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INFORMATION TECHNOLOGY STATISTICS

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Note:

The ABS would like to emphasise that figures in this paper should be treated as indicative only and should not be quoted or used for any purpose outside this conference without ABS approval. All figures are subject to revision.

Introduction

In its paper presented to the 7th meeting of the Voorburg Group in Williamsburg USA in October 1992, the ABS summarised international experience in the conduct of model surveys of computer services. It concluded that there were some deficiencies in considering the computer services industry (as defined in ISIC) in isolation to certain other industries. This is because significant levels of computer service activities are carried out by businesses classified to other industries. Moreover, the computer industry itself is only one part of the information technology (IT) "industry" and this latter "industry" is the true focus of user interest.

2. A major difficulty in conducting a survey of the IT industry is that neither the ISIC nor the ANZSIC defines an information technology industry. This does not mean the "industry" does not exist, it is merely an alternative industry view in much the same way as the tourism or hospitality industry could be viewed. In fact the information technology industry, as perceived by the business community and by policy makers in Australia at least, is comprised of businesses which, according to standard industry coding practices, find themselves in one of the manufacturing, distribution, telecommunications, computer or other service industries. The IT industry is, in essence, more like the vertically integrated industrial sectors defined in the Canadian Companies Classification.

3. The OECD Information Computers and Communication (ICC) Statistical Experts group, grappled with this problem through the 1980's without fully completing its work. The group did however conclude that the field had to be defined on the basis of a specified set of outputs whose industry of origin (principal industry of production) covered a number of industries, as defined by ISIC. Unfortunately the group was disbanded before completing the definitional and other work required for developing a statistical framework for ICC statistics. It is understood that the OECD is nevertheless interested in progressing this work as resources permit.

4. In 1992 the ABS decided to review the position reached by the OECD and to

progress the development of a set of statistical indicators about the information technology "industry". As a starting point, a series of user meetings were convened to establish the scope and nature of statistical interest in IT. There was general support for an ABS initiative to redress the void of official statistics on IT. It was noted that some users wished to define the "IT industry" on the basis of those businesses which primarily produce and/or distribute the selected IT goods and services. Other users expressed a desire to define the "industry" not only on the basis of primary producers but also to include secondary producers (at least significant ones). There was also some interest in including non-marketed IT activities within the range of outputs. With this information a statistical model containing a pragmatic definition of the "IT industry" was devised in consultation with major user organisations and IT businesses. The outcome is broadly consistent with the OECD direction.

The ABS approach

5. On the basis of consultations with both users and suppliers of IT data, the ABS defined IT goods and services to include those items in the list below. (Income data was collected for each of these items in the 1992-93 IT Survey).

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

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

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 the 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)

Other computer and communication income:

Contract, sub-contract and commission revenue
Licence fees and royalties not included elsewhere

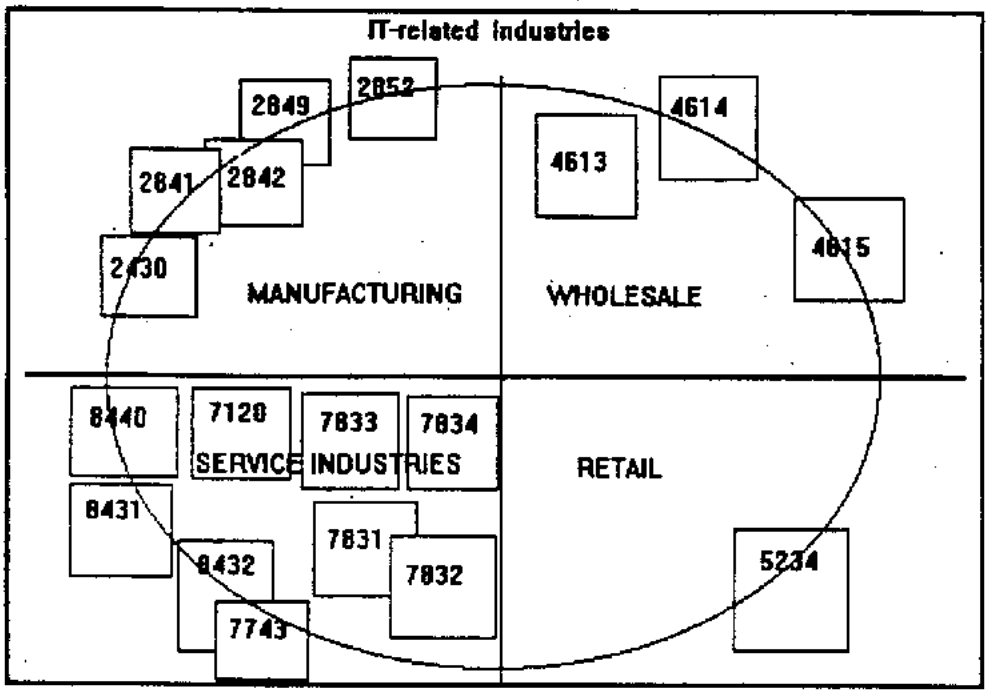
6. Having defined a list of IT goods and services, the next part of the problem was to determine which ANZSIC industries would collectively account for the bulk of businesses engaged in providing these IT goods and services. The industries were selected from an understanding of the industry of origin of the IT goods and services, information collected in a pilot IT Activity Survey (in Western Australia) and other (more anecdotal) information obtained from the industry about the occurrence

