



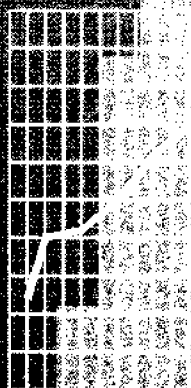
NEW ISSUE

1993-94

EMBARGOED UNTIL 11:30 AM THURS 14 NOVEMBER 1996

# Government Information Technology

## Australia





**GOVERNMENT INFORMATION TECHNOLOGY  
AUSTRALIA  
1993—94**

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<b>INQUIRIES</b>	<ul style="list-style-type: none"> <li>▪ <i>for further information about statistics in this publication and the availability of related unpublished statistics, contact David McGeachie on Canberra (06) 252 5614.</i></li> <li>▪ <i>for information about ABS statistics and services, please refer to the back of this publication.</i></li> </ul>
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## INTRODUCTION

This publication presents the results of the first survey by the Australian Bureau of Statistics (ABS) of the resources devoted to information technology and telecommunication (IT&T) goods and services by general government organisations in 1993-94.

The survey was designed to complement a similar survey in the Business Enterprise sector of the economy which is expected to be released in the near future. Together they supplement the results of a survey of the producers of IT&T goods and services, which was conducted in respect of 1992-93 and published in *Information Technology in Australia* (8126.0) and a survey of IT&T in the home published in *Household Use of Information Technology, Australia* (8128.0).

ABS has already commenced a repeat of this cycle of survey work. Four surveys on the use of IT&T in the home are being conducted during 1996; the results of the first of these (February 1996) were published on 9 September 1996. The ABS has also initiated a repeat survey of the producers of IT&T goods and services in respect of 1995-96 and the results of this will become available in about twelve months' time.

This was not an easy survey to conduct. The delineation of boundaries for the government organisations included was complicated by the many and varied ways in which these organisations arranged their information technology operations. In addition, some of the data sought in the survey was not readily available from the records of the organisations. These factors have added an element of uncertainty to the statistics included in this publication.

The statistics in this publication were compiled from survey responses from 256 of the largest federal and State government organisations (53 federal and 203 State). The survey excludes the decentralised operations of community service organisations such as hospitals, schools and police. In addition, military personnel are excluded from the employment and computer users statistics. A more complete explanation of the scope of the survey is included in the Explanatory Notes on page 14.

In using these statistics, users should be aware that the government organisations included in these statistics varied significantly in size, purpose and activity. The federal organisations are, in general, much larger than the State organisations. Furthermore, some of the State organisations included, because of the nature of their responsibilities, require less use of IT&T resources.

Because of this diversity, the aggregates and averages featured in the main body of this publication may not satisfy all analytical needs. Therefore, to further assist users in interpreting these statistics, the Appendix contains information about the distribution of responses to the various performance measures shown in table 2.

The ABS is keen to obtain the reaction of users to the data contained in this publication or in any of its other IT&T publications. Comments should be forwarded to: The Director, Small Business and Science and Technology Section, Australian Bureau of Statistics, PO Box 10, Belconnen, ACT 2616.

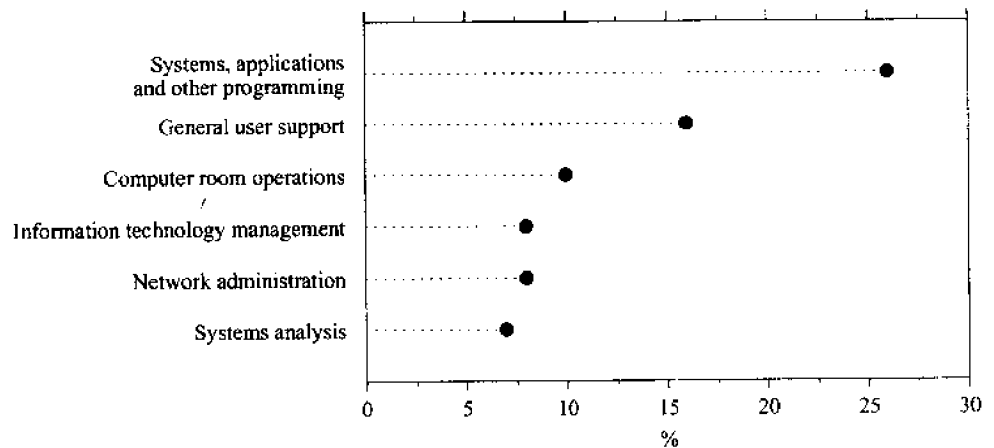




## SUMMARY OF FINDINGS

EMPLOYMENT	Of the 342,000 people employed at the end of June 1994 by the 256 departments and authorities in the survey, 131,000 were in federal organisations and 210,000 were in State organisations.
COMPUTER USERS	Of those persons employed 72% used a computer on a regular basis (i.e. were computer users). This proportion was higher in federal government organisations (84%) than in State organisations (64%).
IT&T STAFF USAGE	<p>A total of 10,127 staff years were expended during 1993-94 on IT&amp;T activities by professional computer and communication staff. This represents only 3% of total employment in the organisations included in this survey.</p> <p>The proportion of employees who were IT&amp;T professionals was larger in federal government organisations than in State government organisations. On average, in federal government organisations, one person in 22 was an IT&amp;T professional, whereas only one person in 51 was an IT&amp;T professional in State government organisations. This difference is explained in part by the lower proportion of computer users and the greater use of outsourced services in State government organisations.</p> <p>By reference to the Appendix, the median value for the ratio of employees to IT&amp;T staff for State organisations was 36. This means that half of the State organisations have a ratio of 36 employees or less to each IT&amp;T professional. The average for State organisations of 51 employees to each IT&amp;T professional is therefore influenced by a small number of organisations with larger ratios of employees to IT&amp;T professionals.</p> <p>The ratio of employees to IT&amp;T staff for federal organisations is more evenly distributed with an average value of about 22 employees per IT&amp;T professional, this being only marginally less than the median value of 24 employees to each IT&amp;T professional.</p> <p>The major IT&amp;T activities undertaken by these staff in 1993-94 were:</p> <ul style="list-style-type: none"><li>▪ systems, applications and other programming (26%);</li><li>▪ general user support (16%); and</li><li>▪ computer room operations (10%).</li></ul>

