

Australian ICT Trade Update 2002

by
John W. Houghton

Executive Summary



Sponsored by
Australian Computer Society

Published by
Centre for Strategic Economic Studies
PO Box 14428 Melbourne City MC 8001 Australia

Executive Summary

Australian ICT Trade Update 2002 presents a detailed statistical update on Australia's information and communication technology (ICT) trade over the decade to 2001-02. It explores the composition and direction of equipment, content and services trade and discusses trends in the balance of trade in ICTs. It also examines the impact of the recent 'dot.com' crash and subsequent downturn on Australia's ICT trade performance.

Impact of the downturn in ICTs

Australia's ICT exports and imports have both fallen over the last financial year. The deficit on trade in ICTs is down a little too.

During financial year 2001-02, Australia's ICT exports fell by \$1.7 billion, or 24%. Discounting the one-off impact of the Sydney Olympics, ICT exports would have fallen by around 11%. ICT imports were down by almost \$1.9 billion, or 8.6%. Australia's overall ICT trade deficit was \$14.4 billion.

Were the ICT trade deficit declining because of a rapid increase in Australia's ICT exports, the news would be good. A decline due to falling investment, combined with a decline in exports, is not good news.

ICT equipment trade

Looking at Australia's trade in ICT *equipment* it is clear that Australia's dependence on imports is increasing, while locally produced equipment exports are now lower than they were in the mid 1990s.

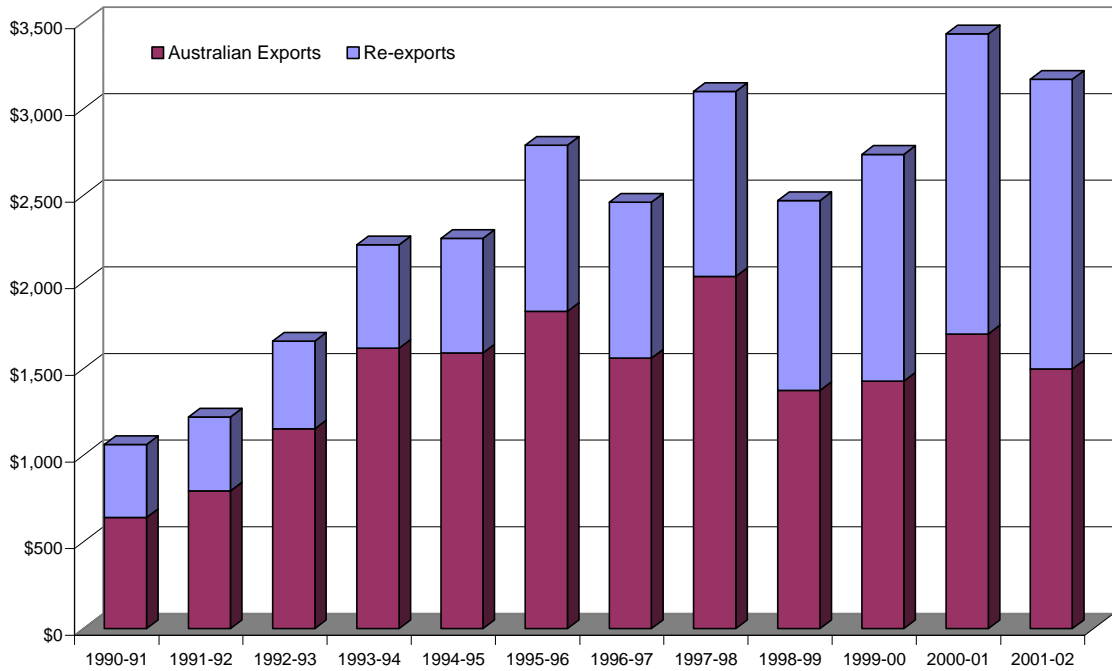
ICT equipment exports

In 2001-02, total ICT equipment exports from Australia (including re-exports) were worth \$3.17 billion – up from \$1.22 billion a decade earlier. They account for around 2.6% of Australia's total merchandise credits. Australia's wool exports account for around 3%.

However, less than half of Australia's ICT equipment exports are produced locally (Figure 1). In 2001-02, re-exports (things brought into Australia and re-exported with little or no value-added) amounted to \$1.67 billion, with locally produced exports worth just less than \$1.5 billion.

