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Summary

For Australia's ICT trade, much of this decade has been one of a steady recovery from the 'Dot Com' downturn, but 2009 bears the scars of the Global Financial Crisis.

The 'Dot Com' downturn triggered a new wave of globalisation in the information and communication technology (ICT) industries with increasing specialisation along the value chain and the emergence of developing economies in both new production locations and new growth markets (e.g. China and India). In the early years of this decade, international investment flows focused on developing economies, on services rather than manufacturing and, in particular, on a range of IT and ICT-enabled business services. Consequently, a new international division of labour has emerged, with the globalisation of services following a similar path to that previously seen in manufacturing.

As with many other sectors, the Global Financial Crisis and higher Australian dollar have caused a marked slowing in Australia's ICT exports, although imports continue to grow. During 2009, Australia's ICT exports fell by 11%, with ICT services exports falling by almost 7% and ICT equipment exports falling by 15% (in current prices). Preliminary analysis of ICT trade data for the first half of 2010 reveals evidence of further slowing – with equipment exports during the first four months down by the annual equivalent of 9%, and computer and information services exports in the first quarter of 2010 some 27% lower than first quarter 2009 (in current prices). Both first half year 2010 and Financial Year 2009-10 computer and information services exports are also down by around 15% to 20% on the previous periods.

Placing recent trade performance in this context, this report presents a detailed statistical update on Australia's ICT trade over the decade 2000 to 2009 (inclusive). It explores the composition of ICT services, software, content and equipment trade, and identifies major export markets and import sources. It also examines ICT trade State-by-State.

Australia's ICT Trade

ICT goods and services exports from Australia were worth almost $4.5 billion during 2009, well below the peak of $7.2 billion reached during the boom in 2000 (in current prices) (Table 1 and Figure 1).

Table 1 Australia's ICT trade, 2009 (AUD millions)

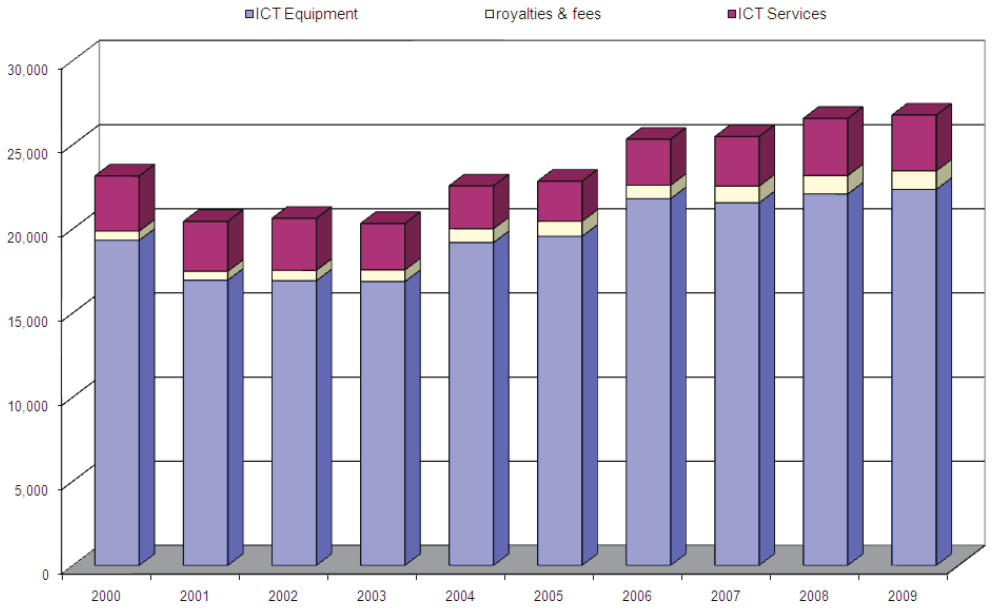
	Exports	Imports	Balance
ICT Equipment	2,259	22,347	-20,088
ICT Services	2,048	3,314	-1,266
ICT-related Royalties & Fees	227	1,101	-874
ICT Trade	4,534	26,762	-22,228

Sources: ABS and TradeData (www.tradedata.net), CSES Analysis.

Figure 1 Australia's ICT exports, 2000 to 2009 (AUDM)

Sources: ABS and TradeData (www.tradedata.net), CSES Analysis.

Figure 2 Australia's ICT imports, 2000 to 2009 (AUDM)



Sources: ABS and TradeData (www.tradedata.net), CSES Analysis.

ICT exports fell from the peak in 2000 until 2005, after which exports increased a little in the following years (in spite of the global downturn) before falling substantially again in 2009. Total ICT exports fell by 11% during 2009, with ICT equipment exports falling by 15% and ICT services exports by almost 7% (in current prices). ICT services exports continued to fall during the first two quarters of 2010.

However, with Australia's comparatively strong economic performance during the Global Financial Crisis, ICT imports have continued to grow and cost almost $27 billion during 2009 (Table 1 and Figure 2).

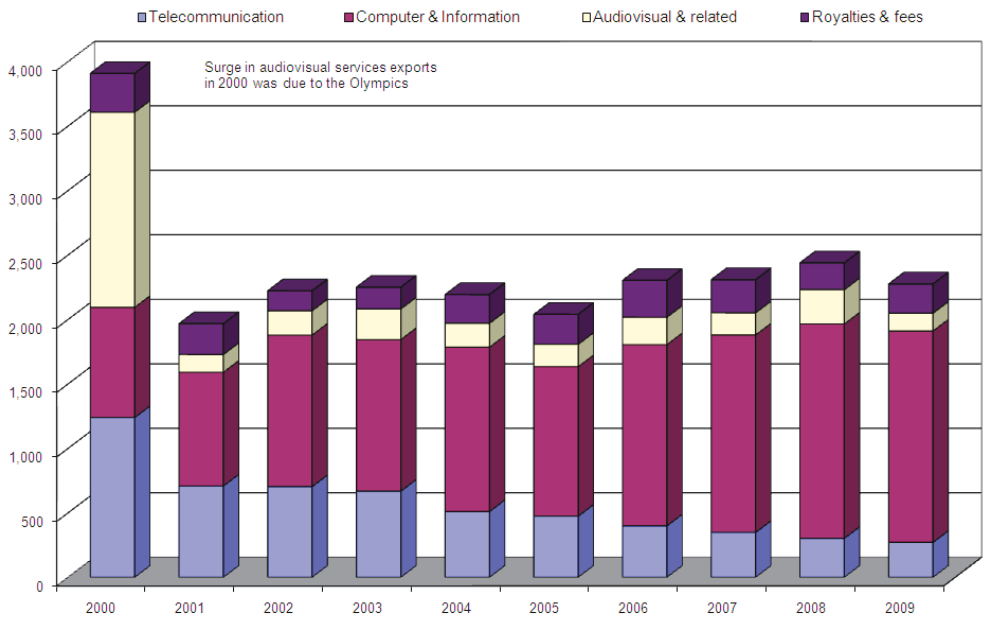
Consequently, Australia's ICT trade deficit exceeded $22 billion during 2009 – increasing by $755 million during the year, and by more than $6 billion since 2000 (in current prices).[1]

1 ICTs exhibit rapid technological development and consequent price changes that are unlike consumer prices. The complexity of available ICT price deflators and differences between them and CPI deflators render attempts to adjust prices extremely difficult. As a result, it is standard practice to present ICT trade data in current prices (i.e. unadjusted for price changes over time).

ICT Services Trade

Australia's ICT services exports (including payments of royalties and licence fees) were worth $2.3 billion in 2009, and accounted for around 4% of total services exports. Computer and information services exports have grown by 7.5% per annum over the decade – a notable highlight in Australia's overall ICT trade performance (Figure 3).

Figure 3 Australia's ICT services exports, 2000 to 2009 (AUDM)

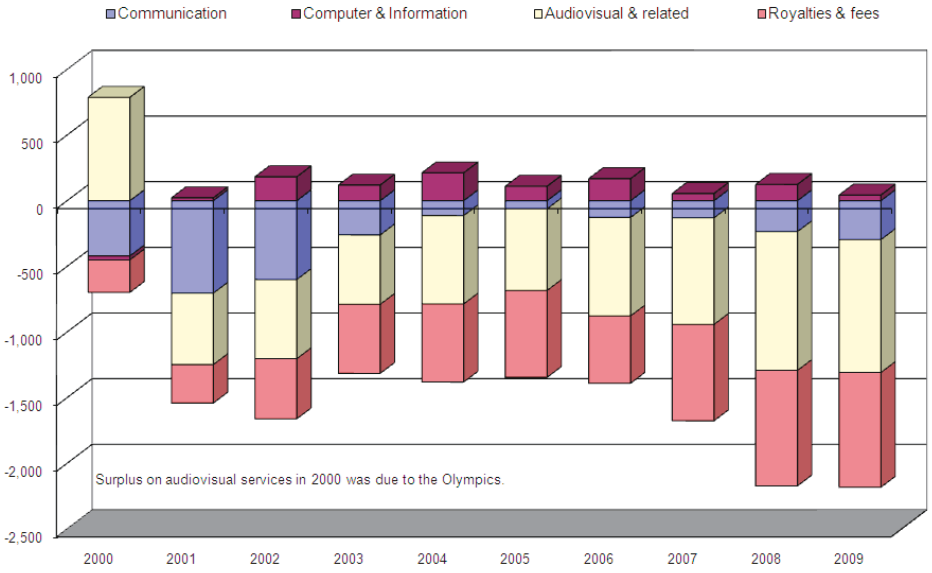


Sources: ABS, CSES Analysis.

Australia's ICT services imports cost $4.4 billion in 2009, and accounted for around 8% of Australia's total services imports. Computer and information services accounted for 36%, audiovisual accounted for 26%, telecommunication services accounted for 13%, and royalties and licence fees (mainly for software) accounted for around 25%.

There was a deficit on trade in ICT services of more than $2 billion during 2009, but computer and information services stand out, having traded in surplus since 2001 and being the only category of ICT goods or services to be in surplus (Figure 4).

Figure 4 Australia's ICT services trade balance, 2000 to 2009 (AUDM)



Sources: ABS, CSES Analysis.

ICT Equipment Trade

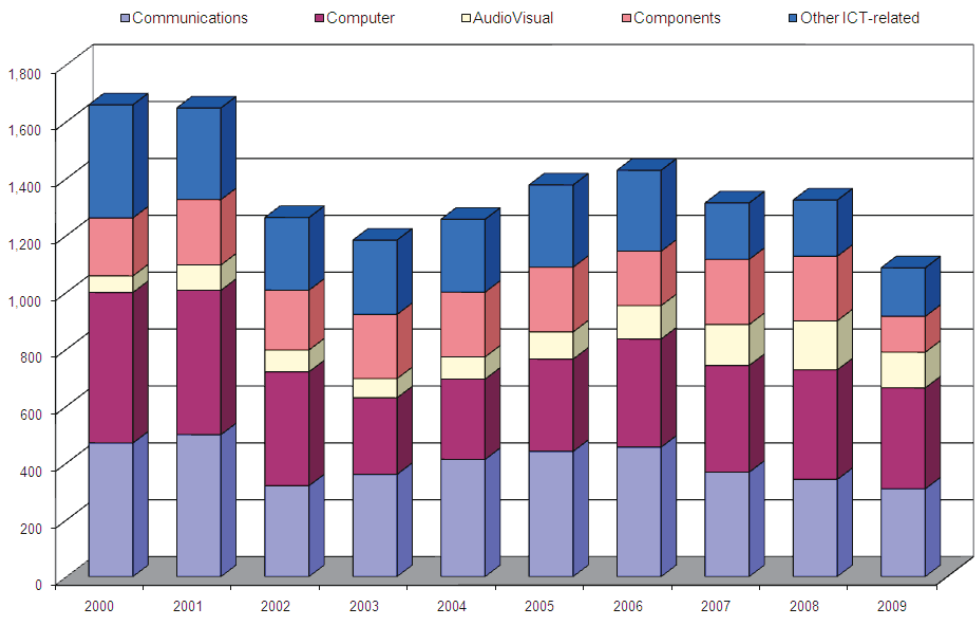
While there are significant areas of export strength, Australia continues to source much of its ICT equipment from overseas, and increasingly from Asia.

In 2009, ICT equipment exports from Australia were worth almost $2.3 billion – 1.1% of Australia's total goods exports. By comparison, Australia's gold exports accounted for around 8% of total goods exports and coal for 20%.

During 2009, re-exports (i.e. things brought into Australia and re-exported with little or no value added) accounted for $1.1 billion, or 52% of Australia's ICT equipment exports. Locally produced equipment exports were worth a little less than $1.1 billion.

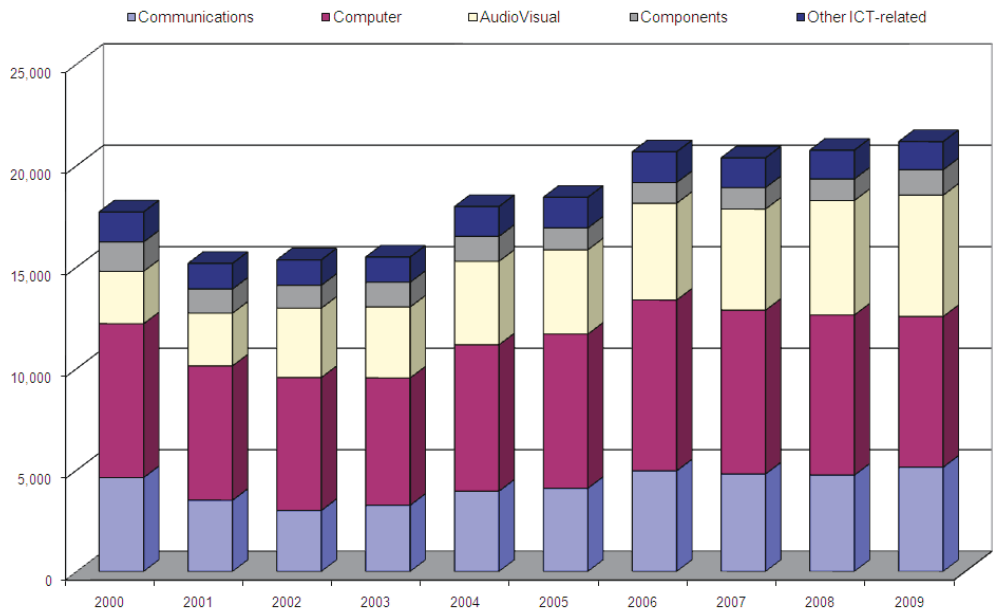
Locally produced exports of audiovisual equipment have increased during the past decade, but locally produced computer and communications equipment, components and other ICT-related equipment exports have declined (Figure 5).

Figure 5 Locally produced ICT equipment exports, 2000 to 2009 (AUDM)



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

Figure 6 ICT equipment imports for domestic consumption, 2000 to 2009 (AUDM)



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

In 2000, Australia's locally produced exports of computer equipment were worth $529 million. By 2009, they had fallen to just $355 million, and communications equipment had fallen from $470 million to $309 million (in current prices).

ICT equipment imports into Australia cost more than $22 billion during 2009 – up from $19 billion in 2000 and higher than at any other time during the decade (in current prices). ICT equipment accounted for around 11% of Australia's total goods imports during 2009. In comparison, passenger motor vehicles and crude petroleum both accounted for around 6%.

As noted, re-exports were worth more than $1.1 billion in 2009. Hence, imports of ICT equipment for domestic consumption cost around $21 billion during 2009, up from $18 billion a decade earlier. Computer equipment accounted for 33%, audiovisual equipment for 27% and communications equipment for 23% (Figure 6).

ICT Services Export Markets and Import Sources

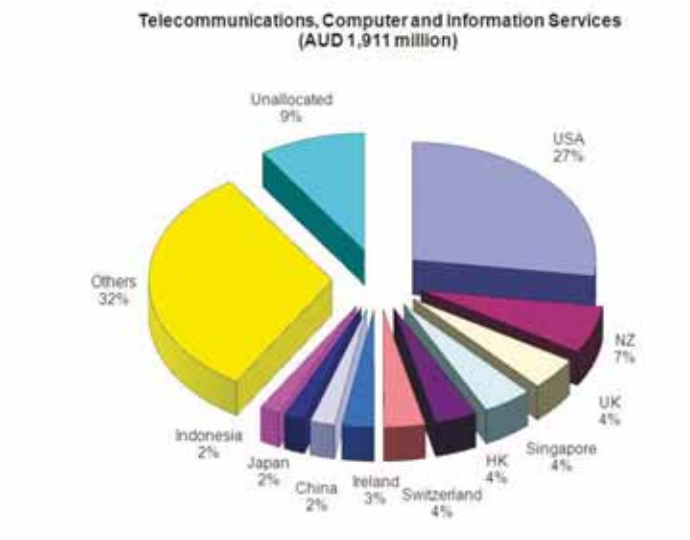
Bilateral services trade data are limited, but among reporting countries major markets for Australia's ICT services exports during 2009 included the United States, New Zealand, the United Kingdom, Singapore, Hong Kong, Switzerland, Ireland and China (Figure 7).

Of the reporting countries, the United States was by far our largest single source for ICT services imports during 2009 at $626 million. Hong Kong was the source of $284 million, the United Kingdom $142 million, India $139 million, Switzerland $107 million, New Zealand $66 million, Singapore $56 million and China $43 million.

Offshoring and trade in off-shored services involve both computer and information services (i.e. IT services) and a range of ICT-enabled business services. In only five countries did computer and information services account for more than 10% of total services exports during 2007 – India, where they accounted for almost 40% (down from 50% in 2004), Ireland 29% (down from 39% in 2004), Israel 28%, Costa Rica 15% and Sweden 10% (Figure 8).

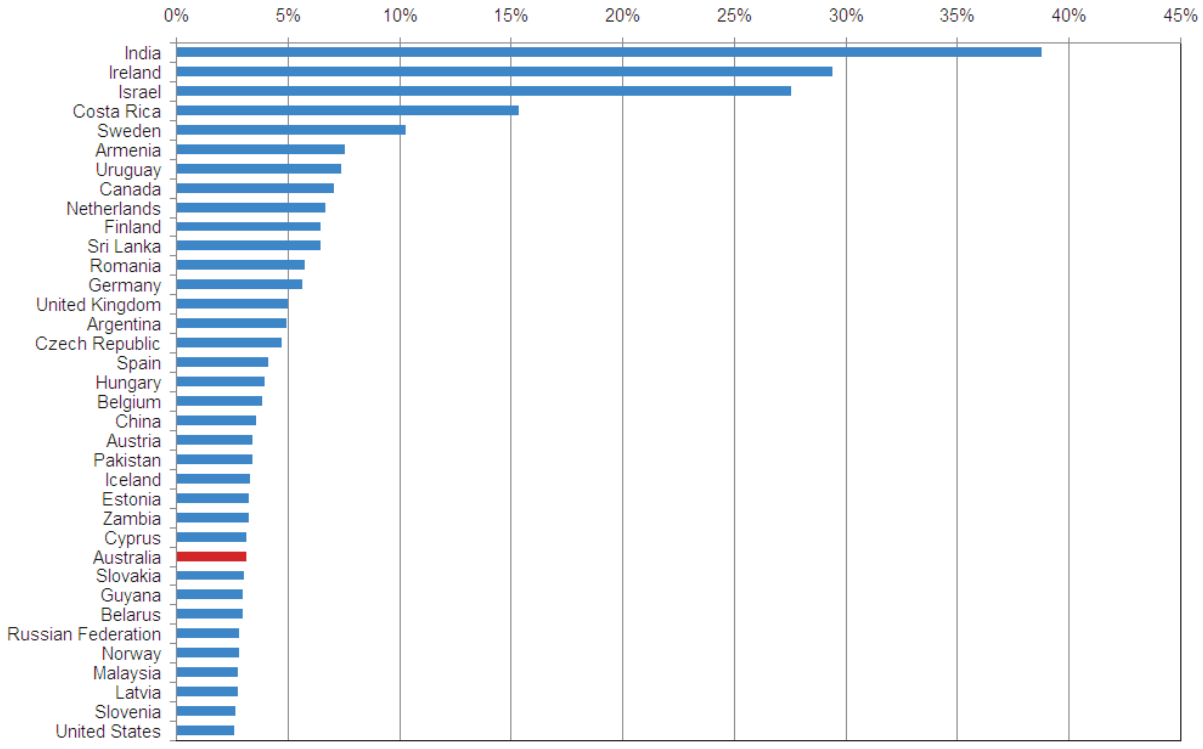
It is apparent from these data that India, Ireland and Israel are major IT services offshoring locations. The other countries listed are also significant exporters of IT services, and prima facie have the potential to become major offshoring locations (including Australia).

Figure 7 Australia's ICT services export markets, 2009 (per cent)



Sources: ABS, CSES Analysis

Figure 8 Share of IT services in total services exports, 2007 (per cent)

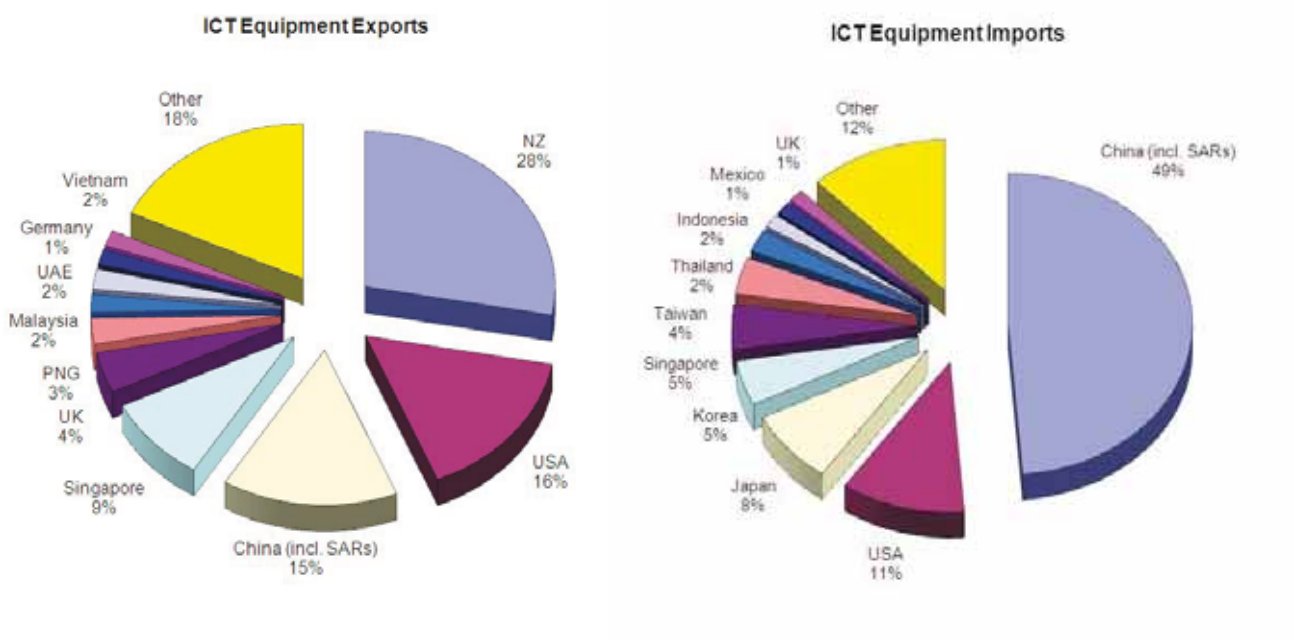


Sources: UNCTAD, CSES analysis.

ICT Equipment Export Markets and Import Sources

Throughout the past decade New Zealand and the United States have been the largest markets for Australia's ICT equipment exports. In 2009, other major markets included China (incl. SARs), Singapore, the United Kingdom, Papua New Guinea, the United Arab Emirates, Malaysia, Indonesia and Germany (Figure 9). The United States, China (incl. SARs), New Zealand, Germany, Singapore and the United Kingdom were also the largest markets for domestic equipment exports.

Figure 9 Australia's ICT export markets and import sources, 2009 (per cent)



Note: Includes re-exports and re-imports.
Sources: TradeData (www.tradedata.net), CSES analysis.

A decade ago the United States and Japan were the two main sources of ICT equipment imports into Australia, but Asian countries, including China (incl. SARs), Japan, Korea, Singapore, Taiwan, Thailand and Indonesia, are now major suppliers (Figure 9). The biggest change has been in imports from China (incl. SARs), which is now the largest supplier – with ICT equipment exports to Australia in excess of $11 billion during 2009 (almost one-half of Australia's total ICT equipment imports).

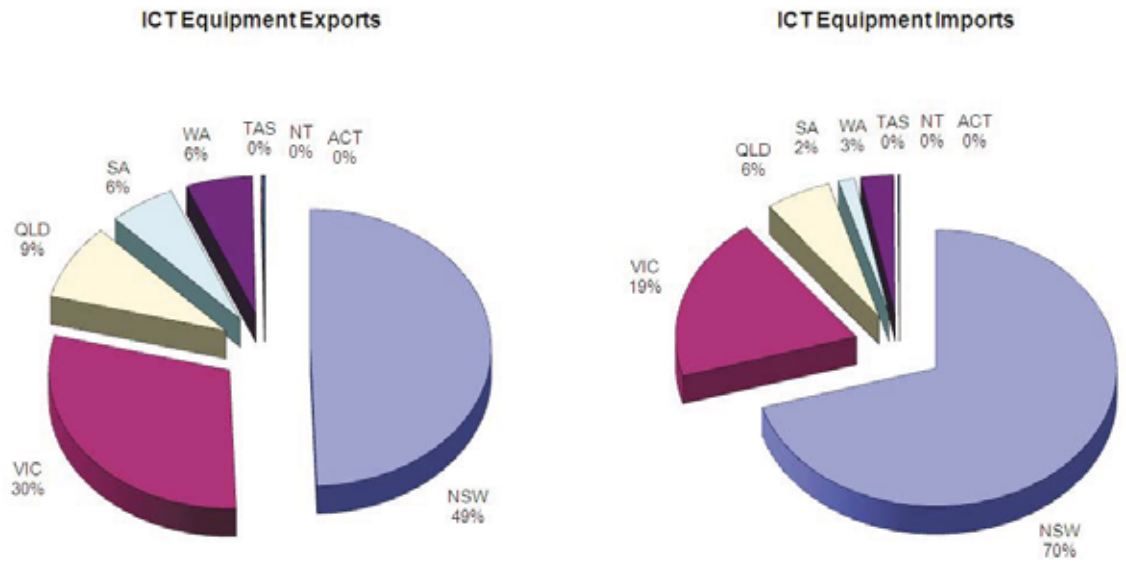
ICT Trade State-by-State

New South Wales and Victoria dominate ICT equipment exports and imports – with NSW being the largest exporter and importer of ICT and related equipment during 2009. In addition to Victoria, ICT equipment exports from Queensland, South Australia and Western Australia were also significant (Figure 10).