## STAFF USAGE ON MAJOR IT&T ACTIVITIES, 1993-94



## WORKSTATIONS

At the end of June 1994, the State and federal government organisations included in this survey had 296,300 workstations. These were made up of 234,600 personal computers (excluding those dedicated to server functions), 59,000 dumb terminals and 2,700 other workstations. This is equivalent to 1.2 workstations for each user. The ratio was lower for State government organisations (1.1 workstations per user) than for federal government organisations (1.3). The number of personal computers per computer user was 1.1 for federal organisations, 0.9 for State organisations and 1.0 in total.

The proportion of workstations and personal computers per computer user in federal organisations is inflated by the exclusion of military personnel from the survey while their computing equipment is included. If it had been possible to determine the number of military computer users, their inclusion in the figures would have reduced the the number of workstations per user to a level closer to that for State organisations. Their exclusion is estimated to have an effect of about 10% on the federal ratio.

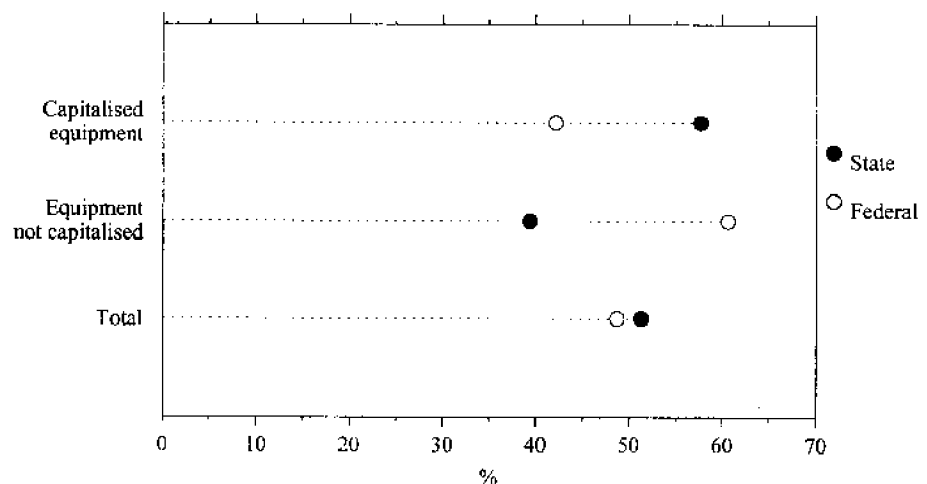
The Appendix shows that the median figures for workstations per user are fairly similar for both federal and State organisations (1.2 and 1.1 respectively) and only marginally different to the averages (1.3 and 1.1 respectively).

## EXPENDITURE ON EQUIPMENT

Expenditure on IT&T equipment for 1993-94 was \$576.7 million, of which \$343.9 million (60%) was capitalised. State government organisations accounted for 58% and federal government organisations 42% of the capitalised expenditure.

A further \$232.8 million was spent on the purchase of non-capitalised IT&T equipment during 1993-94. Federal government organisations accounted for the larger portion (61%) of this expenditure.

## EXPENDITURE ON EQUIPMENT, 1993-94



## OPERATING EXPENSES

During 1993-94, the government organisations in the survey incurred IT&T operating expenses of \$1,922.4 million.

Operating expenses can be categorised into two broad components, namely, payments to external IT&T agencies (32%), and other operating expenses (68%).

### Payments to external IT&T organisations

Total payments to external organisations for IT&T services during 1993-94 were \$614.8 million. This comprised:

- payments to telecommunications service providers (\$273.2 million);
- payments for outsourced services (\$202.1 million); and
- payments to contractors and consultants (\$139.5 million).

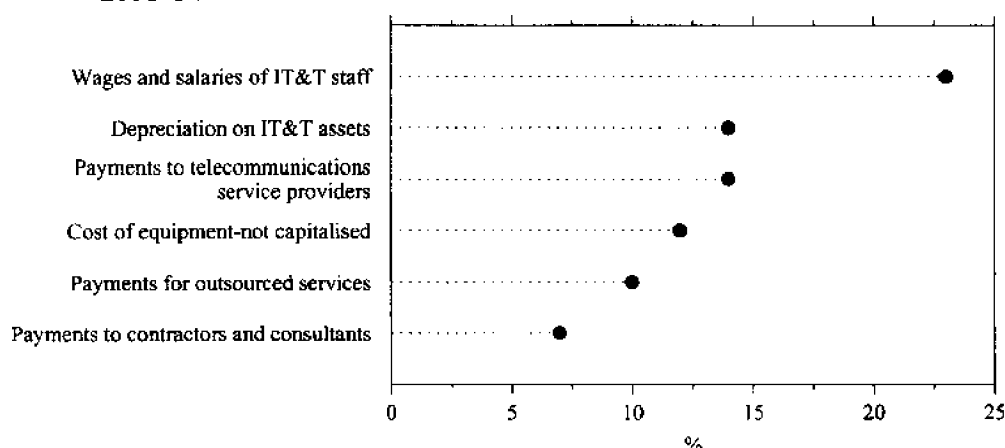
Federal government organisations accounted for \$283.5 million (46%) of payments to external organisations with the major component being payments to telecommunications service providers (\$151.7 million). State organisations accounted for \$331.2 million (54%) with the major component being for outsourced services (\$133.3 million).