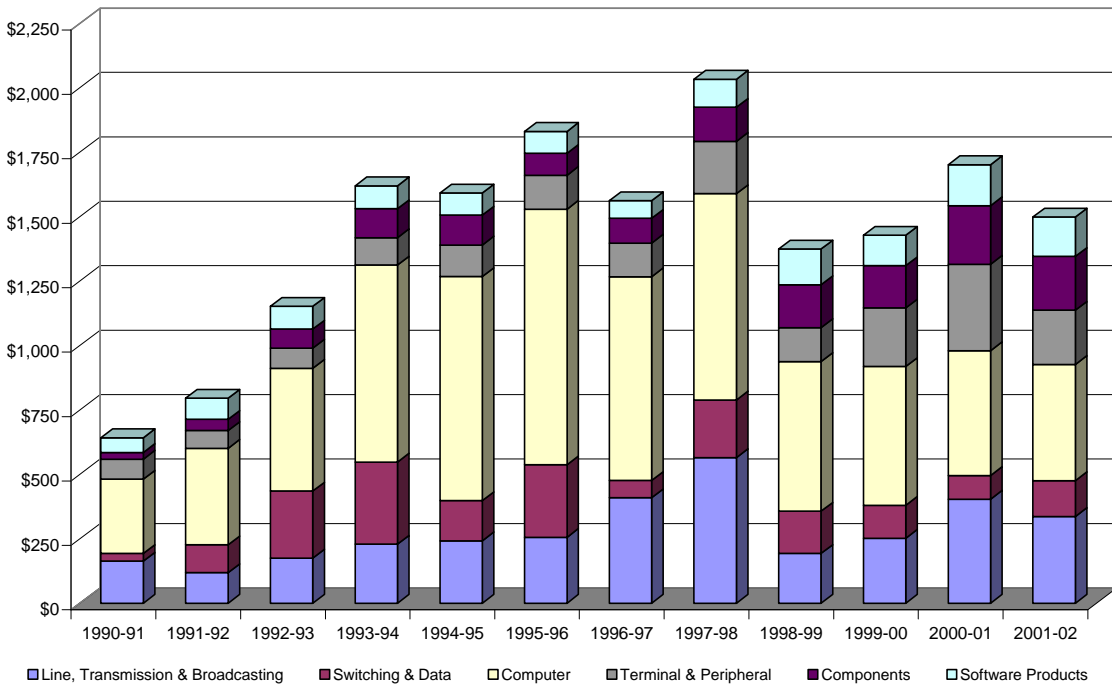
During the last financial year, re-exports accounted for 20% of Australia's software products exports, 28% of components and line, transmission & broadcasting equipment exports, 31% of terminal & peripheral equipment exports, a hefty 66% of switching & data communication equipment exports and fully 70% of computer equipment exports.

Figure 1 Australian produced and re-export shares of total ICT equipment exports, 1990-91 to 2001-02 (\$m)



Source: TradeData (www.tradedata.net), CSES Analysis.

Figure 2 Australian produced ICT equipment exports, 1990-91 to 2001-02 (\$m)



Source: TradeData (www.tradedata.net), CSES Analysis.

Locally produced ICT equipment exports were worth almost \$1.5 billion – up from \$795 million a decade earlier (Figure 2). They account for around 1.2% of Australia’s total merchandise exports. Australian produced ICT equipment exports peaked in 1997-98, at just over \$2 billion, and were lower in 2001-02 (at \$1.5 billion) than they had been throughout the mid 1990s.

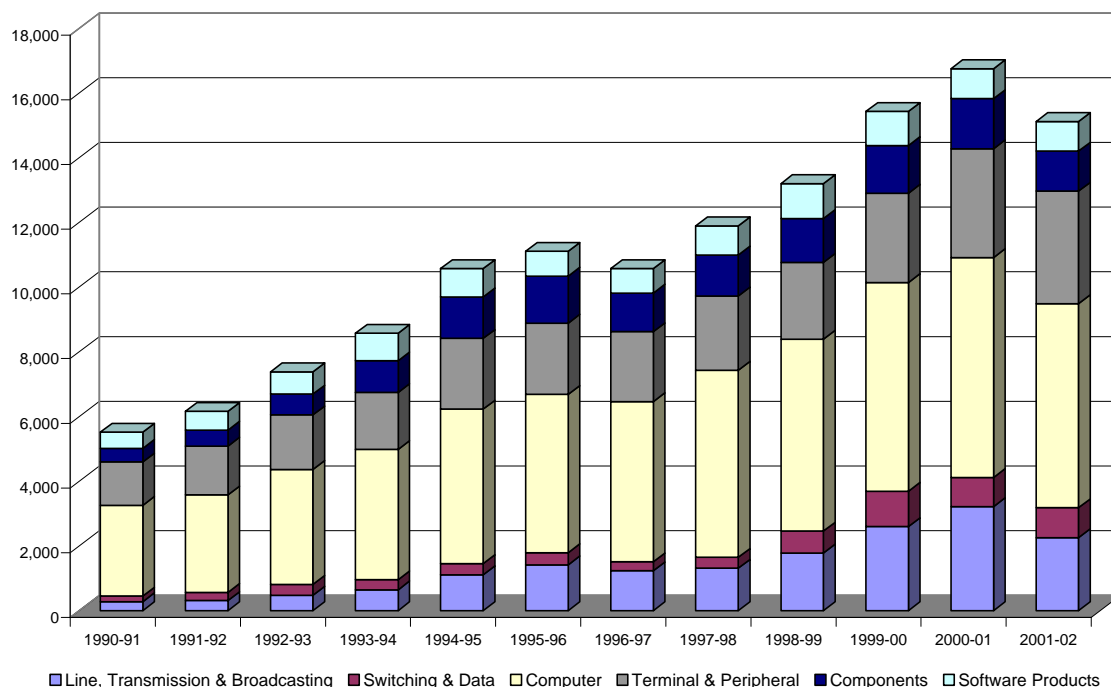
Computer equipment accounts for around 30% of locally produced ICT equipment exports, line, transmission & broadcasting equipment for 23% and terminal & peripheral equipment and components each account for around 14%.

