



**Australian
Bureau of
Statistics**

**1992-93
Information Technology in
Australia**

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Information Technology in Australia 1992-93

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AUSTRALIAN BUREAU OF STATISTICS

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INQUIRIES

- *for further information about the statistics in this publication and the availability of unpublished statistics, contact David McGeachie on Canberra (06) 252 5614 or Joseph Di Gregorio on (06) 252 5609.*
 - *for information about other statistics and services please refer to the back page of this publication.*
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Neither the International Standard Industrial Classification (ISIC) nor the Australian and New Zealand Standard Industrial Classification (ANZSIC) identify a separate Information Technology (IT) industry. Both classifications identify a number of industries in which at least some businesses earn income from the sale of IT goods and services. As not all businesses classified to these industries are involved with IT, the simple aggregation of statistics for these industries would not be consistent with user perceptions of what the 'IT industry' comprises. Accordingly, the industry statistics shown in this publication have been further classified according to the degree of specialisation in IT goods and services of the businesses surveyed. A more complete explanation of the methodology utilised can be found on pages 2 to 5.

SUMMARY OF FINDINGS

Some of the more significant findings from the 1992-93 survey are:

Number of businesses

- There were 9,497 businesses classified to ANZSIC industries which encompass the so called IT industry. Of these, 7,243 were mainly engaged in IT activities (IT specialists) and 260 undertook IT activities as a secondary activity.
- Of the 7,243 IT specialists, 4,315 were in the Computer Consultancy Services industry and 1,488 were classified to Computer Wholesaling. The other 1,440 were spread across the 11 other industries surveyed.
- Secondary IT producers were mainly classified to the Wholesale sector.

Employment and earnings

- The 7,243 IT specialist businesses employed 136,788 people and had gross income of \$27.5 billion. They had earnings (before interest and tax) of \$3.8 billion and operating profit before tax of \$2.7 billion.
- Secondary IT producers employed 8,664 people, had gross income of \$2.1 billion, earnings before interest and tax of \$121 million and operating profit of \$90 million.
- IT specialist businesses earned 98 per cent of their income from IT goods and services; the secondary IT businesses only earned 14 per cent from IT goods and services.

Profitability

- Two-thirds of IT specialist businesses recorded a profit in 1992-93; about 24 per cent of these earned a profit of more than 50 per cent of the value of their assets.
- 3,085 IT specialist businesses had turnover of greater than \$75,000 for each person employed.

International trade

- For the IT industry as defined, there was a substantial trade deficit with imports of \$5.5 billion and exports of \$1.8 billion. Imports mainly consisted of computer and communications hardware.
- Computer hardware imports of \$3.7 billion far exceeded production and exports (\$961 million and \$820 million, respectively).
- Production of computer services and communications and other services (totalling \$16.5 billion) was mostly consumed locally with just \$352 million devoted to exports. \$422 million was imported during 1992-93.

EXPLANATORY NOTES

Introduction

This is the first attempt by the ABS to produce a comprehensive overview of the production and trade of Information Technology (IT) goods and services in Australia. It is part of ABS' work to increase and enhance the statistical data base for the services sector.

The statistics in this publication cover the main industries involved in the production and distribution of IT goods and services and have mainly been derived from an Information Technology Survey undertaken in 1993-94 in respect of the financial year 1992-93.

This publication provides a statistical summary of private sector business activities classified in accordance with the Australian and New Zealand Standard Industrial Classification (ANZSIC) industry and by degree of specialisation in selected IT goods and services.

Considerable effort has been expended by Australian and international organisations to develop and agree on standard concepts and definitions to define both the industries and activities associated with IT. To date however, there is no general agreement on which goods and services should be included. The technology associated with the collection, organisation and communication of data and information is complex and includes a variety of skills, equipment, components and supporting services. While users each may prefer a wider or narrower approach to defining a set of IT products, it is generally accepted that the centrepiece of the IT revolution is the miniaturisation of computer circuits into the form of chip-based integrated circuits (ICs) which includes microprocessors, memory, etc. This is the basis of the approach taken by Miles (1990)¹.

The IT industry according to Miles is made up of businesses which create goods and services based around IC technology. This approach is a little imprecise but underscores the difficulty of clearly defining what is intended by the term IT. The ABS has paid close attention to users' statistical requirements, practicability of collection and cost in resolving what goods and services are included and excluded. Electronic components, for instance, could legitimately be included in the information set because of the importance of these goods in the production of IT. For this first survey however the ABS has adopted a fairly narrow definition of IT.

IT goods and services

After due user consultation the ABS has determined that the following goods and services should be included:

Computer hardware

- PCs and PC based systems
- Mid-range systems
- Large-scale systems
- Other workstations
- Peripheral computer equipment
 - Input/output devices
 - Laser and other printer systems
 - Other peripheral computer equipment
- Other computer equipment, components, parts and consumables

1. Miles, Ian. *Mapping and measuring the information economy* (c 1990).

Communications hardware

- Switching equipment
- Transmission equipment
- Customer equipment, fixed premise
- Customer equipment, mobile
- Communication cables
 - Coaxial
 - Twisted pair, copper
 - Fibre optic
 - Other
- Satellite equipment
- Radio equipment, fixed
- Radio equipment, mobile
- Other communications hardware

Packaged software

- Applications
- Systems management and utilities
- Tools
- Other software

Computer services

- Software and systems services
 - Systems analysis, design and programming
 - System integration
 - Software maintenance
 - Facilities management
- Data entry, processing and time sharing services
- Information network and database services
- Hardware servicing, repairs and maintenance
- Other computer services
 - Training and education
 - Installation and cabling services
 - Other computer services (specify)

Communication services

- Carrier services
 - Fixed network
 - Access including connections and rental
 - Local
 - Domestic long distance
 - International
 - Mobile services
 - Other (specify)
- Non-carrier telecommunication or reseller services
- Network and management services
- Communication consultancy
- Hardware servicing repair and maintenance
- Other communication services (specify)

It is reasonable to expect that this list of goods and services may change over time to take account of significant innovations in IT or to broaden or reduce the scope of the collection. There may also be some refinement of the items in subsequent collections resulting from experience gained during the initial 1992-93 collection.