### Other operating expenses

During 1993-94, other operating expenses were \$1,307.6 million. The most significant items contributing to this figure were:

- wages and salaries for IT&T staff of \$435 million;
- depreciation on IT&T assets of \$269.2 million; and
- IT equipment which was not capitalised of \$233 million.

PERCENTAGE CONTRIBUTIONS OF MAJOR ITEMS OF IT&T OPERATING EXPENSE,  
1993-94



**Average IT&T wage** The average wage for an IT&T professional was \$42,925, compared with \$38,052 for other employees. The average wage for an IT&T professional working in federal government organisations was 9% higher than for staff working in State organisations.

**Expenses per user** The average IT&T operating expense per computer user was \$7,800. For federal organisations this was \$9,500 and for State organisations \$6,400. As indicated previously, military computer users have been excluded while all computing expenses are included. If it had been possible to include the number of military computer users, the average IT&T operating cost per user for federal organisations would have been reduced by about an estimated 10%, but would remain substantially higher than that for State organisations.

Federal organisations did not capitalise expenditure on computing equipment to the same extent as State organisations; they treated proportionately more expenditure on equipment as an operating expense. This had the effect of increasing the ratio of IT&T operating expenses per computer user for federal organisations compared to State organisations.

For State organisations the largest component of IT&T expenses per user was for payments to external IT&T agencies. This component was nearly twice as large as the next largest component, wages and salaries for IT&T staff. For federal organisations, these two components were almost the same size.

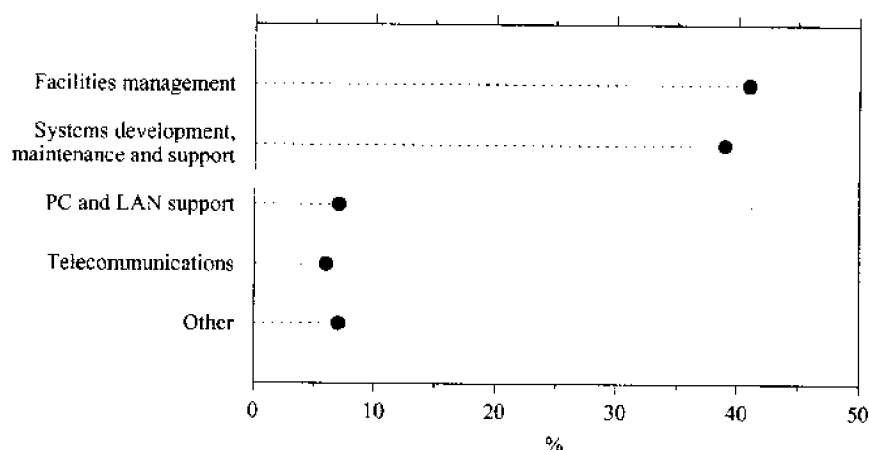
IT&T expenses per user varies with the employment size of the organisation. Smaller organisations had much larger ratios of IT&T expenses per computer user than most other organisations, ranging from \$9,400 for organisations with less than 100 employees to \$12,300 for organisations with 200-499 employees.

Expenditure on IT&T per user was lowest for the 1,000-4,999 employment size grouping (\$5,900). For organisations with 5,000-9,999 persons, the ratio was \$9,100 per user and for the largest organisations the ratio was \$7,500 per user.

## OUTSOURCED SERVICES

Of the \$202.1 million spent on outsourced services by the government organisations included in this survey, the major components were facilities management (41%) and systems development, maintenance and support (39%).

### PAYMENTS FOR OUTSOURCED IT&T SERVICES, 1993-94



The payments for outsourced services were larger for State government organisations representing 15% of total IT&T operating expenses compared with only 7% by federal organisations.

### Cost of outsourced services per computer user

Payments for outsourced services per computer user varied significantly with the size of the government organisation and tended to be higher for the smaller organisations than for the larger organisations. The 155 organisations with less than 500 employees (i.e. 61% of all organisations included in this collection) spent between \$1,900 and \$2,300 on outsourcing per user. This was more than double the amount spent by the larger organisations i.e. those employing 500 or more persons.

The average cost per user for outsourced services for State organisations was \$987 and for federal organisations \$620.

## IN-HOUSE SUPPORT COSTS

In-house IT&T support costs are the estimated cost of providing computer and communication support by professional IT employees of government organisations.

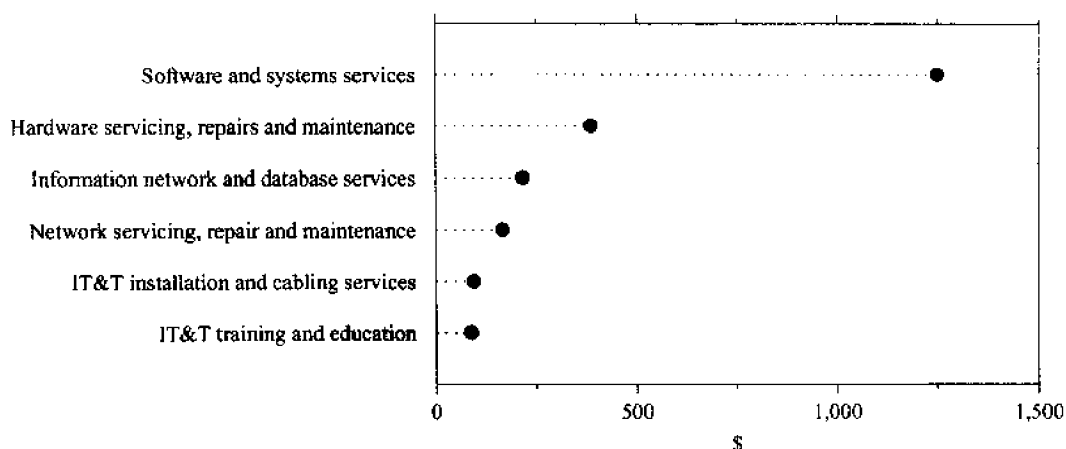
Total in-house support costs incurred by government organisations during 1993-94 were \$567.2 million. These costs included wages and salaries paid to IT&T staff and the cost of materials consumed; these represented 30% of total IT&T expenses.