ICT equipment imports

In 2001-02, total imports of ICT equipment into Australia cost \$16.8 billion – up from \$6.6 billion a decade earlier. ICT equipment accounts for around 14% of Australia’s total merchandise imports. ICT equipment imports have increased by almost 10% per annum over the last decade.

Imports of ICT equipment for domestic consumption reached \$15 billion in 2001-02, up from \$6 billion a decade earlier and growing 9.4% per annum (Figure 3). Computer equipment accounts for around 40%, terminal & peripheral equipment for 23% and line, transmission & broadcasting equipment for 15%.

Figure 3 ICT equipment imports for domestic consumption, 1990-91 to 2001-02 (\$m)



Source: TradeData (www.tradedata.net), CSES Analysis.

Direction of trade in ICT equipment

Over the last decade New Zealand and the United States have been the largest markets for Australia's ICT equipment exports, and their overall share of exports has increased. In 2001-02, both New Zealand and the United States took around 22% of Australia's ICT equipment exports.

As a destination for our ICT equipment exports, Japan has fallen from ranking 3rd in 1991-92 to ranking 8th in 2001-02. China (including Hong Kong) and Singapore have been good markets for Australian ICT equipment throughout the last decade. Other major export markets during 2001-02 included: the United Kingdom, Germany, Malaysia, Taiwan and Thailand.

The United States and Japan have been the two main sources of ICT equipment imports into Australia over the last decade, but their share of total imports is falling. Among those countries increasing their share of ICT imports into Australia over the last decade are China (including Hong Kong), Singapore, Malaysia, Korea, the United Kingdom, Philippines and Ireland.

ICT equipment trade balance

Australia has run a large and growing deficit on trade in ICT equipment over a number of years. In 2001-02, it reached just over \$13.6 billion – up from \$5.4 billion in 1991-92, and growing 9.8% per annum over the decade 1991-92 to 2001-02 (Figure 4).

Trade deficits on components, computer equipment and terminal & peripheral equipment all increased around 8.5% per annum, while the deficit on trade in switching & data communication equipment grew 18% per annum, and that on trade in line, transmission & broadcasting equipment 26% per annum.

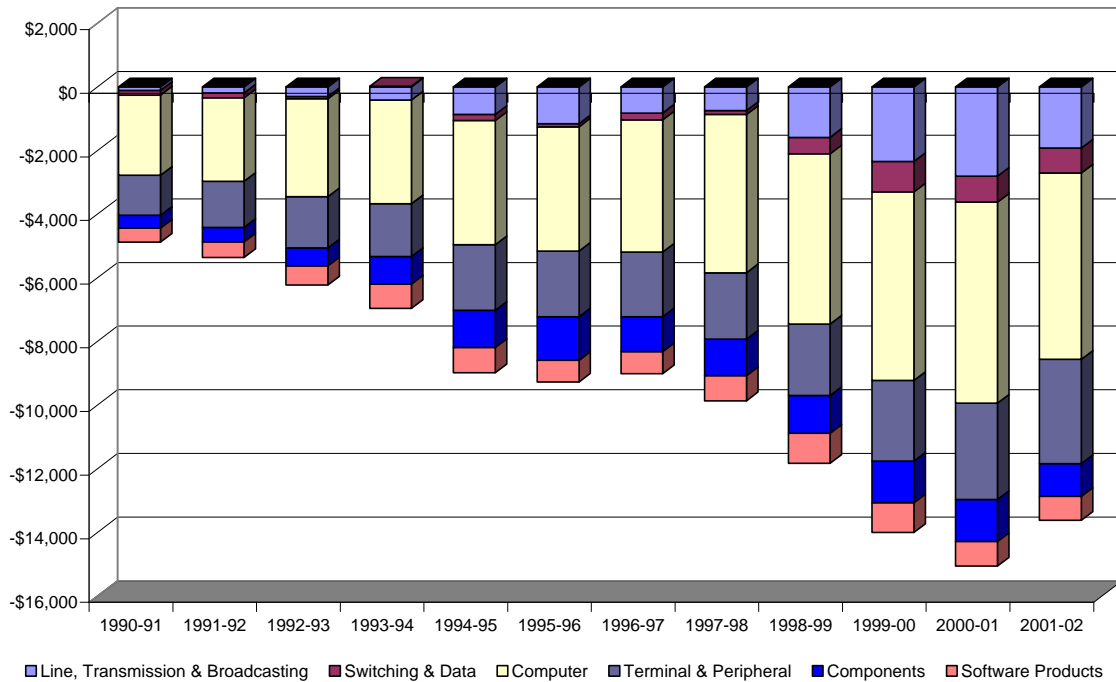
ICT services trade

Australia's ICT related *services* exports were worth \$2.3 billion in 2001-02, up from \$1.3 billion in 1993-94 (Figure 5). Exports of ICT services increased by 7.4% per annum over that period. Strong export growth was recorded in database services, albeit from a low base, and in consultancy and implementation services, which increased 19% per annum over the period.

Australia's ICT related services imports cost almost \$3 billion in 2001-02, up from \$1.9 billion in 1993-94 (Figure 6). Imports of ICT services increased 6% per annum over that period. Strong growth was recorded in database services imports (33% per annum), and consultancy and implementation services imports (12.5% per annum).