NSW attracted no less than 70% of all ICT equipment imports during 2009 – although $1.1 billion worth were re-exported, with Sydney acting as a regional distribution hub (Figure 10). NSW also accounted for 51% of Australia's State-attributed ICT services exports and 70% of ICT services imports.

During 2009, NSW exported $520 million worth of domestically produced ICT equipment, down from more than $746 million in 2000. Victoria exported $312 million worth, down from $464 million a decade earlier (in current prices). Queensland, South Australia and Western Australia each accounted for 6% to 9% of Australia's locally produced ICT equipment exports, while the contribution of the other States and Territories to ICT trade is relatively small (Figure 10).

Figure 10 State ICT equipment trade shares, 2009 (per cent)



Note: Exports exclude re-exports, but imports include them.
Sources: TradeData (www.tradedata.net), CSES Analysis.

During 2009, major markets for locally produced ICT equipment exports from NSW included New Zealand, China (incl. SARs) and the United States, while for Victorian equipment exports the major markets were the United States, Germany, China (incl. SARs) and New Zealand. Queensland's ICT equipment exports went primarily to New Zealand, the United States, China (incl. SARs), PNG, Singapore, the United Kingdom and Indonesia; South Australia's to the United States, Afghanistan, China (incl. SARs), New Zealand, India, the United Kingdom and Malaysia; and Western Australia's to the United States, China (incl. SARs), New Zealand, Singapore, the United Kingdom and Canada.

The composition of the State's ICT equipment exports also varied. NSW accounted for 63% of computer equipment exports during 2009 and Victoria 20%, but just 35% of communications equipment exports came from NSW compared to Victoria's 40%. Victoria also accounted for more than 40% of all components exports.

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1 Australia's ICT Trade at a Glance

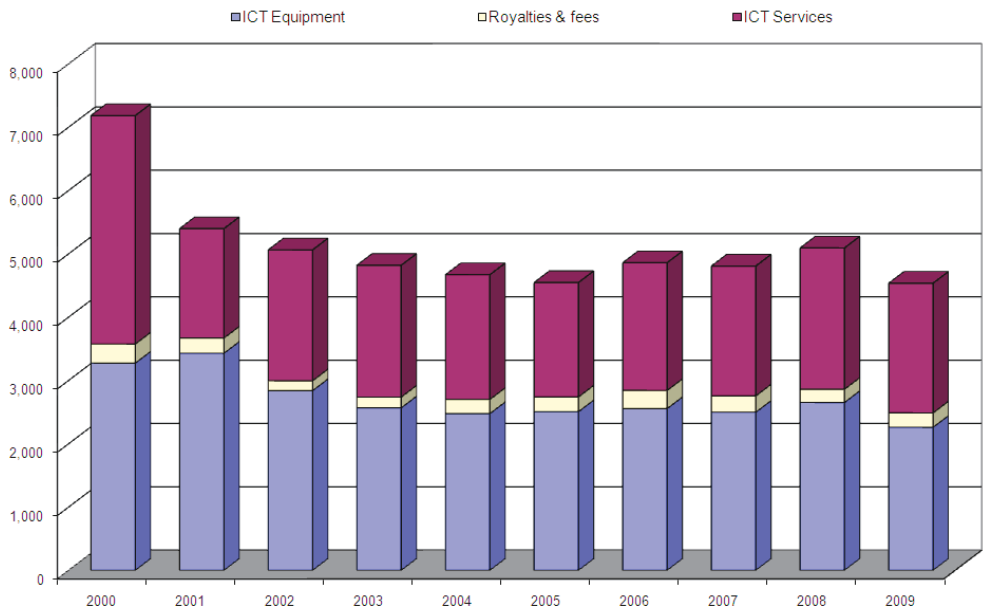
Bringing services, software and equipment trade together, this chapter describes Australia's overall ICT trade position. A more detailed and in-depth analysis of each element of Australia's ICT trade is presented in the following chapters.

1.1 Australia's ICT Exports

During 2009, ICT goods and services exports from Australia were worth $4.5 billion, down from $7.2 billion in 2000 (in current prices). Together, ICT goods and services exports accounted for 1.8% of Australia's total exports earnings. ICT equipment exports accounted for almost $2.3 billion (50% of total ICT exports), ICT-related services accounted for $2 billion (40%) and royalties and fees $227 million (5%) (Figure 1.1).

It should be noted, however, that equipment re-exports (i.e. things brought into Australia and re-exported with little or no value added) were worth almost $1.2 billion, around 25% of total ICT exports. Hence, locally produced ICT exports were worth around $3.4 billion.

Figure 1.1 Australia's ICT Exports, 2000 to 2009 (AUDM)



Notes: See notes to table.
Sources: ABS and TradeData (www.tradedata.net), CSES Analysis.

Total ICT exports decreased 5% per annum over the period 2000 to 2009 (in current prices), with ICT services exports falling by 5.8% per annum over the period and ICT equipment exports by 4% per annum. Australian domestically produced ICT equipment exports decreased by 4.6% per annum, with re-exports falling at slower rate than locally produced exports. However, year 2000 data are affected by the 2000 Olympic Games in Sydney – particularly demand for audiovisual services. The Australian Bureau of Statistics estimated that the Olympic Games accounted for $1.025 billion of the $1.513 billion of audiovisual services in that year. If that effect is removed, the rate of decline of total ICT exports is 3.3% per annum.

Table 1.1 Australia's Total ICT Emports, 2000 to 2009 (AUDM)

	2000	2002	2004	2006	2008	2009
EQUIPMENT						
Re-exports	1,614	1,576	1,219	1,126	1,327	1,173
Local Exports	1,659	1,262	1,256	1,429	1,324	1,086
Communications	1,108	509	546	578	683	655
Computer	1,273	1,531	1,043	1,056	1,074	914
Audiovisual	113	161	225	248	301	259
Components	302	295	337	332	341	191
Other ICT-related	477	342	324	341	251	240
Total ICT Equipment	3,273	2,838	2,475	2,555	2,651	2,259
SERVICES						
Communications	1,239	703	510	399	302	271
Computer & Information	855	1,177	1,275	1,407	1,663	1,640
Audiovisual & related	1,513	188	185	212	266	137
Royalties & fees	301	155	223	286	208	227
Total ICT Services	3,908	2,222	2,193	2,303	2,439	2,275
TOTAL						
Total ICT Exports	7,181	5,060	4,668	4,857	5,090	4,534
Australian ICT Exports	5,567	3,484	3,449	3,731	3,763	3,361

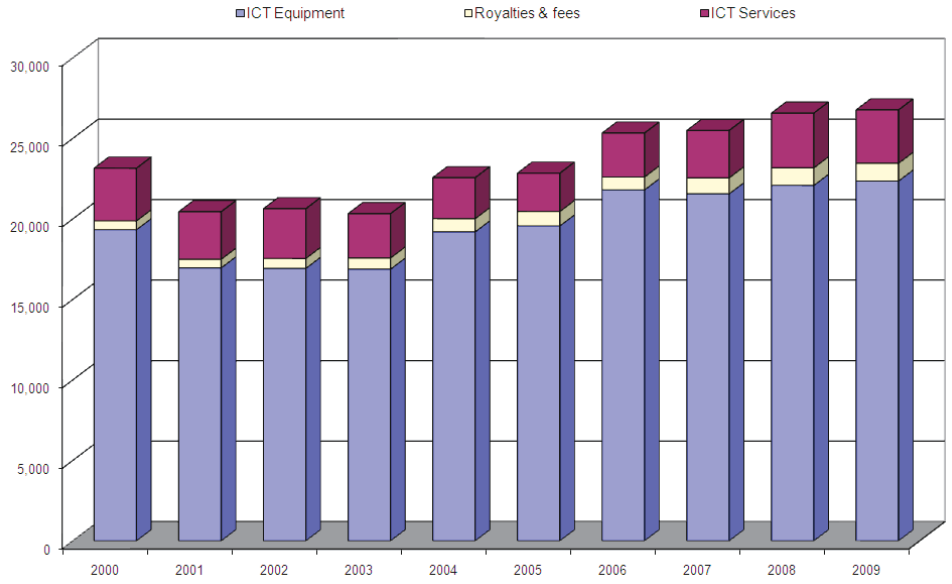
Notes: Total includes re-exports, while the Australian total excludes them. All data are current prices.
Sources: ABS and TradeData (www.tradedata.net), CSES Analysis

Exports fell from the peak in 2000 until 2005, after which exports increased a little in the following years (in spite the global downturn), before falling substantially again in 2009 (Figure 1.1). Total ICT exports fell by 11% during 2009, ICT equipment exports fell by 15% and ICT services exports by almost 7%. ICT exports during the first quarter of 2010 show continued challenges.

1.2 Australia's ICT Imports

ICT imports cost Australia almost $27 billion during 2009, up from $23 billion in 2000 (in current prices). During 2009, ICT goods and services imports accounted for around 11% of Australia's total import debits. ICT imports have grown by 1.6% per annum since 2000, with ICT services and equipment imports showing the same overall growth rate.

Figure 1.2 Australia's ICT Imports, 2000 to 2009 (AUDM)



Notes: See notes to table. Sources: ABS and TradeData (www.tradedata.net), CSES Analysis.

Table 1.2 Australia's Total ICT Imports, 2000 to 2009 (AUDM)

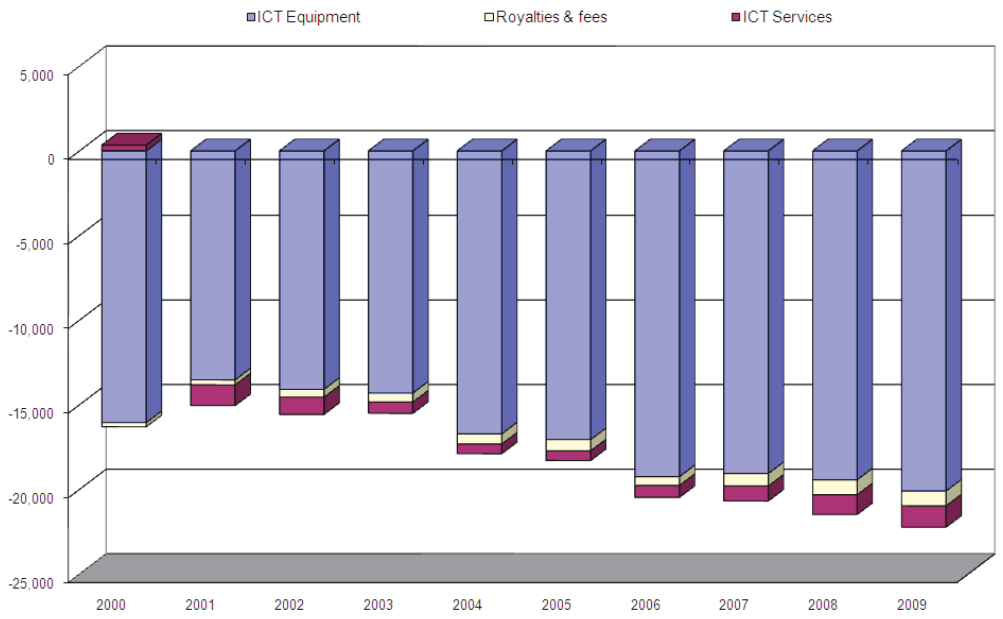
	2000	2002	2004	2006	2008	2009
EQUIPMENT						
Re-imports	28	44	46	55	48	43
Foreign Equipment Imports	19,294	16,879	19,145	21,742	22,030	22,304
Communications	5,261	3,192	4,089	5,079	5,084	5,482
Computer	8,326	7,683	7,974	9,092	8,579	7,982
Audiovisual	2,633	3,499	4,256	4,897	5,768	6,110
Components	1,547	1,214	1,342	1,161	1,177	1,319
Other ICT-related	1,555	1,335	1,531	1,568	1,469	1,454
Total ICT Equipment	19,322	16,923	19,191	21,797	22,077	22,347
SERVICES						
Communications	1,659	1,303	623	526	537	567
Computer & Information	886	995	1,064	1,239	1,540	1,598
Audiovisual & related	727	791	858	962	1,323	1,149
Royalties & fees	548	613	818	799	1,088	1,101
Total ICT Services	3,820	3,702	3,363	3,526	4,488	4,415
TOTAL						
Total ICT Imports	23,142	20,625	22,554	25,323	26,565	26,762
Foreign ICT Imports	23,114	20,581	22,508	25,268	26,518	26,719

Notes: All data are current prices. Equipment imports include re-imports and re-exports.
Sources: ABS and TradeData (www.tradedata.net), CSES Analysis.

1.3 Australia's ICT Trade Balance

Australia's deficit on ICT trade increased to $22 billion in 2009 (Figure 1.3), more than $6 billion higher than it had been in 2000 and $755 million higher than 2008 (in current prices). The deficit on trade in ICT equipment reached $20 billion in 2009, while the deficit on ICT services reached $2 billion.

Figure 1.3 Australia's ICT Trade Balance, 2000 to 2009 (AUDM)



Notes: See notes to table.
Sources: ABS and TradeData (www.tradedata.net), CSES Analysis.

Excluding re-exports and re-imports from analysis allows a clear picture of what Australian ICT producers export and what Australia imports for local consumption – the difference between them can be thought of as the 'deficit on production'. Because re-exports are significantly larger than re-imports, Australia's ICT production deficit is larger than its trade deficit. During 2009, the difference between locally produced exports and foreign produced imports was almost $27 billion (Table 1.3).

Recent surpluses on trade in computer and information services stand out as the only bright spot. In 2009, Australia exported $1.64 billion worth of computer and information services, while importing just under $1.6 billion. It is the only area of ICTs in which Australia runs a surplus on trade.

Table 1.3 Australia's ICT Trade Balance, 2000 to 2009 (AUDM)

	2000	2002	2004	2006	2008	2009
EQUIPMENT						
Re-imports minus re-exports	-1,586	-1,532	-1,173	-1,071	-1,279	-1,130
Production 'Balance'	-17,636	-15,617	-17,889	-20,313	-20,706	-21,219
Communications	-4,153	-2,683	-3,543	-4,501	-4,401	-4,827
Computer	-7,052	-6,152	-6,930	-8,036	-7,505	-7,068
Audiovisual	-2,520	-3,338	-4,031	-4,648	-5,467	-5,852
Components	-1,245	-918	-1,005	-829	-835	-1,128
Other ICT-related	-1,078	-994	-1,207	-1,228	-1,218	-1,214
Total ICT Equipment	-16,050	-14,085	-16,716	-19,242	-19,427	-20,088
SERVICES						
Communications	-420	-600	-113	-127	-235	-296
Computer & Information	-31	182	211	168	123	42
Audiovisual & related	786	-603	-673	-750	-1,057	-1,012
Royalties & fees	-247	-458	-595	-513	-880	-874
Total ICT Services	88	-1,480	-1,170	-1,223	-2,049	-2,140
TOTAL						
Total ICT Balance (Deficit)	-15,962	-15,565	-17,886	-20,465	-21,476	-22,228
'ICT Production Deficit'	-17,548	-17,097	-19,059	-21,536	-26,518	-26,719

Produced imports. See notes to previous tables.
Sources: ABS and TradeData (www.tradedata.net), CSES Analysis.

1.4 Australia's ICT Export Composition Trends

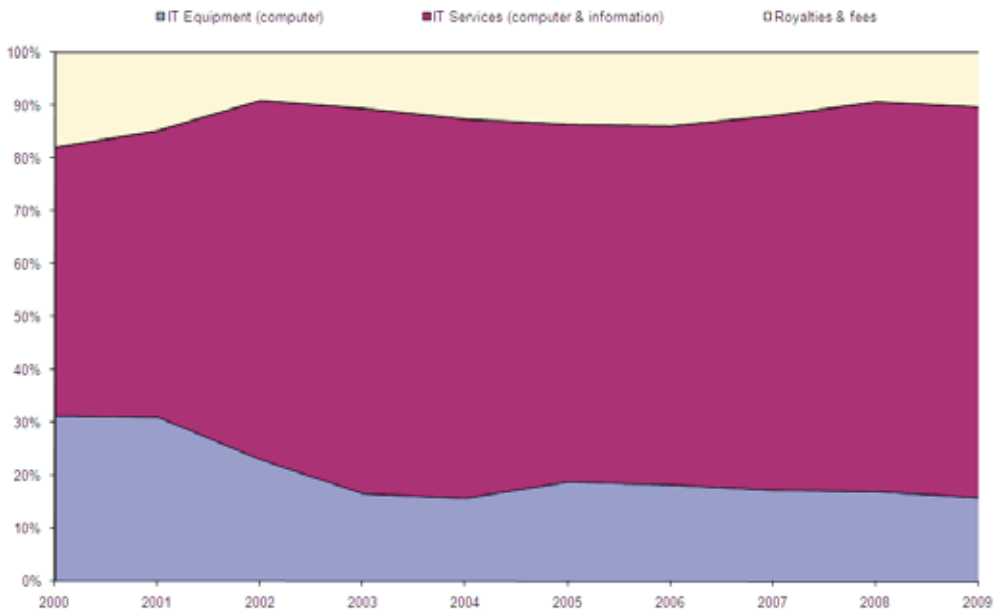
Due to increased value-adding and relative price changes, ICT royalties & fees and services expenditures have been increasing more rapidly than have hardware expenditures. Together with the continued globalisation and international rationalisation of ICT equipment manufacturing, these trends are clearly evident in Australia's ICT export performance.

In 2000, locally produced ICT equipment accounted for 37% of all ICT exports from Australia and ICT services (excluding the Olympic Games) accounted for 63%. A decade later, ICT services increased to 67% of ICT exports.[2] This trend is all the more evident when one considers IT (i.e. computer) equipment and computer and information services exports alone (Figure 1.4).[3]

2 Includes ICT and related equipment, services and software exports – broadly defined. It includes all domestically produced exports of (i) computer, telecommunications, broadcasting and related equipment, components and parts; (ii) audiovisual, communications, computer and information services; and (iii) ICT-related royalties, licence fees and media.

3 Includes domestically produced exports of (i) computer equipment and parts; (ii) computer and information services; and (iii) software (i.e. excludes communications and broadcasting equipment, content and services).

Figure 1.4 Australia's IT Export Shares, 2000 to 2009 (per cent)



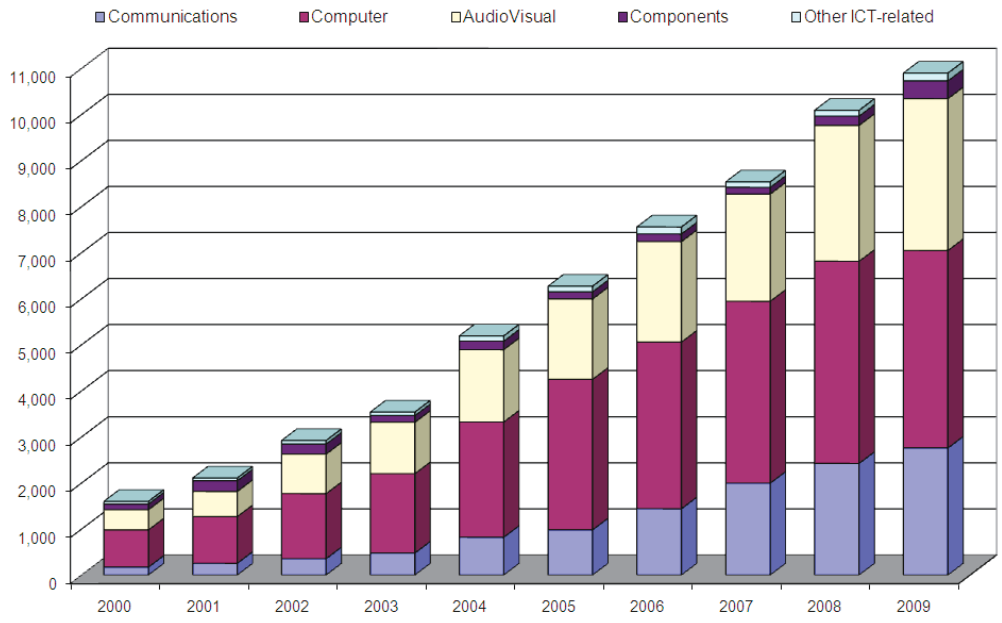
Note: Excludes re-exports.
Sources: ABS and TradeData (www.tradedata.net), CSES Analysis.

In 2000, locally produced computer equipment accounted for 31% of IT exports, and computer and information services accounted for 51%. A decade later the situation had changed, with computer and information services accounting for 74% of IT exports during 2009, and locally produced computer equipment accounting for just 16%. This reflects a marked shift in the composition of Australia's IT exports from hardware to services.

1.5 Australia's Major ICT Equipment Supplier

Australia's ICT equipment imports from China (incl. SARs) have been growing at a very rapid rate. In 2009, ICT equipment imports from China (incl. SARs) reached nearly $11 billion, up from $1.6 billion in 2000 – an annual average increase of 25% (in current prices). The largest category in 2009 was computers at $4.3 billion (39%), followed by audiovisual equipment at $3.3 billion (30%) and communications equipment at $2.8 billion (25%) (Figure 1.5).

Figure 1.5 ICT Equipment Imports from China (incl. SARs), 2000 to 2009 (AUDM)



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

In 2009, Australia's ICT equipment exports to China (incl. SARs) were worth only $334 million, which left an ICT equipment trade deficit approaching $11 billion.

2 Trade in ICT Services

This chapter presents an update on Australia's ICT services trade, exploring the composition of that trade and trends in exports (credits), imports (debits) and trade balances for the period 2000 to 2009, as well as international ICT-related royalties and licence fee payments. All data are in current prices. [4]

2.1 Australian ICT Services Trade

While imports of ICT equipment greatly exceed exports, Australia's ICT services trade presents a more mixed picture. In 2009, total ICT-related services exports (including royalties and licence fees) were worth $2.3 billion, while imports cost $4.4 billion. However, computer and information services continued to trade in surplus, with exports worth more than $1.6 billion during 2009 and imports costing slightly less than $1.6 billion.

2.1.1 ICT Services Exports

Australia's ICT-related services exports were worth almost $2.3 billion in 2009, down from $3.9 billion in 2000 (in current prices). They accounted for 4.3% of total services exports – down from highs of around 9% in the late 1990s. Computer and information services exports were worth more than $1.6 billion in 2009 (72% of all ICT services exports), telecommunications services exports were worth $271 million (12%), software royalties and licence fees were worth $223 million (10%) and audiovisual and related services exports were worth $137 million (6%) (Table 2.1).

Exports of ICT services have fallen (6% per annum) over the past decade, whereas services exports generally increased (5% per annum), primarily fuelled by the rapid expansion of international education services. However, growth was recorded in consultancy and implementation services exports, with information and database services exports also growing strongly. As a result, computer and information services exports have grown by 7.5% per annum since 2000 – a notable highlight in Australia's overall ICT trade performance.

However, it should be noted that audiovisual services were affected by the Olympic Games in Sydney in 2000 and recorded exports of more than $1.5 billon. When adjusted for this one-off event, exports of ICT-related services fell from around $2.9 billion in 2000 to $2.3 billion in 2009. This reduces the overall rate of decline of ICT services exports to 2.6% per annum (rather than 6% per annum).

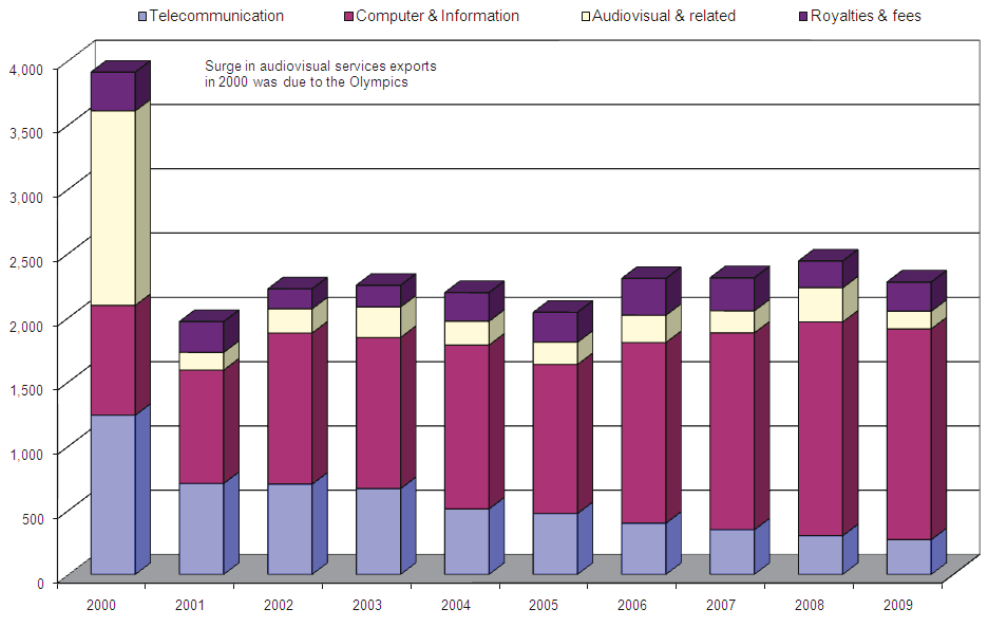
4 ICTs exhibit rapid technological development and consequent price changes that are unlike consumer prices. The complexity of available ICT price deflators and differences between them and CPI deflators render attempts to adjust prices extremely difficult. As a result, it is standard practice to present ICT trade data in current prices (i.e. unadjusted for price changes over time).

Table 2.1 Australia's ICT Services Exports, 2000 to 2009 (AUDM)

	2000	2002	2004	2006	2008	2009
SERVICES						
Telecommunication services	1,239	703	510	399	302	271
Telephone	1,070	646	392	266	214	189
Other telecommunication	169	57	118	133	88	82
Computer & Information	855	1,176	1,275	1,406	1,663	1,640
Computer Services	803	1,071	1,184	1,248	1,422	1,330
Consultancy	778	968	1,161	1,223	1,366	1,260
Data processing	25	103	23	25	56	70
Information services	25	26	16	24	26	37
Database	5	18	9	17	18	28
Other computer & information	27	80	75	135	215	273
Audiovisual & related	1,513	188	185	212	266	137
ROYALTIES & FEES						
Software	298	153	201	279	197	223
Hardware & Design	3	2	22	7	11	4
Audiovisual	0	0	0	0	0	0
Total ICT Services & Royalties	**3,908**	**2,222**	**2,193**	**2,303**	**2,439**	**2,275**

Notes: All data are current prices.
Sources: ABS, CSES Analysis.