Federal government organisations accounted for 64% of expenditure on in-house IT&T support, while State government organisations accounted for 36%.

Federal government organisations spent a greater proportion (34%) of their overall IT&T expenses on in-house support costs than did State government organisations (24%), explained in part by the greater use of outsourced services by State organisations.

The average in-house support cost per computer user was \$2,300. For federal organisations this cost was higher (\$3,300) than for State organisations (\$1,500). As can be seen by reference to the Appendix, the distribution of reported data for State organisations is similar to that for federal organisations but it is centred around a lower mean. This probably reflects the greater tendency for using outsourced services in State organisations.

IN-HOUSE SUPPORT COSTS PER COMPUTER USER, 1993-94

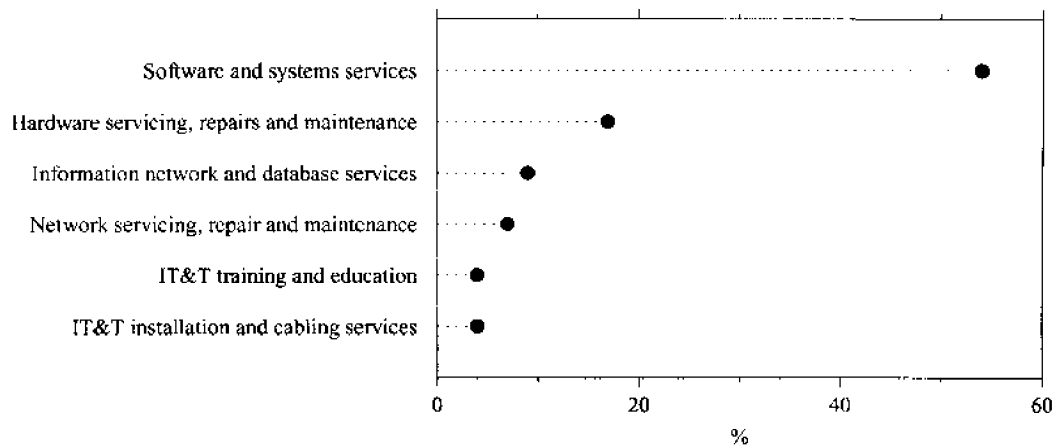


The major activities undertaken in-house were:

- software and systems services (54%);
- hardware servicing and repairs (17%); and
- information network and database services (9%).

As can be seen in the graph on the next page, expenditure on in-house training and education was relatively low, representing only 4% of total in-house costs.

#### MAJOR COMPONENTS OF IN-HOUSE IT&T COSTS, 1993-94



Costs of outsourcing compared to in-house support costs For every dollar spent on in-house support, \$0.36 was spent on payments for outsourced services.

State government organisations spent \$133.3 million on outsourced services and \$205.0 million on in-house support. Almost half of the expenditure on outsourced services (\$61.5 million) went to facilities management and a third was for systems development, maintenance and support. The major in-house expense (\$118.7 million) was for software and systems services.

Federal government organisations spent \$68.8 million on outsourced services while \$362.2 million was spent on in-house support. Half of the cost of outsourced services was for systems development, maintenance and support and a third was for facilities management. Half of the in-house expenses were for software and systems services (\$188.8 million).

#### DISASTER RECOVERY PLANS

One hundred and seventy-seven (69%) of the organisations included in this collection did not have a disaster recovery plan. This included 58% of federal government organisations and 72% of State government organisations.

Those 79 government organisations which had disaster recovery plans had the following types of plans:

- cold site (27%);
- warm site (63%); and
- hot site (10%).

The total cost of maintaining these recovery plans in 1993-94 was \$18.9 million. The 22 federal government organisations spent \$4.0 million (an average of \$182,000 per government organisation) on maintaining disaster recovery plans, while the 57 State organisations spent \$14.9 million (an average of \$261,000 per government organisation).

Smaller organisations tended to have less reliance on disaster recovery plans than larger ones. Only 7 out of the 56 organisations employing less than 100 people had a disaster recovery plan. For the largest organisations (those employing 10,000 or more persons) 7 out of 8 had a disaster recovery plan.



# 1

## SUMMARY IT&T STATISTICS, 1993-94

Item	Unit	Federal	State	Total
<b>Organisations at end June 1994</b>	no.	53	203	256
<b>Workstations at end June 1994</b>	no.	148 771	147 517	296 288
<b>Staffing</b>				
Total employment	no.	131 445	210 400	341 845
IT&T professionals	staff years	5 963	4 164	10 127
Computer users	no.	110 909	135 079	245 988
<b>Wages and salaries</b>				
All staff	\$m	5 052.1	8 005.2	13 057.3
IT&T professional staff	\$m	265.4	169.4	434.7
<b>IT&amp;T expenses</b>				
Wages and salaries of IT&T staff	\$m	265.4	169.4	434.7
Payments to external IT&T agencies	\$m	283.5	331.2	614.8
Equipment not capitalised	\$m	141.1	91.7	232.8
Software not capitalised	\$m	74.5	47.2	121.7
Depreciation on IT&T assets	\$m	179.6	89.7	269.2
Other expenses	\$m	111.1	138.1	249.1
Total IT&T expenses	\$m	1 055.1	867.3	1 922.4
<b>In-house IT&amp;T support costs(a)</b>	\$m	362.2	205.0	567.2
<b>Capital expenditure (hardware)</b>	\$m	145.2	198.6	343.9

(a) These costs are also included in the relevant categories of IT&T expenses.