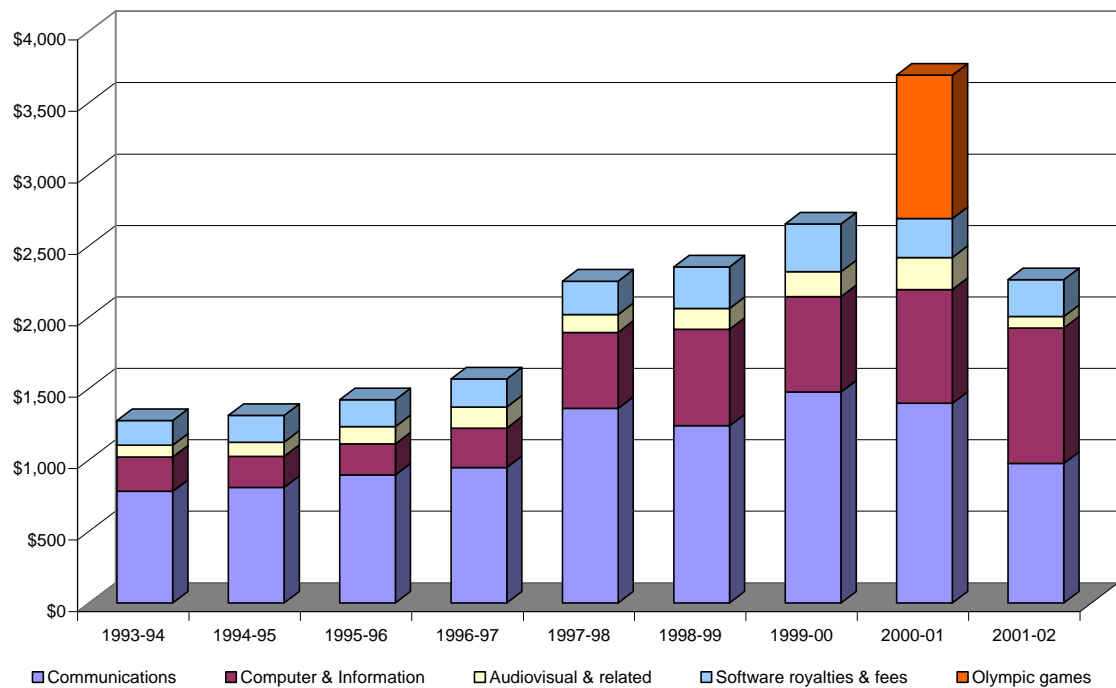
In 2001-02, there was a deficit on trade in ICT related services of \$725 million. This represents a significant deterioration in Australia's ICT services trade performance over recent years – with a doubling of the trade deficit since 1997-98 (Figure 7).

Figure 4 Composition of Australia's ICT equipment trade deficit, 1990-91 to 2001-02 (\$m)



Source: TradeData (www.tradedata.net), CSES Analysis.

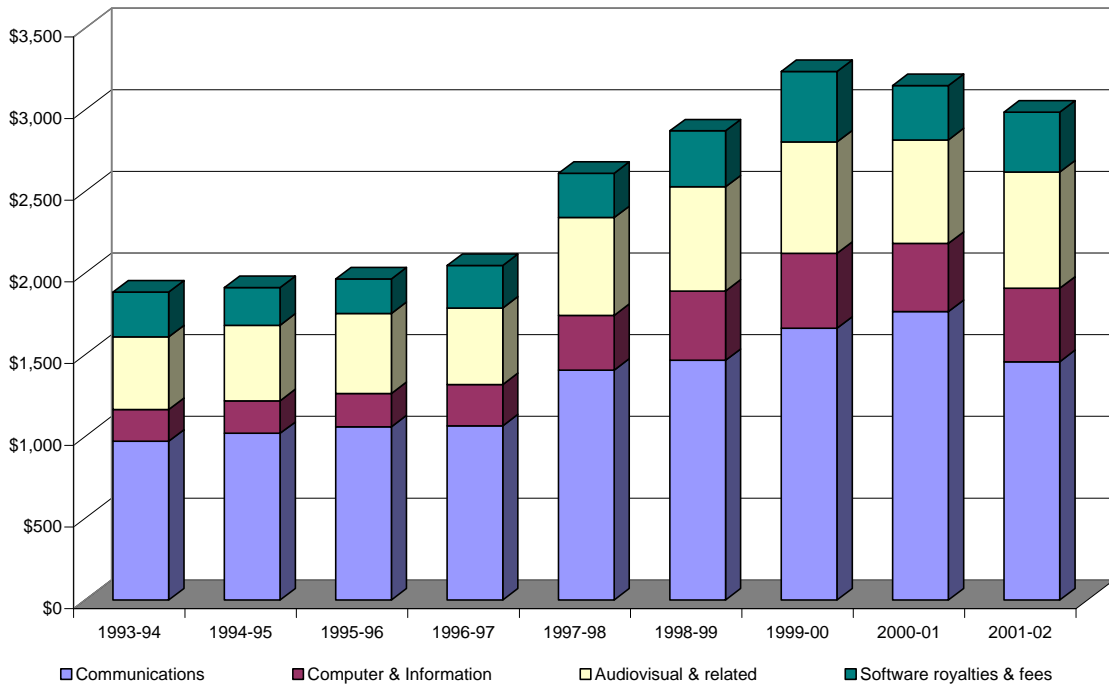
Figure 5 Australia's ICT services exports, 1993-94 to 2001-02 (\$m)



Note: 2000-01 includes the one-off impact of payments for TV rights to the Sydney Olympics, which are identified separately.