of secondary IT activity. Containing the size and cost of the collection was also important when considering the inclusion of whole industries. Nevertheless, it is felt that the industries selected provide substantial coverage of the defined IT activities. (As a check on coverage, we have included a question in the 1993-94 IT usage survey which asks for the value of sales of IT goods and services. This survey covers all industries except agriculture). Those industries considered to be the most significant are:

2430	Recorded Media Manufacturing and Publishing
2841	Computer and Business Machine Manufacturing
2842	Telecommunication, Broadcasting and Transceiving Equipment Manufacturing
2848	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

7. As not all businesses classified to these industries will be involved with IT goods and services, or may only be involved to a limited extent, the ABS has opted to group businesses within ANZSIC classes into primary producers of IT goods and services, secondary producers of IT goods and services and producers of non-IT goods and services on the basis of their specialisation ratio. This ratio has been calculated by dividing IT Revenue by Total Turnover and expressing the result as a percentage. A primary producer will have a specialisation ratio of 50% or greater, a secondary producer will have a ratio greater than zero but less than 50%, and non-IT producers will have 0%. (It would be possible to group businesses into a finer set of specialisation groups if this were required for some analytic purpose). In terms of industries as opposed to businesses, some ANZSIC industries will be considered wholly relevant to the "IT industry", while others will only be partly relevant. A diagrammatic representation of this is shown overleaf.

IT INDUSTRY MODEL



8. With the exception of ANZSIC classes 8431, 8432 and 8440, the above diagram indicates the scope of ABS' 1992-93 IT data collection. The industries excluded are in the Education subdivision of ANZSIC. As development time for the survey was short and it was felt that a relatively small proportion of IT training would be provided by education and training specialists in Australia, it was decided to exclude these industries for this first survey. Data for ANZSIC class 5234 - Domestic Appliance Retailing - is not yet available and is therefore excluded from the data in this paper. The data models defining the range of data to be collected about the "industry" are shown immediately overleaf. The commodities (goods and services) are those shown in paragraph 5 above.

IT GOODS AND SERVICES DATA MODEL

BROAD DATA CATEGORY	MEASURE
PRODUCTION:	
Market Output (sales and transfers)	Value of sales by commodity: . by predominantly IT producers (including distribution and training) . by secondary IT producers (including distribution and training)
Non-market Output (in-house use)	Value of non-market IT production (incl. training) by commodity: . by private sector (business) . by public sector (Government)
Intermediate consumption:	
. by private sector	. Not planned to be measured
. by public sector	. Not planned to be measured
Consumption of fixed capital	. Not to be measured. Will be combined with depreciation of non-IT fixed assets
ACCUMULATION:	
Stocks/assets: . current . non-current	. Not to be measured. Will be combined with non-IT . Computer service industries will show hardware, software licences, other. Remainder will be combined with non-IT.
CONSUMPTION:	
Household final consumption	.Value of household IT purchases
Government final consumption	.Value of Govt. IT purchases (incl. outsourcing)
Business final consumption	. Value of IT purchases (incl. outsourcing)
EXTERNAL TRADE:	
Imports	. Value of IT imports by commodity
Exports	. Value of IT exports by commodity