Figure 2.1 Australia's ICT Services Exports, 2000 to 2009 (AUDM)



Sources: ABS, CSES Analysis.

Figure 2.1 shows trends in the composition of ICT-related services exports. It reveals that after growing strongly in 2000 Australia's ICT services exports declined during 2001, before recovering during 2002 (in current prices). This reflects the general 'Dot Com' downturn in ICTs, from which recovery was slow. A decline in communications (16% per annum) and audiovisual services exports resulted in an overall decline in total ICT services exports over the next few years. Computer and information services exports were steady at around $1.2 billion per annum until 2006, when they increased and peaked at $1.7 billion in 2008. During 2009, ICT services exports fell by almost 6%. Computer and information services exports fell for the first time in more than a decade, albeit marginally, audiovisual exports virtually halved and telecommunication services continued a trend decline.

2.1.2 ICT Services Imports

Australia's ICT-related services imports cost $4.4 billion in 2009 – accounting for more than 8% of all services imports. Computer and information services imports were the largest category, costing $1.6 billion (36% of total ICT services imports). Audiovisual and related services imports cost $1.1 billion (26%), software royalties and licence fees cost $910 million (21%) and telecommunications services imports $567 million (13%) (Table 2.2).

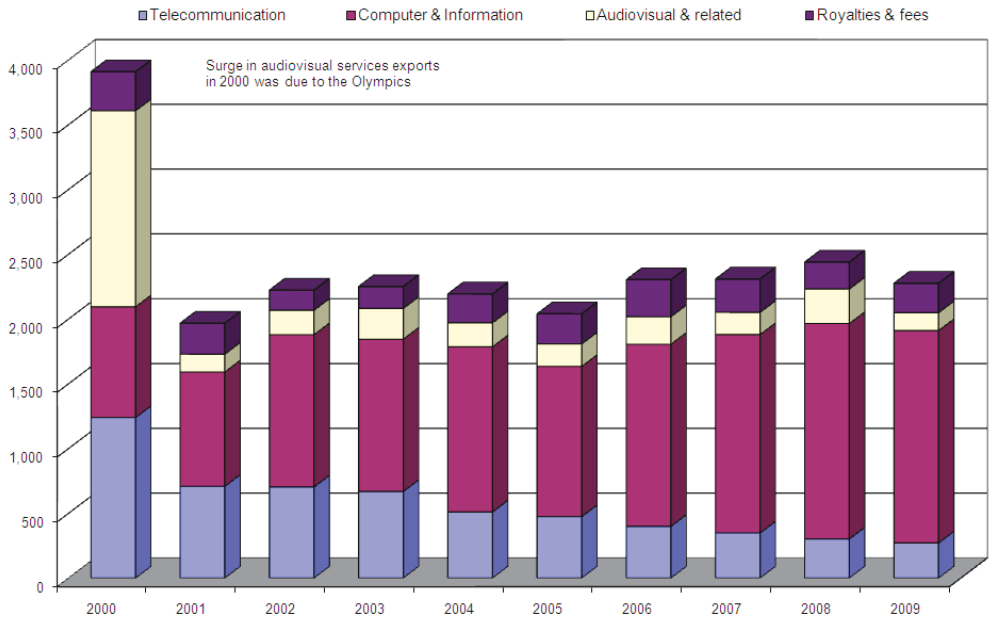
Table 2.2 Australia's ICT Services Imports, 2000 to 2009 (AUDM)

	2000	2002	2004	2006	2008	2009
SERVICES						
Telecommunication services	1,659	1,303	623	526	537	567
Telephone	1,356	1,098	501	372	466	493
Other telecommunication	303	205	122	154	71	74
Computer & Information	886	995	1,064	1,239	1,540	1,598
Computer Services	798	899	986	1,082	1,338	1,337
Consultancy	780	855	961	1,062	1,308	1,269
Data processing	18	44	25	20	30	68
Information services	31	47	18	23	39	35
Database	15	38	11	11	23	20
Other computer & information	57	49	60	134	152	226
Audiovisual & related	727	791	858	962	1,323	1,149
ROYALTIES & FEES						
Software	390	487	693	663	887	910
Hardware & Design	158	126	125	136	201	191
Audiovisual	0	0	0	0	0	0
Total ICT Services & Royalties	**3,820**	**3,702**	**3,363**	**3,526**	**4,488**	**4,415**

Notes: All data are current prices.
Sources: ABS, CSES Analysis.

Since a peak in 2000 ICT services imports had grown (in current prices), and remained within the $3.3 billion to $3.5 billion range until 2007 when imports increased by 11% to almost $4 billion and increased by 14% in 2008 to $4.5 billion, remaining at more than $4 billion in 2009 (Figure 2.2). Between 2000 and 2009, ICT services imports grew by an annual average of 1.6%, but by contrast overall services imports grew by 5.5% per annum. Areas of strong import growth have included software royalties and licence fees, computer and information services and audiovisual services. Telecommunication services imports have declined since the peak in 2000. However, in 2009 there was strong growth of telecommunication services, as well as software royalties and fees imports, but declines in consultancy, information services and audiovisual-related services.

Figure 2.2 Australia's ICT Services Imports, 2000 to 2009 (AUDM)



Sources: ABS, CSES Analysis.

2.1.3 Intellectual Property Royalties and Licence Fees

Australia's ICT-related services trade data include international payments of royalties and fees relating to software, hardware and design and audiovisual content. Payments to Australia (exports) of royalties and licence fees for software peaked at $298 million in 2000 before declining to $150 million between 2002 and 2003. Peaking again in 2006, payments of software royalties and fees declined to $223 million in 2009. Software accounts for 10% of all ICT services and royalties exports.

By contrast, royalties and licence fee payments for imports of software increased from $390 million in 2000 to $910 million in 2009 (10% per annum). Software accounts for 22% of all ICT services and royalties imports. Between 2000 and 2009, Australia's payments of royalties and licence fees for hardware and design services increased from $158 million to more than $190 million (2% per annum).

Overall payments for ICT-related royalties reached $1.1 billion in 2009, with receipts of just $227 million – a deficit of $874 million, of which $687 million related to software.

Box 2.1 Tracking Software Trade

There are many problems associated with tracking software trade. The approach used in previous editions of the ICT Trade Update has been to track trade in the physical supports for software (e.g. magnetic discs, tapes and other recorded media) and payments made in respect to software-related royalties and licence fees.

Tracking the physical supports for software (i.e. software products) has had many limitations. First, as border valuations are based on the physical support media, the value of the software traded is likely to be significantly understated. Second, the bundling of software with hardware leads to substantial mis-measurement (i.e. likely overstating equipment trade and understating software trade). Third, trade statistics do not measure the value of copyright works sold in foreign markets (i.e. the 'gold master' problem). Fourth, trade statistics do not capture emerging business models for software delivery, in that they do not measure the value of software electronically transmitted across borders, nor do they capture software delivered as a service, by, for example, applications services providers.[5] There is also a recent trend towards a greater blurring of the distinctions between media products, with software and data of various types supported by a wider range of media than hitherto.

Tracking software-related royalty and licence fee payments complemented software products trade statistics, as some of the elements of the trade missed in commodity trade statistics are captured in royalty and license fee payments (e.g. embedded software). Taken together, trade in software products and payments of software-related royalties and licence fees provide a window on Australia's software trade.

Due to the Customs revisions of 2007, it is no longer possible to track software media products with any accuracy, and analysis is now limited to software-related royalties and licence fees.

2.1.4 Balance of Trade in ICT Services

In 2009, there was a deficit on trade in ICT-related services of more than $2 billion. The largest deficit was on trade in audiovisual content and related services, at $1 billion. The deficit on telecommunication services reached $296 million and that on software royalties and licence fees reached $687 million (Table 2.3).

Computer and information services are the best-performing area, having traded in surplus since 2001 – being in surplus by $181 million in 2002, rising to around $211 million in 2004, before falling over the following years to $42 million during 2009. It is the only area of ICT trade in which Australia has a surplus (Figure 2.3).

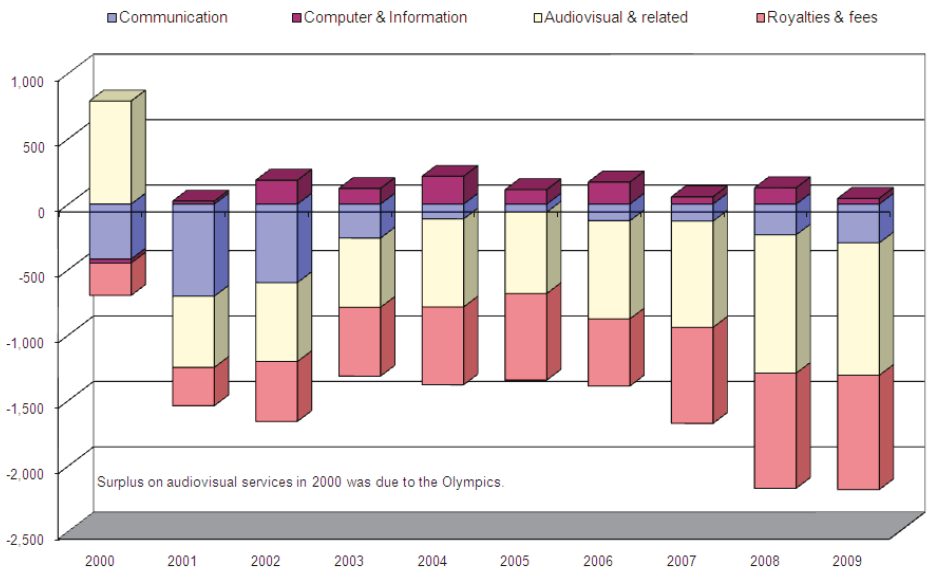
5 OECD (2008) Information Technology Outlook 2008, Organisation for Economic Cooperation and Development, Paris.

Table 2.3 Australia's ICT Services Trade Balance, 2000 to 2009 (AUDM)

	2000	2002	2004	2006	2008	2009
SERVICES						
Telecommunication services	-420	-600	-113	-127	-235	-296
Telephone	-286	-452	-109	-106	-252	-304
Other telecommunication	-134	-148	-4	-21	17	8
Computer & Information	-31	181	211	167	123	42
Computer Services	5	172	198	166	84	-7
Consultancy	-2	113	200	161	58	-9
Data processing	7	59	-2	5	26	2
Information services	-6	-21	-2	1	-13	2
Database	-10	-20	-2	6	-5	8
Other computer & information	-30	31	15	1	63	47
Audiovisual & related	786	-603	-673	-750	-1,057	-1,012
ROYALTIES & FEES						
Software	-92	-334	-492	-384	-690	-687
Hardware & Design	-155	-124	-103	-129	-190	-187
Audiovisual	0	0	0	0	0	0
Total ICT Services & Royalties	**88**	**-1,480**	**-1,170**	**-1,223**	**-2,049**	**-2,140**

Notes: All data are current prices.
Sources: ABS, CSES Analysis.

Figure 2.3 Australia's ICT Services Trade Balance, 2000 to 2009 (AUDM)



Sources: ABS, CSES Analysis.

2.2 The Direction of ICT Services Trade

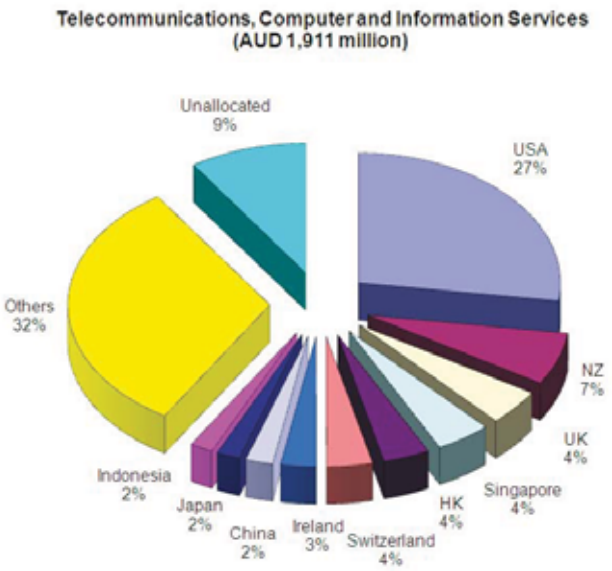
This section focuses on the direction of trade in ICT services (i.e. our export markets and import sources). Services data are more limited than goods trade data, and analysis of Australia's bilateral trade in ICT services is restricted to reporting countries. Subsequent sections explore developments in the global sourcing of IT and ICT-enabled business services through the prism of international services trade.

2.2.1 Australia's Major ICT Services Export Markets

Some 9% of the exports of telecommunications services and computer & information services from Australia during 2009 could not be traced to a specific country limiting bilateral analysis is limited to reporting countries. Consequently, it should be interpreted with a little caution.

Regionally, however, APEC economies purchased more than $1 billion of Australia's telecommunications, computer and information services (ICT services) exports during 2009. OECD countries purchased $959 million, European Union countries $194 million and ASEAN economies $181 million (Table 2.4). Of those countries reporting, the United States was by far our largest single customer for ICT services exports during 2009, taking $520 million, New Zealand took $125 million, the United Kingdom $85 million, Singapore $84 million, Hong Kong $71 million, Switzerland $70 million and Ireland $54 million, while $42 million went to China (excl. SARs).

Figure 2.4 Australia's ICT Services Export Markets, 2009 (per cent)



Sources: ABS. CSES Analysis.

Table 2.4 ICT and Related Services Trade, 2009 (AUDM)

Country/Region	ICT Services		Charges for IP		ICT-enabled Services (OECD)		ICT-enabled Services (UNCTAD)	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
Belgium and Luxembourg	3	5	4	5	11	46	22	52
Brunei Darussalam	2	0	0	0	3	0	3	0
Canada	8	13	33	4	71	97	92	102
Chile	0	0	2	0	90	90	90	90
China	42	43	14	1	155	99	238	130
Fiji	4	5	0	0	9	3	13	3
France	10	14	12	65	50	117	104	141
Germany	3	26	22	56	71	65	81	95
Greece	0	0	0	0	2	1	2	4
Hong Kong	71	284	2	28	158	104	295	119
India	21	139	8	1	44	46	74	54
Indonesia	35	10	37	0	101	43	119	48
Ireland	54	12	12	333	89	40	92	67
Italy	3	10	4	41	21	22	23	32
Japan	36	15	21	297	142	358	245	386
Korea	4	5	4	9	15	32	37	38
Malaysia	26	12	17	2	123	64	183	74
Mexico	2	1	0	0	2	2	2	3
Netherlands	8	12	40	217	85	350	128	623
New Zealand	125	66	42	24	396	224	671	251
Norway	0	5	0	2	14	94	20	95
Papua New Guinea	16	3	5	0	198	56	238	79
Peru	0	0	0	0	18	5	18	5
Philippines	24	39	2	0	61	41	65	44
Russian Federation	3	0	2	0	9	0	9	0
Singapore	84	56	4	37	986	386	1,203	424
South Africa	12	1	14	2	63	34	70	37
Sweden	1	12	3	55	36	13	38	14
Switzerland	70	107	11	389	243	59	256	79
Taiwan	3	5	0	4	11	8	31	10
Thailand	6	6	1	0	28	513	35	519
United Kingdom	85	142	58	348	609	1,091	849	1,611
United States of America	520	626	461	1,582	1,675	2,529	1,915	3,810
Vietnam	5	9	0	0	40	41	45	47
Africa NES	14	12	0	0	227	77	234	79
America NES	26	1	13	1	57	40	62	42
Asia nes	343	320	8	32	276	58	358	83
Central America and Caribbean	8	17	0	40	40	269	52	276
Europe NES	52	15	49	74	90	537	99	545
Oceania NES	3	0	0	0	100	29	110	30
International capital markets	0	0	0	0	0	0	0	0
International institutions	0	0	0	0	0	0	0	0
Unallocated	179	117	34	38	668	267	1,201	386
Total all countries	1,911	2,165	938	3,611	7,086	7,949	9,420	10,525
APEC	1,011	1,195	647	1,988	4,283	4,690	5,533	6,178
ASEAN	181	132	61	40	1,348	1,089	1,659	1,159
OECD	959	1,081	733	3,436	3,595	5,152	4,633	7,416
EU	194	241	162	1,186	1,049	1,760	1,407	2,655

NES = not elsewhere specified
Sources: ABS. OECD & UNCTAD. CSES Analysis.

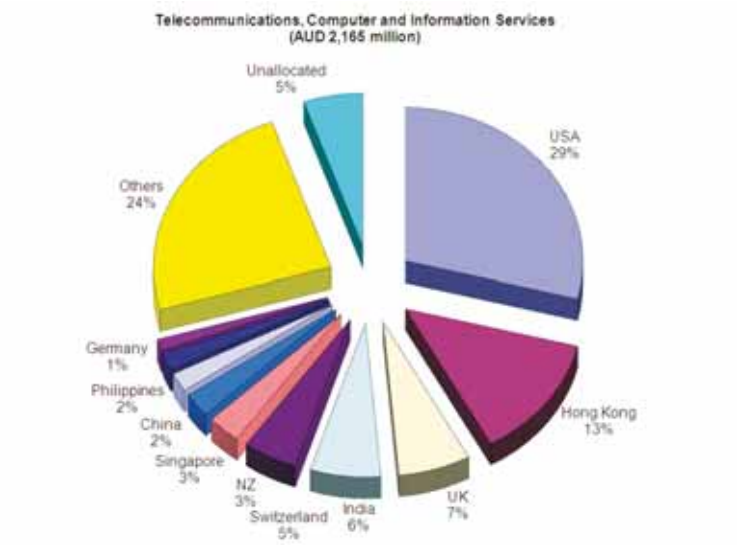
The major recorded markets for ICT-related intellectual property (IP) exports during 2009, which totalled $938 million, included: the United States $461 million, the United Kingdom $58 million, New Zealand $42 million, Netherlands $40 million, Indonesia $37 million, Canada $33 million, Germany $22 million and Japan $21 million.

2.2.2 Australia's Major ICT Services Import Sources

Just 5.4% of the combined telecommunications and computer & information services imports into Australia during 2009 could not be traced to a specific country source.

However, regional APEC economies were the source of $1.2 billion of Australia's telecommunications and computer & information services imports (ICT services) during 2009, OECD countries $1.1 billion, European Union countries $241 million and ASEAN economies $132 million (Table 2.4). Of the reporting countries, the United States was by far our largest single source for ICT services imports during 2009, at $626 million. Hong Kong was the source of $284 million, The United Kingdom $142 million, India $139 million, Switzerland $107 million, New Zealand $66 million, Singapore $56 million and China (excl. SARS) $43 million.

Figure 2.5 Australia's ICT Services Import Sources, 2009 (per cent)



Sources: ABS, CSES Analysis.

Charges for ICT-related intellectual property (IP) during 2009 totalled $3.6 billion, Regionally, OECD countries were the source of more than $3.4 billion, APEC economies about $2 billion, European Union countries nearly $1 billion and ASEAN economies just $40 million (Table 2.4). The largest recorded sources of ICT-related intellectual property imports during 2009 included: the United States $1.6 billion, Switzerland $389 million, the United Kingdom $348 million, Ireland $333 million, Japan $297 million and the Netherlands $217 million.

Australia had a positive balance on trade in telecommunications and computer & information services (ICT services) during 2009 with New Zealand, Canada, Indonesia, Ireland, Japan, Malaysia and Papua New Guinea; and a deficit on trade with Hong Kong, India, the United States and the United Kingdom.

2.3 Trade in ICT-Enabled Services

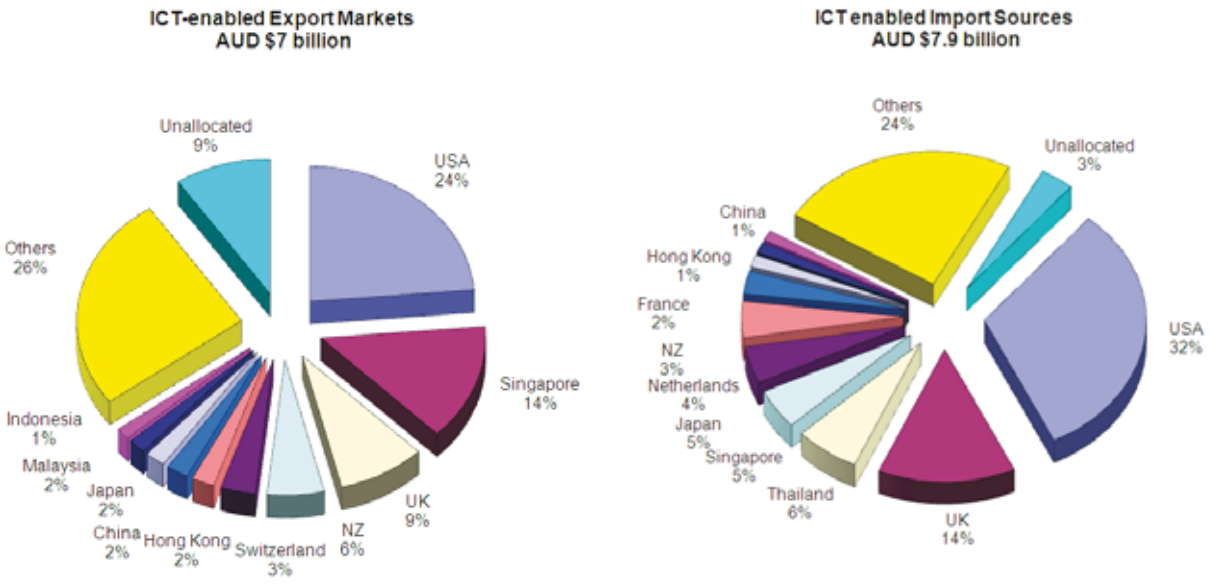
Offshoring and trade in offshored services involves computer and information services (i.e. IT services) and a range of ICT-enabled business services. Hence, while not strictly ICT services, there is significant value in exploring Australia's trade in these ICT-enabled business services as a window on to ICT-enabled trade and the offshoring phenomenon.

2.3.1 Australia's Trade in ICT-Enabled Services

Total exports of ICT-enabled other business services reached $7 billion in 2009. Regionally, APEC economies took more than $4 billion of Australia's ICT-enabled other business services exports during 2009, OECD countries about $3.6 billion, ASEAN economies $1.3 billion and European Union countries $1 billion (Table 3.1). The major recorded markets for ICT-enabled other business services exports during 2009 included: the United States $1.7 billion, Singapore $986 million, the United Kingdom $609 million, New Zealand $396 million, Switzerland $243 million, Papua New Guinea $198 million, Hong Kong $158 million and China (excl. SARs) $155 million.

Total imports of ICT-enabled other business services reached almost $8 billion in 2009. Regionally, OECD countries were the source of $5.2 billion, APEC economies $4.7 billion, European Union countries $1.8 billion and ASEAN economies $1.1 billion. Of the reporting countries, the United States was by far our largest single source for ICT-enabled business services imports during 2009, at $2.5 billion. The United Kingdom was the source of $1.1 billion, Thailand $513 million, Singapore $386 million, Japan $358 million, the Netherlands $350 million, New Zealand $224 million, France $117 million, Hong Kong $104 million and China $99 million.

Figure 2.6 Markets and Sources of ICT-enabled Other Business Services, 2009 (per cent)



Sources: ABS, CSES Analysis.

Australia had a positive balance on trade in these ICT-enabled other business services during 2009 with China (excl SARs), Indonesia, Malaysia, Hong Kong, Singapore, Philippines, PNG, South Africa, Sweden, Peru and New Zealand; and a deficit on trade with the United States ($854 million), Thailand ($485 million), United Kingdom ($482 million), Netherlands ($265 million), Japan ($216 million), France ($67 million), Belgium & Luxemburg ($35 million) and Canada ($26 million).

In 2009, total exports of ICT-enabled business services were worth $9.4 billion using the broader UNCTAD definition, with imports costing $10.5 billion (Table 2.4). The patterns of trade are similar.

2.3.2 T250 Vertical Market Data

Data available from industry surveys provides a picture of the scale of export activities.

For example, an extract from Whitehorse Strategic's Top 250 survey for the six months June to December 2009 shows reported exports worth $3.8 billion. Telecommunications services exports to the Asia-Pacific are a major contributor, with software services the second-largest export targeting markets in Europe and North America. There were also significant exports of software products reported, targeting the UK, other European countries and the US.

Unfortunately, reported target vertical markets include company reporting and not only to its exports. Nevertheless, significant vertical markets included government, finance/insurance, health, information, agriculture, mining, utilities, transport and education. As might be expected, the largest IT services exports were to Europe and US and targeting finance/insurance, with substantial exports of software products to the UK health sector and many of the other larger exporters targeting the information sector. There were also substantial exports of software products to mining, agriculture and transport.

2.4 Offshoring IT and ICT-Enabled Services

Those countries with extensive and rapidly growing exports of IT and ICT-enabled services are likely to be major providers of offshored services. The more so if such services account for a relatively large share of total services exports. In this section we describe world trade in services in order to identify major offshoring locations and global trends.[6]

2.4.1 IT Services

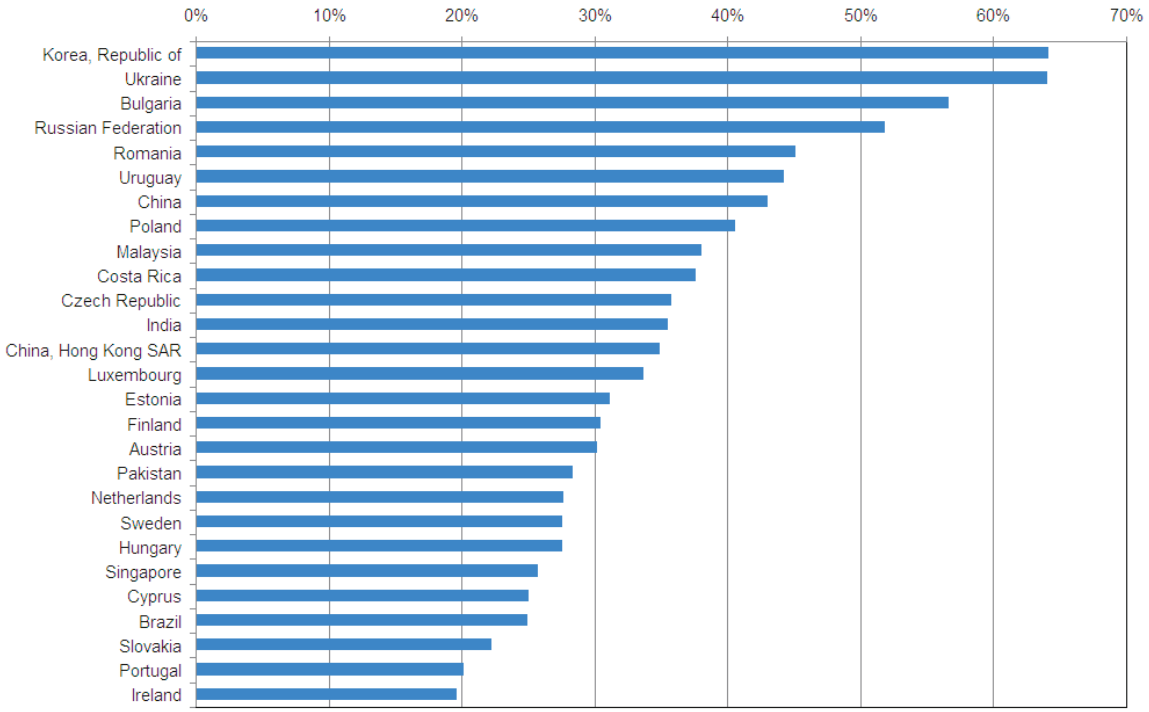
The largest exporters of computer and information services (i.e. IT services) during 2007 included India (2006) and Ireland, which exported more than USD 20 billion, the United Kingdom, Germany, the United States, with exports of more than USD 10 billion.[7] Other major exporters included: Netherlands, Sweden, Israel, Spain, Canada, China (incl. SARs), Belgium and Luxembourg (in descending order), which all exported between USD 3 billion and USD 9 billion worth of IT services during the year.