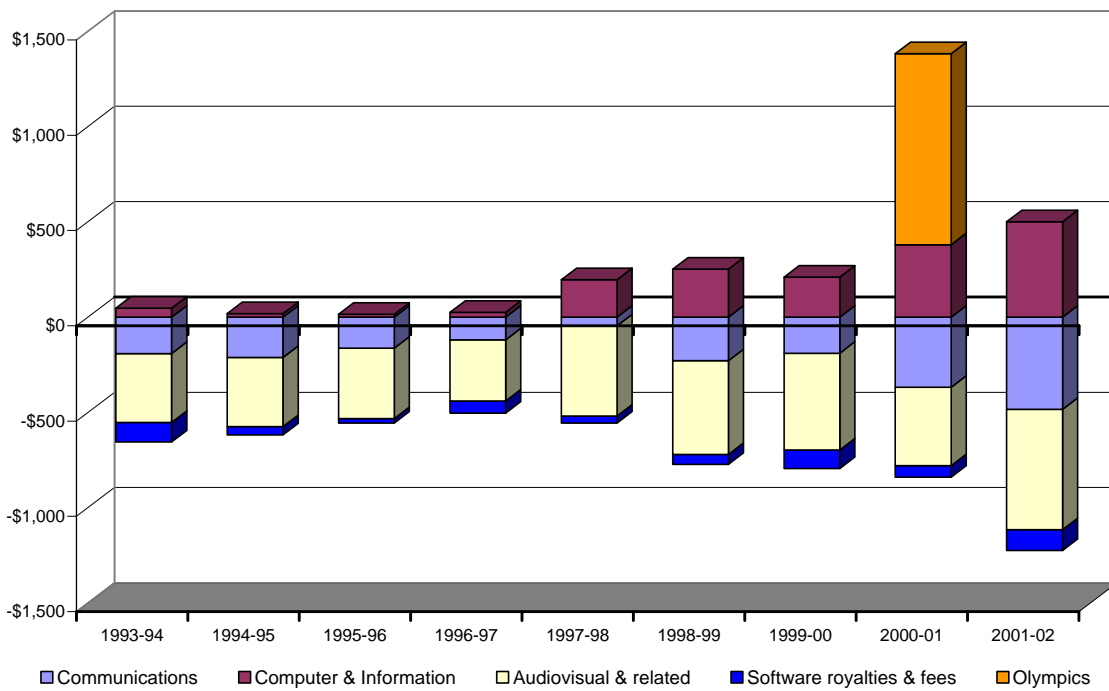
Source: ABS, CSES analysis.

Figure 6 Australia's ICT services imports, 1993-94 to 2001-02 (\$m)



Source: ABS, CSES analysis.

Figure 7 Australia's ICT services trade balance, 1993-94 to 2001-02 (\$m)



Note: 2000-01 includes the one-off impact of payments for TV rights to the Sydney Olympics.
Source: ABS, CSES analysis.

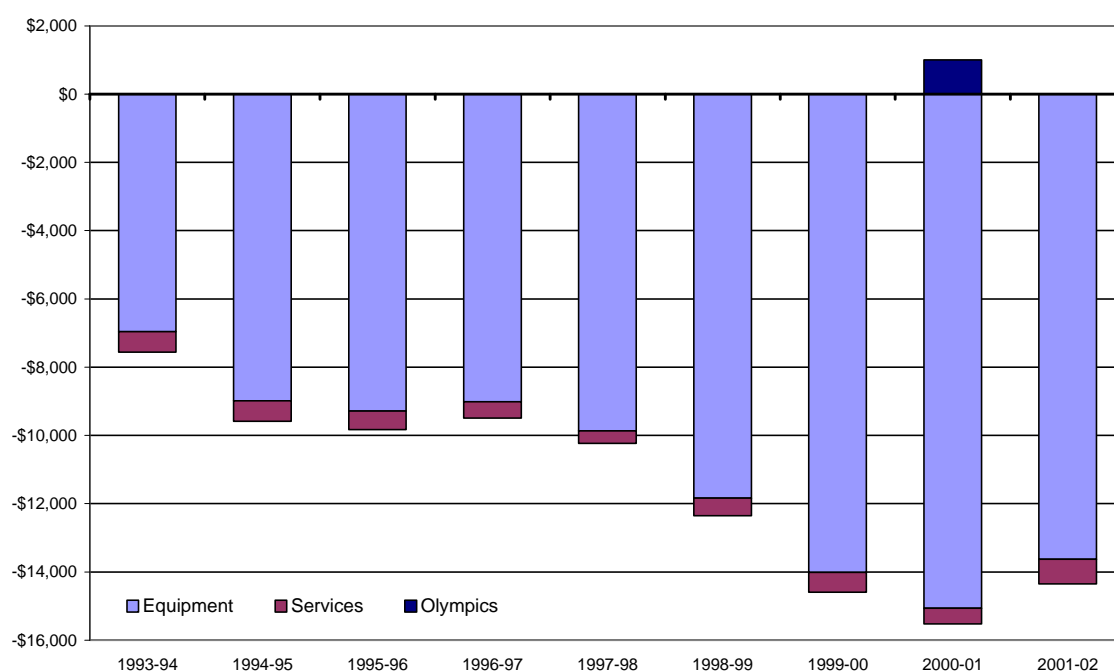
ICT trade summary

Putting ICT equipment and services trade together gives a more complete picture of Australia's overall trade position.

