed	IT&T expenses per PC user	Wages & salaries of in-house IT&T employees/total IT&T expenses	Contract IT&T payments to external organisations/ total IT&T expenses
	$	$	%	%
Government type(a)				
Federal departments and agencies	9 806	10 415	27	21
State/Territory departments and agencies	3 604	5 290	21	30
Local government	2 586	5 230	22	15
Other government organisations	1 026	2 184	25	24
Employment size				
1–19 persons	3 572	5 102	*13	16
20–99 persons	2 635	5 587	22	17
100–499 persons	3 993	6 488	22	23
500–999 persons	4 148	6 186	22	23
1 000–4 999 persons	4 940	6 747	23	25
5 000 or more persons	3 379	5 469	26	24
Total	**3 984**	**6 106**	**24**	**24**

(a) For definition of Government type see Explanatory Notes paragraph 5.

CONTRACT PAYMENTS FOR
IT&T SERVICES

Of the $795 million of external payments for IT&T services by government organisations in 1997–98, $709 million (89%) were contracts with the business sector and $86 million (11%) were with the public sector. Federal and State/Territory departments and agencies had similar splits between the business and public sector, with 92% of Federal contract IT&T payments and 89% of State/Territory contract IT&T payments made to the business sector. In comparison local government organisations made 75% of their external contracting and outsourcing payments to the business sector and 25% to the public sector.

Organisations with 1,000 or more employees made 91% of their contract IT&T payments to the business sector compared with 83% for organisations employing less than 1,000 persons.

5.3 CONTRACT PAYMENTS FOR IT&T SERVICES

	Contracts with the business sector	Contracts with the public sector
	$m	$m
Government type(a)		
Federal departments and agencies	270	23
State/Territory departments and agencies	362	46
Local government	38	13
Other government organisations	39	4
Employment size		
1–19 persons	*4	1
20–99 persons	8	*5
100–499 persons	93	15
500–999 persons	65	13
1 000–4 999 persons	n.p.	n.p.
5 000 or more persons	n.p.	n.p.
Total	**709**	**86**

(a) For definition of Government type see Explanatory Notes paragraph 5.

EXPLANATORY NOTES

INTRODUCTION

1   This publication presents results from the 1997–98 Government Use of Technology Survey which focused on measuring government use of information technology and telecommunications (IT&T) including the Internet. These results are based on a sample of 972 government organisations recorded on the Australian Bureau of Statistics (ABS) Business Register.

SURVEY SCOPE AND METHODOLOGY

2   The survey results are based on a stratified random sample of government organisations recorded on the ABS Business Register with the population frame consisting of all Federal, State/Territory and local government organisations whose predominant activity falls within the institutional sectors of General Government and the Reserve Bank of Australia. These organisations were recorded on the ABS Business Register classified to classes 3000 and 2100 respectively of the Standard Institutional Sector Classification of Australia (SISCA).

3   Exclusions from the population frame were:

- Education organisations (defined in Division N of the Australian and New Zealand Standard Industrial Classification (ANZSIC));

- Defence organisations (part). Australian Defence Force permanent and general reserve personnel and expenses associated with military equipment, facilities and inventories are excluded from the survey. Department of Defence public service employees and associated administrative expenses are included in the survey;

- Foreign Government Representation (defined as ANZSIC 8130); and

- School councils, Parent and Teacher Associations and student unions (included in ANZSIC 9629).

DEFINITION OF GOVERNMENT UNITS

4   Government units are unique kinds of legal entities, established by political processes, which have legislative, judicial or executive authority over other institutional units within a given area. The principal functions of government units are to assume responsibility for the provision of goods and services to the community or to households, and to finance their provision out of taxation or other incomes; to redistribute income and wealth by means of transfers; and engage in non-market production.

DEFINITION OF
GOVERNMENT UNITS
continued

5 Government organisations in the survey were classified by type of government:

- Federal departments and agencies are Australian Government Departments, Australian Government Legislature, Courts, etc., Australian Government Industry and Marketing Boards and Australian Government Statutory Authorities;

- State/Territory departments and agencies are State/Territory Government Departments, State/Territory Government Legislature, Courts, etc., State/Territory Government Industry and Marketing Boards and State/Territory Government Statutory Authorities; this includes organisations providing services such as police, ambulance and fire services, State/Territory museums and State/Territory libraries;

- Local government includes Local Government Authorities and Aboriginal and Torres Strait Islander Community Councils; and

- Other government organisations are organisations not included elsewhere, such as Federal, State/Territory and local government owned companies, health networks (where not included as part of a State/Territory health department), hospitals, and Aboriginal and Torres Strait Islander organisations (where not included as part of a Federal or State/Territory department or agency or local government organisation). Public trading enterprises are included in the Business Use of Information Technology Survey.