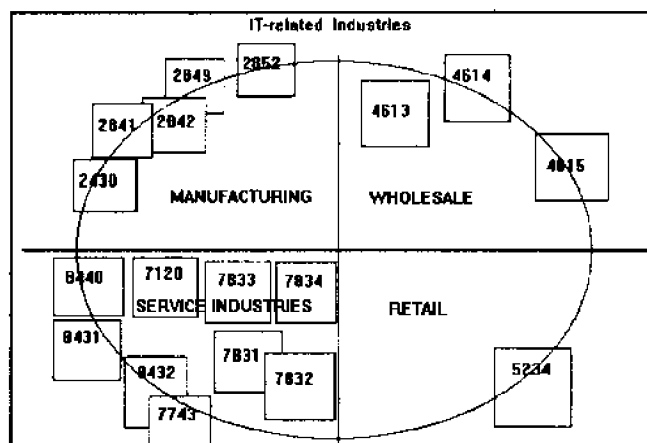
The concept of an IT industry

Neither the International Standard Industrial Classification (ISIC) nor the ANZSIC define an IT industry in ways which fully meet the conceptual needs of users.

Users in Australia generally consider the IT 'industry' to be made up of those business units which predominantly earn their income from IT goods and services and those which earn their income from IT goods and services as a secondary activity. In certain circumstances the 'industry' may also include those businesses which produce and consume IT goods and services 'in-house'.

This perception is at odds with the standards normally applying to industry statistics in Australia, in which only those businesses which **predominantly** earn their income from a specific activity would be included. It is however a valid reflection of users information needs and therefore requires an appropriate statistical response. The approach taken by the ABS has therefore been to identify the IT businesses in certain standard industries as defined by the ANZSIC. For instance, a significant number of the businesses classified to ANZSIC class 4614 Business Machine Wholesaling n.e.c. will not derive any of their income from the distribution of IT goods (eg. a business wholesaling only photocopiers) whilst others will derive some or all of their income from IT sales (eg. a business which wholesales fax machines as part of its range of office machines will derive some income from IT sales). It has, therefore, been considered necessary to include in the concept of 'industry' a range of ANZSIC industry classes for which some primary activities would normally not be considered part of an IT industry. The effect of defining the IT industry in this way is illustrated in the following diagram where the area within the oval comprises both specific IT ANZSIC classes and others in which only some businesses have a primary or significant secondary role in the provision of IT goods and services.

IT industry model



The ANZSIC industries identified are those in which it is expected to find significant primary and/or secondary IT activity. These are:

- 2430 Recorded Media Manufacturing and Publishing
- 2841 Computer and Business Machine Manufacturing
- 2842 Telecommunication, Broadcasting and Transceiving Equipment Manufacturing
- 2849 Electronic Equipment Manufacturing n.e.c.
- 2852 Electric Cable and Wire Manufacturing
- 4613 Computer Wholesaling
- 4614 Business Machine Wholesaling

4615 Electrical and Electronic Equipment Wholesaling n.e.c.
 5234 Domestic Appliance Retailing
 7120 Telecommunication Services
 7743 Plant Hiring or Leasing
 7831 Data Processing Services
 7832 Information Storage and Retrieval Services
 7833 Computer Maintenance Services
 7834 Computer Consultancy Services
 8431 Higher Education
 8432 Technical and Further Education
 8440 Other Education

Although the education industries (8431, 8432 and 8440) are notionally included in the set of relevant industries, they were not included in this first survey of IT producers as it was felt that there would be very few businesses whose primary source of income was from IT education.

Related statistics

Other statistics relevant to IT are contained in the following publications:

Household Use of Information Technology, February 1994 (8128.0)

Computing Services Industry, Australia, 1992-93 (8669.0)

Computing Services Industry, Australia, 1987-88 (8669.0)

Information Technology Activity Survey, Western Australia, June 1991
(8124.0)

In addition to the above, the ABS also expects, later this year, to release further statistics on in-house IT production and usage of IT for the business enterprise and general government sectors.

General note to the tables

In the following tables, businesses classified to each ANZSIC class are subdivided into columns according to their degree of IT specialisation. IT specialists are defined as businesses which have an IT specialisation equal to or greater than 50 per cent. Secondary IT producers are those businesses which have an IT specialisation of less than 50 per cent but greater than zero. Non-IT producers make up the balance of businesses classified to each ANZSIC class.

Specialisation is calculated by dividing IT revenue by total turnover and expressing the result as a percentage.

It should be noted that IT revenue covers income from all IT goods and services sold, including hardware leasing, software licence fees and royalties, etc, all of which have been treated as income from the provision of an IT service.

Figures for ANZSIC industry 2430 Recorded Media Manufacturing and Publishing have been suppressed on the basis that those found to have IT activity were too small in number to produce a reliable estimate.

Figures for ANZSIC industry 5234 Domestic Appliance Retailing are not included in this publication but may be released at a later date following a more complete evaluation of the results.

For the Telecommunications Services industry (ANZSIC 7120) figures from Telstra's *Annual Report 1993* have been utilised.

In the following tables, where counts of businesses are shown, the business unit used is the Management Unit (MU). In most cases an MU will correspond to the operations of a legal entity such as a company. For very large businesses which have divisionalised their operations, an MU will mostly correspond to one of these operating divisions.