In 2001-02, total **ICT exports** from Australia (including equipment re-exports) were worth \$5.4 billion, up from \$3.5 billion in 1993-94. Together, ICT goods and services exports account for around 3.6% of Australia's total exports earnings. However, ICT equipment re-exports (things brought into Australia and re-exported with little or no value added) were worth almost \$1.7 billion in 2001-02, no less than 30% of Australia's total ICT exports. Australian produced ICT exports were worth just less than \$3.8 billion.

Australia's **ICT imports** cost almost \$20 billion in 2001-02, up from \$11 billion in 1993-94. Together ICT goods and services imports account for around 13% of Australia's total import debits.

Figure 8 Australia's ICT trade balance, 1993-94 to 2001-02 (\$m)



Notes: 2000-01 includes the one-off impact of payments for TV rights to the Sydney Olympics.
Sources: ABS and TradeData (www.tradedata.net), CSES Analysis.

In 2001-02, Australia's total **deficit on ICT trade reached almost \$14.4 billion**. It has grown 8.3% per annum since 1993-94 (Figure 8).

International comparisons

International comparisons put Australia's ICT *equipment* trade performance into perspective. In 2000:

- Australia ranked 23rd of the 29 OECD countries in terms of the contribution of ICT equipment to total merchandise exports.
- Australia ranked 23rd of the 29 OECD countries in terms of the ratio of ICT equipment exports to GDP, with exports equivalent to just 0.32% of Australia's GDP compared with the OECD average of 2.2%.
- Australia ranked 24th among the 29 OECD countries in terms of its export/import ratio, with Australia's ratio less than 0.2 compared with Finland's 1.9 and the OECD average of 0.9.
- Australia ranked 23rd of 29 OECD countries in terms of its 'revealed comparative advantage' in ICT equipment, with an RCA of 0.19. Disturbingly, this is down from 0.34 in 1995, one of the most rapid declines in ICT equipment production advantage experienced by an OECD country.
- Australia ranked 26th among 29 OECD countries in terms of the per capita cost of its ICT equipment trade deficit. Australia's deficit on trade in ICT equipment cost USD 365 per head of population. The average for OECD countries was a deficit of USD 38 per head of population.

However one looks at it, Australia's unusually high dependence on ICT equipment imports, and the very low contribution made to merchandise exports by ICTs are clearly evident.

Australia, an IT services producer?

Trade and specialisation are beneficial. Not all countries will have a comparative advantage in all areas of ICT production. Nevertheless, the ICT industries are a highly diverse range of industries. Comparative and competitive advantage in areas like electronic equipment assembly are very different from those in such areas as consulting services. Given the enormous range of the ICT industries, and the diversity of their underlying inputs and cost structures, one could reasonably expect almost all developed countries to have strengths in some area of ICT production, and comparative advantage in part of the ICT industries.

In Australia's case, long term and rapidly growing surpluses on trade in ICT consulting and implementation services stand out as the bright spot among what are otherwise rather depressing trade data. This suggests that *ICT consulting and implementation services may be an area of local comparative advantage*. The challenge for Australian policy makers is to build on that advantage.

Table of Contents

1	INTRODUCTION	1
1.1	OUTLINE OF THIS REPORT	1
2	DEFINING ICTS.....	3
2.1	MAPPING ICTS	3
3	AUSTRALIAN ICT EQUIPMENT TRADE.....	7
3.1	THE COMPOSITION OF ICT EQUIPMENT EXPORTS	7
3.2	ICT EQUIPMENT EXPORT TRENDS	10
3.3	LOCAL AUSTRALIAN PRODUCTION FOR EXPORT	11
3.4	THE COMPOSITION OF ICT EQUIPMENT IMPORTS	12
3.5	ICT EQUIPMENT IMPORT TRENDS.....	15
3.6	AUSTRALIA'S BALANCE OF TRADE IN ICT EQUIPMENT.....	16
3.7	THE DIRECTION OF AUSTRALIAN ICT TRADE	18
4	AUSTRALIAN ICT SERVICES TRADE.....	23
4.1	ICT SERVICES EXPORTS	23
4.2	ICT SERVICES IMPORTS	24
4.3	BALANCE OF TRADE IN ICT SERVICES	26
5	AUSTRALIAN ICT TRADE SUMMARY	29
5.1	AUSTRALIA'S ICT EXPORTS	29
5.2	AUSTRALIA'S ICT IMPORTS.....	30
5.3	OVERALL ICT TRADE BALANCE	32
5.4	AUSTRALIA, AN IT SERVICES PRODUCER?	33
6	A STATE-BY-STATE BREAKDOWN OF ICT TRADE.....	35
6.1	NEW SOUTH WALES	35
6.2	VICTORIA	38
6.3	QUEENSLAND	40
6.4	SOUTH AUSTRALIA.....	41
6.5	WESTERN AUSTRALIA	43
6.6	TASMANIA	44
6.7	NORTHERN TERRITORY	45
6.8	AUSTRALIAN CAPITAL TERRITORY.....	46

