



GOVERNMENT USE OF INFORMATION TECHNOLOGY

AUSTRALIA

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- For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070 or Annette Scott on Melbourne 03 9615 7977.

NOTES

ABOUT THIS PUBLICATION	This publication presents results, in respect of the 1999–2000 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 third ABS survey of IT&T use by government, with the previous collections being conducted in respect of the 1993–94 and 1997–98 financial years. The 1999–2000 survey provides information on government expenditure on IT&T and IT employment.
COMPARABILITY WITH PREVIOUS COLLECTION	Users should take care when comparing data from this publication with previous surveys. In particular, the scope of the 1997–98 and 1999–2000 surveys differed, so figures in this publication are not comparable to the 1997–98 publication figures. More details on the scope differences can be found in paragraphs 6 to 8 of the Explanatory Notes.
DATA QUALITY	When interpreting the results of a survey it is important to take into account factors that may affect the reliability of estimates. Such factors can be classified as either sampling or non-sampling error. While the degree of sampling error for estimates presented in this publication can be considered small, estimates are subject to a higher degree of non-sampling error. The extent and sources of non-sampling errors are described in paragraphs 15 to 17 of the Explanatory Notes.
OTHER ABS INFORMATION TECHNOLOGY STATISTICS	Details of other ABS activities in the field of information technology statistics are available from the Information Technology Statistics theme page on the ABS web site (www.abs.gov.au). To access the theme page, select Themes from the menu on the home page. Details of other ABS publications relating to the production and use of information technologies in Australia can be found in paragraph 20 of the Explanatory Notes.
COMMENTS	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, Australian Bureau of Statistics, Locked Bag 10 Belconnen, ACT, 2616 or phone Canberra on 02 6252 5019.
ROUNDING	Where figures have been rounded discrepancies may occur between the sum of component items and the total.

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Acting Australian Statistician

GOVERNMENT USE OF INFORMATION TECHNOLOGY

SUMMARY

Total expenditure on information technology and telecommunications (IT&T) by government organisations during 1999–2000 was an estimated \$4.3b or 5% of total government operating expenditure.

Federal departments and agencies accounted for just under half (47%) of the total government expenditure on IT&T. State/territory departments and agencies accounted for slightly less (45%) and local government accounted for the balance (8%). When the proportion of IT&T expenditure to the total government operating expenditure is compared for each level of government, the following proportions are obtained 7% (federal), 4% (state/territory) and 2% (local government).

IT&T outsourcing expenses were \$1,168m or 27% of the total IT&T expenditure by government organisations in 1999–2000. While the ratio of IT&T outsourcing expenses to total IT&T operating expenses showed little variation between federal and state/territory governments at 29% and 27% respectively, a much lower ratio of 15% was reported by local government.

During 1999–2000, total IT&T operating expenses per employee were \$4,800. However, there was considerable variation across the three types of government, with total IT&T operating expenses estimated at \$9,500 per federal government employee, \$3,600 per state/territory government employee and \$2,300 per local government employee.

IT employees accounted for only 2% of total employment of government organisations at the end of June 2000. Federal departments and agencies had the highest proportion of IT employees to total employment (4%) compared with 1% for both state/territory and local government departments and agencies.

1

GOVERNMENT EXPENDITURE ON IT&T—Year ended 30 June 2000

	<i>Wages and salaries of IT employees</i>	<i>IT&T outsourcing expenses</i>	<i>Other IT&T operating expenses</i>	<i>Total IT&T operating expenses</i>
	\$m	\$m	\$m	\$m
Federal departments and agencies	531	589	927	2 047
State/Territory departments and agencies	435	530	1 003	1 968
Local government	84	49	201	334
Total	1 050	1 168	2 130	4 349

2

GOVERNMENT IT&T EXPENDITURE RATIOS—Year ended 30 June 2000

	<i>IT wages and salaries as a percentage of total IT&T operating expenses</i>	<i>IT&T outsourcing expenses as a percentage of total IT&T operating expenses</i>	<i>IT&T operating expenses as a percentage of total operating expenses</i>	<i>IT&T operating expenses per employee</i>
	%	%	%	\$'000
Federal departments and agencies	26	29	7	9.5
State/Territory departments and agencies	22	27	4	3.6
Local government	25	15	2	2.3
Total	24	27	5	4.8