Symbols

The following symbols, where shown in columns or elsewhere in tables mean:

- nil or rounded to zero
- . . not applicable
- n.a. not available
- n.p. not published (data is confidential)
- * subject to high sampling variability — exercise caution
(relative standard error is greater than or equal to 25%)

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

Abbreviations

ABS	Australian Bureau of Statistics
ANZSIC	Australian and New Zealand Standard Industrial Classification
IT	Information Technology
EBIT	Earnings before interest and tax
OPBT	Operating profit before tax

Comments on the statistics

Comments on the statistics presented in this publication and suggestions for further improvement would be most welcome and should be forwarded to:

The Director
Small Business and Science and Technology Section
Australian Bureau of Statistics
PO Box 10
Belconnen ACT 2616

TABLE 1. NUMBER OF BUSINESSES BY INDUSTRY

ANZSIC	IT specialists	Secondary IT producers	Non-IT producers	Total
2841 Computer and Business Machine Manufacturing	120	3	*34	158
2842 Telecommunication, Broadcasting and Transceiving				
Equipment Manufacturing	*69	*1	70	140
2849 Electronic Equipment Manufacturing n.e.c.	*31	*25	201	257
2852 Electric Cable and Wire Manufacturing	*28	1	27	56
4613 Computer Wholesaling	1,488	*11	—	1,500
4614 Business Machine Wholesaling	*46	136	253	435
4615 Electrical and Electronic Equipment Wholesaling n.e.c.	348	83	1,406	1,837
7120 Telecommunication Services	189	—	2	191
7743(a) Plant Hiring or Leasing	*38	n.a.	n.a.	n.a.
7831 Data Processing Services	262	—	—	262
7832 Information Storage and Retrieval Services	*67	—	—	67
7833 Computer Maintenance Services	242	—	—	242
7834 Computer Consultancy Services	4,315	—	—	4,315
Total	7,243	260	1,993	9,497

(a) Figures for this industry were derived by only selecting those businesses thought to be significantly involved in IT. It is probable that some undercoverage of this industry may have resulted. Figures for secondary and non-IT producers have not been obtained.

TABLE 2. NUMBER OF BUSINESSES BY INDUSTRY AND EMPLOYMENT SIZE

ANZSIC	Employer size group				
	1-9	10-19	20-49	50-99	100+
IT SPECIALISTS					
2841 Computer and Business Machine Manufacturing	73	23	19	4	1
2842 Telecommunication, Broadcasting and Transceiving					
Equipment Manufacturing	18	26	8	3	14
2849 Electronic Equipment Manufacturing n.e.c.	10	7	9	—	5
2852 Electric Cable and Wire Manufacturing	20	3	—	2	3
4613 Computer Wholesaling	1,221	154	66	31	16
4614 Business Machine Wholesaling	34	6	3	—	3
4615 Electrical and Electronic Equipment Wholesaling n.e.c.	290	43	9	1	5
7120 Telecommunication Services	172	2	11	1	3
7743(a) Plant Hiring or Leasing	30	1	7	—	—
7831 Data Processing Services	224	20	15	1	2
7832 Information Storage and Retrieval Services	58	—	8	—	1
7833 Computer Maintenance Services	201	21	12	3	5
7834 Computer Consultancy Services	4,064	137	81	12	21
Total	6,415	443	248	58	79
SECONDARY IT PRODUCERS					
2841 Computer and Business Machine Manufacturing	1	—	1	1	—
2842 Telecommunication, Broadcasting and Transceiving					
Equipment Manufacturing	1	—	—	—	—
2849 Electronic Equipment Manufacturing n.e.c.	6	17	—	—	2
2852 Electric Cable and Wire Manufacturing	—	—	—	—	1
4613 Computer Wholesaling	7	3	—	—	1
4614 Business Machine Wholesaling	99	24	5	1	7
4615 Electrical and Electronic Equipment Wholesaling n.e.c.	50	13	11	7	2
7120 Telecommunication Services	—	—	—	—	—
7743 Plant Hiring or Leasing	n.a.	n.a.	n.a.	n.a.	n.a.
7831 Data Processing Services	—	—	—	—	—
7832 Information Storage and Retrieval Services	—	—	—	—	—
7833 Computer Maintenance Services	—	—	—	—	—
7834 Computer Consultancy Services	—	—	—	—	—
Total	164	57	17	9	13

For footnote see end of table.

TABLE 2. NUMBER OF BUSINESSES BY INDUSTRY AND EMPLOYMENT SIZE—continued

		Employer size group				
ANZSIC		1-9	10-19	20-49	50-99	100+
NON-IT PRODUCERS						
2841	Computer and Business Machine Manufacturing	32	—	1	1	—
2842	Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	54	11	2	1	1
2849	Electronic Equipment Manufacturing n.e.c.	149	18	14	14	6
2852	Electric Cable and Wire Manufacturing	7	2	12	2	4
4613	Computer Wholesaling	—	—	—	—	—
4614	Business Machine Wholesaling	219	27	5	1	1
4615	Electrical and Electronic Equipment Wholesaling n.e.c.	1,075	168	113	31	18
7120	Telecommunication Services	2	—	—	—	—
7743	Plant Hiring or Leasing	n.a.	n.a.	n.a.	n.a.	n.a.
7831	Data Processing Services	—	—	—	—	—
7832	Information Storage and Retrieval Services	—	—	—	—	—
7833	Computer Maintenance Services	—	—	—	—	—
7834	Computer Consultancy Services	—	—	—	—	—
Total		1,538	226	148	51	30

(a) Figures for this industry were derived by only selecting those businesses thought to be significantly involved in IT. It is probable that some undercoverage of this industry may have resulted. Figures for secondary and non-IT producers have not been obtained.

TABLE 3. EMPLOYMENT BY INDUSTRY
(persons)

ANZSIC		IT specialists	Secondary IT producers	Non-IT producers	Total
2841	Computer and Business Machine Manufacturing	n.p.	n.p.	n.p.	n.p.
2842	Telecommunication, Broadcasting and Transceiving	—	—	—	—
	Equipment Manufacturing	7,705	4	576	8,285
2849	Electronic Equipment Manufacturing n.e.c.	1,452	825	3,403	5,681
2852	Electric Cable and Wire Manufacturing	1,087	1,083	2,819	4,989
4613	Computer Wholesaling	15,556	366	—	15,922
4614	Business Machine Wholesaling	n.p.	n.p.	n.p.	n.p.
4615	Electrical and Electronic Equipment Wholesaling n.e.c.	2,871	1,720	19,157	23,748
7120	Telecommunication Services	n.p.	—	n.p.	n.p.
7743	Plant Hiring or Leasing	n.p.	n.a.	n.a.	n.p.
7831	Data Processing Services	2,049	—	—	2,049
7832	Information Storage and Retrieval Services	636	—	—	636
7833	Computer Maintenance Services	4,778	—	—	4,778
7834	Computer Consultancy Services	22,605	—	—	22,605
Total		136,788	8,664	27,651	173,103