STATISTICAL UNIT

6 The unit for which statistics were reported in the survey was the management unit (see Glossary).

RELIABILITY OF ESTIMATES

7 The estimates presented in this publication are subject to sampling and non-sampling error.

Sampling error

8 A sample of government organisations (including all units with more than 500 employees) was selected for this survey. Consequently, the estimates in this publication are subject to sampling variability, that is they may differ from figures that would have been obtained if all units had been included in the survey. One measure of the likely difference is given by the standard error (SE), which indicates the extent to which an estimate might have varied by chance because only a sample of units was included.

9 There are about two chances in three that a sample estimate will differ by less than one SE from the figure that would have been obtained if a census had been conducted, and approximately 19 chances in 20 that the difference will be less than two SEs.

10 Sampling variability can be 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 percentage errors likely to have occurred due to sampling and thus avoids the need to refer also to the size of the estimate.

Sampling error *continued*   **11** The tables below contain estimates of RSEs for a selection of statistics presented in this publication. RSEs for other statistics are available on request.

RELATIVE STANDARD ERRORS FOR TABLE 1.1, GOVERNMENT USE OF PCs AND THE INTERNET

	PCs	LAN/ WAN	Internet access	Email access	Web browser access	Restricted browser access	Web site/ home page	Number of government organisations
	%	%	%	%	%	%	%	%
Government type(a)								
Federal departments and agencies	—	—	—	—	—	18	5	11
State/Territory departments and agencies								
1–19 persons	—	19	19	19	19	54	27	19
20 or more persons	—	1	1	1	2	11	5	6
Total	—	5	5	5	5	12	7	7
Local government	1	4	4	4	4	19	13	3
Other government organisations	2	9	7	7	8	24	15	6
Employment size								
1–19 persons	2	10	8	8	8	25	16	6
20–99 persons	—	5	5	6	6	43	14	9
100–499 persons	—	1	3	3	3	14	9	8
500–999 persons	—	—	2	2	2	6	4	5
1 000–4 999 persons	—	—	—	1	—	2	—	1
5 000 or more persons	—	—	—	—	—	—	—	—
Total	**1**	**3**	**3**	**3**	**3**	**10**	**6**	**3**

(a) For definition of Government type see Explanatory Notes paragraph 5.

RELATIVE STANDARD ERRORS FOR SELECTED ITEMS FROM TABLES 3.1, 4.1 AND 5.1

	PCs	PC users	Internet users	IT&T employees	Wages & salaries of in-house IT&T employees	Total IT&T expenses
	%	%	%	%	%	%
Government type(a)						
Federal departments and agencies	2	3	5	2	2	2
State/Territory departments and agencies	2	1	3	2	2	1
Local government	3	3	4	4	4	8
Other government organisations	2	2	5	4	3	4
Employment size						
1–19 persons	11	10	14	26	27	21
20–99 persons	12	12	16	17	20	14
100–499 persons	8	7	10	9	10	8
500–999 persons	4	4	2	4	3	9
1 000–4 999 persons	2	1	2	1	1	1
5 000 or more persons	—	—	—	—	—	—
Total	**1**	**1**	**2**	**1**	**1**	**1**

(a) For definition of Government type see Explanatory Notes paragraph 5.

Sampling error *continued*   **12** As an example of the above, an estimate of the percentage of government organisations employing 1–19 persons which have a LAN/WAN is 41% and the RSE is 10%, giving a standard error of 4% (10% of 41%). Therefore, there would be two chances in three that, if all units had been included in the survey, a figure in the range of 37% to 45% 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 33% to 49%.

Non-sampling error   **13** Errors other than those due to sampling may occur because of deficiencies in the register of units from which the sample was selected, non-response and imperfections in reporting by respondents. Inaccuracies of this kind are referred to as non-sampling errors and they may occur in any collection, whether it be a census or a sample. Every effort has been made to reduce non-sampling error to a minimum by careful design and testing of questionnaires, efficient operating procedures and systems and appropriate methodology.

ACKNOWLEDGMENT   **14** ABS publications draw extensively on information provided freely by individuals, businesses, governments and other organisations. Their continued cooperation is very much appreciated; without it, the wide range of statistics published by the ABS would not be available. Information received by the ABS is treated in strict confidence as required by the *Census and Statistics Act 1905*.

RELATED PUBLICATIONS   **15** The most recent issue of other ABS publications on the use and production of IT&T goods and services in Australia are listed below:

Business Use of Information Technology, Australia, 1997–98
   (Cat. no. 8129.0)

Business Use of Information Technology, Australia, Preliminary, 1997–98
   (Cat. no. 8133.0)

Computing Services Industry, Australia, 1995–96 (Cat. no. 8669.0)

Government Information Technology, Australia, 1993–94
   (Cat. no. 8119.0)

Household Use of Information Technology, Australia, 1998
   (Cat. no. 8146.0)

Information Technology, Australia, 1995–96 (Cat. no. 8126.0)

Telecommunication Services, Australia, 1996–97 (Cat. no. 8145.0)

Use of the Internet by Householders, Australia, May 1999
   (Cat. no. 8147.0)

Year 2000 Problem, Australia, October 1998 (Cat. no. 8152.0)

Year 2000 Problem, Australia, June 1999 (Cat. no. 8152.0)

SYMBOLS AND OTHER
USAGES

16 Symbols and abbreviations used in the publication represent the following:

ABS	Australian Bureau of Statistics
ANZSIC	Australian and New Zealand Standard Industrial Classification
IT&T	information technology and telecommunications
n.a.	not available
n.p.	not available for publication but included in totals where applicable
PAYE	pay as you earn
PC	personal computer
SE	standard error
RSE	relative standard error
*	relative standard error greater than 25%—subject to sampling variability too high for most practical purposes
**	relative standard error greater than 50%—subject to sampling variability too high for practical purposes
_	nil or rounded to zero

Where figures have been rounded, discrepancies may occur between the sum of the component items and the total.