Of those countries exporting more than USD 100 million worth of computer and information services during 2007, the fastest export growth over the 2000 to 2007 period was enjoyed by Korea and Ukraine (64% per annum), Bulgaria (57% per annum), the Russian Federation (52% per annum), Romania (45% per annum), Uruguay (44% per annum) and China (43% per annum). Some of the biggest exporters also enjoyed strong export growth, most notably India, Ireland, the United Kingdom, the United States, Austria, Netherlands, Sweden, Germany, France and Spain. Australia's IT services exports grew from $494 million in 2000 to $1,256 million in 2007, an annual increase of 14% (Figure 2.7).

6 Data are sourced from UNCTAD. Values are expressed in US dollars (USD), in current prices. Because of exchange rate and reporting differences there may be minor differences between locally sourced and these internationally sourced data.

7 It should be noted that countries vary in reporting, with, for example, some including software royalties and licence fees in IT services (e.g. Ireland) and most not doing so.

Figure 2.7 *Annual Growth of Computer and Information Services Exports, 2000-2007 (per cent)*



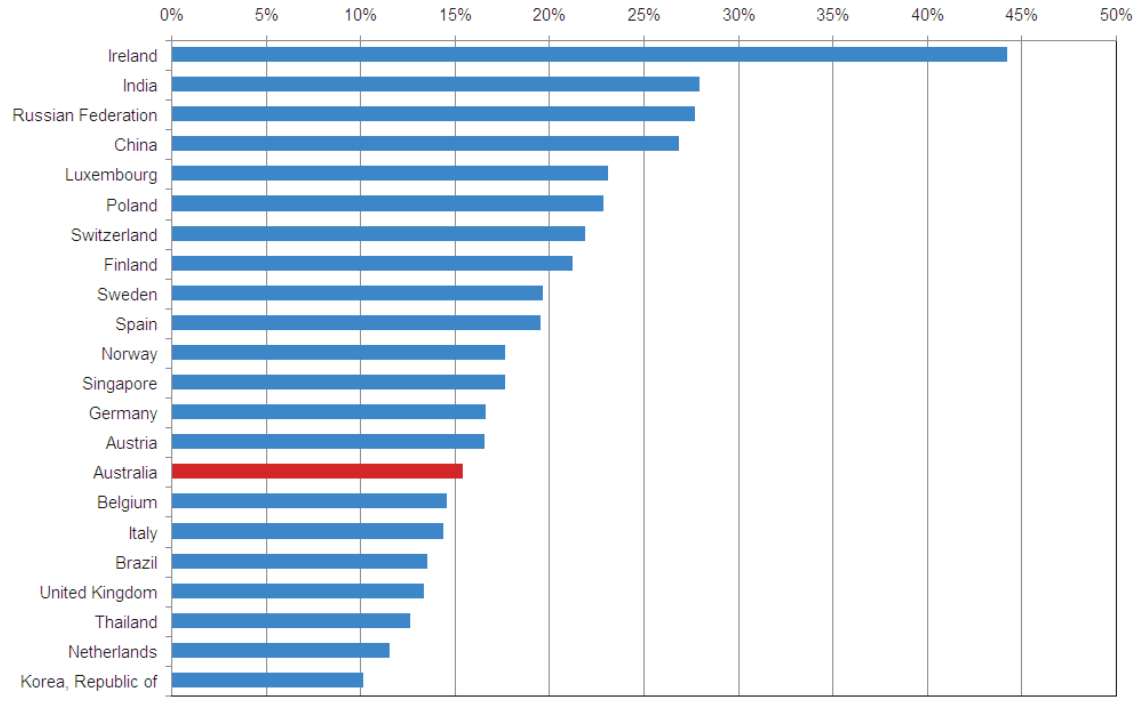
Note: Includes those countries exporting more than USD 100 million in computer and information services during 2007 and experiencing annual export growth of 20% or more over the period 2000 to 2007.
Sources: UNCTAD, CSES analysis.

2.4.2 ICT-Enabled Services

Offshoring also involves a range of ICT-enabled business services. The world's largest exporters of these 'other business services' include: the United States and the United Kingdom, which exported more than $80 billion, Germany, China (incl. SARs), Netherlands, Italy, Japan and France, which all exported more than USD 30 billion worth during 2007. Spain, Belgium, Singapore, Ireland, India (2006), Sweden, Switzerland, Taiwan, Canada, Austria and Korea were among those exporting between USD 15 billion and USD 30 billion worth of 'other business services' during the year.

Of those countries exporting more than USD 1 billion worth of these ICT-enabled 'other business services', the fastest export growth over the 2000 to 2007 period was enjoyed by Ireland (44% per annum), India (28% per annum), Russian Federation (28% per annum), China (27% per cent per annum), Luxemburg and Poland (23% per annum), Switzerland (22% per annum), Finland (21% per annum) and Sweden and Spain (20% per annum). Australia also enjoyed double-digit growth (Figure 2.8).

Figure 2.8 Annual Growth of ICT-enabled 'Other Business Services' Exports, 2000-2007 (per cent)



Note: Includes those countries exporting more than USD 1 billion in ICT-enabled services during 2007 and experiencing annual export growth of 10% or more over the period 2000 to 2007.
Sources: UNCTAD, CSES analysis.

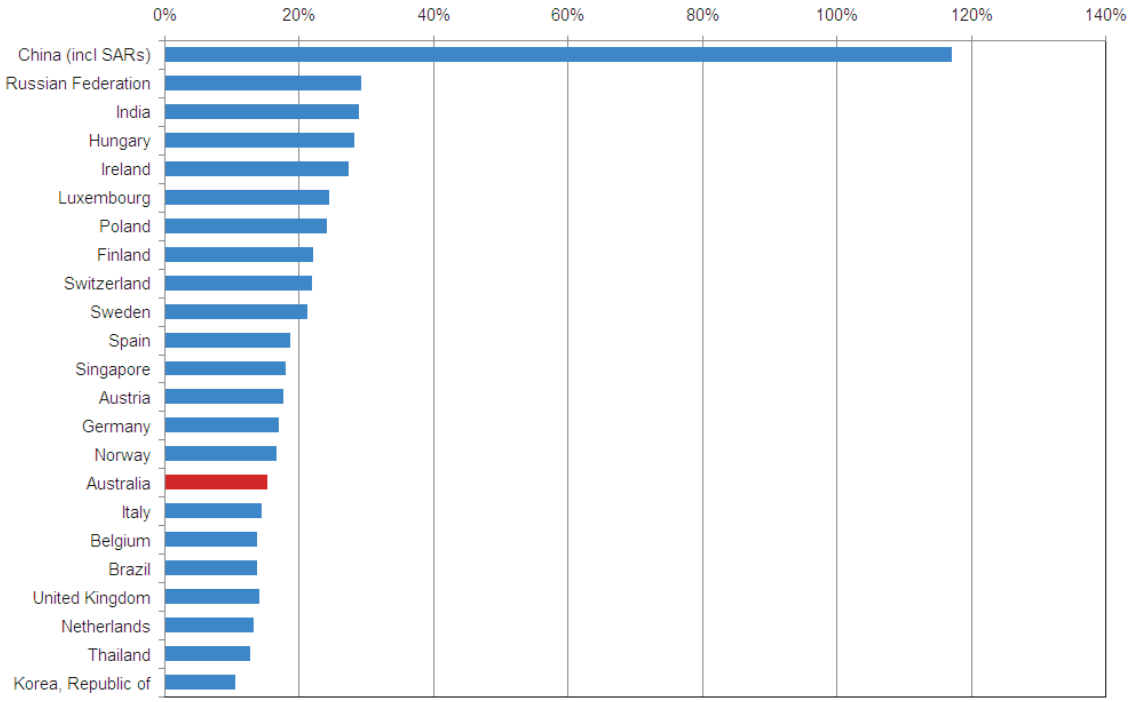
2.4.3 IT and ICT-Enabled Services

Combining IT services and ICT-enabled business services exports (i.e. computer & information services and other business services) gives a clearer picture of the offshoring phenomenon.

The largest exporters of combined IT and ICT-enabled business services in 2007 included: the United Kingdom, the United States, Germany, China (incl. SARs), India, Ireland, Netherlands, Italy, Japan, France and Spain, with combined exports of more than USD 30 billion worth during 2007. Australia ranked 28th among the world's largest exporters.

Among those countries exporting more than USD 10 billion worth of combined IT and ICT-enabled services, those enjoying the fastest average annual growth since 2000 included: China (incl. SARs), the Russian Federation, India, Hungary, Ireland, Luxembourg, Poland, Finland, Switzerland and Sweden, which all achieved annual growth of 20% or more (Figure 2.9). Australia experienced combined IT and ICT-enabled services export growth of around 15% per annum.

Figure 2.9 Average Annual Growth of IT and ICT-enabled Services Exports, 2000-2007 (per cent)



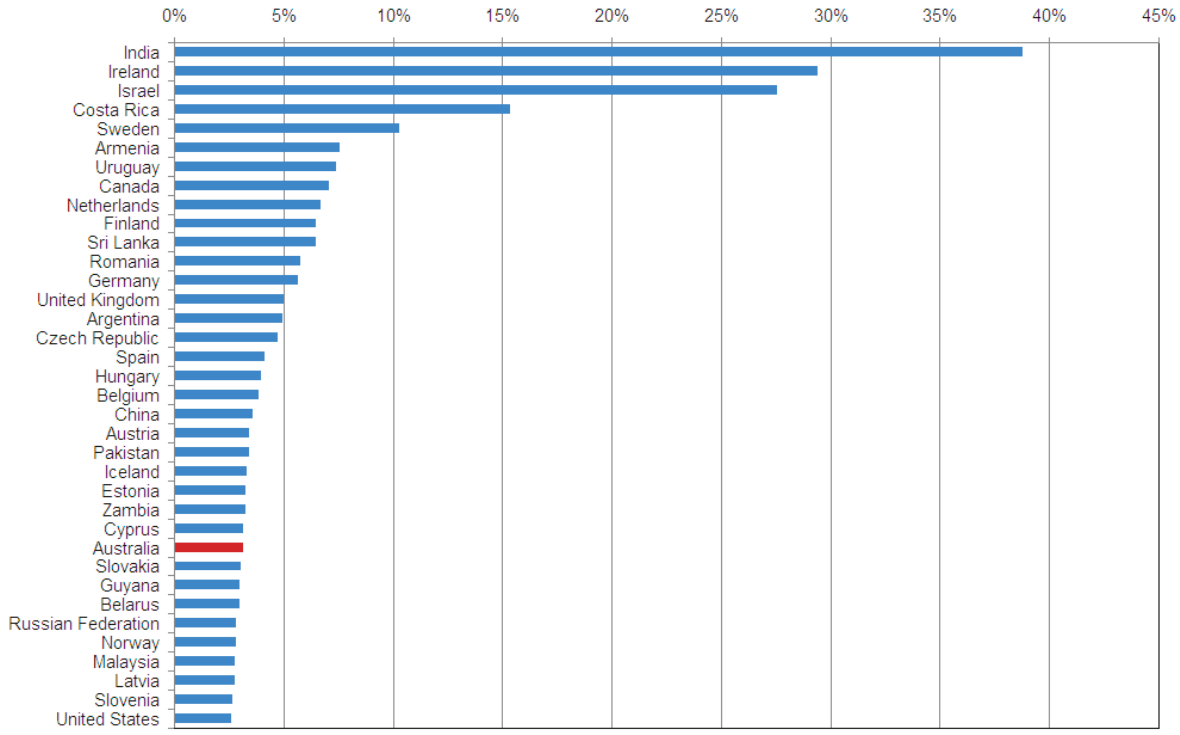
Note: Includes those countries exporting more than USD 10 billion in computer and information services and ICT-enabled services during 2007.
Sources: UNCTAD, CSES analysis.

2.4.4 IT Services Intensity

Another important indicator of the level of offshoring activity is the intensity of computer and information services exporting (i.e. the share of IT services exports in total services exports).

In only five countries did computer and information services account for 10% or more of total services exports during 2007 – India (2006), where they accounted for almost 40% (down from 50% in 2004), Ireland 29% (down from 39% in 2004), Israel 28%, Costa Rica 15% and Sweden 10%. Australia's IT services account for 3% of total services exports.

Figure 2.10 Share of IT Services in Total Services Exports, 2007 (per cent)



Sources: UNCTAD, CSES analysis.

It is immediately apparent from these data that India, Ireland and Israel are major offshoring locations. The other countries listed in Figure 2.10 are also significant exporters of IT services, and prima facie have the potential to become major offshoring locations (including Australia).[8]

8 It should be noted that the apparent IT services intensity of various countries will be affected by their practices regarding the inclusion or exclusion of software-related royalty payments and licence fees in 'computer services' versus 'royalties and licence fees' (e.g. Ireland does the former, whereas Australia does the latter).

3 Trade in ICT Equipment

This chapter presents a detailed update on Australia's ICT equipment trade. It discusses the composition of trade and trends in exports, imports and trade balances for the decade 2000 to 2009, as well as Australia's major export markets and import suppliers. Analysis is presented in terms of value in current prices, free-on-board (fob) in the case of exports and cost-insurance-freight (cif) in the case of imports.[9]

3.1 Australia's ICT Equipment Trade

In late 2003, the OECD Working Party on Indicators for the Information Society (WPIIS) released a proposal for a classification of ICT goods as commodity-based rather than industry-based.[10] In order to reflect international developments and maintain comparability, previous editions of the ICT Trade Update have used that OECD classification (with a few very minor amendments). However, due to a major customs re-classification in 2007 this year's ICT Trade Update uses a new definition currently being developed by the OECD. This new definition is more focused in its scope and includes fewer items in the 'Other ICT-related Equipment' category. As a result, overall ICT equipment import, export and trade balances are somewhat lower than reported in previous years, and a new time series has been created for the period from 2000.

3.1.1 ICT Equipment Exports

This section examines the composition of ICT equipment exports and recent export trends. It also explores the issue of re-exports and examines the differences between locally produced exports and re-exports in order to shed light on the export performance of local manufacturers.

The Composition of ICT Equipment Exports

In 2009, total ICT equipment exports from Australia (including re-exports) were worth almost $2.3 billion – down from almost $3.3 billion in 2000 (in current prices) (Table 3.1). They accounted for around 1.2% of Australia's total goods exports. By comparison, Australia's coal exports accounted for around 20% of total goods exports and gold for 8%.

During 2009, computer equipment was the largest category of ICT equipment exports, worth $914 million. Communications equipment exports were worth $655 million, audiovisual equipment exports $259 million, other ICT-related equipment exports were worth $240 million, and electronic components exports $191 million. Computer equipment accounted for 41% of total ICT equipment exports, communications equipment for 29%, audiovisual equipment for 11.4%, other ICT-related equipment for 11% and components for 8.5%.

9 ICTs exhibit rapid technological development and consequent price changes that are unlike consumer prices. The complexity of available ICT price deflators and differences between them and CPI deflators render attempts to adjust prices extremely difficult. As a result, it is standard practice to present ICT trade data in current prices (i.e. unadjusted for price changes over time).

10 OECD (2003) A Proposed Classification of ICT Goods, OECD, Paris.

Table 3.1 ICT Equipment Exports, 2000 to 2009 (AUDM)

	2000	2002	2004	2006	2008	2009
Domestic Exports						
Communications	470	320	412	455	342	309
Computer	529	401	282	380	385	355
Audiovisual	58	77	78	117	172	125
Components	204	210	228	191	227	126
Other ICT-related	397	255	256	284	197	170
Total	1,659	1,262	1,256	1,429	1,324	1,086
Re-Exports						
Communications	638	190	134	122	341	346
Computer	744	1,130	761	676	689	560
Audiovisual	55	85	147	131	129	133
Components	98	85	109	140	114	65
Other ICT-related	79	86	68	56	54	69
Total	1,614	1,576	1,219	1,126	1,327	1,173
Total Exports						
Communications	1,108	509	546	578	683	655
Computer	1,273	1,531	1,043	1,056	1,074	914
Audiovisual	113	161	225	248	301	259
Components	302	295	337	332	341	191
Other ICT-related	477	342	324	341	251	240
Total	**3,273**	**2,838**	**2,475**	**2,555**	**2,651**	**2,259**

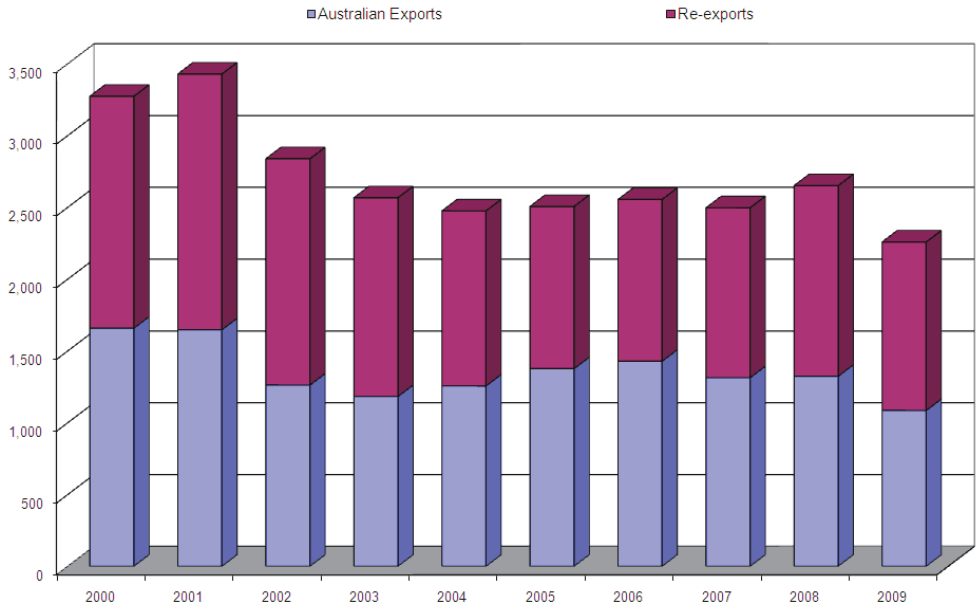
Notes: All data are in current prices, FOB.
Sources: TradeData (www.tradedata.net), CSES Analysis.

Locally Produced ICT Equipment Exports and Re-Exports

Re-exports (i.e. things brought into Australia and then re-exported with little or no value-add) account for a significant share of Australia's ICT exports. In 2009, re-exports of ICT equipment were worth almost $1.2 billion, 52% of total ICT equipment exports (Figure 3.1).

Re-exports of computer equipment were the most significant, amounting to $560 million, re-exports of communications equipment were worth $346 million, re-exports of audiovisual equipment $133 million, re-exports of other ICT-related equipment amounted to $69 million and re-exports of components $65 million (Figure 3.2). Hence, re-exports accounted for 29% of other ICT-related equipment exports, 34% of components exports, 51% of audiovisual equipment exports, 53% of communications equipment exports, and no less than 61% of computer equipment exports.

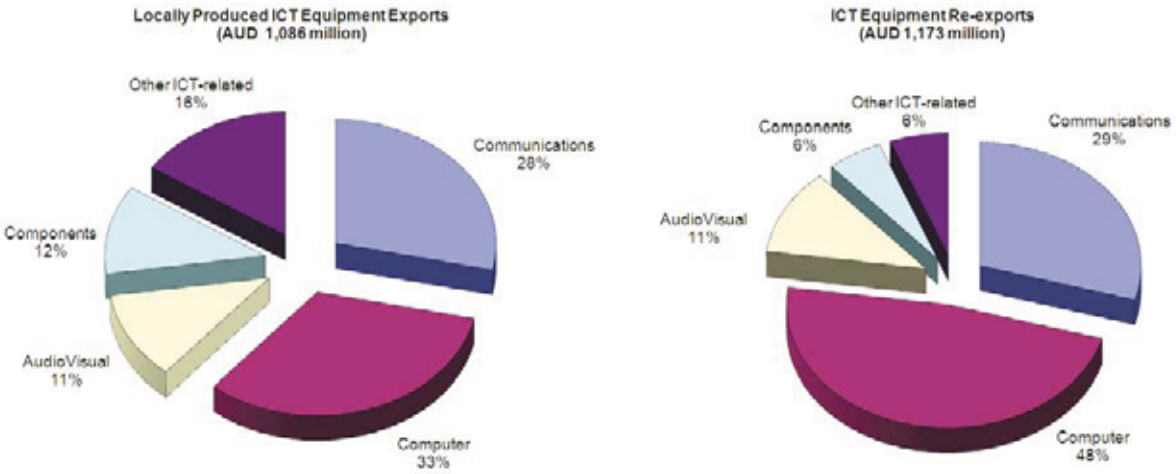
Figure 3.1 Australian-Produced and Re-export Shares of Total ICT Equipment Exports, 2000 to 2009 (AUDM)



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

Australian-produced exports (i.e. total exports minus re-exports) are a better indicator of the ability of Australian-based ICT equipment manufacturers to compete in export markets. In 2009, around 48% of Australia's ICT equipment exports were produced locally, worth $1.1 billion – $573 million less than they had been worth in 2000 and lower than at any time during the decade (Figure 3.3).

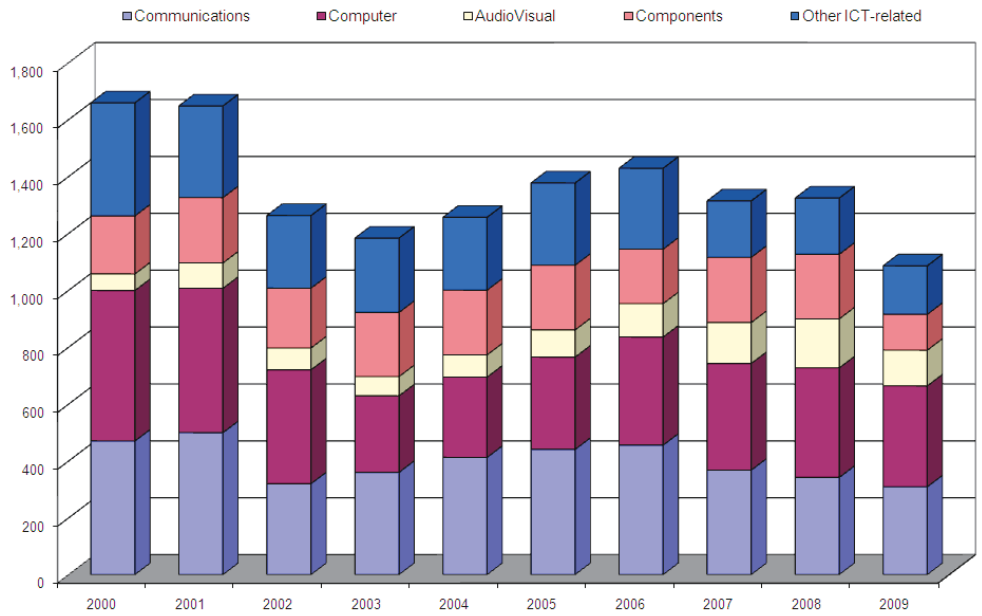
Figure 3.2 Composition of ICT Equipment Exports, 2009 (per cent)



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

In 2009, Australian-produced exports of computer equipment were worth $355 million, Australian-produced communications equipment exports of $309 million, Australian-produced exports of other ICT-related equipment $170 million, Australian-produced exports of components $126 million and Australian-produced exports of audiovisual equipment $125 million (Figures 3.2 and 3.3).

Figure 3.3 Australian-Produced ICT Equipment Exports, 2000 to 2009 (AUDM)



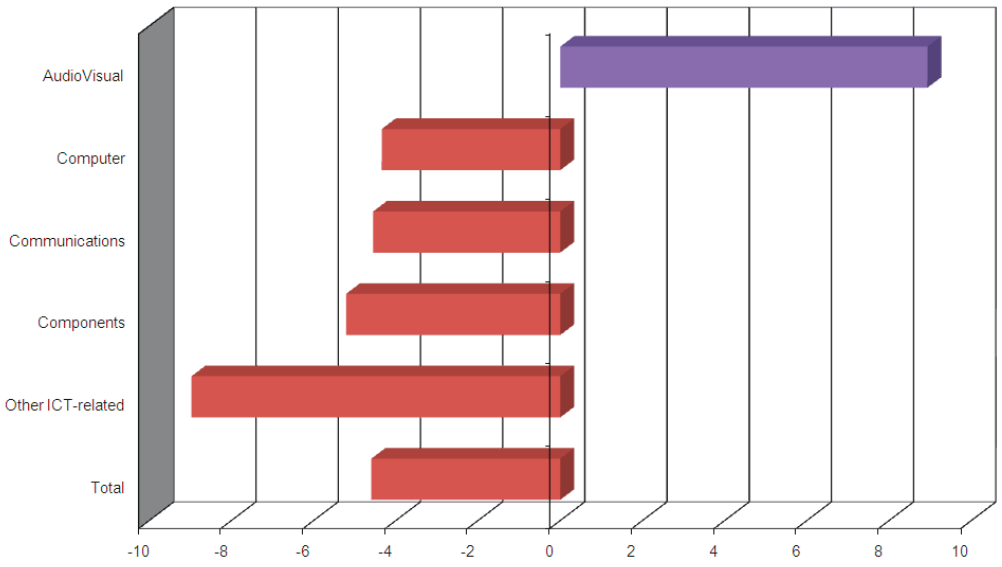
Sources: TradeData (www.tradedata.net), CSES Analysis.