TABLE 4. GROSS INCOME BY INDUSTRY
(\$'000)

ANZSIC		IT specialists	Secondary IT producers	Non-IT producers	Total
2841	Computer and Business Machine Manufacturing	n.p.	n.p.	n.p.	n.p.
2842	Telecommunication, Broadcasting and Transceiving	—	—	—	—
	Equipment Manufacturing	1,802,674	390	81,777	1,884,841
2849	Electronic Equipment Manufacturing n.e.c.	290,368	77,177	475,785	843,330
2852	Electric Cable and Wire Manufacturing	412,270	303,085	572,008	1,287,363
4613	Computer Wholesaling	4,931,488	68,348	—	4,999,836
4614	Business Machine Wholesaling	n.p.	n.p.	n.p.	n.p.
4615	Electrical and Electronic Equipment Wholesaling n.e.c.	726,628	634,248	4,596,486	5,957,362
7120	Telecommunication Services	n.p.	—	n.p.	n.p.
7743	Plant Hiring or Leasing	n.p.	n.a.	n.a.	n.p.
7831	Data Processing Services	147,919	—	—	147,919
7832	Information Storage and Retrieval Services	103,797	—	—	103,797
7833	Computer Maintenance Services	1,085,167	—	—	1,085,167
7834	Computer Consultancy Services	2,763,777	—	—	2,763,777
Total		27,502,107	2,057,527	5,910,923	35,470,556

TABLE 5. IT REVENUE BY INDUSTRY
(S'000)

ANZSIC		IT specialists	Secondary IT producers	Total
2841	Computer and Business Machine Manufacturing	n.p.	n.p.	n.p.
2842	Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	1,752,395	28	1,752,423
2849	Electronic Equipment Manufacturing n.e.c.	229,808	9,717	239,525
2852	Electric Cable and Wire Manufacturing	404,650	102,012	506,662
4613	Computer Wholesaling	4,820,212	8,014	4,828,226
4614	Business Machine Wholesaling	n.p.	n.p.	n.p.
4615	Electrical and Electronic Equipment Wholesaling n.e.c.	699,204	49,636	748,840
7120	Telecommunication Services	n.p.	—	n.p.
7743	Plant Hiring or Leasing	n.p.	n.a.	n.p.
7831	Data Processing Services	144,203	—	144,203
7832	Information Storage and Retrieval Services	102,625	—	102,625
7833	Computer Maintenance Services	1,082,297	—	1,082,297
7834	Computer Consultancy Services	2,701,669	—	2,701,669
Total		26,888,815	290,165	27,178,980

TABLE 6. WAGES AND SALARIES BY INDUSTRY
(S'000)

ANZSIC		IT specialists	Secondary IT producers
2841	Computer and Business Machine Manufacturing	n.p.	n.p.
2842	Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	323,244	91
2849	Electronic Equipment Manufacturing n.e.c.	55,027	24,700
2852	Electric Cable and Wire Manufacturing	43,697	40,622
4613	Computer Wholesaling	581,588	10,356
4614	Business Machine Wholesaling	n.p.	n.p.
4615	Electrical and Electronic Equipment Wholesaling n.e.c.	90,616	61,330
7120	Telecommunication Services	n.p.	—
7743	Plant Hiring or Leasing	n.p.	n.a.
7831	Data Processing Services	52,627	—
7832	Information Storage and Retrieval Services	22,646	—
7833	Computer Maintenance Services	223,221	—
7834	Computer Consultancy Services	909,025	—
Total		6,003,161	322,229

TABLE 7. RATIO OF TURNOVER TO EMPLOYMENT BY INDUSTRY
(thousand)

ANZSIC		IT specialists	Secondary IT producers	Non-IT producers	Total
2841	Computer and Business Machine Manufacturing	392	370	96	376
2842	Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	233	1,040	128	226
2849	Electronic Equipment Manufacturing n.e.c.	196	94	139	147
2852	Electric Cable and Wire Manufacturing	373	278	202	256
4613	Computer Wholesaling	316	187	..	313
4614	Business Machine Wholesaling	244	204	109	200
4615	Electrical and Electronic Equipment Wholesaling n.e.c.	253	367	239	250
7120	Telecommunication Services	n.p.	..	n.p.	n.p.
7743(a)	Plant Hiring or Leasing	224	n.a.	n.a.	n.a.
7831	Data Processing Services	72	..	..	72
7832	Information Storage and Retrieval Services	163	..	..	163
7833	Computer Maintenance Services	227	..	..	227
7834	Computer Consultancy Services	121	..	..	121

(a) Figures for this industry were derived by only selecting those businesses thought to be significantly involved in IT. It is probable that some undercoverage of this industry may have resulted. Figures for secondary and non-IT producers have not been obtained.

TABLE 8. RATIO OF TURNOVER TO WAGES AND SALARIES BY INDUSTRY

ANZSIC	IT specialists	Secondary IT producers
2841 Computer and Business Machine Manufacturing	7.06	12.67
2842 Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	5.55	4.27
2849 Electronic Equipment Manufacturing n.e.c.	5.16	3.12
2852 Electric Cable and Wire Manufacturing	9.27	7.42
4613 Computer Wholesaling	8.46	6.60
4614 Business Machine Wholesaling	4.46	5.10
4615 Electrical and Electronic Equipment Wholesaling n.e.c.	8.00	10.30
7120 Telecommunication Services	n.p.	..
7743 Plant Hiring or Leasing	5.98	n.a.
7831 Data Processing Services	2.79	..
7832 Information Storage and Retrieval Services	4.57	..
7833 Computer Maintenance Services	4.85	..
7834 Computer Consultancy Services	3.00	..