IT INDUSTRY STRUCTURAL DATA MODEL

Primary IT sub-industry	Secondary IT sub-industry	Nil IT sub-industry
Measures:	**Measures:**	**Measures:**
Number of businesses Location Employment Income: . IT by commodity . Other: . Govt subsidies . Other	Number of businesses Location Employment Income: . IT by commodity . Other: . Govt subsidies . Other	Number of businesses Location Employment Income/turnover
Income by broad source (for computer service industries only)		
Expenses: . Wages and salaries . Payments to subcontractors/consultants . Employer superannuation contributions . Workers compensation . purchase of goods for resale . Insurance premiums . Interest expenses . Depreciation . Rent, leasing and hiring . Motor vehicle expenses . Bad debts . Royalties expenses ..Other expenses	Expenses: . Wages and salaries . Payments to subcontractors/consultants . Employer superannuation contributions . Workers compensation . purchase of goods for resale . Insurance premiums . Interest expenses . Depreciation . Rent, leasing and hiring . Motor vehicle expenses . Bad debts . Royalties expenses . Other expenses	
Estimated cost of employee training (Computer service industries only) Profit or loss Trading stocks: . Opening . Closing	Profit or loss Trading stocks: . Opening . Closing	
Assets and liabilities Capital expenditure	Assets and liabilities Capital expenditure	

9. The collection strategy outlined above relates to the producers of marketed IT goods and services. The second part of the strategy, which is being implemented in respect of 1993-94 relates to the production of non-marketed (ie ancillary or in-house) IT goods and services whilst a third part relates to the use or consumption of these IT goods and services. This third part is also being implemented this year in respect of 1993-94.

10. The measurement of non-marketed goods and services is being made by surveys of the business enterprise and general government sectors. (The ABS will be trialling 3-digit CPC items in the measurement of in-house production). The consumption of IT goods and services is being measured in the same surveys and additionally in a survey of the household sector, which has recently been completed. Briefly, the items being collected from the business sector in the IT usage survey are as shown below. Items for the General Government sector will be similar but have not been finalised at this point in time.

Employment
Gross Income:
- Sales of computer and communication goods and services
- Total gross income

Computer and communication operating expenses:
- Expenditure on computer and communication equipment which is not recorded in your books as capital expenditure
- Depreciation and amortisation on computer and communication assets
- Wages and salaries of computer and communication staff
- Payments to sub-contractors and consultants for computing and communication services and related work
- Other computer and communication operating expenses
- Total computer and communication operating expenses

Capital expenditure on computer and communication equipment

Estimated cost of providing computer and communication support to this business by employees of the business:
- Software and systems services (including systems analysis, design and programming, system integration, software maintenance and facilities management)
- Information network and database services
- Hardware servicing, repair and maintenance
- Computer and communication training and education
- Computer and communication installation and cabling services
- Communication network servicing, repair and maintenance
- Data entry and processing services
- Other computer or communication services - (please specify)

Number of users of computers:
- Of the total employment of this business, approximately how many employees would be required to use a computer generally on a weekly basis

Selected equipment installed in this business:
- Personal computers (including portables, laptops, notebooks, pen based and hand held)
- PCs used as a server in a LAN, WAN, etc
- Mini-computers (ie mid range systems listed at a price generally between $15,000 and $1.5 million)
- Mainframe and super computers (ie systems listed at a price generally more than $1.5 million)
- Other workstations (ie single user devices with high graphics capabilities eg. Sun SPARC station, IBM RS/6000)

Dumb terminals
Staff usage on computer and communication activities:
Estimated person years of effort on:
IT management
Network administration
Database administration
Systems programming
Applications programming
Other programming
Systems analysis
Software engineering
Systems integration
Computer room operations
Repair and maintenance
General user support eg. help desk)
Data processing
Intensive data entry
Other IT activities - (please specify)

11. Some of the measures which this set of data may provide include:

(a). Total income compared to sales of IT goods and services

This will be an indication of deficiencies in coverage of the production collection undertaken for the 92-93 reference period. As this current collection is to cover all industries except agriculture it will be interesting to discover the true incidence of IT production/sales in all industries.