ICT Equipment Export Trends

The value of total ICT equipment exports from Australia fell by 4% per annum between 2000 and 2009 (in current prices), from $3.3 billion to $2.3 billion. Exports of audiovisual equipment was the only segment that showed growth between 2000 and 2009 (almost 10% per annum). Exports of other ICT-related equipment declined by 7.4% per annum, communications equipment declined by 5.7% per annum, components exports declined by 4.9% per annum and computer equipment exports declined by 3.6% per annum.

Unfortunately, on trend, re-exports have been declining slightly more slowly than locally produced exports – at 3.5% per annum over the past decade, compared with 4.6% per annum (in current prices). Australian-produced exports of audiovisual equipment increased by 9% per annum while other ICT-related equipment, components, computer equipment exports have all declined by between 4% and 9% per annum (Figure 3.4). A decade ago locally produced exports of computer equipment were worth $529 million. By 2009, they had fallen to just $355 million.

Figure 3.4 Australian ICT Equipment Export Growth, 2000 to 2009 (per cent per annum)



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

Total ICT equipment exports from Australia peaked at $3.4 billion in 2001, then declined and remained around $2.5 billion until 2009, when they fell to $2.3 billion (Figure 3.1). Locally produced exports also peaked in 2000 at $1.6 billion, also declining before increasing again in 2005 and 2006, and falling to the end of 2009 (Figure 3.3). Some part of these overall trends can be explained by the 'Dot Com' downturn and by the process of globalisation during the first half of the decade. There is no doubt that the immediate post-'Dot Com' years were difficult for ICT equipment exporters. Nevertheless, over the past decade, locally produced exports have declined more quickly than total exports, suggesting a loss of competitiveness by local producers in markets that are being served from Australia. The strength of the Australian dollar is likely to be a contributing factor to the 18% decline in domestic exports last year, as well as slowing demand as the Global Financial Crisis has affected our export markets.

3.1.2 ICT Equipment Imports

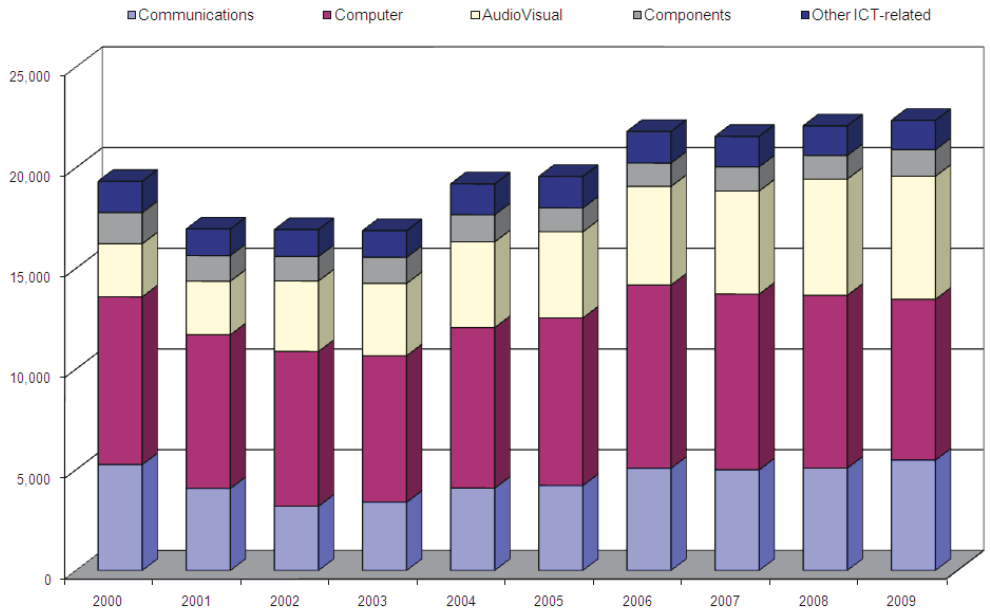
This section examines the composition of trade and trends in ICT equipment imports between 2000 and 2009. It also explores the composition of imports for domestic consumption in order to shed light on what is being imported for local use.

The Composition of ICT Equipment Imports

Total imports of ICT equipment into Australia (including re-exports and re-imports) cost more than $22 billion in 2009 – up from $19 billion a decade earlier and higher than they have been at any time since. During 2009, ICT equipment accounted for around 11% of Australia's total merchandise imports. In comparison, passenger motor vehicles accounted for 5.8% and crude petroleum 6.1%.

Computer equipment was the largest category of ICT equipment imports into Australia, costing almost $8 billion in 2009 (Figure 3.5). Audiovisual equipment imports $6.1 billion, communications equipment imports cost $5.5 billion, other ICT-related equipment imports cost $1.4 billion and components imports cost $1.3 billion.

Figure 3.5 Total ICT Equipment Imports, 2000 to 2009 (AUDM)



While computer equipment remains the largest category of ICT equipment imports, its share has been falling – accounting for 36% of ICT equipment imports in 2009, compared with 43% during 2000. Significant computer equipment imports in 2009 included laptops, notebooks, personal computers and flat-screen monitors. Components, communications and other ICT-related equipment import shares have all fallen slightly over the past 10 years. The category to have increased its import share over the past decade is audiovisual equipment – rising from 14% of ICT equipment imports in 2000 to 27% in 2009.

Table 3.2 Australia's ICT Equipment Imports, 2000 to 2009 (AUDM)

	2000	2002	2004	2006	2008	2009
Total Imports						
Communications	5,261	3,192	4,089	5,079	5,084	5,482
Computer	8,326	7,683	7,974	9,092	8,579	7,982
Audiovisual	2,633	3,499	4,256	4,897	5,768	6,110
Components	1,547	1,214	1,342	1,161	1,177	1,319
Other ICT-related	1,555	1,335	1,531	1,568	1,469	1,454
Total	19,322	16,923	19,191	21,797	22,077	22,347
Re-imports	28	44	46	55	48	43
Foreign Imports	19,294	16,879	19,145	21,742	22,030	22,304
Imports for Consumption						
Communications	4,623	3,002	3,955	4,957	4,743	5,136
Computer	7,582	6,553	7,213	8,416	7,890	7,423
Audiovisual	2,578	3,414	4,109	4,765	5,639	5,977
Components	1,449	1,129	1,233	1,021	1,062	1,254
Other ICT-related	1,476	1,249	1,463	1,512	1,415	1,385
Total	**17,708**	**15,347**	**17,972**	**20,671**	**20,750**	**21,174**

Notes: All data are current prices, CIF. Total imports include re-exports, while imports for domestic consumption exclude them.
Sources: TradeData (www.tradedata.net), CSES Analysis.

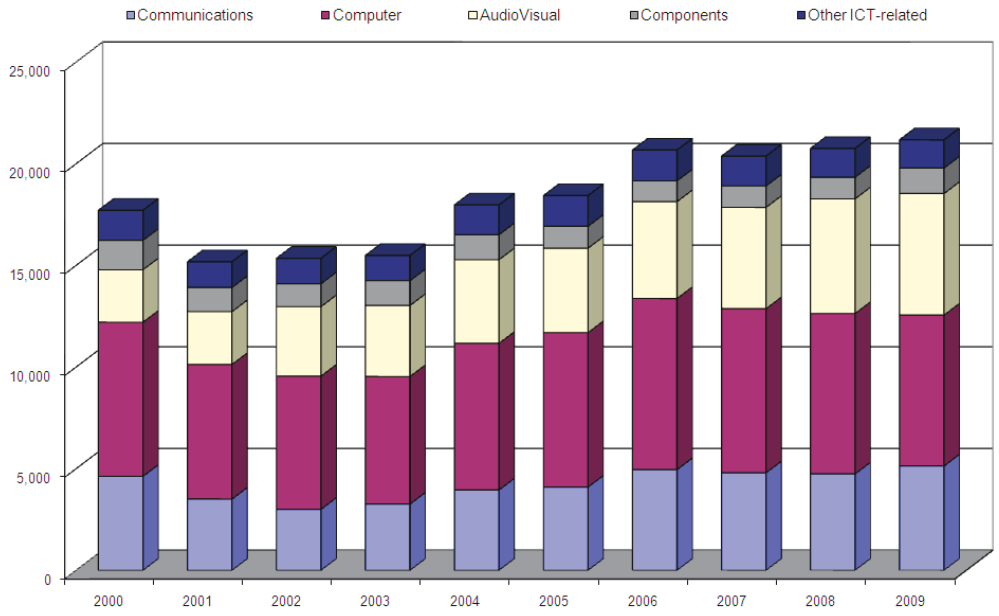
ICT Equipment Imports for Domestic Consumption

Because some of the equipment imported is subsequently re-exported, total imports of ICT equipment do not accurately reflect what is imported for domestic Australian consumption. To calculate what is imported for local consumption it is necessary to subtract re-exports from total imports. Doing so reveals that imports of ICT equipment for domestic consumption cost $21 billion in 2009, up from $17.7 billion a decade earlier (Figure 3.6).

After declining in the early part of the decade there was a marked resurgence of imports of ICT equipment for domestic consumption during 2004, which continued through to 2009 – with imports during the past four years exceeding the previous peak reached during the height of the 'Dot Com' boom.

The composition of ICT equipment imports for domestic consumption varies slightly from that of total imports – computer equipment accounted for 35% of ICT equipment imports for domestic consumption in 2009, audiovisual equipment for 28%, communications equipment for 24%, other ICT-related equipment for 7% and components for around 6%.

Figure 3.6 ICT Equipment Imports for Domestic Consumption, 2000 to 2009 (AUDM)



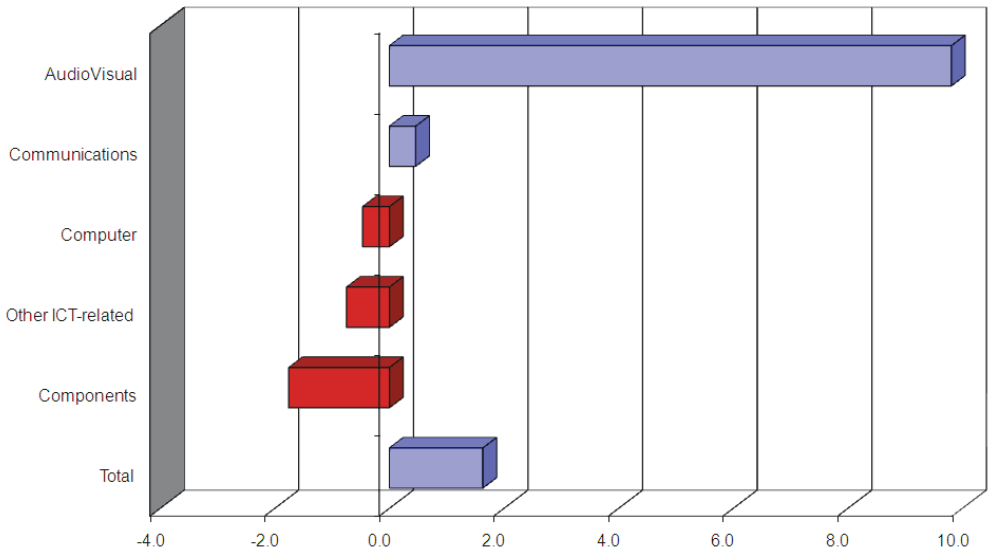
ICT Equipment Import Trends

Total ICT equipment imports have grown by 1.6% per annum between 2000 and 2009 (in current prices). Computer equipment, other ICT-related equipment and components imports have decreased over the decade, while strong growth has been seen in imports of audiovisual equipment (10% per annum) and minimal growth in communications equipment (Figure 3.7). Significant audiovisual equipment imports in 2009 included LCD and plasma televisions, digital cameras, video games and video camera recorders.

Imports for domestic consumption have increased at the slightly higher rate of 2% per annum over the past decade (in current prices). Audiovisual equipment imports increased strongly and imports of communications equipment increased slightly, but computer equipment, components and other ICT-related equipment imports fell. A major item within communications equipment imports in 2009 was phones for cellular networks.

These figures reflect the impacts of the communications revolution and the growth of the Internet – with total imports of audiovisual equipment rising from $2.6 billion in 2000 to $6.1 billion in 2009, and imports of communications equipment rising to almost $5.5 billion in 2009. Locally consumed audiovisual and communications equipment imports exhibited similar trends. Australia's relatively strong performance in the global downturn is reflected in these ICT equipment import trends, with strong growth of components, communications and audiovisual equipment during 2009.

Figure 3.7 Australian ICT Equipment Import Growth, 2000-2009 (per cent per annum)



Note: Including re-exports
Sources: TradeData (www.tradedata.net), CSES Analysis.

3.1.3 The Balance of Trade in ICT Equipment

Australia runs a large and increasing deficit on trade in ICT equipment. In 2009, it amounted to $20 billion – up from $16 billion a decade earlier and higher than at any other time during the past decade (Figure 3.8). The most notable feature is the surges of growth in the deficit, with the ICT equipment deficit increasing by more than $2 billion during 2004 and again during 2006.

Australia's deficit on trade in computer equipment was $7 billion in 2009. The deficit on trade in audiovisual equipment reached $5.9 billion in 2009, up from $2.5 billion in 2000; the deficit on trade in communications equipment reached almost $4.8 billion, up from $4.2 billion; the deficit on trade in other ICT-related equipment reached $1.2 billion and the deficit on trade in components reached $1.1 billion.

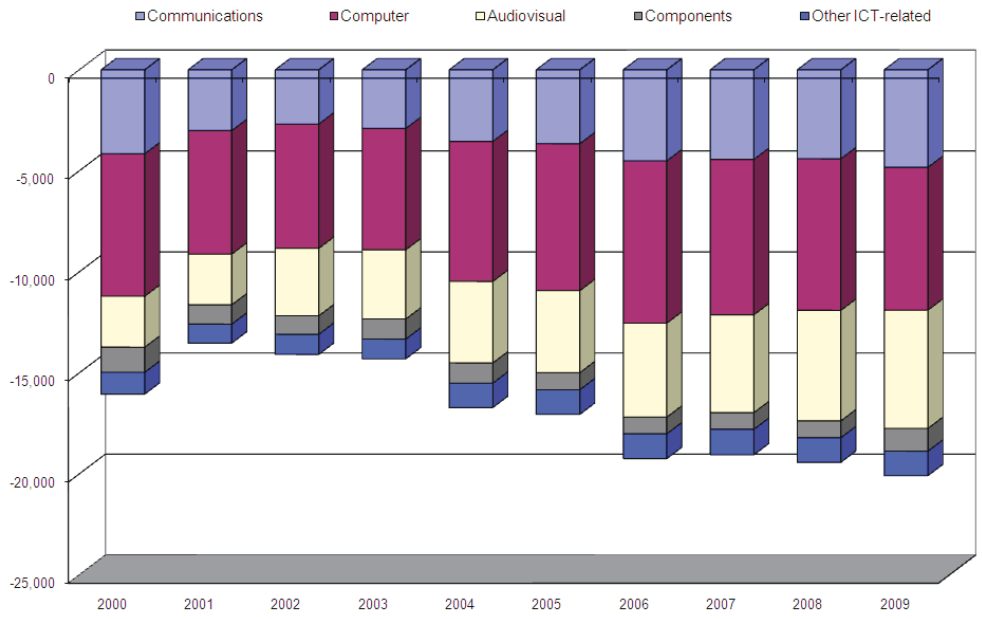
The deficit on trade in ICT equipment grew 2.5% per annum between 2000 and 2009 (in current prices). The deficit on trade in audiovisual equipment grew by 9.8% per annum, while the deficits on trade for other ICT-related equipment and communications equipment have increased by 1.3% and 1.7% per annum, respectively. Again, this reflects the Internet and communications revolution.

Table 3.3 Australia's ICT Equipment Trade Balance, 2000 to 2009 (AUDM)

	2000	2002	2004	2006	2008	2009
Balance of trade						
Communications	-4,153	-2,683	-3,543	-4,501	-4,401	-4,827
Computer	-7,052	-6,152	-6,930	-8,036	-7,505	-7,068
Audiovisual	-2,520	-3,338	-4,031	-4,648	-5,467	-5,852
Components	-1,245	-918	-1,005	-829	-835	-1,128
Other ICT-related	-1,078	-994	-1,207	-1,228	-1,218	-1,214
Total	-16,050	-14,085	-16,716	-19,242	-19,427	-20,088
Difference between domestic exports and foreign imports						
Communications	-4,782	-2,851	-3,664	-4,609	-4,728	-5,158
Computer	**-7,785**	-7,270	-7,673	-8,691	-8,179	-7,616
Audiovisual	-2,574	-3,420	-4,175	-4,775	-5,587	-5,979
Components	-1,341	-1,002	-1,112	-963	-947	-1,188
Other ICT-related	-1,154	-1,074	-1,266	-1,275	-1,265	-1,278
Total	-17,636	-15,617	-17,889	-20,313	-20,706	-21,219

Notes: All data are current prices, imports cif and exports FOB.
Sources: TradeData (www.tradedata.net), CSES Analysis.

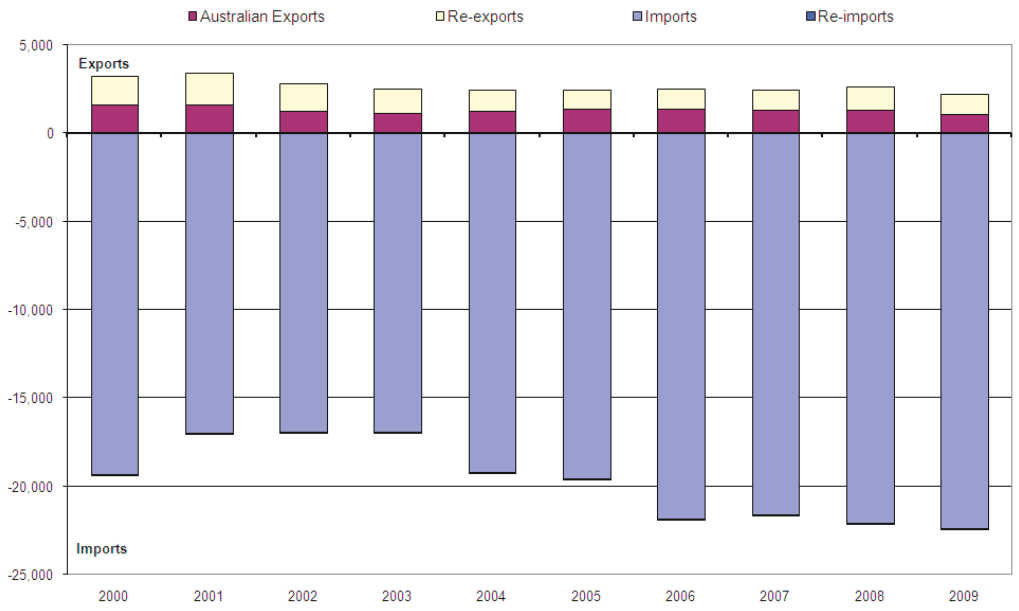
Figure 3.8 Composition of Australia's ICT equipment trade deficit, 2000 to 2009 (AUDM)



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

The high level of re-exports in Australia's ICT equipment trade clouds some issues. For example, the balance of trade shows neither the extent nor composition of what Australia produces for export or what is imported for domestic consumption. In 2009, the difference between domestically produced exports and foreign-produced imports (i.e. what might be called the 'deficit on production') exceeded $21 billion – up from $17.6 billion in 2000 (Table 3.3).

Figure 3.9 Australia's ICT Equipment Trade, 2000 to 2009 (AUDM)



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

Figure 3.9 shows Australia's deficit on trade in ICT equipment, highlighting the scale of Australian exports relative to imports.

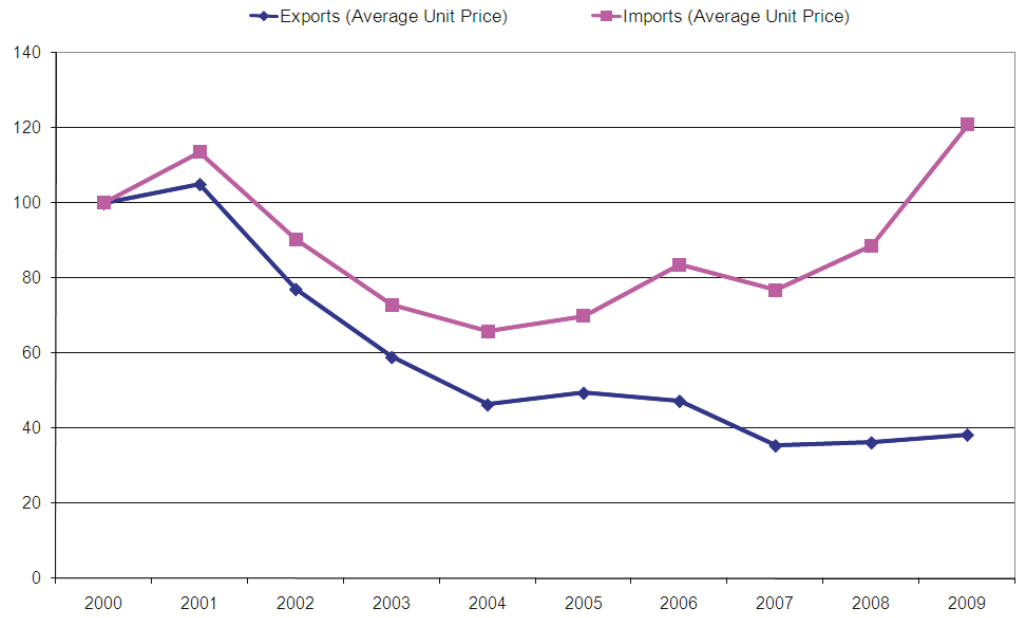
3.1.4 ICT Equipment Trade Values and Volumes

Price changes can have a significant impact on apparent trade trends and performance. In recent years, for example, there has been a commodity boom, with commodity prices rising rapidly. At the same time, many ICT equipment prices have continued to fall – dramatically in terms of price performance (i.e. hedonic prices). As a result, with analysis focusing primarily on values, the relative performance of ICT equipment in world trade tends to be understated. For example, the recent boom in the value of world trade in energy and minerals is largely a value-based phenomenon, with world trade volumes initially exhibiting relatively limited expansion. Conversely, relatively slower growth in worldwide ICT equipment trade values disguises a relatively strong growth in trade volumes. Hence, it is interesting to compare Australia's ICT equipment trade values and volumes.

ICT equipment trade 'volumes' are recorded in various ways, if at all. For most of the ICT equipment categories for which a trade volume is recorded the unit is numbers (i.e. the number of units shipped). However, in some cases the unit is length (e.g. kilometres of optical fibre cable), and in others the unit is weight (e.g. tonnes of insulated wire). The analysis presented in this section focuses on units shipped, and compares units shipped with the value of trade in those items for which unit volumes were recorded. In order to focus on ICT equipment unit price trends, values are free-on-board for both imports and exports (i.e. excluding the insurance and freight costs on imports). [11]

11 Both imports and exports include re-exports.

Figure 3.10 Average Unit Prices for ICT Equipment Exports and Imports, 2000 to 2009 (indexed, 2000=100)



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

Adding value implies that unit prices increase (relative to world prices), so comparing trends in average unit prices of ICT equipment exports and imports reveals something of Australian ICT manufacturing performance. Ideally, the average unit price of ICT equipment exports would be increasing faster (or falling more slowly) than the average unit price of imports, as low-value manufacturing activities move to lower wage locations and higher-value activities remain (i.e. as local ICT manufacturers move up the value chain). Unfortunately, the opposite is the case – with the average unit price of Australia's ICT equipment exports falling by 10% per annum between 2000 and 2009, while the average unit price of ICT equipment imports increased by 2.1% per annum (Figure 3.10).

3.2 The Direction of ICT Equipment Trade

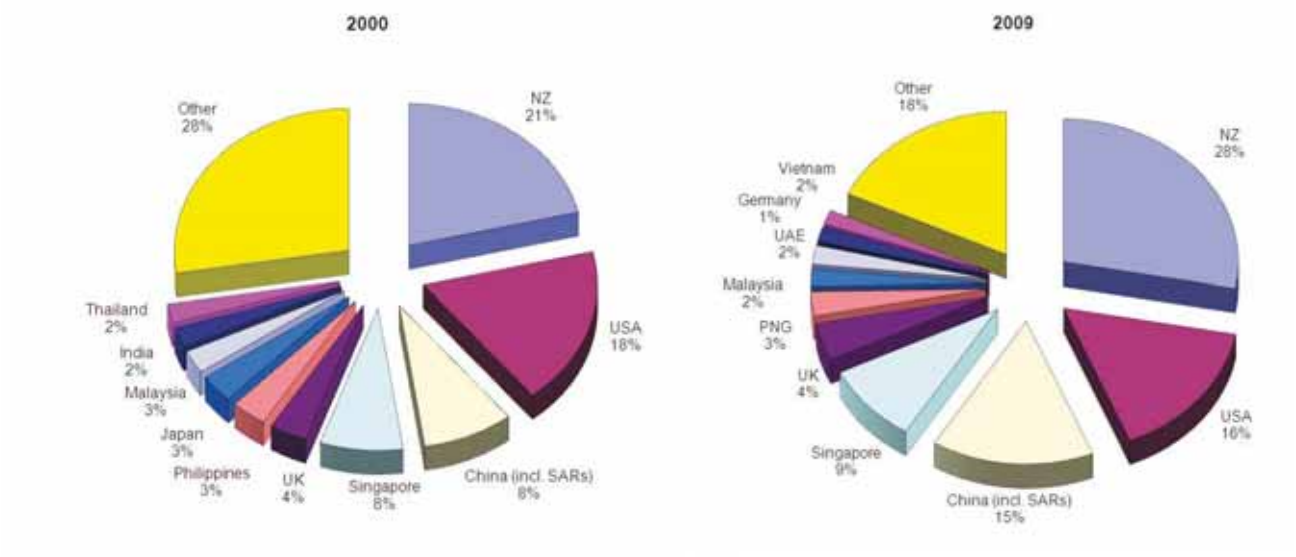
This section focuses on the direction of trade in ICT equipment (i.e. our export markets and import sources), comparing the current situation with that of a decade ago. It also examines the extraordinary emergence of China as a location for electronics manufacturing and as an exporter of ICT equipment.

3.2.1 Australia's ICT Equipment Export Markets

Over the past decade New Zealand and the United States have been the largest markets for Australia's ICT equipment exports. In 2000, New Zealand took $583 million worth of our ICT equipment exports (21%) and the United States took $496 million (18%). In 2009, New Zealand took $624 million (28%) and the United States took $355 million (16%) (Figure 3.11). The overall share of ICT equipment exports taken by the Top 10 markets increased from 72% in 2000 to 82% in 2009.[12]

12 Some items go to 'international waters' (e.g. trans-ocean fibre optic cable) or to unknown destinations, while others come from unknown sources.

