

The
Information
Industry in
NSW

Economic
performance
of the
Information
Industry

Contribution
to
economic
growth

Contribution
to
productivity

Contribution
to
employment

Contribution
to
investment

Contribution
to GDP

Contribution
to trade

Contribution
to the
information
economy

CREATING PROSPERITY

**The role of the Information industry
in creating wealth
for the people of New South Wales**

A joint project between
Australian Information Industry Association
and
NSW Office of Information Technology

CONTENTS

The Information Industry in New South Wales

The NSW Information Industry has become the key industry for NSW and will play the major role for the people of NSW in the 21st century.

Economic performance of the Information Industry

The Australian computing and communications industry is growing at three times that of Australian economy.

Contribution to economic growth

The Australian Information Industry has an average growth rate of 13% compared to Australia's national economic growth rate of 3-3.5%.

Contribution to productivity

Investment in computing resources, both equipment and human, provide a return on investment up to ten times more than investment in any other resource.

Contribution to employment

Over 500,000 Australians are employed in computing and communication positions, accounting for 10% of the Australian labour force.

Contribution to business investment

In 1997, the Australian Information Industry spent A\$2.7 billion on fixed assets. Capital expenditure by Australian industry on computing and telecommunications assets in 1992-1993 was A\$5.2 billion.

Contribution to Gross Domestic Product

Australia's Information Industry's contribution to the GDP ranges from about 5% to 7.5% of the total Australian economic activity.

Contribution to trade

By 1995, the Information Industry was Australia's third largest exporter earning over A\$4 billion in exports.

Contribution to the information economy

New South Wales can become a major player in the growing information economy.

No other industry or industry group in this century has completely changed the way we communicate and interact as have the Information Industries.

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THE INFORMATION INDUSTRY OF NEW SOUTH WALES

No other industry or industry group in this century has had such an enormous impact on the NSW, Australian and global economies as has the Information Industries.

New South Wales is undergoing an economic revolution because of the rapid advances in the information technology and telecommunications industries. The NSW Information Industry has become the key industry for NSW and will play the major role for the people of NSW in the 21st century.

The NSW Information Industry, reflecting the convergence of computing and communications technologies and the digitalisation of content, includes the complete value chain from electronics and software to communications platforms and telecommunication services.

The NSW Information Industry's contribution to the New South Wales' economic growth, trade, employment, productivity and investment has been considerable.

Their strategic and innovative products have helped NSW businesses and the New South Wales economy to grow and to become more competitive and advanced. The information economy, particularly electronic commerce, is enabling NSW businesses to be globally competitive and to reach global markets.

The forces of globalisation and rapid technological change are forecast to continue exerting a dynamic force for change into the 21st century.

Companies in the NSW Information Industry are at the forefront of computing and communications developments and business opportunities.

They will become the significant contributors to the growth of the NSW economy and help realise the potential for NSW to be a significant player in the global computing and communications revolution.

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ECONOMIC PERFORMANCE OF THE INFORMATION INDUSTRY

The Information Industry in NSW

Economic performance of the Information Industry

The economic performance of the worldwide Information Industry in the past three years has been outstanding.

The Australian computing and communications industry is growing at three times that of Australian economy.

Global and Regional

The worldwide computing and communications industry market is growing at 10% per year, and is predicted to reach US\$1200 billion by 2002 - a growth rate of almost 60%.

Contribution to economic growth

Contribution to productivity

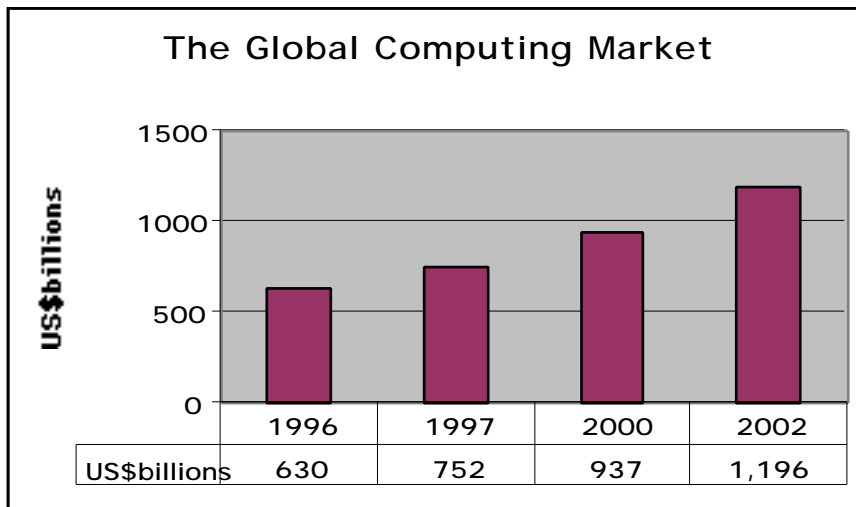
Contribution to employment

Contribution to investment

Contribution to GDP

Contribution to trade

Contribution to the information economy



NB check trillion!!!

In 1997, the global computing market of US\$752 billion was composed of 37% computing services, 29% single user systems, 17% packaged software, 12% multi-user systems and 5% data communication equipment.

The Information Industry in NSW

The greater economic contribution of the Information Industry is through the application of its goods and services across all sectors of the economy. Studies from the US reveal that the return on investment of computing products and services is 86.5%, and that one unit of computer capital contributes as much to the growth of output as 98 units of other form of capital.

Economic performance of the Information Industry

Although such studies have not been conducted in Australia, the productivity performance of the Information Industry in Australia can be accepted to be comparable.