(b). End user access to computing technology

Number of end users compared to number of workstations will give an indication of the extent of computing facilities in industries. To some degree it will indicate potential for further sales of PCs etc by vendors not counting upgrades and ignoring the economics involved.

(c). Ratio of IT support to number of end users

This will be an indication of the relative cost of providing support services within industries

(d). Ratio of end users to total employment

This will be an indication of the extent to which computing has infiltrated the jobs of employees in industries.

(e). Distribution and incidence of IT support provided in-house

This will be a comparison across industries. It may indicate where the best sources of work are for consultants and contractors etc.

(f). Distribution and incidence of payments to subcontractors and consultants

This will indicate where most of the outsourcing has been (ie which industries) and would be useful when looking at 5 above.

(g). Ratio of in-house support compared to work contracted out (outsourced)

This could be shown by industry. It would be an indication of the trend towards the use of consultants and contractors for IT support work if measured at regular intervals.

(h). Staff usage on IT activities from a training perspective

This will provide some indication of the industries towards which IT training should be provided. It should be viewed in conjunction with end user data (see 4 above). It should also be looked at in the

context of training provided in-house (see specific item for this).

(i). Total IT infrastructure installed

We will be able to provide counts of various types of equipment on a national scale. This will indicate the size of the total IT installation in Australia. This is significant when upgrades in PCs, for instance, are contemplated. Suppliers will be able to calculate the total market for PC upgrades or perhaps to calculate their current market share in broad terms.

(j). Ratio of mainframes to mid range or PC

This will indicate trends (if measures are taken at subsequent intervals) in the continued use of large scale machines as compared to PC/LAN or midrange technology.

(k). Industry IT usage profiles

These could be constructed on the basis of the number of core machines (ie mainframes, PCs etc) compared to the number of end users and number of non-users.

(l). IT capital expenditure by industry

An indication of the rate of IT investment across industry. An indication of the level of annual machine purchase which can be compared over time if measures are at regular intervals.

12. The final list of measures is dependent on survey results and the successful resolution of any reporting difficulties. As a number of the data items are not readily obtainable from business records, the provision of estimates is being emphasised.

13. For the Household Use of IT, the following set of questions were collected in February 1994 by the ABS Population Survey Monitor area.

Does anyone in household operate a home based businesses
Does household have a fax machine
Does anyone in household regularly use a computer
How many computers of the type:
- dedicated games machines
- portable computer
- desktop PC
- dedicated word processor
- other

Other equipment used in household:
- printers
- image or character scanners
- CD ROM equipment
- Modems
- Other

Main use of home computing equipment
Software used:
- integrated packages
- word processor software
- business financial packages
- general purpose database
- general purpose spreadsheet
- programming languages
- industry specific software
- communication software
- games software
- other (specify)

Source of computer training:
- equipment supplier
- an employer

a commercial organisation
primary or secondary school
technical or further education
university
manuals/tutorials
other
Expenditure during last 12 months on :
dedicated games computers
desktop or personal computers
other computing equipment
data entry or data processing services
computer software
training in use of computers
Expenditure plans during next 12 months - total dollars
Expenditure plans in next 2 years - total dollars

14. The importance of the household sector as a market for small scale technology is evidenced by the survey results which indicate, among other things, that 23% of all households frequently use a computer, 11.6% of households have a home based business, 2.9% of all households have a facimile machine, and 14.6% of all households plan to spend more than $1000 on computing equipment in the next year. A full set of survey results is to be released shortly.

Results of the 1992-93 survey of IT producers

15. The remainder of this paper is devoted to preliminary analysis of the results of the first phase of the strategy, ie the measurement and performance of IT goods and services producers and data on the IT goods and services produced. The ABS would like to stress that results presented in this paper are very preliminary and may be revised as output editing proceeds. The data is however sufficiently sound to demonstrate the effectiveness of the ABS strategy. Please note that the data presented is for a restricted audience and should not be released to other persons or organisations without the permission of the ABS. It should also be noted that tables exclude data for industry class 5234 Domestic Appliance Retailing as these results are not yet available.