GLOSSARY

Barcoding/scanning systems	Commonly used for tracking inventory and pricing goods e.g. a business scans the product barcode to read the price of the product into the cash register.
Contract payments for IT&T services	Refers to any 'contract' payments to a third party vendor, which may include contractors and consultants and self employed persons providing IT&T services. It includes payments for ongoing and non ongoing services.
Contract IT&T payments that relate to ongoing services	Includes amounts paid for maintenance services, help desk services and any other support services which are used to support the running of information technology and/or telecommunication technology or services within the organisation.
Electronic Funds Transfer Point of Sale (EFTPOS)	Referred to as EFTPOS and is a method of purchasing/making payments (i.e. a method for performing a financial transaction).
Email	Electronic mail is a facility which allows network users locally and worldwide to exchange messages, including text and attachments.
Home page	Also referred to as a web site. This is an electronic document which provides information in a textual, graphical or multimedia format and is accessed via the Internet.
Information technology & telecommunications (IT&T)	Refers to the services and technologies that enable information to be accessed, stored, processed, transformed, manipulated and disseminated, including the transmission or communication of voice and/or data over a variety of transmission media. Transmission media include telephone, facsimile, Internet data lines, satellite, microwave, radio, etc.
In-house IT&T employees	Includes those employees providing IT&T services mainly to computer users within the organisation.
Interactive Voice Response (IVR)	An automated process of dealing with clients. For example, recorded phone messages which direct the caller to dial a specific number/s to enable a specific activity to occur.
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 users	Refers to all employees with authorised access to the Internet.
IT&T contractors	Includes those contract persons predominantly engaged in providing IT&T services for whom pay as you earn (PAYE) tax is not deducted.

IT&T employees   Refers to all employees who are predominantly engaged in IT&T work of a support nature to system users. They could mainly be providing services to users within the organisation or to external organisations/persons. Excluded are employees predominantly engaged in manufacturing, sales and/or performing data capture/entry and keying. Also excluded are contractors for whom PAYE tax is not deducted.

Kiosk   Includes all public access devices: databases of information which can be accessed by the public to obtain general and specific information, to make credit card payments, lodge government forms, etc.

Local Area Network (LAN)   Refers to a network of computers and devices installed within a single physical property area.

Management unit   The highest-level accounting unit within a business or organisation, having regard to the required level of industry homogeneity, for which a set of accounts is maintained. In most cases it coincides with the entire organisation e.g. government department or statutory authority. However, in the case of large diversified organisations, there may be more than one management unit, with each coinciding with, for example, a 'division' of a department or a geographical area. Recognition of separate management units within an organisation require that separate and comprehensive accounts are compiled for them. For the Government Use of Technology Survey, some management units have been combined to accommodate organisations which can only provide meaningful answers to IT&T questions at an aggregated level, due to the centralised nature of their IT&T resources.

Other IT&T expenses   Includes all payments relating to telecommunication services (excluding contract payments), payments for leased IT&T equipment, depreciation of IT&T equipment, repair and maintenance expenses and non-capitalised purchases of IT&T goods and services for own use. It excludes purchases of IT&T goods/services bought for resale and wages and salaries of IT&T employees mainly providing IT&T goods/services to external organisations.

Personal Computers (PCs)   Personal computer workstations, both IBM compatible and Macintosh/Apple systems, such as desktops, portables, laptops, notebooks, hand held and pen-based machines, and other similar single user devices with high graphic capabilities. It excludes mainframes, super computers, mini-computers with their associated terminals and PCs used solely as servers.

PC users   Refers to all employees with authorised access to personal computers.

Total employment	Includes permanent, part-time, temporary and casual staff (including managerial and executive employees) working for the organisation. Employees on paid leave are also included.
Total IT&T expenses	Includes wages and salaries of in-house IT&T employees and other IT&T expenses.
Video conferencing/ teleconferencing	Refers to a method of 'live' two way video and audio communication.
Wages and salaries of in-house IT&T employees	Wages and salaries of those IT&T employees engaged in providing IT&T services to employees of the organisation, including severance, termination and redundancy payments and provision expenses for employee entitlements. It excludes payments to contractors, consultants and persons paid solely by commission without a retainer.
Web browser	A program specifically designed for navigating the Internet, including the world wide web.
Web site	Refer to the definition for home page.
Wide Area Network (WAN)	Refers to computers connected to a decentralised network.

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