TABLE 9. CAPITAL EXPENDITURE BY INDUSTRY
(\$'000)

ANZSIC	IT specialists	Secondary IT producers
2841 Computer and Business Machine Manufacturing	n.p.	n.p.
2842 Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	*44,898	—
2849 Electronic Equipment Manufacturing n.e.c.	9,216	1,494
2852 Electric Cable and Wire Manufacturing	19,202	5,310
4613 Computer Wholesaling	50,611	30
4614 Business Machine Wholesaling	n.p.	n.p.
4615 Electrical and Electronic Equipment Wholesaling n.e.c.	14,120	4,335
7120 Telecommunication Services	n.p.	—
7743 Plant Hiring or Leasing	n.p.	n.a.
7831 Data Processing Services	9,740	—
7832 Information Storage and Retrieval Services	n.p.	n.p.
7833 Computer Maintenance Services	14,686	—
7834 Computer Consultancy Services	120,046	—
Total	4,011,850	20,331

TABLE 10. TOTAL EXPENSES BY INDUSTRY
(\$'000)

ANZSIC	IT specialists	Secondary IT producers
2841 Computer and Business Machine Manufacturing	n.p.	n.p.
2842 Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	1,730,080	371
2849 Electronic Equipment Manufacturing n.e.c.	270,052	77,006
2852 Electric Cable and Wire Manufacturing	316,417	272,526
4613 Computer Wholesaling	4,828,578	65,878
4614 Business Machine Wholesaling	n.p.	n.p.
4615 Electrical and Electronic Equipment Wholesaling n.e.c.	704,157	614,211
7120 Telecommunication Services	n.p.	—
7743 Plant Hiring or Leasing	n.p.	n.a.
7831 Data Processing Services	132,329	—
7832 Information Storage and Retrieval Services	93,012	—
7833 Computer Maintenance Services	1,006,951	—
7834 Computer Consultancy Services	2,517,216	—
Total	24,950,125	1,994,850

TABLE 11. EARNINGS BEFORE INTEREST AND TAX BY INDUSTRY
(S'000)

<i>ANZSIC</i>	<i>IT specialists</i>	<i>Secondary IT producers</i>	<i>Total(a)</i>
2841 Computer and Business Machine Manufacturing	n.p.	n.p.	n.p.
2842 Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	107,535	19	107,553
2849 Electronic Equipment Manufacturing n.e.c.	-1,408	3,547	*2,139
2852 Electric Cable and Wire Manufacturing	131,347	45,094	176,441
4613 Computer Wholesaling	212,596	3,499	216,095
4614 Business Machine Wholesaling	n.p.	n.p.	n.p.
4615 Electrical and Electronic Equipment Wholesaling n.e.c.	49,156	29,730	78,889
7120 Telecommunication Services	n.p.	—	n.p.
7743 Plant Hiring or Leasing	n.p.	n.a.	n.a.
7831 Data Processing Services	19,422	—	19,422
7832 Information Storage and Retrieval Services	14,852	—	14,852
7833 Computer Maintenance Services	99,832	—	99,832
7834 Computer Consultancy Services	288,014	—	288,014
Total	3,759,222	120,673	3,879,897

(a) Total of specialist and secondary producer columns.

TABLE 12. OPERATING PROFIT BEFORE TAX BY INDUSTRY
(S'000)

<i>ANZSIC</i>	<i>IT specialists</i>	<i>Secondary IT producers</i>	<i>Total(a)</i>
2841 Computer and Business Machine Manufacturing	n.p.	n.p.	n.p.
2842 Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	93,829	19	93,848
2849 Electronic Equipment Manufacturing n.e.c.	*(3,834)	1,981	*(1,853)
2852 Electric Cable and Wire Manufacturing	124,325	36,806	161,131
4613 Computer Wholesaling	167,077	3,081	170,158
4614 Business Machine Wholesaling	n.p.	n.p.	n.p.
4615 Electrical and Electronic Equipment Wholesaling n.e.c.	42,658	19,991	62,649
7120 Telecommunication Services	n.p.	—	n.p.
7743 Plant Hiring or Leasing	n.p.	n.a.	n.p.
7831 Data Processing Services	15,487	—	15,487
7832 Information Storage and Retrieval Services	10,779	—	10,779
7833 Computer Maintenance Services	92,474	—	92,474
7834 Computer Consultancy Services	246,240	—	246,240
Total	2,736,016	89,922	2,825,934

(a) Total of specialist and secondary producer columns.

TABLE 13. NUMBER OF IT BUSINESSES BY INDUSTRY AND OPERATING PROFIT RANGE

ANZSIC	Less than \$1	\$1- \$100,000	\$100,001- \$1,000,000	\$1,000,001- \$5,000,000	Over \$5,000,000
IT SPECIALISTS					
2841 Computer and Business Machine Manufacturing	49	45	12	8	*6
2842 Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	11	*16	*31	7	4
2849 Electronic Equipment Manufacturing n.e.c.	10	1	*13	*6	1
2852 Electric Cable and Wire Manufacturing	1	*18	5	—	4
4613 Computer Wholesaling	537	694	210	42	5
4614 Business Machine Wholesaling	*26	18	1	—	1
4615 Electrical and Electronic Equipment Wholesaling n.e.c.	92	184	63	9	—
7120 Telecommunication Services	116	60	*8	*4	1
7743(a) Plant Hiring or Leasing	*4	15	*19	—	—
7831 Data Processing Services	67	152	40	3	—
7832 Information Storage and Retrieval Services	*11	47	8	—	1
7833 Computer Maintenance Services	85	125	27	3	2
7834 Computer Consultancy Services	1,278	2,736	267	26	8
Total	2,287	4,111	704	108	33
SECONDARY IT PRODUCERS					
2841 Computer and Business Machine Manufacturing	1	—	—	1	1
2842 Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	—	1	—	—	—
2849 Electronic Equipment Manufacturing n.e.c.	21	12	—	1	—
2852 Electric Cable and Wire Manufacturing	—	—	—	—	1
4613 Computer Wholesaling	*10	—	—	1	—
4614 Business Machine Wholesaling	63	50	19	1	2
4615 Electrical and Electronic Equipment Wholesaling n.e.c.	8	44	26	6	—
7120 Telecommunication Services	—	—	—	—	—
7743 Plant Hiring or Leasing	n.a.	n.a.	n.a.	n.a.	n.a.
7831 Data Processing Services	—	—	—	—	—
7832 Information Storage and Retrieval Services	—	—	—	—	—
7833 Computer Maintenance Services	—	—	—	—	—
7834 Computer Consultancy Services	—	—	—	—	—
Total	103	107	45	10	4

(a) Figures for this industry were derived by only selecting those businesses thought to be significantly involved in IT. It is probable that some undercoverage of this industry may have resulted. Figures for secondary and non-IT producers have not been obtained.