Figure 3.11 Top 10 Markets for Australia's ICT Equipment Exports, 2000 and 2009 (per cent)



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

As a destination market for our ICT equipment exports, China (incl. SARs) maintained its ranking behind New Zealand and the United States, but increased its market share – taking 8% of total ICT equipment exports in 2000 and 15% in 2009. In the 1990s, Japan was a major export market for Australia. However, by 2009 it had slipped to 12th place. Singapore and the United Kingdom have also been good markets for Australian ICT equipment throughout the past decade. In 2000, Singapore took $211 million (9%) of our ICT equipment exports and the United Kingdom took $96 million (4%). In 2009, Singapore took $201 million (9%), while the United Kingdom took $95 million (4%). Other major ICT equipment export markets during 2009 included: Papua New Guinea ($61 million), United Arab Emirates ($48 million), Malaysia ($42 million) Germany and Vietnam ($36 million).

Table 3.4 Australia's Top 10 ICT Equipment Export Markets, 2000 and 2009 (AUDM & Share)

2000				2009		
	AUDM	Share %			AUDM	Share %
NZ	584	21%		NZ	624	28%
USA	496	18%		USA	355	16%
China (incl. SARs)	232	8%		China (incl. SARs)	334	15%
Singapore	211	8%		Singapore	201	9%
UK	96	3%		UK	95	4%
Philippines	91	3%		PNG	61	3%
Japan	88	3%		Malaysia	42	2%
Malaysia	72	3%		UAE	48	2%
India	62	2%		Germany	36	2%
Thailand	61	2%		Vietnam	36	2%
Total Top 10	1,993	72%		Total Top 10	1,832	83%

Note: All data are current prices, FOB.
Sources: TradeData (www.tradedata.net), CSES Analysis.

Re-exports account for a significant share of total ICT equipment exports, so it is interesting to examine separately the destination markets for re-exports and locally produced exports. The markets for ICT equipment re-exports from Australia reveal something of the ICT supply and distribution chains in which Australia is involved, while the destination markets for locally produced ICT equipment reveal the markets to which Australian manufacturers export domestically produced ICT equipment.

In 2009, New Zealand was by far the largest market for ICT equipment re-exports from Australia, taking 39% of all re-exports (Figure 3.12). Other major markets for re-exports included the United States, China (incl. SARs) and Singapore. These data suggest that Australia acts as an ICT equipment distribution hub for the local region (e.g. New Zealand), and participates in international manufacturing supply chains (e.g. the United States, China (incl. SARs) and Singapore).

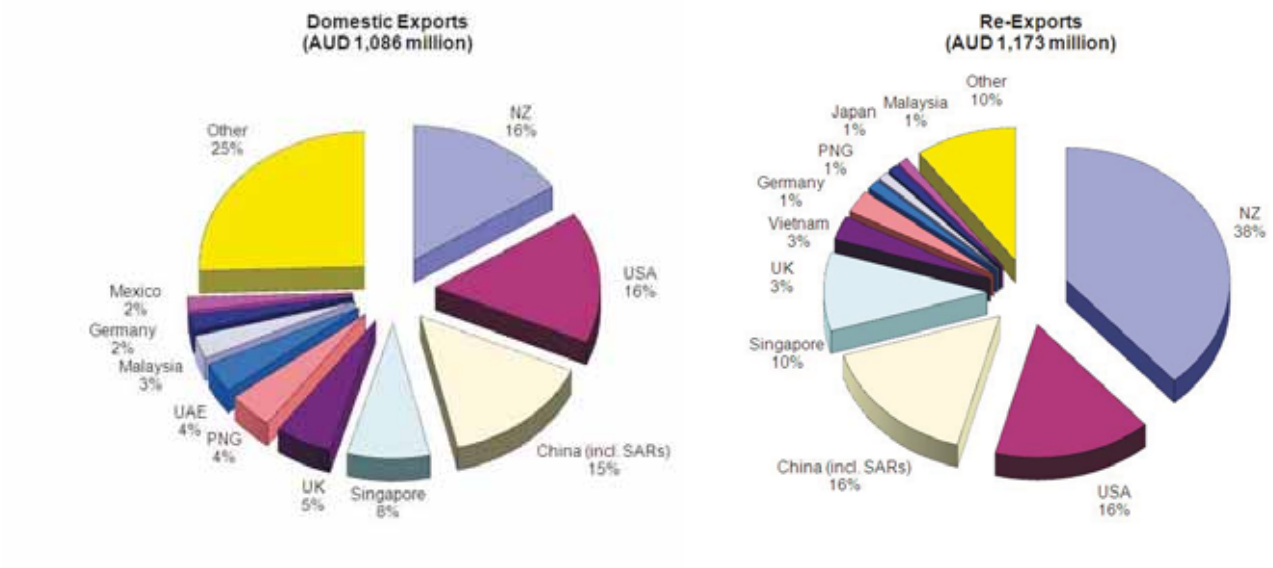
Perhaps more interestingly, locally produced exports of ICT equipment from Australia found their largest markets in the United States and New Zealand (16%), China (incl. SARs) (15%), Singapore (8%) and the United Kingdom (6%), with PNG, UAE, Malaysia, Germany and Mexico making up the Top 10 markets for our locally produced ICT equipment exports during 2009.

Table 3.5 Australia's Top 10 ICT Equipment Re-export and Domestic Export Markets, 2009

Re-Exports	AUDM	Share %		Domestic Exports	AUDM	Share %
NZ	452	39%		NZ	172	16%
USA	183	16%		USA	172	16%
China (incl. SARs)	189	16%		China (incl. SARs)	160	15%
Singapore	113	10%		Singapore	88	8%
UK	34	3%		UK	61	6%
Vietnam	33	3%		PNG	48	4%
Germany	15	1%		UAE	39	4%
PNG	13	1%		Malaysia	31	3%
Japan	12	1%		Germany	22	2%
Malaysia	12	1%		Mexico	18	2%
Other	118	10%		Other	277	25%
Top 10	1,056	90%		Top 10	809	75%
Total	1,173	100%		Total	1,086	100%
Total Top 10	1,993	72%		Total Top 10	1,832	82%

Note: All data are current prices, FOB.
Sources: TradeData (www.tradedata.net), CSES Analysis.

Figure 3.12 Top 10 Markets for Australia's ICT Equipment Exports, 2009 (per cent)



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

3.2.2 Australia's Major ICT Equipment Import Sources

Australia draws ICT equipment imports from a somewhat wider range of sources than it did a decade ago. Reflecting globalisation and increasing specialisation in ICT manufacturing, the Top 10 share of imports is greater than the Top 10 share of exports in 2009.

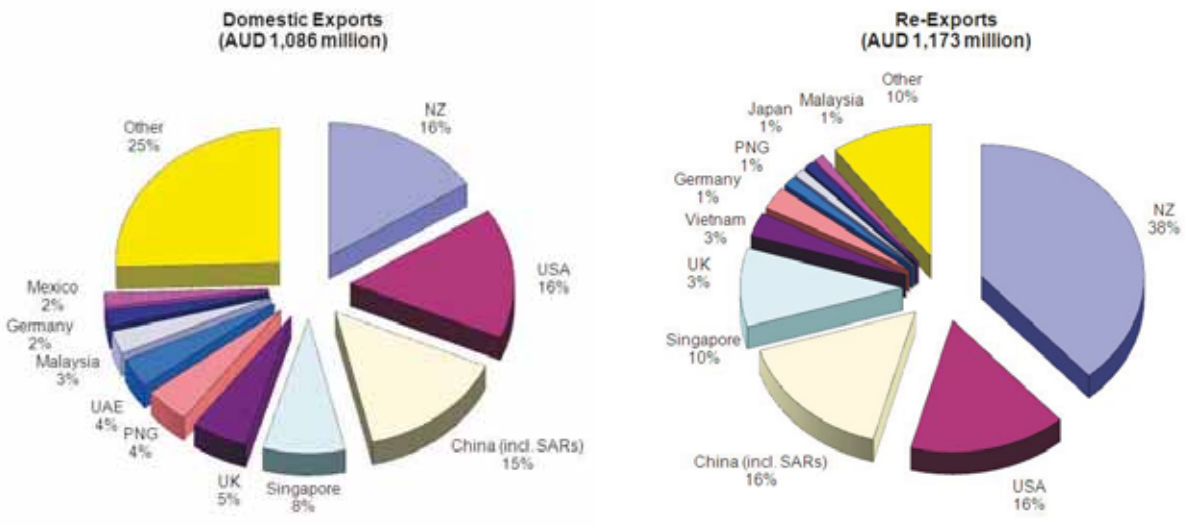
Table 3.6 Australia's Top 10 ICT Equipment Import Sources, 2000 and 2009 (AUDM)

	2000				2009	
	AUDM	Share %			AUDM	Share %
USA	3,912	20.3		China (incl. SARs)	10,896	48.8
Japan	2,309	12.0		USA	2,443	10.9
Malaysia	2,113	11.0		Japan	1,769	7.9
China (incl. SARs)	1,598	8.3		Korea	1,082	4.8
Singapore	1,867	9.7		Singapore	1,078	4.8
Korea	1,449	7.5		Taiwan	890	4.0
Taiwan	1,380	7.2		Thailand	536	2.4
UK	1,189	6.2		Indonesia	322	1.4
Ireland	361	1.9		Mexico	301	1.3
Canada	346	1.8		UK	300	1.3
Total Top 10	15,119	78.4		Total Top 10	19,617	87.8

Note: All data are current prices, FOB.
Sources: TradeData (www.tradedata.net), CSES Analysis.

A decade ago the United States and Japan were the two main sources of ICT equipment imports into Australia – supplying $4 billion (20%) and $2.3 billion (12%), respectively (Table 3.6). Japan has fallen down the rankings of suppliers, from 2nd to 3rd and by 2009 supplied just 8% of Australia's ICT equipment imports, while the United States now supplies 11%. Asian countries, including China (incl. SARs), Malaysia, Korea, Singapore, Taiwan, Thailand and Indonesia, are now major suppliers.

Figure 3.13 Top 10 sources of Australia's ICT equipment imports, 2000 and 2009 (per cent share)



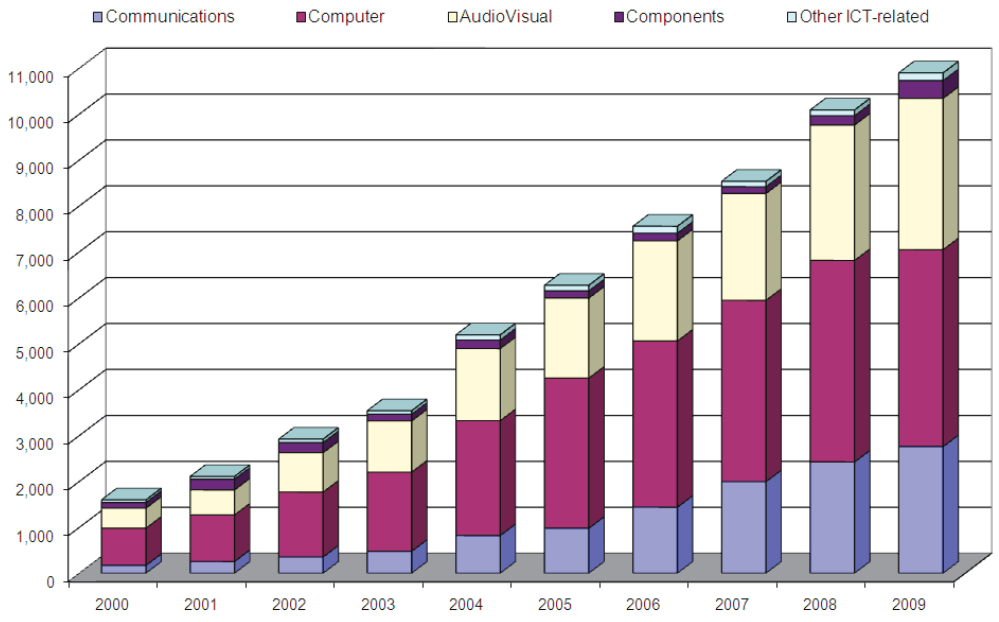
Sources: TradeData (www.tradedata.net), CSES Analysis.

The biggest change is in imports from China (incl. SARs), which accounted for 8% of Australia's ICT equipment imports in 2000, but is now the largest supplier – with exports to Australia of nearly $11 billion in 2009, some 49% of Australia's total ICT equipment imports. These data reflect the rise of Asia as a location for ICT manufacturing and assembly, the shift of Japanese ICT equipment manufacturing offshore and the rapid development of China (incl. SARs) as a base for electronics manufacturing.

3.2.3 Emerging Trade Patterns (China and East Asia)

During 2003, China (including the Hong Kong and Macao SARs) became the largest supplier of ICT equipment imports into Australia – taking over the number one spot from the United States. Indeed, China (incl. SARs) is now the world's largest exporter of ICT equipment, eclipsing the United States and Japan during 2004. Australia's ICT equipment imports from China (incl. SARs) increased by 24% per annum between 2000 and 2009, with the post-'Dot Com' era exhibiting quite different ICT trade patterns to the preceding boom period (Figure 3.14).

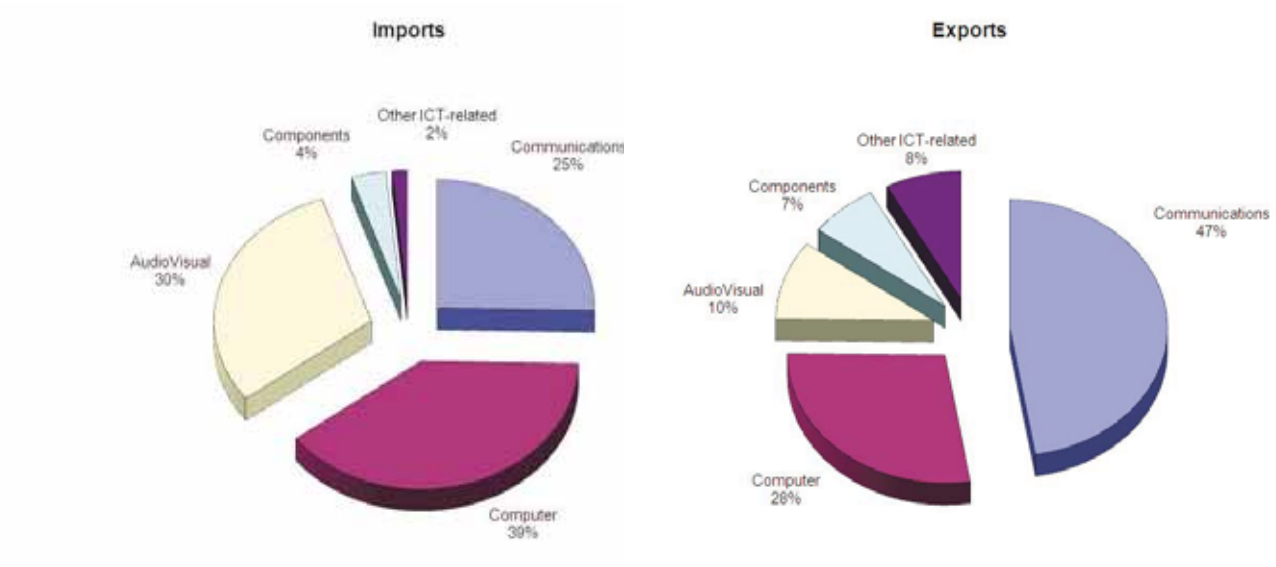
Figure 3.14 ICT Equipment Imports from China (incl. SARs), 2000 to 2009 (AUDM)



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

In 2009, computer equipment was by far the largest category of ICT imports from China (incl. SARs), worth $4.3 billion. Audiovisual equipment imports from China (incl. SARs) cost $3.3 billion during 2009, communications equipment $2.8 billion, components imports $388 million and other ICT-related equipment imports $167 million (Figure 3.15).

Figure 3.15 ICT Equipment Trade with China (incl. SARs), 2009 (per cent share)



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

Australia's exports of ICT equipment to China (incl. SARs) grew by 4% per annum over the decade, reaching $334 million in 2009. Communications equipment was the largest category of Australian ICT equipment exports to China (incl. SARs) during 2009, at $159 million. Computer equipment exports to China (incl. SARs) were worth $93 million, audiovisual equipment exports $33 million, components exports $23 million, other ICT-related equipment exports $26 million and (Figure 3.15).

Australia's deficit on trade in ICT equipment with China (incl. SARs) reached $10.5 billion in 2009, and accounted for no less than 53% of the total deficit on trade in ICT equipment – up from $1.3 billion or 9% of the total ICT equipment deficit in 2000. The deficit on ICT equipment trade with China has increased by 25% per annum over the decade.

4 ICT Trade State-by-State

This chapter examines ICT equipment and services trade State-by-State. It includes a detailed analysis of ICT equipment and services exports and imports for all States and Territories.

It should be noted that there are cases in which either the State of origination or destination of goods is not known, and cases in which returns are incorrectly filed – with, for example, the head office address given as origin/destination instead of the address of the branch or office that is the ultimate origin/destination. Imported equipment may also be purchased by a distributor in one State and subsequently sold in another State. Services data by State are limited, and are derived from ABS estimates. Consequently, State-based data are subject to a degree of error and should be interpreted with caution. Moreover, because of these data limitations totals may not correlate with those presented in the previous chapters.

4.1 State and Territory ICT Trade

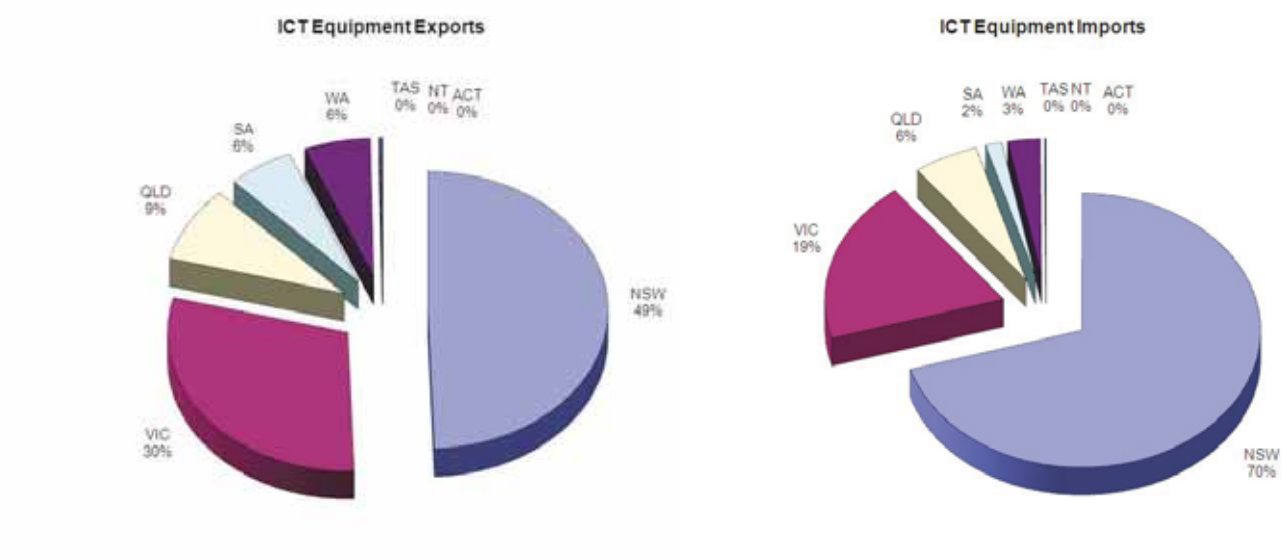
This section presents a brief overview of State trade before looking at each of the States and Territories in detail. All data are in current prices.

4.1.1 Comparative State Performance

New South Wales and Victoria dominate ICT equipment exports and imports, with NSW the largest exporter of ICT equipment in 2009 (Figure 4.1). ICT equipment exports from Queensland, South Australia and Western Australia were also significant. During 2009, NSW also attracted some 70% of all ICT equipment imports, although $1 billion worth were subsequently re-exported – with Sydney acting as a regional distribution hub.

New South Wales' position is more dominant when it comes to ICT-related services, with NSW accounting for 51% of total State recorded exports (credits) during 2009 and 70% of imports (debits) (Figure 4.2). At 30%, Victoria's share of ICT services exports was significantly smaller. However, uneven reporting of services trade data means that caution should be exercised when interpreting these data – with that for the smaller States being understated, hence the shares of the larger States are typically overstated.

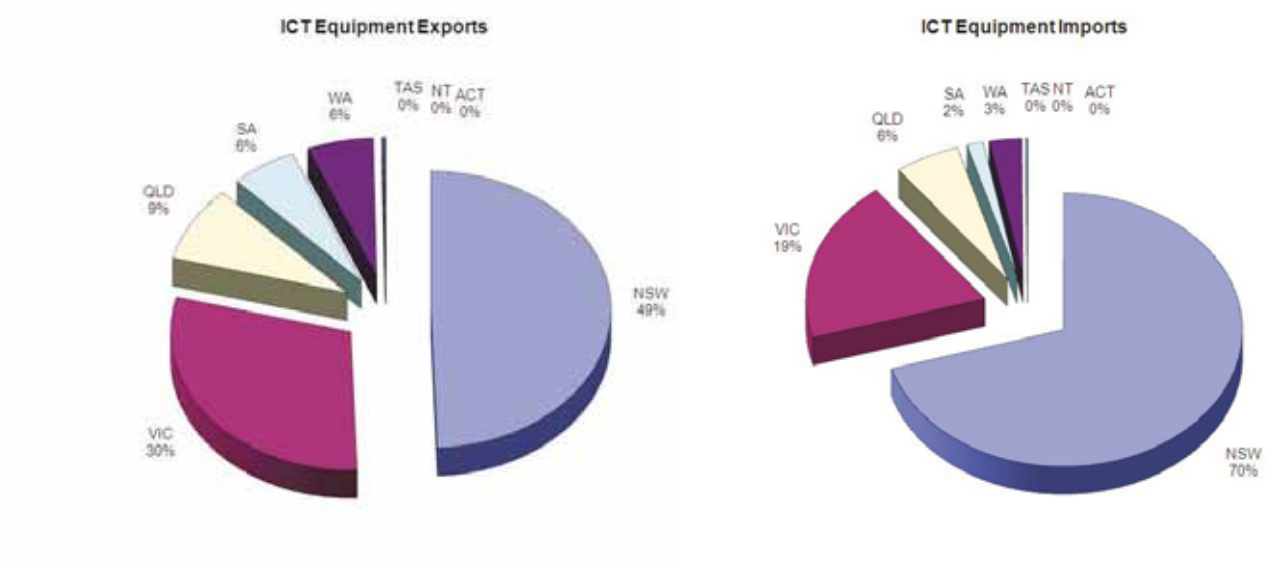
Figure 4.1 State ICT Equipment Trade Shares, 2009 (per cent)



Note: Exports exclude re-exports, but imports include them.
Sources: TradeData (www.tradedata.net), CSES Analysis.

While there are data limitations, Figures 4.1 and 4.2 reveal something of the relative performance of the States and of their contribution to Australia's overall trade position. For example, where a State makes a higher percentage contribution to exports than to imports it is making a relatively positive contribution, and vice-versa (e.g. Victoria's ICT equipment and services trade vis-à-vis that of NSW).

Figure 4.2 State ICT Services Trade Shares, 2009 (per cent)



Note: Limited data mean that these shares should be interpreted with caution.
Sources: ABS, CSES Analysis.

4.1.2 State Export Markets

During 2009, the major markets for locally produced ICT equipment exports from NSW were: New Zealand, which took $113 million, China (incl. SARs) took $90 million and the United States $61 million. Papua New Guinea, the United Kingdom, Singapore, Mexico, UAE and Malaysia were also substantial markets for equipment exports from NSW.

The major markets for locally produced ICT equipment exports from Victoria were: the United States which took $63 million, Singapore $42 million, the United Kingdom $35 million, China (incl. SARs) $40 million, New Zealand $29 million and The United Arab Emirates $20 million. Malaysia, Japan, Germany, Brazil and Korea were also substantial markets for equipment exports from Victoria.

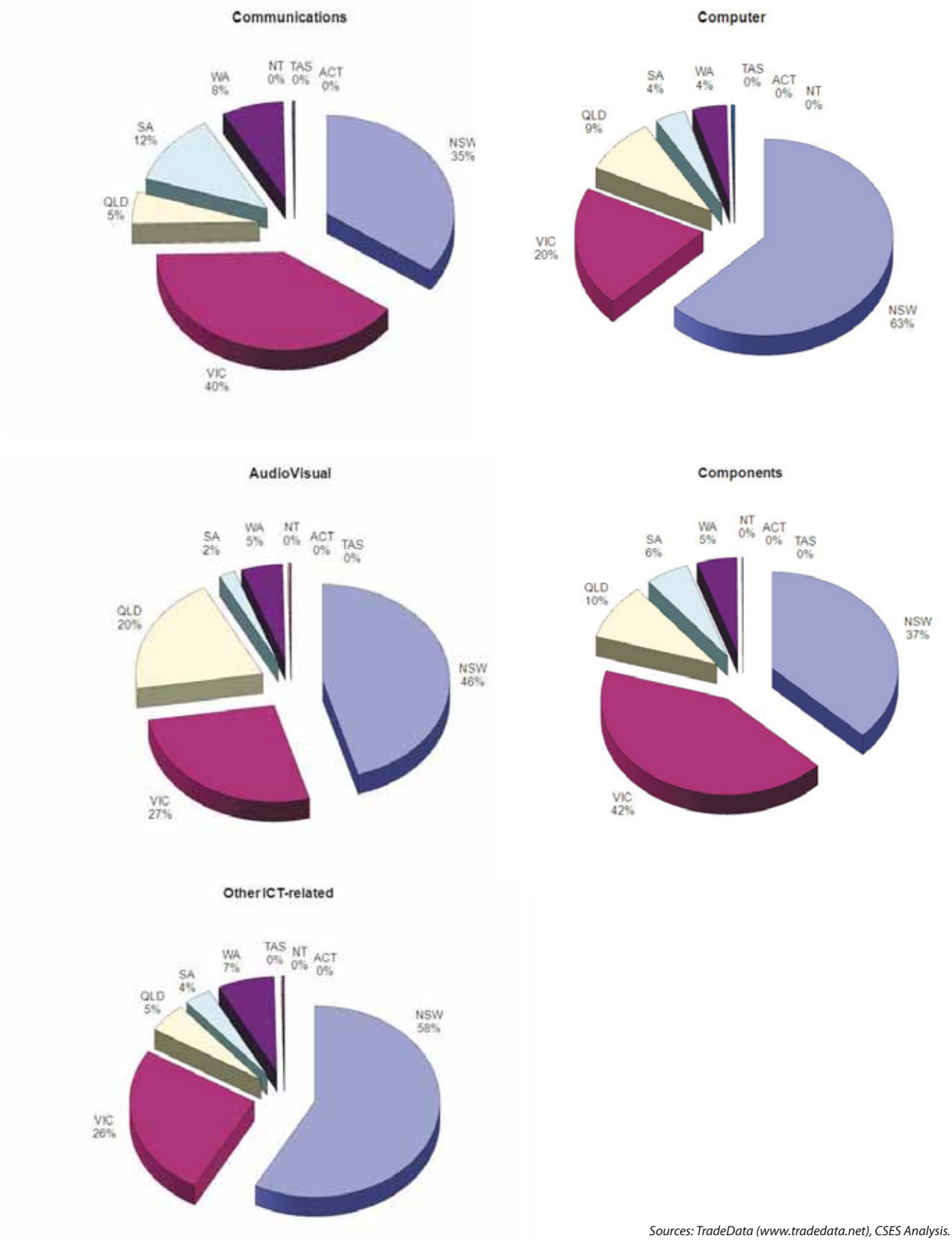
Queensland's ICT equipment exports during 2009 went primarily to New Zealand, the United States, China (incl. SARs), Papua New Guinea, Singapore, the United Kingdom and Indonesia, although there were several other countries that took more than $1 million worth.