# 2

## SELECTED IT&T PERFORMANCE RATIOS, 1993-94

Ratio	Unit	Federal	State	Total
Computer users/total employment	%	84.4	64.2	72.0
Workstations per computer user	no.	1.3	1.1	1.2
Payments to external IT&T agencies/in-house support costs	%	78.3	161.6	108.4
Payments to external IT&T agencies/total IT&T expenses	%	26.9	38.2	32.0
Software purchases/total IT&T expenses	%	7.1	5.4	6.3
Cost of maintaining disaster recovery plans per computer user	\$	36	110	77
Computer users per IT&T professional	no.	18.6	32.4	24.3
Total employment/IT&T professional staff	no.	22.0	50.5	33.8
IT&T expenses per employee	\$	8 000	4 100	5 600
IT&T expenses per user	\$	9 500	6 400	7 800
In-house support costs per computer user	\$	3 300	1 500	2 300
Cost of in-house IT&T training per computer user	\$	117	65	88

### 3

#### SELECTED IT&T PERFORMANCE RATIOS BY EMPLOYMENT SIZE GROUPINGS, 1993-94

<i>Employment size groupings at end June</i>	<i>Computer users to total employment</i>	<i>Computer users per IT&amp;T professional</i>	<i>Payments to external IT&amp;T agencies to IT&amp;T expenses</i>	<i>Payments to external IT&amp;T agencies to in-house support costs</i>	<i>In-house support costs per computer user</i>	<i>IT&amp;T expenses per computer user</i>
	%	no.	%	%	\$	\$
0-99 persons	82.0	24.5	40.0	201.0	1 900	9 400
100-199 persons	84.9	16.9	37.1	148.1	3 000	11 800
200-499 persons	86.9	16.6	41.2	190.7	2 700	12 300
500-999 persons	78.1	16.3	27.7	95.2	3 000	10 100
1 000-4 999 persons	71.6	28.0	34.5	107.1	1 900	5 900
5 000-9 999 persons	54.0	42.9	36.0	202.4	1 600	9 100
10 000 or more persons	77.5	22.6	26.0	72.0	2 700	7 500
<b>Average</b>	<b>72.0</b>	<b>24.3</b>	<b>32.0</b>	<b>108.4</b>	<b>2 300</b>	<b>7 800</b>

### 4

#### IT&T OPERATING EXPENSES, 1993-94

<i>Expense item</i>	<i>Federal</i>		<i>State</i>		<i>Total</i>	
	\$m	%	\$m	%	\$m	%
<b>Payments to external IT&amp;T agencies</b>						
Payments for outsourced services	68.8	6.5	133.3	15.4	202.1	10.5
Payments to contractors and consultants	63.0	6.0	76.5	8.8	139.5	7.3
Payments to telecommunications service providers	151.7	14.4	121.4	14.0	273.2	14.2
<b>Total payments to external IT&amp;T agencies</b>	<b>283.5</b>	<b>26.9</b>	<b>331.2</b>	<b>38.2</b>	<b>614.8</b>	<b>32.0</b>
<b>Other operating expenses</b>						
Wages and salaries of IT&T staff	265.4	25.2	169.4	19.5	434.7	22.6
Software purchases	74.5	7.1	47.2	5.4	121.7	6.3
Cost of IT&T equipment — not capitalised	141.1	13.4	91.7	10.6	232.8	12.1
Depreciation on IT&T assets	179.6	17.0	89.7	10.3	269.2	14.0
Other IT&T operating expenses	111.1	10.5	138.1	15.9	249.1	13.0
<b>Total other operating expenses</b>	<b>771.6</b>	<b>73.1</b>	<b>536.0</b>	<b>61.8</b>	<b>1 307.6</b>	<b>68.0</b>
<b>Total IT&amp;T operating expenses</b>	<b>1 055.1</b>	<b>100.0</b>	<b>867.3</b>	<b>100.0</b>	<b>1 922.4</b>	<b>100.0</b>

## 5

### PAYMENTS FOR OUTSOURCED IT&T SERVICES, 1993-94

Service	Federal		State		Total	
	\$m	%	\$m	%	\$m	%
Facilities management	21.0	30.5	61.5	46.1	82.5	40.8
Systems development, maintenance and support	35.2	51.1	43.1	32.3	78.3	38.7
PC and LAN support	3.2	4.6	10.8	8.1	14.0	6.9
Telecommunications	5.5	8.0	7.5	5.6	13.0	6.4
Other	4.0	5.7	10.3	7.7	14.3	7.1
<b>Total</b>	<b>68.8</b>	<b>100.0</b>	<b>133.3</b>	<b>100.0</b>	<b>202.1</b>	<b>100.0</b>

## 6

### IN-HOUSE IT&T SUPPORT COSTS, 1993-94

Item	Federal		State		Total	
	\$m	%	\$m	%	\$m	%
Software and systems services	188.8	52.1	118.7	57.9	307.5	54.2
Information network and database services	34.6	9.6	19.0	9.3	53.6	9.4
Hardware servicing, repairs and maintenance	72.0	19.9	23.2	11.3	95.2	16.8
IT&T training and education	13.0	3.6	8.8	4.3	21.8	3.8
IT&T installation and cabling services	12.3	3.4	10.9	5.3	23.2	4.1
Network servicing, repair and maintenance	27.8	7.7	13.2	6.5	41.0	7.2
Dedicated data entry and processing services	1.6	0.4	1.2	0.6	2.8	0.5
Other IT&T services	12.1	3.3	10.1	4.9	22.2	3.9
<b>Total</b>	<b>362.2</b>	<b>100.0</b>	<b>205.0</b>	<b>100.0</b>	<b>567.2</b>	<b>100.0</b>