16. Table 1 below contains statistics about the group of IT-related industries as a whole. Counts of businesses shown against each ANZSIC class have been derived using standard step-by-step industry coding procedures. In table 1, no account has been taken of the IT intensity of businesses. The figures presented are ANZSIC class level estimates.

Table 1: IT-Related Industries, 1992-93

Business numbers, employment and income

ANZSIC		Business Nos.	Employment Nos.	IT Revenue $M	Gross Income $M
2430	Recorded Media Manufacturing and Publishing	11	1079	43	400
2841	Computer and Business Machine Manufacturing	149	1651	314	397
2842	Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	144	8386	1768	1890
2848	Electronic Equipment Manufacturing n.e.c.	255	5831	205	857
2852	Electric Cable and Wire Manufacturing	57	4705	507	1288
4613	Computer Wholesaling	1505	14862	4579	4747
4614	Business Machine Wholesaling	384	7358	671	1506
4615	Electrical and Electronic Equipment Wholesaling n.e.c.	1930	24459	782	6369
7120	Telecommunication Services	198	n.p.	12558(a)	13030(a)
7743	Plant Hiring or Leasing (b)	40	248	52	55
7831	Data Processing Services	263	2089	150	154
7832	Information Storage and Retrieval Services	67	638	103	104
7833	Computer Maintenance Services	226	6424	1525	1566
7834	Computer Consultancy Services	4380	22398	2464	2506
TOTAL		**9609**	**n.p.**	**25721**	**34670**

(a) Figures for Telstra Corporation which are included in this aggregate have been taken from the Telstra Annual Report 1993.
(b) Only part of this ANZSIC industry was surveyed. Estimates are therefore not ANZSIC class level.

17. This table shows that if the IT industry were made up of all the ANZSIC industries included in paragraph 6, there would be about 9,600 businesses in the industry with a total employment of over 100,000 and a total income of $A35 billion. The combined revenue from IT goods and services (as defined) for all IT related industries is about $26 billion. IT revenue therefore accounts for about 77% of total gross income for the selected industries. This is a significant statistic. Importantly, if the ABS had surveyed only the computer service industries, coverage of IT activities (as defined) would be short by almost $22 billion in IT sales revenue.

18. If we isolate, from table 1 above, those businesses which specialise in IT, we can assess the overall importance of the contribution to IT revenue made by secondary producers.

Table 2: IT-Related Industries, 1992-93

Businesses specialising in IT

Business numbers, employment and income

ANZSIC		Business Nos.	Employment Nos.	IT Revenue $M	Gross Income $M
2430	Recorded Media Manufacturing and Publishing	2	165	43	43
2841	Computer and Business Machine Manufacturing	108	1268	312	319
2842	Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	66	7813	1768	1817
2849	Electronic Equipment Manufacturing n.e.c.	26	1318	194	256
2852	Electric Cable and Wire Manufacturing	29	808	405	413
4613	Computer Wholesaling	1494	14488	4571	4677
4614	Business Machine Wholesaling	46	2349	576	587
4615	Electrical and Electronic Equipment Wholesaling n.e.c.	372	3023	726	754
7120	Telecommunication Services	196	n.p.	12558(a)	13027(a)
7743	Plant Hiring or Leasing (b)	38	240	52	54
7831	Data Processing Services	263	2089	150	154
7832	Information Storage and Retrieval Services	67	638	103	104
7833	Computer Maintenance Services	226	6424	1525	1566
7834	Computer Consultancy Services	4380	22398	2463	2506
TOTAL		**7335**	**n.p.**	**25445**	**26278**

(a) Figures for Telstra Corporation which are included in this aggregate have been taken from the Telstra Annual Report 1993.
(b) Only part of this ANZSIC industry was surveyed. Estimates are therefore not ANZSIC class level.

19. As can be seen, by only including the primary IT producers, the difference in IT Revenue when compared to the total for primary and secondary producers is in the order of $276 million (a little over 1% of total IT Revenue). On this basis there is little reason for wanting to include secondary producers as their effect on totals is negligible. There is however great interest in the characteristics of primary producers and it is important therefore to separate this group for analysis. In view of this, it seems likely that all businesses will need to be surveyed in order to identify the set of businesses of principal concern.

20. It is useful to look at each of the industries individually and to analyse how much they each specialise in IT goods and services. These are shown in Table 3 overleaf.