South Australia's ICT equipment exports went primarily to the United States, Afghanistan, Malaysia, China (incl. SARs), New Zealand, the United Kingdom, India, South Africa, Germany, Canada and the United Arab Emirates. Interestingly, about $4 million of "Parts (excl. aerials and aerial reflectors) suitable for use with transmission apparatus, for radio-telephony, radio-telegraphy, radio-broadcasting or television" were exported to Afghanistan from South Australia in 2009.

Western Australia's ICT equipment exports went primarily to the United States, Singapore, China (incl. SARs), the United Kingdom, New Zealand, Canada, the Netherlands, South Africa and Italy. Other countries took more than $1 million worth, including India, Tanzania, Malaysia and Brazil. Export markets for the smaller States and Territories tend to vary from year to year.

Figure 4.3 shows the State-by-State contributions to exports of the various categories of ICT equipment during 2009.

Figure 4.3 State Shares of ICT Equipment Exports by Category, 2009



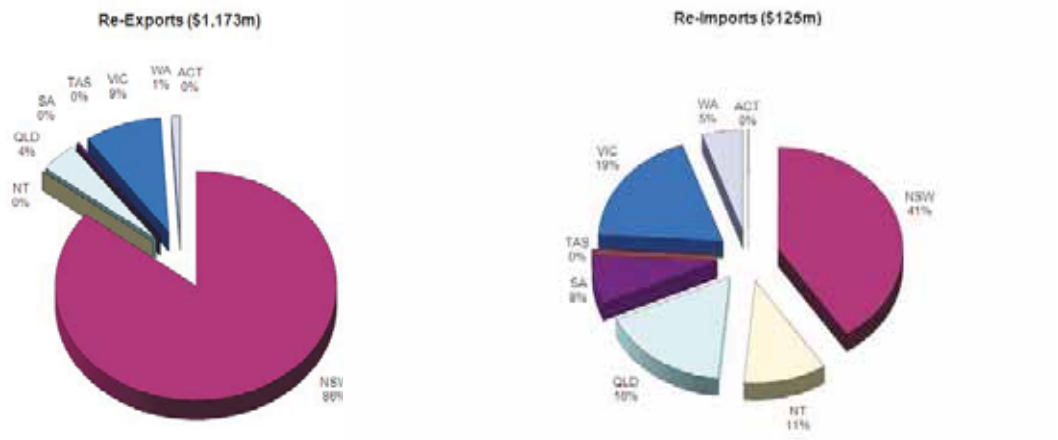
Sources: TradeData (www.tradedata.net), CSES Analysis.

4.1.3 Re-exports and Re-imports by State

As noted, ICT equipment trade data are derived from customs returns, which show the 'State of Origin' for exports and the 'State of Destination' for imports. Because of the way in which State of Origin and State of Destination are coded, State-based exports report locally produced exports and exclude re-exports, but State-based imports include both re-imports and re-exports.

Re-exports accounted for about 52% of total ICT equipment exports in 2009, so it is important to note the State-by-State flow of re-exports. Among other things, that flow indicates the role of various States in international supply and value chains and as entrepôt ports (i.e. international distribution hubs).

Figure 4.4 ICT Equipment Re-exports and Re-imports by State, 2009 (per cent)



Note: Re-exports by State of Discharge and re-imports by State of Destination.
Sources: TradeData (www.tradedata.net), CSES Analysis.

What is immediately apparent from an analysis of the data is that New South Wales (Sydney) plays an important role in regional distribution – accounting for 86% of all ICT equipment re-exports during 2009 (more than $1 billion) (Figure 4.4).

4.2 ICT Trade State-by-State

This section presents a detailed description of ICT trade for each of the States and Territories. All data are in current prices.

4.2.1 New South Wales

In 2009, NSW exported $521 million worth of domestically produced ICT equipment, down from more than $746 million during 2000. It accounted for around 50% of Australia's (State attributable) equipment exports.

Computer equipment was the largest category of domestically produced ICT equipment exports from NSW in 2009, worth $221 million or 62% of the national total. Other ICT-related equipment exports were worth $99 million, communications equipment exports $97 million, audiovisual equipment exports $57 million and components exports $47 million. Audiovisual and other ICT-related equipment exports from NSW have grown over the past decade, whereas computer, components and communications equipment exports have declined.

Table 4.1 NSW's ICT Equipment Trade, 2000 to 2009 ($ '000)

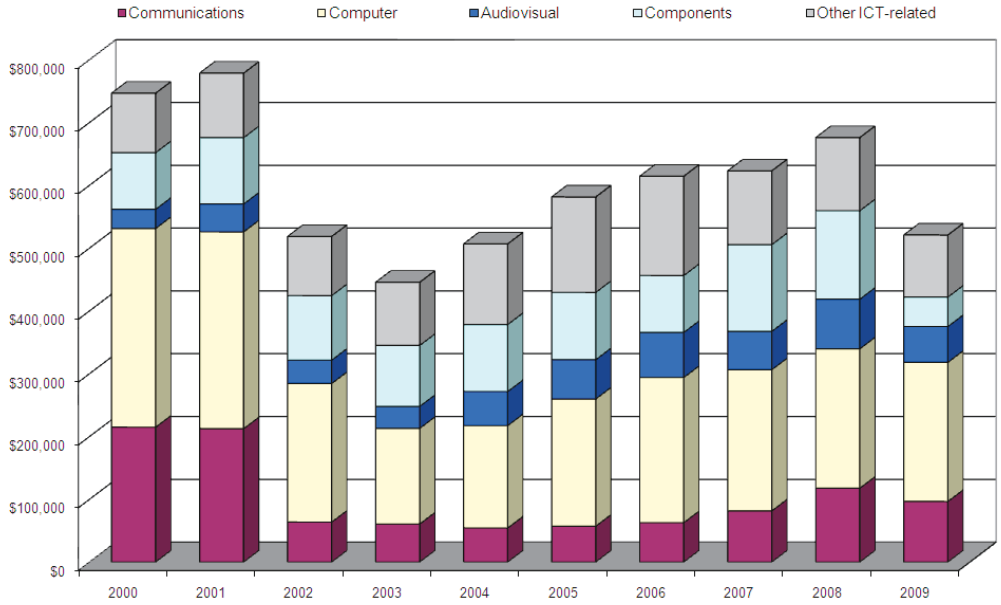
	2000	2002	2004	2006	2008	2009
ICT Equipment Exports						
Communications	214,837	63,715	54,399	62,835	117,788	96,584
Computer	316,350	220,614	162,939	231,056	221,811	221,450
Audiovisual	30,594	37,318	54,284	71,834	79,096	57,073
Components	90,184	102,673	106,713	90,582	140,829	46,886
Other ICT-related	94,505	94,079	128,293	157,978	116,366	98,747
Total	746,470	518,399	506,628	614,285	675,890	520,739
ICT Equipment Imports						
Communications	4,050,148	2,325,897	2,969,170	3,284,772	3,920,008	4,424,809
Computer	6,477,658	5,971,061	6,063,756	6,840,318	6,570,937	6,215,400
Audiovisual	1,617,539	2,010,967	2,629,510	2,714,543	3,559,509	3,579,302
Components	922,589	723,783	816,861	693,999	622,896	693,316
Other ICT-related	1,011,916	832,392	1,002,593	909,454	922,574	820,822
Total	14,079,850	11,864,100	13,481,890	14,443,086	15,595,923	15,733,649
Balance (Approx.)	**-11,945,740**	**-9,955,182**	**-11,945,814**	**-12,834,291**	**-13,840,636**	**-14,208,652**

Notes: All data are current prices. Imports are CIF, exports FOB. Exports exclude re-exports, but imports include them. Balances are no more than approximations.
Sources: TradeData (www.tradedata.net), CSES Analysis.

Imports of ICT equipment into NSW cost nearly $16 billion in 2009, up from $14 billion a decade earlier. NSW accounted for 70% of total national ICT equipment imports. Computer equipment, costing $6.2 billion, was the largest category, followed by communications equipment ($4.4 billion), audiovisual equipment ($3.6 billion), other ICT-related equipment ($821 million) and components ($693 million). ICT equipment imports into NSW have increased by 1.2% per annum over the past decade (in current prices), while exports from NSW have declined by nearly 4% per annum. NSW's approximate deficit on trade in ICT equipment in 2009 was $14 billion. [13]

13 ICT equipment trade data are derived from customs returns, which show the State of Origin for exports and the State of Destination for imports. Because of the way in which State of Origin and State of Destination are coded, State-based exports report locally produced exports and exclude re-exports, but State-based imports include both re-imports and re-exports. Hence, the difference between State exports and imports reported in the following tables reflects the difference between the States' domestically produced exports and its total imports. This is not the same as the State's ICT trade balance. The approximate ICT equipment trade balances reported in the tables below are calculated as the State's locally produced exports and re-exports discharged from that State, minus total imports (including both re-exports and re-imports) with that State destination. Because of differences between State of Origin and State of Discharge these balances are no more than indicative approximations.

Figure 4.5 NSW's Exports of ICT Equipment, 2000 to 2009 ($ '000)



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

State-based services trade data are limited and are rounded to millions. However, computer and information services exports from NSW were reported to have been worth $847 million in 2009, royalties and fees exports $121 million, telecommunications services exports $109 million and audiovisual services exports $80 million. Telecommunication and computer and information services exports have been growing since 2000, while other categories have fallen. Imports of audiovisual services cost NSW $1 billion, ICT-related royalties and fees cost $941 million, computer and information services imports cost $859 million and telecommunications services cost NSW $228 million in 2009. Hence, NSW had a deficit on ICT services trade during 2009 of around $2 billion.

Table 4.2 NSW's ICT Services Trade, 2000 to 2009 (AUDM)

	2000	2002	2004	2006	2008	2009
ICT Services Exports						
Telecommunications services	463	260	185	159	122	109
Computer & information services	662	917	1,059	833	883	847
Audiovisual & related*	1,483	160	130	158	138	80
Royalties & fees	235	118	154	165	93	121
ICT Services Imports						
Telecommunications services	620	482	226	210	216	228
Computer & information services	730	812	837	836	772	859
Audiovisual & related	537	694	804	851	1,237	1,069
Royalties & fees	500	520	735	689	917	941

*Note: *Includes the one-off impacts of the Sydney Olympic Games. .. no data available. np not published.*
Sources: ABS, CSES Analysis.

4.2.2 Victoria

In 2009, Victoria's domestically produced ICT equipment exports were worth $312 million, down from $464 million a decade earlier – with Victoria accounting for 30% of national (State attributable) equipment exports. Communications equipment was the main export category.

Victorian ICT equipment exports declined from their 2000 peak of $464 million and remained around $350 million for most of the decade until 2009, when they fell by 14% (in current prices). There has been significant variation by category, with strong growth in audiovisual equipment exports and modest growth in communications exports. The big falls since the turn of the century have been in exports of computer equipment and other ICT-related equipment – with computer equipment exports falling from $154 million in 2000 to just $70 million in 2009, and other ICT-related equipment exports falling from $119 million in 2000 to $44 million in 2009.

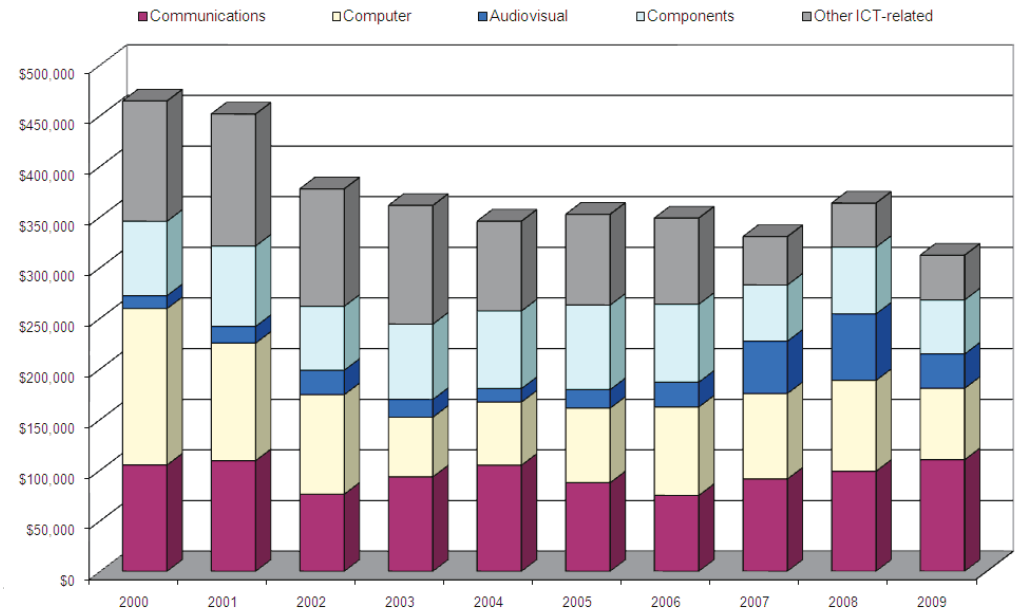
Imports of ICT equipment destined for Victoria cost more than $4 billion in 2009, up from $3.5 billion a decade earlier. Victoria accounted for around 19% of national ICT equipment imports. Audiovisual equipment accounted for around $1.6 billion, computer equipment accounted for $1.2 billion, communications equipment accounted for $798 million, components $360 million and other ICT-related equipment accounted for $353 million. Exports of ICT equipment from Victoria have declined by 4.3% per annum over the past decade, while imports into Victoria have grown by 2.2% per annum. Victoria's deficit on ICT equipment trade stood at around $3.9 billion in 2009 (See note 12).

Table 4.3 Victoria's ICT Equipment Trade, 2000 to 2009 ($ '000)

	2000	2002	2004	2006	2008	2009
ICT Equipment Exports						
Communications	104,969	76,193	104,795	74,920	98,831	110,219
Computer	154,453	98,206	62,333	87,312	89,677	70,457
Audiovisual	12,730	24,109	13,297	24,510	65,659	33,926
Components	73,467	63,127	76,648	76,932	65,893	53,397
Other ICT-related	118,742	115,978	88,655	85,081	43,475	44,095
Total	464,360	377,613	345,729	348,755	363,534	312,094
ICT Equipment Imports						
Communications	936,883	616,968	969,854	1,505,848	933,560	798,483
Computer	1,076,873	1,116,988	1,169,130	1,396,260	1,377,174	1,198,660
Audiovisual	755,494	945,932	1,122,890	1,182,375	1,415,421	1,583,967
Components	466,289	387,026	421,123	348,739	412,790	360,184
Other ICT-related	309,550	251,190	278,268	341,238	321,595	353,074
Total	3,545,090	3,318,104	3,961,265	4,774,460	4,460,539	4,294,368
Balance (Approx.)	**-2,933,123**	**-2,810,891**	**-3,478,456**	**-4,331,577**	**-3,930,897**	**-3,878,243**

Notes: All data are current prices. Imports are CIF, exports FOB. Exports exclude re-exports, but imports include them. Balances are no more than approximations.
Sources: TradeData (www.tradedata.net), CSES Analysis.

Figure 4.6 Victoria's Exports of ICT Equipment, 2000 to 2009 ($ '000)



Services trade data are limited. However, computer and information services exports from Victoria were reported to have been worth $504 million in 2009, and telecommunications services exports $62 million, royalties and fees $58 million and audiovisual services exports $46 million in 2009. Imports of computer and information services cost Victoria $524 million, telecommunications services $130 million, royalties and fees $95 million and imports audiovisual services $44 million. Victoria had a deficit on trade in ICT services of around $123 million.

Table 4.4 Victoria's ICT Services Trade, 2000 to 2009 (AUDM)

	2000	2002	2004	2006	2008	2009
ICT Services Exports						
Telecommunications services	299	171	125	92	69	62
Computer & information services	119	146	130	403	504	504
Audiovisual & related	28	17	41	42	115	46
Royalties & fees	32	14	36	50	57	58
ICT Services Imports						
Telecommunications services	401	316	153	122	123	130
Computer & information services	91	119	189	323	467	524
Audiovisual & related	166	69	29	70	53	44
Royalties & fees	36	84	68	67	130	95

Note: .. no data available. np not published.
Sources: ABS, CSES Analysis.

4.2.3 Queensland

Queensland exported $93 million worth of locally produced ICT equipment in 2009, well up on the $74 million it exported a decade earlier. In 2009, Queensland accounted for around 9% of national (State attributable) equipment exports. Computer and audiovisual equipment were the main export categories. Queensland's exports grew by 2.6 per annum between 2000 and 2009. Audiovisual equipment has been particularly strong, growing by 13.5% per annum. Communications and computer exports also increased over the decade, with only components and other ICT-related exports declining.

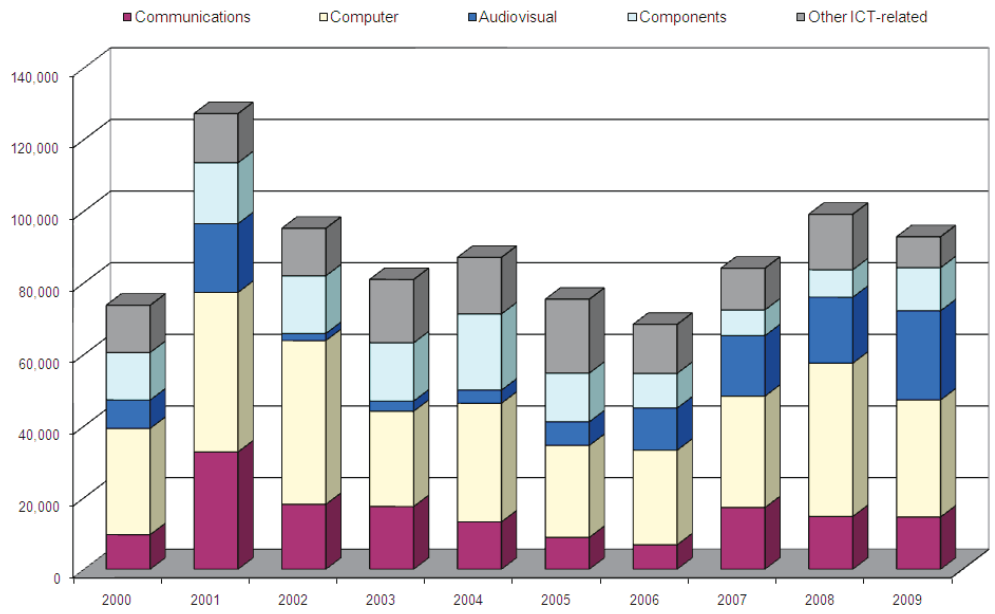
As elsewhere, imports of ICT equipment continue to grow – costing $1.3 billion in 2009, up from $532 million a decade earlier. Audiovisual equipment and computers are the largest categories of imports into Queensland – at $541 and $318 million, respectively. Queensland's deficit on ICT equipment trade in 2009 was approximately $1.3 billion (See note 12).

Table 4.5 Queensland's ICT Equipment Trade, 2000 to 2009 ($ '000)

	2000	2002	2004	2006	2008	2009
ICT Equipment Exports						
Communications	9,679	18,146	13,240	6,855	14,750	14,614
Computer	29,654	45,706	33,119	26,393	42,801	32,678
Audiovisual	7,938	1,979	3,669	11,763	18,409	24,884
Components	13,257	16,088	21,269	9,688	7,671	12,031
Other ICT-related	13,167	13,267	15,775	13,666	15,480	8,636
Total	73,696	95,186	87,071	68,364	99,111	92,843
ICT Equipment Imports						
Communications	140,982	163,164	92,488	169,654	126,774	153,933
Computer	152,205	193,988	304,713	405,488	380,789	318,470
Audiovisual	130,187	147,949	279,848	355,354	441,654	540,938
Components	35,543	24,757	21,708	25,285	47,173	108,289
Other ICT-related	72,923	115,528	145,326	239,120	163,768	191,319
Total	531,840	645,386	844,084	1,194,901	1,160,159	1,312,948
Balance (Approx.)	**-435,651**	**-514,289**	**-722,249**	**-1,106,061**	**-999,581**	**-1,170,323**

Notes: All data are current prices. Imports are CIF, exports FOB. Exports exclude re-exports, but imports include them. Balances are no more than approximations.
Sources: TradeData (www.tradedata.net), CSES Analysis.

Figure 4.7 Queensland's Exports of ICT Equipment, 2000 to 2009 ($ '000)



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

Services trade data are limited. However, computer and information services exports are reported to have been worth $193 million in 2009, telecommunications services exports from Queensland were worth $45 million and royalties and fees were a further $26 million. The imports of telecommunications services cost Queensland $95 million, imports of computer and information services $51 million and royalties and fees $14 million. Thus, Queensland would have had a surplus on trade in ICT services of around $104 million in 2009.

Table 4.6 Queensland's ICT Services Trade, 2000 to 2009 (AUDM)

	2000	2002	2004	2006	2008	2009
ICT Services Exports						
Telecommunications services	216	123	91	67	50	45
Computer & information services	54	77	56	115	167	193
Audiovisual & related	..	7	9	5	5	5
Royalties & fees	15	13	15	32	28	26
ICT Services Imports						
Telecommunications services	289	229	111	88	90	95
Computer & information services	28	19	7	22	28	51
Audiovisual & related	..	4		6	1	5
Royalties & fees	1	1	7	19	15	14

Note: .. no data available. np not published.
Sources: ABS, CSES Analysis.

4.2.4 South Australia

For the smaller States and Territories trade data are more volatile, reflecting the lumpy nature of trade and the impacts of particular transactions. This volatility should be borne in mind when interpreting these data (especially apparent trends). Moreover, some items of electronics may fall outside the classifications of ICT and/or may be deemed confidential items. This may lead to an understatement of State-based exports where there is significant defence-related electronics manufacturing.

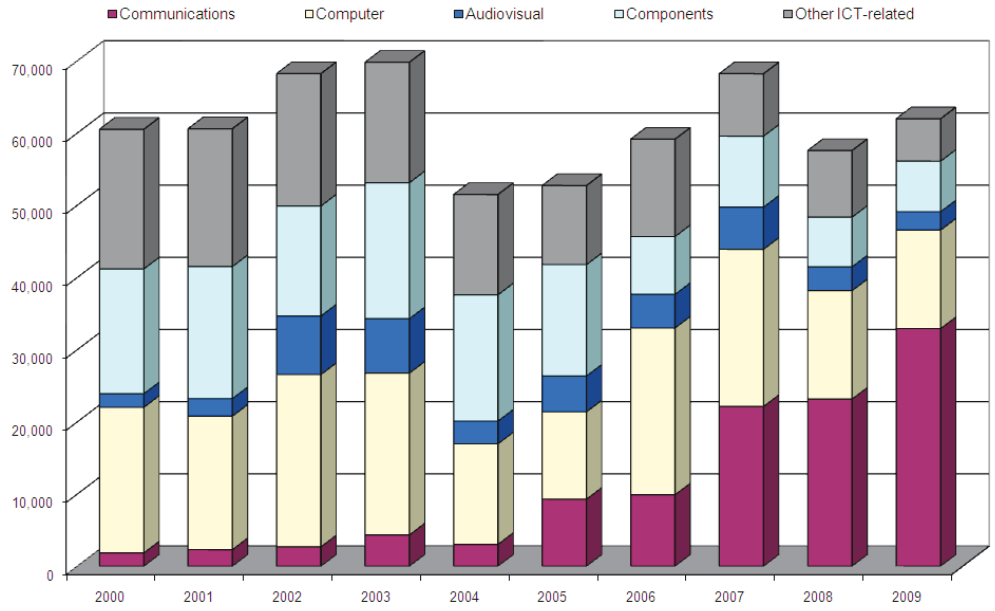
South Australia's locally produced exports of ICT equipment reached $62 million in 2009, which is similar to the level in 2000 ($61 million). Communications equipment ($33 million) and computer equipment ($13 million) were the major contributors. ICT equipment imports reached $326 million in 2009, up from $224 million a decade earlier. These are significantly lower import levels than Queensland and Western Australia. South Australia's ICT equipment trade deficit was approximately $260 million in 2009 (See note 12).

Table 4.7 South Australia's ICT Equipment Trade, 2000 to 2009 ($ '000)

	2000	2002	2004	2006	2008	2009
ICT Equipment Exports						
Communications	1,848	2,688	3,031	9,895	23,155	32,915
Computer	20,159	23,857	13,924	23,098	15,006	13,641
Audiovisual	1,884	8,115	3,149	4,659	3,312	2,543
Components	17,283	15,226	17,483	8,003	6,875	7,001
Other ICT-related	19,339	18,333	13,887	13,480	9,228	5,872
Total	60,513	68,219	51,475	59,135	57,576	61,973
ICT Equipment Imports						
Communications	33,738	37,730	15,524	28,030	27,837	23,004
Computer	38,058	35,335	79,360	77,776	40,345	51,326
Audiovisual	18,537	68,619	97,399	114,359	142,203	148,580
Components	93,101	58,999	56,993	53,967	30,489	49,014
Other ICT-related	40,731	28,563	32,569	42,701	32,998	53,612
Total	224,165	229,245	281,845	316,834	273,871	325,537
Balance (Approx.)	**-162,568**	**-157,385**	**-225,947**	**-252,406**	**-211,565**	**-259,849**

Notes: All data are current prices. Imports are CIF, exports FOB. Exports exclude re-exports, but imports include them. Balances are no more than approximations.
Sources: TradeData (www.tradedata.net), CSES Analysis.