## 7

### OUTSOURCING AND IN-HOUSE COSTS BY EMPLOYMENT SIZE GROUPINGS, 1993-94

Employment size groupings at end June	Number of organisations	Number of computer users	Payments for outsourced services	Payments to contractors and consultants	Payments to tele-communication providers	Total payments to external IT&T agencies	Cost of in-house support
	no.	no.	\$m	\$m	\$m	\$m	\$m
0-99 persons	56	2 171	5.0	1.7	1.4	8.1	4.0
100-199 persons	44	5 801	11.1	6.0	8.2	25.3	17.1
200-499 persons	55	15 646	34.2	15.6	29.2	79.0	41.4
500-999 persons	34	18 719	15.4	16.7	20.5	52.6	55.3
1 000-4 999 persons	51	82 835	58.2	37.0	73.0	168.2	157.1
5 000-9 999 persons	9	33 476	39.9	17.9	52.6	110.3	54.5
10 000 persons or more	7	87 340	38.4	44.6	88.2	171.2	237.8
<b>Total</b>	<b>256</b>	<b>245 988</b>	<b>202.1</b>	<b>139.5</b>	<b>273.2</b>	<b>614.8</b>	<b>567.2</b>

## 8

## PROFESSIONAL IT&amp;T STAFF USAGE ON IT&amp;T ACTIVITIES, 1993-94

Activity	Staff years					
	Federal		State		Total	
	no.	%	no.	%	no.	%
IT&T management	402.3	6.7	438.0	10.5	840.3	8.3
Network administration	397.1	6.7	437.3	10.5	834.4	8.2
Database administration	291.1	4.9	195.2	4.7	486.3	4.8
Systems programming	322.9	5.4	217.6	5.2	540.5	5.3
Applications programming	1 058.0	17.7	859.2	20.6	1 917.2	18.9
Other programming	81.4	1.4	62.4	1.5	143.8	1.4
Systems analysis	364.1	6.1	379.1	9.1	743.2	7.3
Software engineering	211.9	3.6	74.7	1.8	286.6	2.8
Systems integration	194.9	3.3	92.0	2.2	286.9	2.8
Computer room operations	699.8	11.7	269.0	6.5	968.8	9.6
Repair and maintenance	206.7	3.5	124.3	3.0	331.0	3.3
General user support	1 072.3	18.0	538.6	12.9	1 610.9	15.9
Data processing	n.p.	n.p.	n.p.	n.p.	190.0	1.9
Intensive data entry	n.p.	n.p.	n.p.	n.p.	126.7	1.3
IT&T Training	149.0	2.5	116.4	2.8	265.4	2.6
Other IT&T activities	260.6	4.4	294.7	7.1	555.3	5.5
<b>Total</b>	<b>5 962.8</b>	<b>100.0</b>	<b>4 164.5</b>	<b>100.0</b>	<b>10 127.3</b>	<b>100.0</b>

## 9

## SELECTED EQUIPMENT INSTALLED, AT END JUNE 1994

Type of equipment	Federal	State	Total
	no.	no.	no.
Workstations			
Personal computers	117 149	117 454	234 603
Dumb terminals	31 027	27 988	59 015
Other work stations	595	2 075	2 670
<b>Total</b>	<b>148 771</b>	<b>147 517</b>	<b>296 288</b>
Servers(a)	2 980	3 796	6 776
Mini-computers	938	991	1 929
Large-scale computers	50	41	91

(a) Includes PCs used as servers.

# 10

## NUMBER OF GOVERNMENT DEPARTMENTS WITH DISASTER RECOVERY PLANS, 1993-94

<i>Type of plan</i>	<i>Federal</i>		<i>State</i>		<i>Total</i>	
	no.	%	no.	%	no.	%
None	31	58.5	146	71.9	177	69.1
Cold site	9	17.0	12	5.9	21	8.2
Warm site	11	20.8	39	19.2	50	19.5
Hot site	2	3.8	6	3.0	8	3.1
<b>Total</b>	<b>53</b>	<b>100.0</b>	<b>203</b>	<b>100.0</b>	<b>256</b>	<b>100.0</b>

# 11

## COST OF MAINTAINING DISASTER RECOVERY PLANS, 1993-94

	<i>Value</i>	<i>Percentage contribution</i>
<i>Government</i>	<i>\$m</i>	<i>%</i>
Federal	4.0	21.2
State	14.9	78.8
<b>Total</b>	<b>18.9</b>	<b>100.0</b>

# 12

## NUMBER OF ORGANISATIONS BY TYPE OF DISASTER RECOVERY PLAN BY EMPLOYMENT SIZE GROUPINGS, 1993-94

<i>Employment size groupings at end June</i>	<i>Type of plan</i>				<i>No disaster recovery plan</i>
	<i>Hot site</i>	<i>Warm site</i>	<i>Cold site</i>	<i>Total</i>	
0-99 persons	—	6	1	7	49
100-199 persons	—	8	1	9	35
200-499 persons	1	10	7	18	37
500-999 persons	3	8	2	13	21
1 000-4 999 persons	3	11	7	21	30
5 000-9 999 persons	1	2	2	4	4
10 000 persons or more	—	5	1	7	1
<b>Total</b>	<b>8</b>	<b>50</b>	<b>21</b>	<b>79</b>	<b>177</b>

## EXPLANATORY NOTES

### SCOPE

**1** The statistics in this publication were compiled from a survey of 53 federal and 203 State government departments and statutory authorities conducted in respect of 1993-94.

**2** This was the first such ABS survey focusing on IT&T usage by the general government sector.

- Government departments are entities created as Departments of State by the instrument (e.g. proclamation, Executive Council order) required by legislation in the Commonwealth and each State or Territory.
- Statutory authorities are entities established by the Constitution or by an Act of Parliament of the Commonwealth or one of the States and Territories. This includes each house of the parliaments of the Commonwealth and each State and Territory and each court of law.

**3** The survey included units primarily drawn from Division M (Government Administration and Defence) of the 1993 edition of the Australian and New Zealand Standard Industrial Classification (ANZSIC) but also included some classified to community services, education, health and emergency services industries. Local government organisations (ANZSIC Class 8113) have been excluded.