TABLE 14. NUMBER OF IT SPECIALISTS BY INDUSTRY AND RANGE OF TURNOVER/EMPLOYMENT (number)

ANZSIC	\$1- \$25,000	\$25,001- \$35,000	\$35,001- \$45,000	\$45,001- \$75,000	Over \$75,000
2841 Computer and Business Machine Manufacturing	*14	7	—	*11	88
2842 Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	1	4	—	*9	55
2849 Electronic Equipment Manufacturing n.e.c.	1	—	3	6	21
2852 Electric Cable and Wire Manufacturing	—	13	—	5	10
4613 Computer Wholesaling	117	*68	19	145	1,139
4614 Business Machine Wholesaling	12	—	2	—	32
4615 Electrical and Electronic Equipment Wholesaling n.e.c.	4	*15	*12	17	300
7120 Telecommunication Services	16	*13	*18	52	90
7743(a) Plant Hiring or Leasing	—	1	1	—	36
7831 Data Processing Services	70	30	33	58	71
7832 Information Storage and Retrieval Services	*4	—	*10	*24	29
7833 Computer Maintenance Services	41	6	25	85	85
7834 Computer Consultancy Services	551	565	683	1,387	1,129
Total	831	722	806	1,799	3,085

(a) Figures for this industry were derived by only selecting those businesses thought to be significantly involved in IT. It is probable that some undercoverage of this industry may have resulted. Figures for secondary and non-IT producers have not been obtained.

TABLE 15. RETURN ON ASSETS BY NUMBER OF IT SPECIALISTS BY INDUSTRY^(a)
(number)

ANZSIC		Loss				Profit			
		Over 100%	50% - 100%	25% - 50%	0% - 25%	0% - 50%	50% - 100%	100% - 150%	Over 150%
2841	Computer and Business Machine Manufacturing	*6	2	1	34	44	15	*7	1
2842	Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	1	*4	2	1	56	1	—	1
2849	Electronic Equipment Manufacturing n.e.c.	*1	—	*4	6	*10	—	—	—
2852	Electric Cable and Wire Manufacturing	—	—	—	1	11	2	—	*13
4613	Computer Wholesaling	*73	56	66	316	737	127	14	57
4614	Business Machine Wholesaling	—	—	1	*14	20	—	—	—
4615	Electrical and Electronic Equipment Wholesaling n.e.c.	*24	1	25	42	170	30	*12	*21
7120	Telecommunication Services	—	2	*20	80	61	*15	1	*5
7743(b)	Plant Hiring or Leasing	—	—	—	*4	16	*4	*13	—
7831	Data Processing Services	3	*13	*5	17	112	15	19	51
7832	Information Storage and Retrieval Services	—	—	*6	4	32	*19	*2	*4
7833	Computer Maintenance Services	*8	2	*16	35	81	42	*14	22
7834	Computer Consultancy Services	134	85	147	762	1,719	680	141	369
Total		250	165	294	1,315	3,071	952	223	544

(a) Excludes the 429 businesses which had nil assets. (b) Figures for this industry were derived by only selecting those businesses thought to be significantly involved in IT. It is probable that some undercoverage of this industry may have resulted. Figures for secondary and non-IT producers have not been obtained.

TABLE 16. BROAD IT COMMODITY INCOME BY INDUSTRY
(\$'000)

	Industry of the reporting business ^(a)						
	2841	2842	2849	2852	4613	4614	4615
Computer hardware							
Produced by the business	760,818	n.p.	*14,302	n.p.	*137,669	n.p.	n.p.
Not produced by the business	n.p.	n.p.	*8,466	n.p.	3,378,821	316,894	65,459
Commission	n.p.	—	n.p.	—	*33,480	n.p.	n.p.
Leasing and hiring	n.p.	—	—	—	*9,448	n.p.	n.p.
Communications hardware							
Cables							
Produced by the business	n.p.	n.p.	n.p.	487,184	n.p.	—	294
Not produced by the business	n.p.	n.p.	n.p.	n.p.	4,850	n.p.	*75,306
Commission	—	—	—	—	—	—	—
Leasing and hiring	—	—	—	—	—	—	—
Other communications hardware							
Produced by the business	n.p.	1,559,673	154,436	n.p.	n.p.	n.p.	*27,248
Not produced by the business	n.p.	n.p.	n.p.	n.p.	38,434	34,086	463,072
Commission	—	n.p.	—	—	*74	n.p.	*1,348
Leasing and hiring	—	n.p.	—	—	—	n.p.	n.p.
Packaged software							
Produced by the business	n.p.	n.p.	n.p.	—	68,913	n.p.	1,208
Not produced by the business	n.p.	n.p.	n.p.	—	556,228	n.p.	8,265
Commission	n.p.	—	n.p.	—	12,859	—	n.p.
License fees and royalties	n.p.	—	—	—	11,933	n.p.	n.p.
Computer services							
Software and systems services produced	n.p.	n.p.	n.p.	—	144,534	n.p.	n.p.
Training and education produced	n.p.	n.p.	n.p.	—	28,736	n.p.	n.p.
Other computer services produced	n.p.	n.p.	116	n.p.	366,488	n.p.	14,092
Communications services							
Produced	n.p.	45,533	n.p.	n.p.	8,959	3,060	46,061

For footnotes see end of table.