GOVERNMENT IT EMPLOYMENT—Year ended 30 June 2000

	<i>Number of IT employees</i>	<i>IT employment as a percentage of total employment</i>
	<i>'000</i>	<i>%</i>
Federal departments and agencies	10	4
State/Territory departments and agencies	8	1
Local government	2	1
Total	20	2

EXPLANATORY NOTES

INTRODUCTION

1 This publication presents final results from the ABS 1999–2000 Government Technology Survey which focused on measuring government use of information technology and telecommunications (IT&T).

SURVEY SCOPE AND METHODOLOGY

2 The scope of the survey was federal, state/territory and local government organisations whose predominant activity falls within the institutional sector of General Government and the Reserve Bank of Australia. Public non-financial corporations and public financial corporations are not included in the scope of the survey.

3 The general government sector includes all agencies of government such as government departments, offices and bodies engaged in providing services free of charge or at prices significantly below their cost of production and non-market nonprofit institutions which are controlled and mainly financed by government.

4 Exclusions from the scope of the survey were:

- Education organisations, defined under ANZSIC Division N; and
- Foreign Government Representation, defined under ANZSIC class 8130.

5 The estimates presented in this publication are based upon a stratified sample of government organisations included in the survey's scope. The population frame was sourced from the ABS business register and government directories.

SCOPE CHANGES

6 The previous collection (1997–98) included organisations not defined as federal, state/territory or local government organisations. These organisations were referred to as 'Other government organisations' and included health networks, hospitals and those non-market nonprofit institutions mainly financed by government but where government control was unclear. These organisations were excluded from the 1999–2000 survey, with the exception of health networks and hospitals which have been included as part of each state health department.

7 The previous collection excluded Australian Defence Force permanent and general reserve personnel and associated IT&T expenses. The 1999–2000 survey includes IT&T expenses and employment associated with both Department of Defence public service employees and Australian Defence Force permanent and general reserve personnel.

8 Because of the differences between the 1997–98 and 1999–2000 surveys, it is recommended that users do not compare the estimates in this publication with those presented in the 1997–98 publication.

DATA QUALITY

9 When interpreting the results of a survey it is important to take into account factors that may affect the reliability of estimates. Such factors can be classified as either sampling or non-sampling error.

Sampling error

10 The estimates in this publication are based on a sample of 618 government organisations and, as such, are subject to sampling variability. That is, the estimates 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.

11 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.

EXPLANATORY NOTES *continued*

Sampling error continued

12 Sampling variability can also 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 to the size of the estimate.

13 The table below contains estimates of RSEs for a selection of statistics presented in this publication. RSEs for other statistics are available upon request.

RELATIVE STANDARD ERRORS, Government Expenditure on IT&T

	<i>Wages and salaries of IT employees</i>	<i>IT&T outsourcing expenses</i>	<i>Other IT&T operating expenses</i>	<i>Total IT&T operating expenses</i>
	%	%	%	%
Federal departments and agencies	1	2	1	1
State/Territory departments and agencies	2	2	1	1
Local government	4	3	4	3
Total	1	1	1	1

14 As an example of the use of the RSE table, an estimate of total IT&T expenses for local government organisations is \$334m. This estimate has an RSE of 3%, giving a standard error of \$10m (i.e. 3% of \$334m). Therefore there would be two chances in three that if all government organisations had been included in the survey, a figure in the range of \$324m to \$344m would have been obtained, and 19 chances in 20 that the figure would have been within the range of \$314m to \$354m.

Non-sampling error

15 Errors other than those due to sampling may occur because of deficiencies in the population frame from which the sample was drawn, 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. Factors contributing to non-sampling error have been described below. Note that survey estimates have been adjusted through an imputation process for missing data which also introduces the potential for non-sampling error.