**4** There are a number of caveats relating to the scope of the statistics gathered:

- Where centralised records were not available for the entire operations of the unit, data were collected for the administrative operations only. Although some units were therefore only partly covered, care was taken during editing to ensure that the performance ratios in this publication are not unduly affected by such exclusions. Some under coverage of total staffing levels and total workstation counts would however have resulted.
- Hospitals and schools which fall under the umbrella of a State or Territory organisation, were generally excluded from the survey because of the lack of centralised records relating to certain data items and the substantial extra costs involved in covering such units individually.
- Military personnel have been excluded from staffing figures.

### RELIABILITY OF DATA

**5** Because the survey does not have a sample component, the data are not subject to sampling variability. However, other inaccuracies collectively referred to as non-sampling error may affect the data. These non-sampling errors may arise from a number of sources, including:

- errors in the reporting of data by respondents;
- errors in the capturing or processing of data;
- estimation for missing or mis-reported data; and
- definition and classification errors.

**6** 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.

**STATISTICAL UNIT**

**7** The units for which statistics were reported in the survey were each department and statutory authority as defined above.

**REFERENCE PERIOD**

**8** Data contained in the tables of this publication relate to the financial year ended June 1994.

**ROUNDING**

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

**SYMBOLS AND OTHER  
ABBREVIATIONS**

**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 separate publication, but included in totals where applicable

**..** not applicable

**—** nil or rounded to zero

## APPENDIX

### PERCENTILE ANALYSIS OF IT&T USAGE PERFORMANCE RATIOS

The following table shows information about the distribution of the performance ratios shown in table 13. They are presented here to assist users with a more detailed analysis of the data shown in this publication.

While statistical averages and aggregates are generally sufficient for users to be able to properly interpret a set of statistics, the data in this collection is influenced by some fairly extreme values. Therefore table 13 shows the distribution of the individual responses and, in particular, enables users to get a better feel for the difference between the more typical federal and State organisations included in the collection.

#### HOW TO USE THE DATA

The data in table 13 are based on a size ordered distribution of ratio values as calculated for each individual organisation. The percentile columns show the values of the ratios below which 10, 25, 50, 75 and 90 % of the individual values fall. Median values are therefore those shown in the 50% column.

The use of the data in the table 13 is best explained by an example.

Using the second performance ratio in table 13 (computer users/total employment) for federal organisations, the ratios show:

- that the 10% of organisations with the lowest ratios had 60.8% or less staff who were computer users;
- that the 25% of organisations with the lowest ratios had 80.2% or less staff who were computer users;
- that the median value below which half the organisations fall was 98.6% (i.e. almost all staff were computer users);
- that for the upper quarter of organisations all staff were computer users (i.e. the 75% and 90% columns are 100%).



# SELECTED IT&T PERFORMANCE RATIOS BY PERCENTILE FOR FEDERAL AND STATE GOVERNMENT ORGANISATIONS, 1993-94

Ratio	Unit	Percentiles					Mean
		10%	25%	50%	75%	90%	
FEDERAL GOVERNMENT ORGANISATIONS							
Computer users/total employment	%	60.8	80.2	98.6	100.0	100.0	84.4
Workstations per computer user	no.	1.0	1.1	1.2	1.4	1.9	1.3
Payments to external IT&T agencies/in-house support costs	%	17.0	34.7	65.3	154.2	390.6	78.3
Payments to external IT&T agencies/total IT&T expenses	%	3.0	11.6	22.6	42.1	60.1	26.9
Software purchases/total IT&T expenses	%	1.0	3.1	6.7	11.2	14.2	7.1
Cost of maintaining disaster recovery plans per computer user	\$	0	0	0	20	94	36
Computer users per IT&T professional	no.	8.6	16.0	22.8	34.5	68.0	18.6
Total employment/IT&T professional staff	no.	10.8	16.8	23.6	47.6	78.7	22.0
IT&T expenses per employee	\$	2 800	4 600	7 900	10 600	15 100	8 000
IT&T expenses per user	\$	4 300	5 700	8 100	11 600	19 000	9 500
In-house support costs per computer user	\$	600	1 100	2 100	3 500	5 800	3 300
Cost of in-house IT&T training per computer user	\$	0	0	59	183	252	117
STATE GOVERNMENT ORGANISATIONS							
Computer users/total employment	%	36.2	67.3	86.7	100.0	100.0	64.2
Workstations per computer user	no.	0.7	0.9	1.1	1.3	1.5	1.1
Payments to external IT&T agencies/in-house support costs	%	12.5	35.4	95.3	203.6	360.3	161.6
Payments to external IT&T agencies/total IT&T expenses	%	3.6	13.8	28.5	47.9	69.7	38.2
Software purchases/total IT&T expenses	%	0.3	1.9	4.8	9.4	17.2	5.4
Cost of maintaining disaster recovery plans per computer user	\$	0	0	0	10	67	110
Computer users per IT&T professional	no.	9.2	17.1	28.2	44.1	79.8	32.4
Total employment/IT&T professional staff	no.	11.4	22.5	36.1	61.2	117.7	50.5
IT&T expenses per employee	\$	1 300	2 100	3 900	7 700	13 700	4 100
IT&T expenses per user	\$	2 100	3 200	5 400	9 100	15 500	6 400
In-house support costs per computer user	\$	0	800	1 400	2 400	3 700	1 500
Cost of in-house IT&T training per computer user	\$	0	0	41	118	222	65
TOTAL FEDERAL AND STATE ORGANISATIONS							
Computer users/total employment	%	41.5	69.8	89.2	100.0	100.0	72.0
Workstations per computer user	no.	0.8	1.0	1.1	1.3	1.8	1.2
Payments to external IT&T agencies/in-house support costs	%	13.6	34.8	86.4	199.2	360.3	108.4
Payments to external IT&T agencies/total IT&T expenses	%	3.4	12.9	27.8	46.4	68.8	32.0
Software purchases/total IT&T expenses	%	0.6	2.1	5.2	9.6	15.8	6.3
Cost of maintaining disaster recovery plans per computer user	\$	0	0	0	14	86	77
Computer users per IT&T professional	no.	8.9	16.7	27.4	42.7	72.1	24.3
Total employment/IT&T professional staff	no.	11.4	19.4	33.2	60.3	109.0	33.8
IT&T expenses per employee	\$	1 400	2 600	4 700	8 400	14 800	5 600
IT&T expenses per user	\$	2 200	3 700	6 000	10 300	16 300	7 800
In-house support costs per computer user	\$	0	800	1 600	2 600	4 700	2 300
Cost of in-house IT&T training per computer user	\$	0	0	45	130	242	89