TABLE 16. BROAD IT COMMODITY INCOME BY INDUSTRY—continued
(\$'000)

	Industry of the reporting business(a)						Total
	7120	7743(b)	7831	7832	7833	7834	
Computer hardware							
Produced by the business	n.p.	—	(c)	(c)	(c)	(c)	961,237
Not produced by the business	4,135	1,980	4,358	n.p.	348,174	106,241	4,360,412
Commission	—	—	—	—	1,149	7,981	43,604
Leasing and hiring	—	*41,379	n.p.	—	816	n.p.	56,875
Communications hardware							
Cables							
Produced by the business	n.p.	—	(c)	(c)	(c)	(c)	501,730
Not produced by the business	n.p.	—	(c)	(c)	(c)	(c)	88,534
Commission	n.p.	—	(c)	(c)	(c)	(c)	22
Leasing and hiring	—	—	(c)	(c)	(c)	(c)	—
Other communications hardware							
Produced by the business	n.p.	n.p.	(c)	(c)	(c)	(c)	1,944,599
Not produced by the business	n.p.	n.p.	n.p.	n.p.	26,183	3,364	825,436
Commission	n.p.	—	—	—	n.p.	n.p.	5,787
Leasing and hiring	n.p.	n.p.	—	—	n.p.	n.p.	12,699
Packaged software							
Produced by the business	n.p.	—	n.p.	n.p.	25,321	226,797	426,563
Not produced by the business	1,916	n.p.	n.p.	n.p.	n.p.	30,486	930,997
Commission	—	—	n.p.	n.p.	—	n.p.	22,013
License fees and royalties	n.p.	n.p.	n.p.	—	n.p.	74,949	98,781
Computer services							
Software and systems services produced	4,268	n.p.	10,480	*2,737	162,458	1,946,347	2,419,590
Training and education produced	*786	—	126	n.p.	n.p.	22,376	94,557
Other computer services produced	6,468	n.p.	121,485	83,391	401,548	118,917	1,449,371
Communications services							
Produced	12,357,550	n.p.	n.p.	n.p.	2,381	83,379	12,598,227

(a) Please refer to table 15 for industry class titles. (b) Figures for this industry were derived by only selecting those businesses thought to be significantly involved in IT. It is probable that some undercoverage of this industry may have resulted. Figures for secondary and non-IT producers have not been obtained. (c) This information was not specifically asked of the businesses in this industry as it is thought that any trade in these product categories by these businesses would be relatively insignificant.

TABLE 17. INDUSTRY SPECIALISATION IN IT
(per cent)

ANZSIC	Specialisation(a)
2841 Computer and Business Machine Manufacturing	88
2842 Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	93
2849 Electronic Equipment Manufacturing n.e.c.	29
2852 Electric Cable and Wire Manufacturing	40
4613 Computer Wholesaling	97
4614 Business Machine Wholesaling	42
4615 Electrical and Electronic Equipment Wholesaling n.e.c.	13
7120 Telecommunication Services	100
7743(b) Plant Hiring or Leasing	n.a.
7831 Data Processing Services	98
7832 Information Storage and Retrieval Services	99
7833 Computer Maintenance Services	99
7834 Computer Consultancy Services	99

(a) IT revenue expressed as a percentage of total turnover. (b) Figures for this industry were derived by only selecting those businesses thought to be significantly involved in IT. It is probable that some undercoverage of this industry may have resulted. Figures for secondary and non-IT producers have not been obtained.

TABLE 18. PRODUCTION, IMPORTS AND EXPORTS OF BROAD IT COMMODITIES
(\$'000)

<i>Item description</i>	<i>Revenue from own production</i>	<i>Imports v.f.d.</i>	<i>Exports f.o.b.</i>
COMPUTER HARDWARE			
Digital computers			
Microcomputers and similar workstations	504,279	573,347	n.a.
Mid-range computers	93,764	421,681	n.a.
Large-scale computers	212,829	108,119	n.a.
Total	810,872	1,103,147	176,212
Analogue or hybrid computers	n.a.	8,463	8,276
Other computer equipment, components, parts and consumables			
Laser and other printer systems	4,298	148,208	n.a.
Computer equipment, components, parts and consumables, n.e.s.	146,067	2,486,389	n.a.
Total	150,365	2,634,597	635,188
Total	961,237	3,746,207	819,676
COMMUNICATIONS HARDWARE			
Telephonic or telegraphic switching equipment	642,394	88,566	21,390
Coaxial communication cables and other coaxial electric conductors	22,863	12,105	42,140
Optical fibre cables	387,562	6,880	29,993
Other communication cables	91,305	11,436	4,488
Communication equipment, n.e.s.	1,302,203	831,454	379,789
Total	2,446,327	950,441	477,800
PACKAGED SOFTWARE			
Packaged software(a)	456,139	410,321	101,747
COMPUTER SERVICES			
Software and system services	2,431,545	119,000	188,000
Data entry, processing and timesharing services	162,707	9,000	13,000
Database services	126,229	1,000	2,000
Hardware servicing, repairs and maintenance and cabling services	1,042,028	2,000	3,000
Computer training and education	95,686	1,000	5,000
Software license fees and royalties	98,781	257,000	74,000
Total	3,956,976	389,000	285,000
COMMUNICATION AND OTHER COMPUTER AND INFORMATION SERVICES			
Communications services; Other computer and information services	12,598,227	33,000	67,000
ALL IT COMMODITIES			
Total	20,418,906	5,528,969	1,751,223

(a) The production value is for off-the-shelf software. Import and export values are for recorded media and as such may contain material other than computer programs/packages.

TECHNICAL NOTES

Survey scope and methodology

This publication contains statistics derived from a survey of IT related industries for the reference year 1992–93. Please refer to the Explanatory Notes for a more detailed outline of the IT statistics collection strategy.

The results are based on a limited and somewhat experimental set of goods and services and on a limited set of industries. The levels of IT production reflected in these figures may therefore be somewhat understated. It is recognised that software developments and sales occur in businesses classified to other industries, such as the Accountancy Services industry for instance. The ABS is in the process of gathering statistics which will indicate whether IT sales in other industries, not included in the 1992–93 survey, are significant. These results are to be released at the end of 1995.

The 1992–93 IT survey excluded non-employing businesses as these contribute very little to total economic activity.

Data from respondents to this survey was combined with data from other ABS collections to compile the results in this publication.