7	SOME INTERNATIONAL COMPARISONS	49
7.1	CONTRIBUTION OF ICT EQUIPMENT TO EXPORTS.....	50
7.2	CONTRIBUTION OF ICT EXPORTS TO GDP	51
7.3	ICT TRADE PERFORMANCE.....	52
7.4	THE COST OF AUSTRALIA’S ICT TRADE DEFICIT.....	54
8	IMPACT OF THE DOWNTURN IN ICTS.....	57
8.1	AUSTRALIAN ICT EXPORTS, 1999-2000 TO 2001-2002	57
8.2	AUSTRALIAN ICT IMPORTS, 1999-2000 TO 2001-2002.....	59
8.3	AUSTRALIAN ICT TRADE BALANCE, 1999-2000 TO 2001-2002	60
8.4	THE DOWNTURN STATE-BY-STATE.....	61

List of Tables

TABLE 3.1	ICT EQUIPMENT EXPORTS, 1991-92 TO 2001-02	7
TABLE 3.2	ICT EQUIPMENT EXPORT SHARES, 1991-92 TO 2001-02	8
TABLE 3.3	AUSTRALIA'S ICT EQUIPMENT IMPORTS, 1991-92 TO 2001-02	13
TABLE 3.4	AUSTRALIA'S ICT EQUIPMENT IMPORT SHARES, 1991-92 TO 2001-02 ...	15
TABLE 3.5	AUSTRALIA'S ICT EQUIPMENT TRADE BALANCE, 1991-92 TO 2001-02 ..	17
TABLE 3.6	AUSTRALIA'S TOP 10 ICT EQUIPMENT EXPORT MARKETS, 2001-02	20
TABLE 3.7	AUSTRALIA'S TOP 10 ICT EQUIPMENT IMPORT SOURCES, 2001-02	22
TABLE 4.1	AUSTRALIA'S ICT SERVICES EXPORTS, 1993-94 TO 2001-02.....	23
TABLE 4.2	AUSTRALIA'S ICT SERVICES IMPORTS, 1993-94 TO 2001-02	25
TABLE 4.3	AUSTRALIA'S ICT SERVICES TRADE BALANCE, 1993-94 TO 2001-02.....	27
TABLE 5.1	AUSTRALIA'S TOTAL ICT EXPORTS, 1993-94 TO 2001-02	29
TABLE 5.2	AUSTRALIA'S TOTAL ICT IMPORTS, 1993-94 TO 2001-02	31
TABLE 5.3	AUSTRALIA'S ICT TRADE BALANCE, 1993-94 TO 2001-02	33
TABLE 6.1	NSW'S ICT EQUIPMENT TRADE, 1991-92 TO 2001-02	37
TABLE 6.2	NSW'S ICT SERVICES TRADE, 1993-94 TO 2001-02	37
TABLE 6.3	VICTORIA'S ICT EQUIPMENT TRADE, 1991-92 TO 2001-02	39
TABLE 6.4	VICTORIA'S ICT SERVICES TRADE, 1993-94 TO 2001-02	40
TABLE 6.5	QUEENSLAND'S ICT EQUIPMENT TRADE, 1991-92 TO 2001-02	41
TABLE 6.6	QUEENSLAND'S ICT SERVICES TRADE, 1993-94 TO 2001-02	41
TABLE 6.7	SOUTH AUSTRALIA'S ICT EQUIPMENT TRADE, 1991-92 TO 2001-02	42
TABLE 6.8	SOUTH AUSTRALIA'S ICT SERVICES TRADE, 1993-94 TO 2001-02	42
TABLE 6.9	WESTERN AUSTRALIA'S ICT EQUIPMENT TRADE, 1991-92 TO 2001-02	43
TABLE 6.10	WESTERN AUSTRALIA'S ICT SERVICES TRADE, 1993-94 TO 2001-02	44
TABLE 6.11	TASMANIA'S ICT RELATED SERVICES TRADE, 1993-94 TO 2001-02	44
TABLE 6.12	TASMANIA'S ICT EQUIPMENT TRADE, 1991-92 TO 2001-02	45
TABLE 6.13	NORTHERN TERRITORY'S ICT RELATED SERVICES TRADE, 2001-02	45
TABLE 6.14	NORTHERN TERRITORY'S ICT EQUIPMENT TRADE, 2001-02	46
TABLE 6.15	ACT'S ICT EQUIPMENT TRADE, 1991-92 TO 2001-02	47
TABLE 6.16	ACT'S ICT RELATED SERVICES TRADE, 1993-94 TO 2001-02	47
TABLE 8.1	AUSTRALIAN ICT EXPORTS, 1999-2000 TO 2001-2002	57
TABLE 8.2	AUSTRALIAN ICT IMPORTS, 1999-2000 TO 2001-2002	59
TABLE 8.3	AUSTRALIAN ICT BALANCE, 1999-2000 TO 2001-2002	61
TABLE 8.4	ICT EQUIPMENT DOWNTURN STATE-BY-STATE, 2000-01 TO 2001-02 ...	63