## GLOSSARY

<b>Capital expenditure</b>	Includes all costs capitalised in the organisations' books, including assets acquired under finance leases, and progress payments made to contractors for capital work done by them. Excludes interest paid. This expenditure relates to purchases made in the reference period only.
<b>Computer users</b>	The number of persons working for the organisation who are required to use a computer on, at least, a weekly basis.
<b>Depreciation</b>	The financial charges made to the accounts to reflect that part of the value of the asset that may be regarded as having been used up in a particular accounting period. Includes depreciation expenses in respect of assets acquired under finance leases, for lessees only. Includes depreciation on software assets.
<b>Disaster recovery plans</b>	<p>Process for the resumption of computer infrastructure operation (including software and hardware) following a physical site failure.</p> <p>There are commonly three levels of disaster recovery plans, namely:</p> <ul style="list-style-type: none"><li>▪ Cold site — floor space and environmental (i.e. power and air-conditioning) allocated specifically for a disaster recovery computing environment.</li><li>▪ Warm site — the provision of computing resources allocated for disaster recovery that can be used to run existing computing operations within an agreed time-frame.</li><li>▪ Hot site — a back-up computing environment available for immediate use with zero down-time, and/or running in parallel with the current system, on another site.</li></ul> <p>The costs involved in maintaining disaster recovery plans include wages and salaries of staff dedicated to providing maintenance to disaster recovery, program development, software, hardware, and off-site storage costs.</p>
<b>Dumb terminals</b>	Equipment providing access to computing facilities which lacks independent processing capabilities.
<b>Employment</b>	The number of persons employed during the last pay period ending in June 1994. Includes full-time and part-time employees, permanent, temporary and casual employees, managerial and executive employees, and employees absent on paid or prepaid leave. Excludes non-salaried board members, self-employed persons such as consultants, persons paid solely by commission without retainer, and volunteers.
<b>Information network and database services</b>	Includes on-line electronic databases and news databases.

<b>In-house IT&amp;T support costs</b>	The estimated costs of providing information technology and telecommunications support by the professional information technology and telecommunications employees of the organisation. These costs include wages and salaries and materials consumed. They exclude work performed by staff which is not of a support nature to systems or systems users, e.g. data entry and other keying done by general staff using computers in the performance of their job; also excluded is the cost of work which contributes directly to the production of marketed goods and services.
<b>IT&amp;T operating expenses</b>	Includes wages and salaries of professional information technology and telecommunications staff; purchases of information technology and telecommunications equipment which have not been capitalised; depreciation on information technology and telecommunications assets; payments for outsourced information technology and telecommunications services and related work; payments to contractors and consultants for information technology and telecommunications services and related work; payments to telecommunications service providers; software purchases; repair and maintenance of information technology and telecommunications equipment; operating lease and hiring expenses.
<b>IT&amp;T professionals</b>	Professional or para-professional information technology and telecommunications staff. These are employees who have a relevant tertiary qualification or recognised vocational training.
<b>Large-scale computers</b>	Mainframes and super computers (i.e. systems listed at a price generally more than \$1.5 million).
<b>Mini-computers</b>	Mid-range systems listed at a price generally between \$15,000 and \$1.5 million.
<b>Other IT&amp;T operating expenses</b>	Includes repair and maintenance expenses and operating lease and hiring expenses.
<b>Other work stations</b>	Devices with high graphics or other special capabilities.
<b>Payments to contractors and consultants</b>	Payments to businesses and self-employed persons outside the organisation who provide information technology and telecommunications services and related work that is contracted in.
<b>Payments to external IT&amp;T agencies</b>	Comprises three components, namely, payments for outsourced services, payments to contractors and consultants, and payments to telecommunications service providers.
<b>Payments for outsourced services</b>	Payments for the contracting out of information technology and telecommunications functions on a service agreement basis.
<b>Payments to telecommunications service providers</b>	Payments for leased voice and data lines, equipment rental, facsimile expenses, and televideo conferencing.
<b>Personal computers (PCs)</b>	Personal computers (including stand-alone, networked, portables, laptops, notebooks, pen-based and hand-held).
<b>Servers</b>	Includes PCs used as servers, in a LAN or WAN.

<b>Software and systems services</b>	Includes systems analysis, design and programming, system integration, software maintenance and facilities management.
<b>Staff usage on IT&amp;T activities</b>	The estimated staff-years of effort on information technology and telecommunications activities by professional and para-professional information technology and telecommunications staff.
<b>Staff years</b>	The estimated staff-years of effort on computer and communications activities by professional and para professional IT&T staff. For the purposes of this collection, a full-time employee can only work one staff year each year. For example, a full-time employee spending 40% of his/her working time on computer and communications activities during half of the year would contribute $0.4 \text{ staff} \times 0.5 \text{ years} = 0.2 \text{ staff years}$ .
<b>Wages and salaries</b>	The gross earnings accruing to all employees before taxation and other deductions.
<b>Workstations</b>	Includes personal computers, dumb terminals and other work stations.



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ISBN 0 642 23245 8

Recommended retail price: \$14.00