16 Government structure varies across the three tiers of government (federal, state/territory and local) and across states/territories. The degree of centralisation of IT&T activity also varies across organisations, with some states/territories having a centralised entity undertaking most of the IT&T activity for most or all government departments. This heterogeneity in structure introduces the potential for duplication of activity recorded in the survey, with the activity of smaller units also included in the response for larger departments. It also introduces the potential for the omission of activity for smaller agencies which are not included in a larger department's response. While every effort has been made to minimise these errors through careful examination of responses and annual financial reporting by agencies, it has not been possible to completely remove this aspect of non-sampling error.

EXPLANATORY NOTES *continued*

Non-sampling error continued

17 The degree of outsourcing of IT&T services and approaches to recording IT&T expenses varies across organisations. This heterogeneity introduces the potential for inconsistency in reporting of IT&T expenses in the survey, in particular other IT&T expenses and contract/outsourcing expenses. While every effort has been made to minimise this inconsistency through careful design and testing of questionnaires, it has not been possible to completely remove this aspect of non-sampling error.

RESTRICTION OF OUTPUT

18 Data quality considerations have limited the output available from the survey. There is considerable diversity in the way government organisations have been established, particularly across the states and territories. The survey collected information from government organisations ranging from very large departments covering a broad range of functions and responsibilities, to relatively small agencies undertaking a narrow range of activities. This diversity in terms of size and functions affects the aggregation and interpretation of activity measures. For example, due to the diversity of units from which data were collected and aggregated, indicators such as the proportion of government organisations providing access to information via their web sites, or the proportion providing services using electronic means, can be misleading when comparisons are made across domains of interest (e.g. across states and territories).

ACKNOWLEDGMENT

19 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

20 The most recent issues of other ABS publications on the use and production of information technology goods and services in Australia are listed below:

Business Use of Information Technology, Australia, 2000–2001

(Cat. no. 8129.0)

Government Use of Information Technology, Australia, 1997–98

(Cat. no. 8119.0)

Household Use of Information Technology, Australia, 2000 (Cat. no. 8146.0)

Information Technology, Australia, 1998–99 (Cat. no. 8126.0)

Internet Activity, September quarter 2001 (Cat. no. 8153.0)

Use of Information Technology on Farms, Australia, June 2000

(Cat. no. 8150.0)

Use of the Internet by Householders, Australia, Nov 2000 (Cat. no. 8147.0)

ABBREVIATIONS

ABS Australian Bureau of Statistics

ANZSIC Australian and New Zealand Standard Industrial Classification

IT information technology

IT&T information technology and telecommunications

PAYG Pay-as-you-go tax

RSE relative standard error

SE standard error

GLOSSARY

IT employees	Refers to all employees who are predominantly engaged in IT and Web activities, providing services to users within the organisation or to external organisations or clients. Excluded are contractors for whom PAYG tax is not deducted, data entry or clerical administrative/secretarial staff, volunteers and workers on unpaid leave. Persons predominantly employed in IT activities include information technology managers, web designers, engineers, technicians, administrators, analysts, designers, programmers, testers, controllers and auditors.
Information technology and telecommunications (IT&T)	Refers to the services and technologies that enable information to be accessed, stored, processed, transformed, manipulated and disseminated over a variety of transmission media. It includes the transmission or communication of voice and/or data over these media. Transmission media include telephone, facsimile, Internet, data lines, satellite, microwave, radio, etc.
IT&T outsourcing expenses	Refers to payments to a third party vendor providing IT&T services. Payments can be for either ongoing or non ongoing services. Third party vendors may include consultants, self-employed persons or contractors for whom PAYG tax is not deducted.
Operating expenses	Includes expenses from abnormal items, but excludes extraordinary items. Also excluded are government transfer payments, e.g. grants to statutory authorities.
Other IT&T operating expenses	Includes non-capitalised purchases of IT&T goods and services, payments for telecommunication services, payments for leased IT equipment, IT repair and maintenance costs and other IT&T operating expenses. Excluded is capital expenditure on IT&T.
Wages and salaries of IT employees	Includes the wages and salaries of those employees predominantly employed on IT & Web activities. It includes payments for all employees for whom PAYG tax is deducted, including contractors for whom PAYG tax is deducted. Excluded from these payments are employer contributions to superannuation, payroll and fringe benefits taxes, worker's compensation premiums and costs and capitalised wages and salaries.

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