Australian ICT Industries Update 2002

EXECUTIVE SUMMARY

John W. Houghton

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Preface

This report is part of a series of statistical updates on the information and communication technology industries and their markets. The series aims to provide consistent compilations of statistics on a core set of topics, namely: the ICT industry, the Australian market for Information and Communication Technology (ICT) products and services, and Australia's international trade in ICTs.

For the last two years The Australian Computer Society, through its Computer Systems and Software Engineering Board, has sponsored these updates. They are produced by Professor John Houghton of the Centre for Strategic Economic Studies, Victoria University, Melbourne. The Australian Computer Society exercises no editorial control over the reports.

The series to date includes:

- ***Information Industries Update 1999*** – Houghton, J.W. (1999), Centre for Strategic Economic Studies, Victoria University, Melbourne.
- ***Information Technology Trade Update 1999*** – Houghton, J.W. (1999), Centre for Strategic Economic Studies, Victoria University, Melbourne.
- ***Information Industries Update 2001*** – Houghton, J.W. (2001), Centre for Strategic Economic Studies, Victoria University, Melbourne.
- ***Australian ICT Trade Update 2001*** – Houghton, J.W. (2001), Centre for Strategic Economic Studies, Victoria University, Melbourne.
- ***Australian ICT Trade Update 2002*** – Houghton, J.W. (2002), Centre for Strategic Economic Studies, Victoria University, Melbourne.

The ICT Update Reports are updated regularly. They can be ordered from the Centre for Strategic Economic Studies. (See http://www.cfses.com/infoind.htm).

This report was researched and written by:
Professor John W. Houghton
Ph: +61 2 6282 1981 Mobile: (Australian) 0409 239 109
E-mail: John.Houghton@pobox.com

Published by:
Centre for Strategic Economic Studies
Victoria University
PO Box 14428 Melbourne City MC 8001 Australia
Ph: +61 3 9248 1340 Fax: +61 3 9248 1350
Web: http://www.cfses.com   E-mail: csesinfo@vu.edu.au

Executive Summary

This report presents a statistical update on Australia's Information and Communication Technology (ICT) industry. It is the sixth report in a series of ICT Updates.

Employment in the Australian ICT industry

The ICT industry employed around 274,000 people in 2001 – approximately 3% of Australia’s working population. The information and communication services sectors are the largest, together accounting for 63% of the total.

The number of people employed increased by 7% per annum between 1993 and 2001. Job growth in the information services sector was strong throughout the 1990s, increasing by almost 16% per annum. More mixed employment patterns have been exhibited by other sectors. ICT equipment manufacturing employment accounted for 7.7% of total employment in 1993, but by 2001 its share had fallen to less than 5%.

Jobs in the ICT industry continue to be a relatively highly paid. The industry (excluding the content sector) spent $14 billion on wages and salaries during 2000-01. The average wage paid was $58,951 per annum,

Less than half of one per cent of those engaged in the ICT industry in 2001 were proprietors or partners.

Perhaps surprisingly, the ICT industry appears to be male dominated. Almost 67% of all those employed in the industry in 2001 were male, compared with less than 56% of all employed persons in Australia.

There is some evidence of a declining professionalisation in the ICT industry, with the proportion of those in computing and technical occupations almost 9 percentage points lower in 2001 than it had been in 1999.

Employment growth in the ICT industry over the two years 1999 to 2001 was driven by increases in non-technical jobs, with the number of computing and technical jobs remaining static.

Recent labour force data suggest that employment in the ICT industry has been falling since 2001, while total employment in Australia has been rising.

Business operations in the Australian ICT industry

There were around 25,200 businesses operating in the Australian ICT Industry in 2001. No less than 73% were information services businesses, the number of which has increased by around 18% per annum since 1993.

The ICT industry is dominated by small businesses. In 2001, almost 96% of all specialist ICT businesses operating in Australia employed less than 20 people.

F**oreign ownership is extensive.** In 1998–1999, foreign-owned businesses accounted for 43% of all employment in the industry and earned 60% of total ICT income. ICT businesses with majority ownership from the United States employed almost as many Australians in 1999 as Australian-owned businesses.

Income per person employed in foreign-owned businesses is higher than in Australian-owned businesses.

The total income of specialist businesses in the Australian ICT industry reached just over $80 billion in 2000-01, having increased by around 13% per annum since 1992-93.

Looking at the share of ICT industry income by sector reveals the importance of communications and the extent of distribution activities relating to imported ICT equipment. It also reveals the relatively modest level of local ICT equipment manufacturing.

Income growth has been fastest for businesses in the distribution (wholesaling) sector. Businesses in the information services sector also enjoyed strong income growth. The slowest income growth was in ICT equipment manufacturing.

Performance during the 1990s varied. ICT industry income increased by 20% per annum between 1992-93 and 1995-96, but by only 10% between 1995-96 and 2000-01 – or 19.4% and 9.6% per annum, respectively, excluding the content sector (for which only partial data are available).

Total operating expenditures of specialist ICT businesses in Australia amounted to more than $73 billion in 2000-01. Labour costs accounted for 22%.