Statistical unit

The statistical unit used throughout the IT survey is the management unit (MU). The management unit is the highest level accounting unit within a business, having regard for industry homogeneity, for which accounts are maintained. In nearly all cases an MU corresponds with the legal entity owning the business (i.e. company, trust, sole proprietor, etc). In the case of large diversified businesses, there may be one or more MUs defined, each coinciding with a 'division' or 'line' of business. MUs are recognised where separate and comprehensive accounts are kept for the 'division' or 'line'.

Only the Australian operations of businesses were included in the 1992–93 IT survey.

Industry classification

Businesses included in the 1992–93 IT survey were classified according to the 1993 ANZSIC and secondly according to their degree of IT specialisation.

The ANZSIC classifies any business according to its main income generating activity. Whilst the ANZSIC generally groups businesses with similar characteristics, the classes relevant to IT were not developed around specific technological criteria. While this may be suitable for most purposes it does not allow for the separate identification of those businesses involved with IT and in respect of which statistics are being sought. To resolve this, each of the ANZSIC classes has been further subdivided to group businesses according to their degree of IT specialisation. The groupings are therefore more homogeneous than the ANZSIC class they are part of and permit analysis of the so-called IT industry. IT businesses were classified as specialists if 50 per cent or more of their turnover was from IT goods and services. Businesses with less than 50 per cent turnover in IT goods and services were classified as secondary IT producers or as non-IT producers if they did not deal in IT goods or services.

Reliability of estimates

Most of the information presented in this publication (except for imports and exports data in Table 18) is subject to sampling as well as non-sampling error. In general, industry estimates are based on a stratified

random sample of businesses. Only ANZSIC industries 2430 Multimedia Manufacturing and Publishing and 7120 Telecommunication Services were completely enumerated.

ANZSIC industry 7743 Plant Hiring and Leasing was included in the survey at a very late stage. A partial enumeration of this industry was undertaken. Those businesses which were thought not to be involved in IT were excluded. The selection process was therefore biased and users are advised to exercise some caution when using the result. Because of the selection method, figures for secondary and non-IT producers were not compiled.

Sampling error

A measure of the reliability of sample estimates is given by the standard error which indicates the extent to which estimates might have varied by chance because only a sample of businesses were included.

There are about two chances in three that a sample estimate will differ by less than one standard error from the figure that would have been obtained if all units had been included in the survey, and approximately 19 chances in 20 that the difference will be less than two standard errors.

Sampling variability can be measured by the relative standard error (RSE) which is obtained by expressing the standard error 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 error likely to have been incurred due to sampling.

Each cell of each table in this publication has an RSE calculated. These details are available on request. Where RSEs of 25 per cent or greater apply, figures are flagged with an asterisk.

In general, the figures obtained from the 1992-93 IT survey have higher RSEs than most ABS collections. These higher than usual RSEs are due mainly to small sample sizes and the resulting small number of observations used in calculating certain table cells.

Imports and exports

For an explanation of ABS concepts and definitions used to compile figures on the import and export of computer merchandise and computer services, readers should consult *International Trade in Services, Australia, 1992-93* (5354.0).

GLOSSARY OF TERMS

Capital expenditure	The value of outlays on plant and machinery (including computers and communications equipment) and other business assets including capital work done by own employees.
Earnings before interest and tax (EBIT)	A measure of profit prior to the deduction of interest expenses and tax.
Employment	The total number of persons engaged by the business who receive some form of remuneration. It includes full-time, part-time and casual employees, working proprietors or directors etc, at 30 June 1993. Non-salaried directors are excluded.
f.o.b.	The value of exports is the free on board (f.o.b.) transactions value of the goods expressed in Australian dollars. The f.o.b. value includes the value of packaging (other than containerisation) and excludes freight and insurance costs for the overseas route.
Gross income	Income from all sources before deduction of any expenses, etc. Includes sales revenue from IT and non-IT goods and services, interest earned, dividends received, etc.
IT	Information technology. In the context of this publication, IT basically means computers (i.e. personal computers (PCs) and the like, mini computers and mainframe systems), communications equipment (generally facilitating two way communication), and the services which facilitate use of this equipment including training. Microprocessors and similar devices used simply to control the functions of various pieces of equipment, such as microwave ovens or video recorders, are excluded. Television and radio broadcasting services are also excluded.
IT revenue	Income from the sale of IT goods and services including royalties and license fees, commissions, etc. Excluded are sales tax, excise and duties received on behalf of the government.
IT specialisation	The percentage of turnover attributed to sales of IT goods and services.
Leasing and hiring income	Revenue from operating leases. Excluded is income from finance leases and payments received under 'hire purchase' agreements.
Operating profit before tax (OPBT)	A measure of profit before taking account of extraordinary items and prior to the deduction of income tax, appropriations to owners or payment of dividends.
Packaged software	General purpose off-the-shelf software (eg. Word, Lotus 1-2-3, DOS, Windows, etc).
Return on assets	Operating profit before tax as a percentage of the total value of assets (i.e. OPBT/assets). This ratio indicates the efficiency with which assets are employed to generate profits.
Software and systems services	Services provided generally by IT professionals to meet specific purposes. This would include consultancy services and the development of special purpose software to meet the needs of a single client.

Total expenses	The sum of all expense items (excluding capital expenditure), i.e. wages and salaries, purchase of stock or materials, insurance premiums, interest expenses, depreciation, rent, leasing and hiring costs, advertising, bad debts, and other expenses.
Turnover	Sales of goods and services, both IT and non-IT, plus royalties, license fees, etc, and other operating income. Interest, dividends and other non-operating income is excluded.
Turnover/employment	A measure of the average turnover generated by each person employed. This ratio is calculated using turnover divided by employment measured at 30 June 1994. Because of possible fluctuations in employment levels during the year an alternative measure can be calculated by dividing turnover by wages and salaries.
v.f.d.	The value of imports is the Australian Customs value (i.e. value for duty). Goods are valued at the point of containerisation, or the port of shipment or the customs frontier of the exporting country, whichever comes first. The value for duty is generally the same as the transaction value unless Australian Customs considers the value reported to be an unfair estimate of market value. This can occur when the transaction is between related companies.
Wages and salaries	The gross earnings of all employees before tax and other deductions. Drawings of working proprietors and working partners of unincorporated businesses are excluded.



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