Table 3: IT Specialisation by Industry

ANZSIC		IT Revenue ($ Million)	Total Turnover ($ Million)	Ratio (a) %
2430	Recorded Media Manufacturing and Publishing	43	399	10.8
2841	Computer and Business Machine Manufacturing	314	396	79.2
2842	Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	1768	1880	94.0
2848	Electronic Equipment Manufacturing n.e.c.	205	850	24.1
2852	Electric Cable and Wire Manufacturing	507	1278	39.7
4613	Computer Wholesaling	4579	4736	96.7
4614	Business Machine Wholesaling	671	1501	44.7
4615	Electrical and Electronic Equipment Wholesaling n.e.c.	782	6346	12.3
7120	Telecommunication Services	12558(b)	12940(b)	97.0
7743	Plant Hiring or Leasing (c)	n.a.	n.a.	n.a.
7831	Data Processing Services	150	153	98.2
7832	Information Storage and Retrieval Services	103	104	99.1
7833	Computer Maintenance Services	1525	1564	97.5
7834	Computer Consultancy Services	2464	2492	98.9
Total		25669	33239	77.2

(a) Calculated by (IT Revenue divided by total turnover) X 100
(b) Figures for Telstra Corporation which are included in this aggregate have been taken from the Telstra Annual Report 1993.
(c) Only part of this ANZSIC industry was surveyed. Figures are therefore excluded from this table.

21. The table demonstrates that all industries included in the IT survey have significant percentages (10% or greater) of IT revenue compared to turnover. Whilst the subtraction of the smaller industries such as 2430 would not have a great effect on totals, such industries are nevertheless seen as being an integral part of the "IT Industry" and may be potential growth areas.

22. As discussed in paragraph 4, some users considered that secondary IT production should be included. To look at this, the individual business units were further classified according to their degree of IT specialisation. The aggregates (all of the data items collected) for each ANZSIC class have been divided into sub-totals according to whether the representative businesses were primarily producers of IT, secondary producers (ie having an IT specialisation ratio of less than 50% but greater than zero), or had nil IT production. In the following tables we present a view of the data by which it is possible to see the IT "industry" as a set of vertically integrated industrial sectors covering the manufacture and distribution of goods and creation of services.

23. The IT Manufacturing industrial sector is made up of ANZSIC classes 2430, 2841, 2842, 2849 and 2852. Table 4 below is for the industrial sector as a whole. The analyst, depending on his or her context, can view the IT manufacturing industry as consisting of only IT specialist businesses, **or** specialist and secondary producers, **or** all businesses in the ANZSIC classes.

Table 4: Broad Aggregates for the Manufacturing Industrial Sector by IT Specialisation and Sector Total

	IT Specialist Businesses	IT Secondary Producers	All Businesses (a)
Number of businesses	252	33	616
Number employed	11373	2180	21853
	Gross Income ($ Million)		
Computer Hardware Revenue	290	2	293
Communi Hardware Revenue	2245	105	2350
Software Revenue	80	0	80
Computer Services	36	1	37
Communication Services	58	6	64
Other IT Revenue	14	0	14
Sub Total	2723	114	2837
Other Income	125	340	1996
Total Income	2848	453	4833
Total Expenses	2502	397	4280

(a) Includes businesses which do not produce any IT goods or services

24. What this shows is that the IT manufacturing industries, when viewed as a whole, are made up of about half IT specialists and half non-IT businesses. Only about 5% of the businesses have secondary production.

25. The IT Wholesale industrial sector is made up of ANZSIC classes 4613, 4614, and 4615. Figures for this sector are shown in table 5 overleaf.

Table 5: Broad Aggregates for the Wholesale Industrial Sector by IT Specialisation and Sector Total

	IT Specialist Businesses	IT Secondary Producers	All Businesses (a)
Number of businesses	1912	217	3819
Employment	19859	5983	46680
	Gross Income ($ Million)		
Computer Hardware Revenue	3774	119	3893
Communi Hardware Revenue	679	36	715
Software Revenue	673	1	675
Computer Services	670	1	671
Communication Services	56	2	59
Other IT Revenue	18	0	19
Sub Total	5872	159	6032
Other Income	146	1350	6591
Total Income	6019	1509	12622
Total Expenses	5933	1469	9556

(a) Includes businesses which do not produce any IT goods or services

26. Once again, about half the businesses in the IT wholesaling sector are IT specialists and only about 5% are secondary IT producers. As is the case with manufacturing industries, this points to the need to subdivide the industries to produce useful IT statistics.