List of Figures

FIGURE 1	AUSTRALIAN AND RE-EXPORT SHARES OF ICT EQUIPMENT EXPORTS	II
FIGURE 2	AUSTRALIAN PRODUCED ICT EQUIPMENT EXPORTS TO 2001-02	II
FIGURE 3	ICT EQUIPMENT IMPORTS FOR DOMESTIC CONSUMPTION TO 2001-02	III
FIGURE 4	COMPOSITION OF AUSTRALIA'S ICT EQUIPMENT TRADE DEFICIT	V
FIGURE 5	AUSTRALIA'S ICT SERVICES EXPORTS, 1993-94 TO 2001-02	V
FIGURE 6	AUSTRALIA'S ICT SERVICES IMPORTS, 1993-94 TO 2001-02	VI
FIGURE 7	AUSTRALIA'S ICT SERVICES TRADE BALANCE, 1993-94 TO 2001-02	VI
FIGURE 8	AUSTRALIA'S ICT TRADE BALANCE, 1993-94 TO 2001-02	VII
FIGURE 2.1	THE ICT MAP.....	4
FIGURE 2.2	MAPPING OF DATA DESCRIPTIONS.....	6
FIGURE 3.1	AUSTRALIAN PRODUCED ICT EQUIPMENT EXPORTS, 2001-02	9
FIGURE 3.2	AUSTRALIAN ICT EQUIPMENT EXPORT GROWTH, 2001-02	10
FIGURE 3.3	AUSTRALIAN AND RE-EXPORT SHARES OF ICT EQUIPMENT EXPORTS	12
FIGURE 3.4	AUSTRALIA'S ICT EQUIPMENT IMPORTS, 1990-91 TO 2001-02	13
FIGURE 3.5	ICT EQUIPMENT IMPORTS FOR DOMESTIC CONSUMPTION TO 2001-02	14
FIGURE 3.6	COMPOSITION OF AUSTRALIA'S ICT EQUIPMENT TRADE DEFICIT	16
FIGURE 3.7	AUSTRALIA'S ICT EQUIPMENT TRADE, 1990-91 TO 2001-02	18
FIGURE 3.8	THE TOP 10 MARKETS FOR AUSTRALIA'S ICT EQUIPMENT EXPORTS	19
FIGURE 3.9	THE TOP 10 SOURCES OF AUSTRALIA'S ICT EQUIPMENT IMPORTS.....	21
FIGURE 4.1	AUSTRALIA'S ICT SERVICES EXPORTS, 1993-94 TO 2001-02	24
FIGURE 4.2	AUSTRALIA'S ICT SERVICES IMPORTS, 1993-94 TO 2001-02	25
FIGURE 4.3	AUSTRALIA'S ICT SERVICES TRADE BALANCE, 1993-94 TO 2001-02	26
FIGURE 5.1	MAPPING AUSTRALIA'S ICT EXPORTS, 2001-02	30
FIGURE 5.2	MAPPING AUSTRALIA'S ICT IMPORTS, 2001-02	31
FIGURE 5.3	AUSTRALIA'S ICT TRADE BALANCE, 1993-94 TO 2001-02	32
FIGURE 6.1	NSW'S EXPORTS OF ICT EQUIPMENT, 1991-92 TO 2001-02	36
FIGURE 6.2	VICTORIA'S EXPORTS OF ICT EQUIPMENT, 1991-92 TO 2001-02	38
FIGURE 7.1	OECD TRADE: TOTAL AND ICT PRODUCTS, 1990-2000	49
FIGURE 7.2	ICT EQUIPMENT SHARE OF TOTAL EXPORTS, 2000	50
FIGURE 7.3	ICT EQUIPMENT EXPORTS AS A SHARE OF GDP, 1990-2000	52
FIGURE 7.4	EXPORT/IMPORT RATIO FOR ICT EQUIPMENT, 2000	53
FIGURE 7.5	REVEALED COMPARATIVE ADVANTAGE IN ICT EQUIPMENT, 2000.....	54
FIGURE 7.6	ICT EQUIPMENT SURPLUS/DEFICIT PER 1,000 POPULATION, 2000	55
FIGURE 8.1	PERCENTAGE CHANGE IN AUSTRALIAN ICT EXPORTS, 1999-2002.....	58
FIGURE 8.2	PERCENTAGE CHANGE IN AUSTRALIAN ICT IMPORTS, 1999-2002.....	60
FIGURE 8.3	PERCENTAGE CHANGE IN AUSTRALIAN ICT TRADE BALANCE, 1999-02..	62

Australian ICT Trade Update 2002

was sponsored by the Australian Computer Society and written by

Professor John W. Houghton

Ph: +61 2 6282 1981 Mobile: (Australian) 0409 239 109

E-mail: John.Houghton@pobox.com

Copies of the full report can be obtained from

Centre for Strategic Economic Studies

Victoria University

PO Box 14428
Melbourne City MC 8001
Australia

Ph: (03) 9248 1340

Fax: (03) 9248 1350

<http://www.cfses.com>

csesinfo@vu.edu.au