ICT usage related expenditures accounted for just over 42%, significantly higher than the level reported in 1998-99.

The recent downturn in the ICT industry is reflected in declining operating profit margins. Communication services continue to be the most profitable sector in the ICT industry, reflecting industry concentration and the dominance of Telstra in some market segments. Other sectors are much less profitable.

In 2000-01, the distribution and sale of imports accounted for 23.5% of total industry income. Imports accounted for 46% of income from the sale of packaged software, and almost 64% of income from sales of hardware.

There appear to have been declines in the international competitiveness of domestically produced packaged software, ICT hardware and information services.

State location of ICT industry activities

Almost 44% of all jobs in the ICT industry are in New South Wales (NSW). Victoria accounted for 30%.

Differences between the States in terms of ICT industry job growth are marked. Between 1996 and 2001, ICT industry jobs in the ACT grew by 8.2% per annum, jobs in Western

Australia by 4.2% per annum and jobs in Victoria by 3.5% per annum. NSW, Queensland, the Northern Territory, South Australia and Tasmania all experienced below average job growth.

The ACT has the highest ICT industry employment intensity of any State or Territory, with almost 25 ICT industry jobs per 1,000 population in 2001. NSW had around 17.5 and Victoria had 16. All other States had below the national average of 13.5 per 1,000 population.

In 2001, NSW was the base for 42% of all specialist businesses in the ICT industry. Victoria was the base for 30% of specialist ICT businesses. Queensland came a relatively distant third, accounting for fewer than 12%.

Over the five years to 2001, rates of growth in the number of ICT businesses varied from a high of 11.6% per annum in Queensland to a low of 4.3% in South Australia (4.3% pa).

Innovation in ICTs

In 2000-01, $1.59 billion was spent on information, computer and communication sciences *as a field of research* – some $47 million lower than 1998-99. It accounted for 15.5% of total R&D expenditure in Australia by field of research – down from 18.5% in 1998-99.

There were 11,470 person years (jobs) devoted to information, computer and communication sciences R&D in 2000-01 – down significantly from 13,757 in 1996-97.

Almost $1.9 billion was spent on information and communication services related R&D *as a socio-economic objective* in 2000-01, of which just over $1.5 billion related to software and services and $349 million related to hardware. The largest category (objective) was computer software & services at $859 million (49% of total). Communication services was the next largest category at $605 million (32% of total).

Forty-two per cent of ICT related R&D expenditure occurred in NSW. Victoria accounted for 38%, Queensland for 7%, South Australia for 5%, Western Australia and the ACT for 3% each, Tasmania and the Northern Territory for less than 1%.

***Business expenditure* on ICT related R&D objectives amounted to $1.7 billion in 2000-01**, of which $1.4 billion was spent on software & services and $325 million was spent on hardware. NSW accounted for the largest share, at 43%.

***Higher education expenditure* on ICT related R&D objectives amounted to $142 million in 2000**, of which $126 million was spent on software & services and $16 million was spent on hardware. Victoria accounted for the largest share (29%). NSW was a close second (25%).

***Commonwealth government expenditure* on ICT related R&D objectives amounted to just $60 million in 2000-01**, of which $22 million was spent on software & services and less than $7 million was spent on hardware. Commonwealth government expenditure is heavily focused on NSW and the ACT.

***State government expenditure* on ICT related R&D objectives is very small**, amounting to just $2.5 million in 2000-01 – of which more than $2.3 million was spent on software & services and the remaining $120,000 was spent on hardware. South Australia received the largest share (34%).

Contribution of the ICT industry to the Australian economy

In 2000, Australia ranked 19th among 25 OECD countries in terms of the contribution of the ICT industry to business sector value added – ie. the contribution of the ICT industry to the Australian economy. Only in the Slovak Republic, Spain, Greece and New Zealand did ICT manufacturing make a smaller contribution.

Australia ranked 15th in terms of the contribution of the ICT industry to business sector employment. Only in countries like the Czech Republic, Spain, Mexico and Portugal does the ICT industry contribute less to employment than it does in Australia.

Australia ranked 25th among 28 OECD countries in terms of the contribution of ICTs to total merchandise exports. Only in Norway, New Zealand and Iceland do ICT exports make a smaller contribution to export earnings.

Australia ranked *last* among OECD countries in terms of the ICT manufacturing sector's revealed comparative advantage, making Australia the most disadvantaged of all OECD member countries in terms of ICT production for export.

Australian domestic market for ICTs

Estimating the size of the domestic market from ICT industry sales suggests that the market for ICT products and services was worth $61.5 billion in 2000-01 (excluding content). Communication services accounted for 49% of the total, hardware accounted for 25%, and information services for 24%.

Over the period 1995-96 to 2000-01, domestic ICT market revenues increased by 10.2% per annum. The information services market was the fastest growing at almost 14% per annum – with strong growth in computer consultancy and software maintenance services. The communication services market grew by 11% per annum, and the market for ICT hardware grew by 7% per annum.

The communications equipment and mobile markets appear to have enjoyed strong growth, while markets for cables, printers, consumables and some desktop systems declined.