27. The Computer Services industrial sector is comprised of ANZSIC classes 7831, 7832, 7833 and 7834. All businesses specialise in IT activities in this group of industries. Figures for ANZSIC 7743 are also included.

Table 6: Broad Aggregates for the Computer Services Industrial Sector by IT Specialisation and Sector Total (a)

	IT Specialist Businesses	IT Secondary Producers	All Businesses (b)
Number of businesses	4976	0	4976
Employment	31795	0	31795
	Gross Income ($ Million)		
Computer Hardware Revenue	791	0	791
Communi Hardware Revenue	31	0	31
Software Revenue	461	0	461
Computer Services	2834	0	2834
Communication Services	91	0	91
Other IT Revenue	86	0	86
Sub Total	4293	0	4293
Other Income	91	0	92
Total Income	4384	0	4385
Total Expenses	3990	0	3990

(a) Includes data for ANZSIC 7743 Plant Leasing and Hiring. This industry was only partly covered.
(b) Includes businesses which do not produce any IT goods or services

28. The Telecommunications Services industrial sector is comprised of only one ANZSIC class, 7120.

Table 7: Broad Aggregates for the Telecommunications Industrial Sector by IT Specialisation and Sector Total

	IT Specialist Businesses	IT Secondary Producers	All Businesses (a)
Number of businesses	198	0	198
Employment	n.p.	0	n.p.
Gross Income ($ Million)			
Computer Hardware Revenue	n.p.	0	n.p.
Communi Hardware Revenue	n.p.	0	n.p.
Software Revenue	n.p.	0	n.p.
Computer Services	n.p.	0	n.p.
Communication Services	n.p.	0	n.p.
Other IT Revenue	n.p.	0	n.p.
Sub Total	12558(b)	0	12558(b)
Other Income	144	0	144
Total Income	13030(b)	0	13030(b)
Total Expenses	11242(b)	0	11242(b)

(a) Includes businesses which do not produce any IT goods or services
(b) Figures for Telstra Corporation which are included in this aggregate have been taken from the Telstra Annual Report 1993.

29. This industry is also totally specialised in IT.

Table 8: Broad Aggregates for All IT Industrial Sectors by IT Specialisation and Sector Total

	IT Specialist Businesses	IT Secondary Producers	All Businesses (a)
Number of businesses	7338	250	9609
Employment	n.p.	8163	n.p.
Gross Income ($ Million)			
Computer Hardware Revenue	n.p.	121	n.p.
Communi Hardware Revenue	n.p.	141	n.p.
Software Revenue	n.p.	1	n.p.
Computer Services	n.p.	2	n.p.
Communication Services	n.p.	8	n.p.
Other IT Revenue	n.p.	0	n.p.
Sub Total	25446	273	25720
Other Income	506	1690	8823
Total Income	26281	1962	34870
Total Expenses	23667	1866	29068

(a) Includes businesses which do not produce any IT goods or services

30. As can be seen from table 8 above, secondary producers account for about 5% of total Gross Income, but only about 1% of IT revenue.

Conclusion

31. The material presented in this paper provides evidence that, in Australia at least, there is significant IT activity in a range of industries including, but not restricted to, the computer service industries. If one accepts that it is useful to look at IT in totality, then it is essential for future collections to measure IT activity not only in the computer services industries but also in these other industries.

32. Given the relatively small number of secondary IT producers, it would not be unreasonable to exclude them from the IT industry aggregates derived.

33. Given the almost equal split in numbers for some ANZSIC industries between primary IT producers and non-IT producers, it may be appropriate to consider amending the ANZSIC (and perhaps the ISIC) to recognise this difference. Until the classification(s) can be reviewed however, it would seem necessary to produce data at the sub-industry level.

34. The methodology used for the IT "industry" may (in principle) be applicable to other activities spanning a number of industries. These would need to be looked at individually, as the significance of secondary production and the spread of related activities across wider ranges of industries may suggest that a different solution is required.