Figure 4.8 South Australia's Exports of ICT Equipment, 2000 to 2009 ($ '000)



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

Services trade data are limited. However, telecommunications services exports from South Australia were reported to have been worth $18 million in 2009, down from $87 million in 2000. Exports of computer and information, audiovisual and royalties and fees were all under $10 million. Imports of telecommunication services cost $38 million in 2009, audiovisual $30 million, royalties and fees $28 million and computer and information services imports cost $13 million. Thus, South Australia had a deficit on trade in ICT services of around $72 million.

Table 4.8 South Australia's ICT Services Trade, 2000 to 2009 (AUDM)

	2000	2002	2004	2006	2008	2009
ICT Services Exports						
Telecommunications services	87	50	37	27	20	18
Computer & information services	11	29	5	8	2	7
Audiovisual & related*	1	3	5	7	7	7
Royalties & fees	13	4	7	7	6	5
ICT Services Imports						
Telecommunications services	117	93	45	36	36	38
Computer & information services	29	24	14	12	62	13
Audiovisual & related	24	21	19	29	31	30
Royalties & fees	2	3	2	7	5	28

Note: .. no data available. np not published.
Sources: ABS, CSES Analysis.

4.2.5 Western Australia

Western Australia's locally produced ICT equipment exports were worth $63 million in 2009, down from $165 million a decade earlier. The largest category was communications equipment ($22 million), with substantial exports of computer equipment. Western Australia accounts for around 6% of total national communications equipment exports (excluding re-exports). It should be noted that in 2000 Western Australia made one-off exports of $69 million to the Philippines as well as $35 million to Thailand of "Parts (excl. aerials and aerial reflectors) for use with transmission and reception apparatus for radio-telephony, radio-telegraphy, radio-broadcasting or television; parts for radar, navigational aid or radio-remote control apparatus".

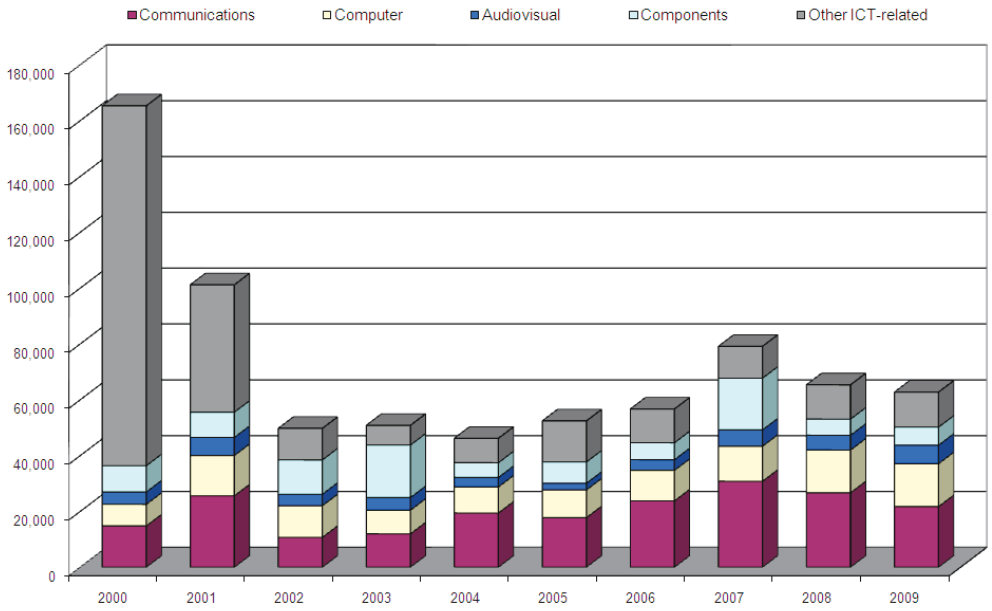
ICT equipment imports into Western Australia cost the State $657 million in 2009, down from $818 million a decade earlier. Audiovisual equipment accounted for $254 million and computer equipment for $193 million. Western Australia's imports of ICT equipment have grown faster than exports over the past decade, and there is a deficit on the State's ICT equipment trade of some $583 million (See note 12).

Table 4.9 Western Australia's ICT Equipment Trade, 2000 to 2009 ($ '000)

	2000	2002	2004	2006	2008	2009
ICT Equipment Exports						
Communications	14,821	10,723	19,450	23,795	26,687	21,741
Computer	7,732	11,326	9,326	10,922	15,309	15,356
Audiovisual	4,438	4,113	3,409	3,834	5,298	6,634
Components	9,390	12,299	5,269	6,069	5,780	6,480
Other ICT-related	128,916	11,285	8,736	12,082	12,284	12,528
Total	165,297	49,745	46,190	56,702	65,359	62,739
ICT Equipment Imports						
Communications	95,966	33,930	35,967	85,601	61,557	74,901
Computer	578,316	363,260	348,261	367,814	205,693	193,748
Audiovisual	55,826	82,807	102,898	178,832	205,608	254,360
Components	29,373	18,866	24,697	38,742	62,879	103,809
Other ICT-related	58,782	33,387	30,629	33,875	25,652	29,865
Total	818,263	532,251	542,453	704,864	561,389	656,683
Balance (Approx.)	**-633,754**	**-472,858**	**-485,535**	**-636,709**	**-480,795**	**-582,970**

Notes: All data are current prices. Imports are CIF, exports FOB. Exports exclude re-exports, but imports include them. Balances are no more than approximations.
Sources: TradeData (www.tradedata.net), CSES Analysis.

Figure 4.9 Western Australia's Exports of ICT Equipment, 2000 to 2009 ($ '000)



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

Services trade data are limited. However, computer services exports from Western Australia were reported to have been worth $82 million in 2009 and telecommunication services $23 million. Imports of computer services cost Western Australia $138 million and telecommunication services a further $49 million in 2009. Western Australia would have had a deficit on trade in ICT services of around $91 million in 2009.

Table 4.10 Western Australia's ICT services trade, 2000 to 2009 (AUDM)

	2000	2002	2004	2006	2008	2009
ICT Services Exports						
Telecommunications services	111	64	47	35	26	23
Computer & information services	9	7	14	35	101	82
Audiovisual & related*	1	..	..	1	1	..
Royalties & fees	2	2	7	24	18	13
ICT Services Imports						
Telecommunications services	149	118	57	46	46	49
Computer & information services	7	20	6	39	207	138
Audiovisual & related	..	4	6	6	2	1
Royalties & fees	8	3	4	15	18	21

Note: .. no data available. np not published.
Sources: ABS, CSES Analysis.

4.2.6 Tasmania

Tasmania's exports of locally produced ICT equipment are small. Worth a little more than $447,000 in 2000, they exceeded $1 million in 2009. Tasmania's ICT imports cost the State $6 million in 2009. Tasmania had a deficit on trade in ICT equipment in 2009 of approximately $5 million (See note 12).

Services trade data for Tasmania are limited, but describe $6 million of telecommunications services exports and $5 million of computer and information services exports being reported in 2009. Imports of telecommunications services are reported to have cost Tasmania $12 million in 2009 and computer and information services $9 million.

Table 4.11 Tasmania's ICT Equipment Trade, 2000 to 2009 ($ '000)

	2000	2002	2004	2006	2008	2009
ICT Equipment Exports						
Communications	16	6	62	11	356	255
Computer	175	137	341	182	95	171
Audiovisual	12	841	86	646	239	299
Components	50	35	27	54	6	17
Other ICT-related	193	466	300	1,431	322	273
Total	447	1,484	815	2,324	1,017	1,015
ICT Equipment Imports						
Communications	358	324	10	151	420	411
Computer	71	261	215	424	311	459
Audiovisual	117	33	241	2,063	263	567
Components	8	109	9	51	140	3,503
Other ICT-related	176	221	159	48	277	1,063
Total	730	947	633	2,737	1,411	6,004
Balance (Approx.)	**-280**	**569**	**194**	**-414**	**-395**	**-4,984**

Notes: All data are current prices. Imports are CIF, exports FOB. Exports exclude re-exports, but imports include them. Balances are no more than approximations.
Sources: TradeData (www.tradedata.net), CSES Analysis.

Table 4.12 Tasmania's ICT Services Trade, 2000 to 2009 (AUDM)

	2000	2002	2004	2006	2008	2009
ICT Services Exports						
Telecommunications services	28	16	12	9	6	6
Computer & information services	..	..	..	..	..	..
Audiovisual & related	..	..	..	..	..	..
Royalties & fees	..	..	..	..	..	..
ICT Services Imports						
Telecommunications services	37	29	14	11	11	12
Computer & information services	1	1	..	..	2	9
Audiovisual & related	..	..	..	..	..	..
Royalties & fees	..	..	..	..	..	..

Note: - no data available. np not published.
Sources: ABS, CSES Analysis.

4.2.7 Northern Territory

Exports of locally produced ICT equipment from the Northern Territory are small, being worth around $2 million in 2009 – which is unchanged from a decade earlier. Computer equipment was the major category. Imports of ICT equipment into the Territory have grown since 2000 – up from $10 million to $16 million in 2009. The Territory's deficit on trade in ICT equipment was around $14 million in 2009 (See note 12).

Table 4.13 Northern Territory's ICT Equipment Trade, 2000 to 2009 ($ '000)

	2000	2002	2004	2006	2008	2009
ICT Equipment Exports						
Communications	513	83	0	34	97	517
Computer	795	323	505	681	604	1,110
Audiovisual	498	177	22	5	143	110
Components	168	208	95	91	31	95
Other ICT-related	85	106	154	502	131	188
Total	2,061	898	777	1,312	1,007	2,020
ICT Equipment Imports						
Communications	846	13,909	5,729	4,589	13,916	5,948
Computer	2,399	2,228	7,845	3,502	3,134	4,242
Audiovisual	4,613	773	1,038	1,260	1,172	1,429
Components	293	54	398	352	387	968
Other ICT-related	1,521	2,055	7,759	1,847	2,271	3,544
Total	9,672	19,019	22,768	11,550	20,879	16,131
Balance (Approx.)	**9,049**	**-12,042**	**-19,556**	**-10,061**	**-19,630**	**-13,841**

Notes: All data are current prices. Imports are CIF, exports FOB. Exports exclude re-exports, but imports include them. Balances are no more than approximations.
Sources: TradeData (www.tradedata.net), CSES Analysis.

Although services trade data are limited, in 2009 the Northern Territory reported exports of telecommunications services of $2 million, and imports to the value of $5 million.

Table 4.14 Northern Territory's ICT Services Trade, 2000 to 2009 (AUDM)

	2000	2002	2004	2006	2008	2009
ICT Services Exports						
Telecommunications services	12	7	5	4	3	2
Computer & information services	..	..	..	..	..	..
Audiovisual & related	..	..	..	..	..	..
Royalties & fees	..	..	..	..	..	..
ICT Services Imports						
Telecommunications services	16	13	6	5	5	5
Computer & information services	..	..	..	..	..	..
Audiovisual & related	..	..	..	..	..	..
Royalties & fees	..	..	..	..	..	..

Note: - no data available. np not published.
Sources: ABS, CSES Analysis.

4.2.8 Australian Capital Territory

Data relating to ICT equipment trade for the ACT are limited and suffer from some variation as to inclusion in, and exclusion from, NSW data, and the limited opportunities to export directly from, or import directly into, a port in the ACT. They should be interpreted with great caution.

ICT equipment exports from the ACT appear to have been worth only $144,000 in 2009, with exports of other ICT-related equipment being the only reported export. Imports appear to have cost $685,000 in 2009, with other ICT-related equipment the major category at $313,000. The ACT deficit on trade in ICT equipment was around $530,000 in 2009.

Table 4.15 ACT's ICT Equipment Trade, 2000 to 2009 ($ '000)

	2000	2002	2004	2006	2008	2009
ICT Equipment Exports						
Communications	0	0	0	0	0	0
Computer	0	413	0	535	0	0
Audiovisual	3	0	0	0	0	0
Components	58	414	0	0	0	0
Other ICT-related	22,473	1,790	189	18	188	144
Total	22,534	2,617	189	552	188	144
ICT Equipment Imports						
Communications	2,232	4	362	274	116	188
Computer	157	73	262	127	832	141
Audiovisual	4	669	209	0	171	19
Components	15	1	0	0	0	24
Other ICT-related	57	53	67	25	154	313
Total	2,466	799	1,142	868	1,274	685
Balance (Approx.)	**20,069**	**1,817**	**-953**	**-316**	**-1,086**	**-530**

Notes: All data are current prices. Imports are CIF, exports FOB. Exports exclude re-exports, but imports include them. Balances are no more than approximations.
Sources: TradeData (www.tradedata.net), CSES Analysis.

While services data are limited, telecommunication services exports from the ACT were reported to have been worth $5 million and imports $10 million in 2009.

Appendix I – Defining ICTs

In this appendix we present a brief summary of the structure and coverage of the ICT Map first developed by the author in Houghton et al. (1996) Mapping the Information Industries.

Mapping ICTs

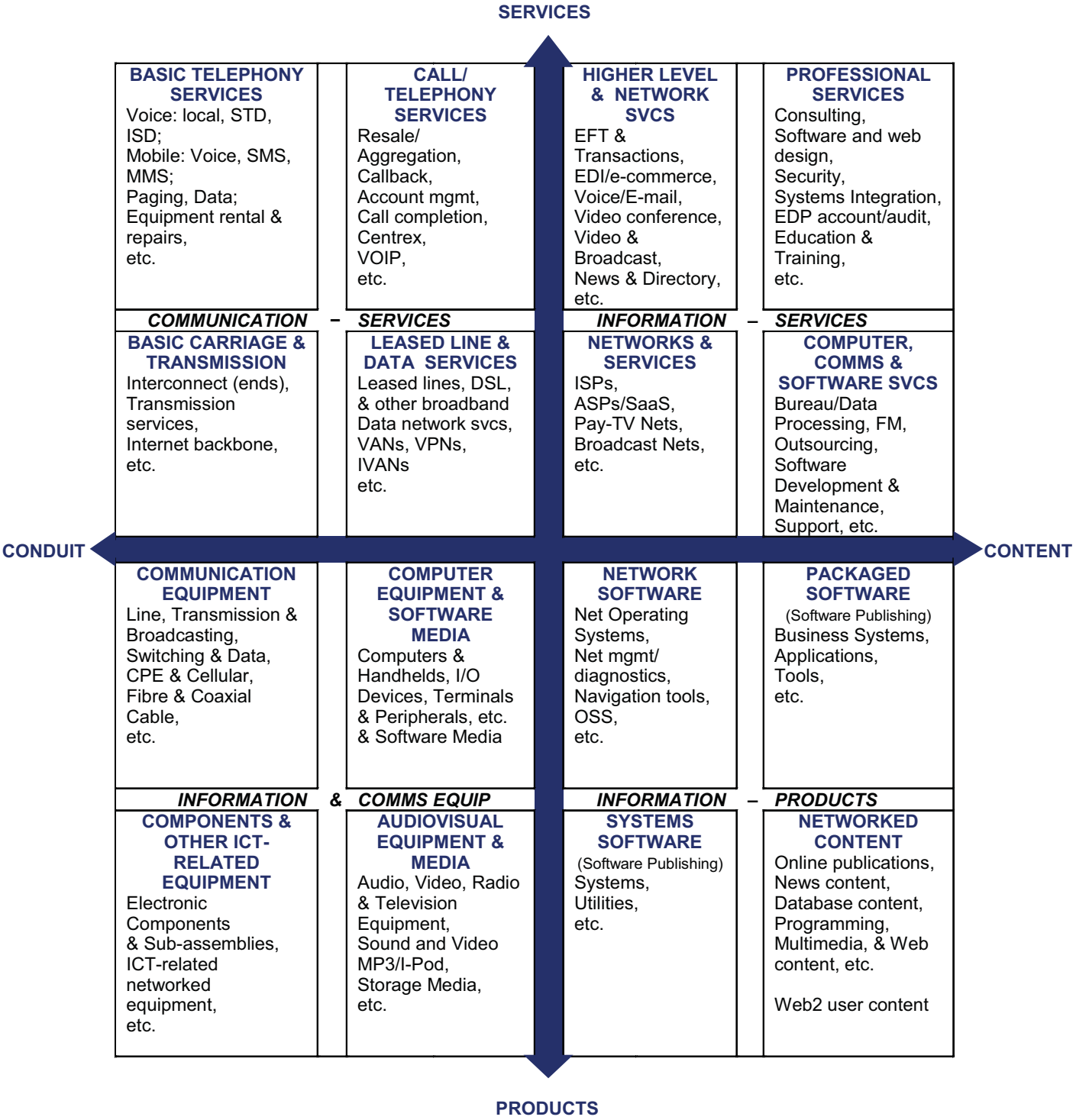
The ICT Map captures both the ICT industries and the products and services they produce in an analytical framework to provide a simple overview of the various related industries and markets that make up ICT. Its defining characteristic is the 'Net', and it includes all the equipment, content and services involved in delivering networked content and services.

The information industries map is drawn (as shown in Figure A1.1) with a vertical product-service dimension and a horizontal conduit-content dimension. Representing activities along a product-service dimension helps to highlight aspects of the 'chain of production' and is suggestive of a blurring of the traditional product and service categories into a middle ground of 'systems' or 'solutions'. The horizontal conduit-content dimension reflects distinctions between the activities of recording, processing, transmitting, publishing and creating information. It is an axis of increasing information value-add.

The information technology space is then broken down into quadrants, representing the four major information industry sectors according to this two-dimensional classification. These are communication services in the upper left-hand quadrant, information-based services in the upper right-hand quadrant, communication and information equipment in the lower left-hand quadrant and information products (i.e. content and software products) in the lower right-hand quadrant.

Using the same principles, we further subdivide each of these four quadrants into product/service classes. These are placed higher on the vertical product-service dimension when they are closer to the end users' use, and lower on the vertical product-service dimension when they are elemental parts of the network. They are placed towards the left-hand end of the conduit-content dimension when they are mere conduit or medium, and further towards the right-hand end when there is more information or knowledge content.

Figure A1.1 The ICT Map



Source: Based on Houghton, J.W., Pucar, M. & Knox, C. (1996) Mapping the Information Industries, Staff Information Paper, Productivity Commission, Canberra.

The rationale for the placement of industries and of product and service classes is essentially the same. The vertical product-service dimension reflects what the enterprise supplies to the market. It can be seen as reflecting the level of customer dependence on, or interaction with, the supplying enterprise in the provision of the network infrastructure that the customer requires. The horizontal conduit-content dimension reflects the extent of information value-added.

The communication services quadrant (the upper left-hand quadrant) is divided as shown in Figure A1.1. In the upper left-hand segment basic telephony services; in the upper right-hand segment, value-added telephony services; in the lower left-hand segment, basic carriage and transmission services; and in the lower right-hand segment, leased line, DSL and other public switched data network and connection services.

The information services quadrant (the upper right-hand quadrant) is divided as shown in Figure A1.1. In the upper left-hand segment, higher level, network-based services; in the upper right-hand segment, professional services; in the lower left-hand segment, networks and connectivity services; and in the lower right-hand segment, computer and software services.

The information and communication equipment quadrant (the lower left-hand quadrant) is divided as shown in Figure A1.1. In the upper left-hand segment, communications equipment; in the upper right-hand segment, computer equipment; in the lower left-hand segment, electronic components and sub-assemblies and a range of other ICT-related equipment; and in the lower right-hand segment, audiovisual equipment.

The content quadrant (the lower right-hand quadrant) is divided as shown in Figure A1.1. In the upper left-hand segment, network and communication related software; in the upper right-hand segment, packaged software; in the lower left-hand segment, systems software and utilities; and in the lower right-hand segment, network content.

This structured classification builds the picture of information technology depicted in Figure A1.1. It divides ICT into four main industry segments – communication services, information services, information and communication equipment, and information products and publications (ie. software and content). Each is, in turn, divided into product/service classes. These classes include, inter alia, the commodity items listed in Figure A1.1.

ICT Definitions Used

In the body of this report we use this ICT Map as the framework for the presentation of an update on Australia's trade in ICT products and services. Inevitably there is some compromise between the ideal framework for analysis and the availability of data that have been collected using traditional industry and commodity classification systems.

Figure A1.2 Mapping trade data descriptions

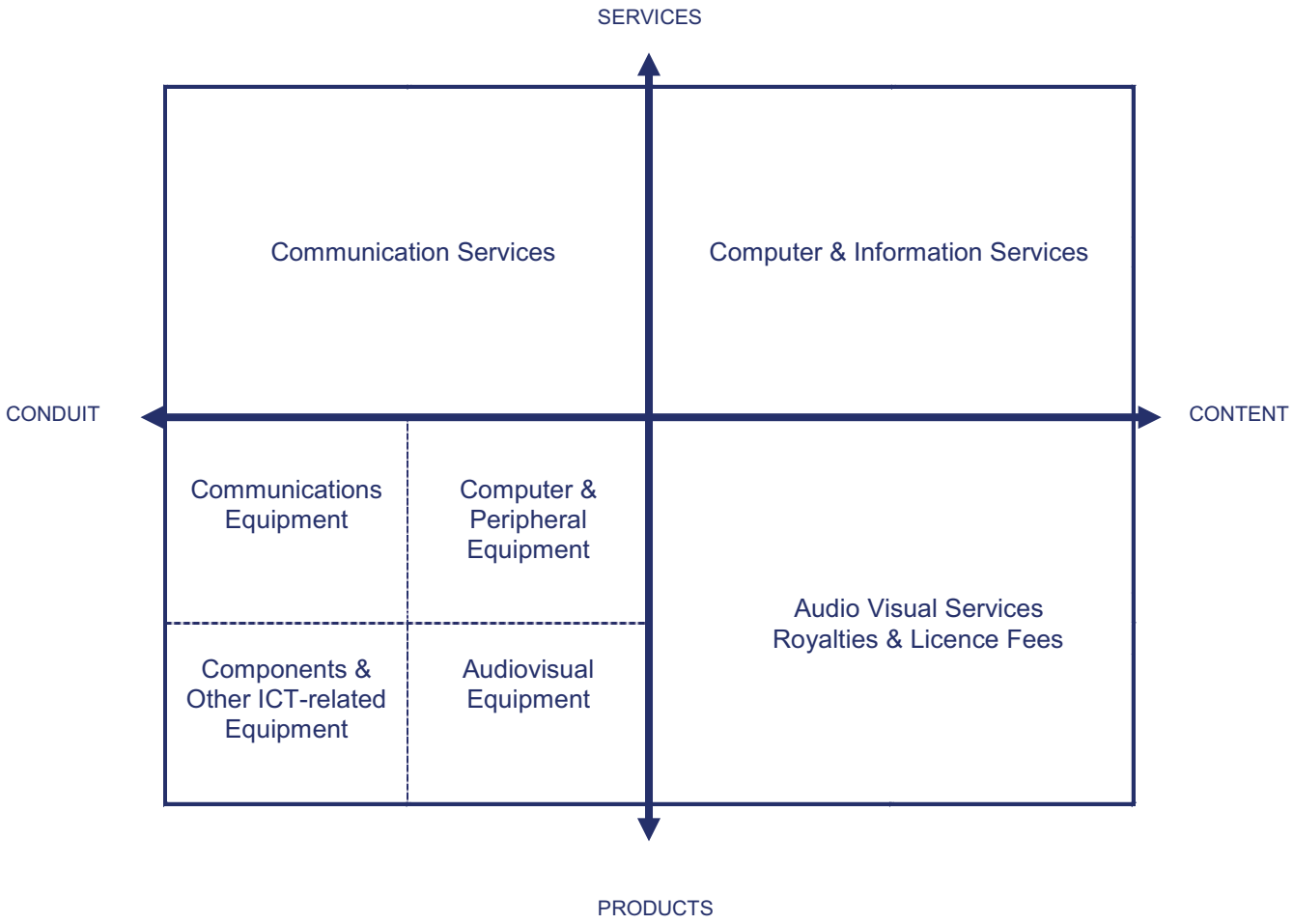


Figure A1.2 maps the ICT equipment, content and services categories used throughout this report on to the ICT Map framework. They include: communication services (telecommunications); computer services (IT consultancy, data processing and other services) and information services (database, subscription and other services); information and communication equipment (communications, computer and audiovisual equipment, components, and other ICT-related equipment); and software, design and content (audiovisual and related services and software, hardware and design-related royalties and licence fees).

Within these groupings internationally agreed definitions of what constitutes ICT goods and services are used.

Glossary of Terms

ABS	Australian Bureau of Statistics
ACA	Australian Communications Authority
ADP	Automatic Data Processing
AIIA	Australian Information Industries Association
ANZSIC	Australian and New Zealand Standard Industry Classification
ASP	Application Service Provider
ATM	Automatic Teller Machine
AUD	Australian Dollar
BCS	Basic Carriage Services
BERD	Business Expenditure on R&D
CAGR	Compound Annual Growth Rate
Centrex	Enhanced services offered by provider from central exchange
CIF	Cost Insurance Freight
CMP	Cellular Mobile Telephone
COS	Central Office Switch
CPE	Customer Premises Equipment
CRT	Cathode Ray Tube
DASD	Direct Access Storage Device
EDI	Electronic Document Interchange
EDP	Electronic Data Processing
EFT	Electronic Funds Transfer
EFTPOS	Electronic Funds Transfer at Point of Sale
F3	Future Framework
FM	Facilities Management
FOB	Free On Board
GDP	Gross Domestic Product
GERD	Gross Expenditure on R&D
HLS	Higher Level Services
IAP	Internet Access Provider
IC	Integrated Circuit
ICT	Information and Communication Technology
IDC	International Data Corporation
IDD	International Direct Dialling
IO	Input-Output
ISD	International Subscriber Dialling
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
IT	Information Technology
ITU	International Telecommunications Union
IVAN	International Value-Added Network
LCD	Liquid Crystal Display
KTS	Key Telephone System
LAN	Local Area Network
MNE	Multinational Enterprise
Modem	Modulator/De-modulator
OSS	Operational Support System
PABX	Private Automatic Branch Exchange
PC	Personal Computer
PCB	Printed Circuit Board
PCS	Personal Communications System
PSDN	Packet Switched Data Network
PSTN	Public Switched Telephone Network
POS	Point of Sale
R&D	Research and Development
SI	Systems Integration
SMEs	Small to Medium Enterprises
SOHO	Small Office/Home Office
SP	Service Provider
STD	Subscriber Trunk Dialling
Svcs	Services
TV	Television
USD	U.S. Dollar
VAN	Value-Added Network
VAS	Value-Added Services
VPN	Virtual Private Network
WAN	Wide Area Network

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