Contribution to economic growth

Asia-Pacific

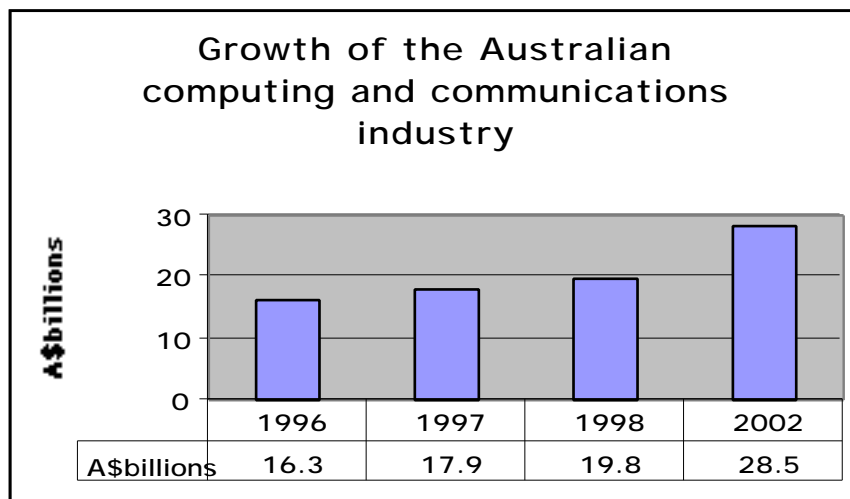
The total value of the Information Industry's market in the Asian-Oceanian region has grown to US\$154 billion in 1995. This represents 27% of the global computing and communications market, and a growth rate of approximately 14.5% per year.

Contribution to productivity

Australia

In 1996-97, the Australian computing market grew by 9.9%. The Australian Information Industry is projected to grow to A\$28.5 billion in 2002 - an average growth rate of 30%.

Contribution to employment



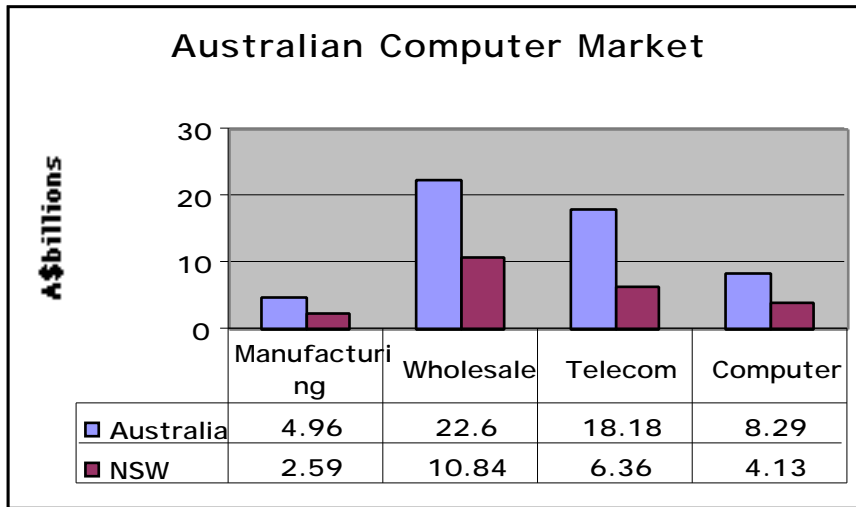
Contribution to investment

Contribution to GDP

The Australian Information Industry's contribution to the Australian GDP is between 5% and 7.5% of the total Australian economic activity.

Contribution to trade

Contribution to the information economy



New South Wales

The NSW computing and communications market was at A\$21.3 billion in 1995-96. This compares with the Australian computing and communications market being at A\$55 - \$67 billion in 1995-1996.

Major computing market opportunities estimates NSW business to be worth A\$860 million in 1998 and these are projected to grow to almost A\$1.8 billion by 2001 (just over one third of the national projected growth of A\$5.3 billion).

NSW accounts for 34% of Australia's population, 44% of finance and insurance services, 40% of property and business services and 36% of the manufacturing industry.

No other industry's growth or multiplier effect has exerted such an enormous influence on commerce, communication and culture on a global, regional and national scale.

The Information Industry in NSW

Economic performance of the Information Industry

Contribution to economic growth

Contribution to productivity

Contribution to employment

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CONTRIBUTION TO ECONOMIC GROWTH

The emergence and rapid growth of the Information Industry has contributed significantly to economic growth in NSW, and Australia. It now plays a crucial role in the performance and competitiveness of fast growing sectors, particularly in the professional services and on-line services sectors.

The Information Industry has created many new industries and businesses such as in the services and electronic commerce industries. The worldwide Information Industry has created some 90,000 organisations in the United States, Canada, Australia, UK, Netherlands, France, Japan and Sweden since 1992.

Worldwide

The US Department of Commerce estimates the worldwide Information Industry contributes 25-40% per year to economic growth. **In comparison, the worldwide economic growth rate is about 3.7%.**

No other industry at any time since the Industrial Revolution has experienced such high levels of growth.

United States

The US computing industry represents 15% of the GDP and its contribution to US economic growth is 25-40% per year (US Department of Commerce).

On average 7,200 new tax-paying and employing companies have been added in each of the past five years.

Canada

Canadian computing and communications industry contributed 25% to Canada's economic growth and increased its national economic growth rate from 2.5% to 3% in 1996-97.

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Australia

The Australian Information Industry has an average growth rate of 13%, compared to Australia's national economic growth rate of 3-3.5%.

The ABS survey of business use of computing equipment shows a high take-up of computing equipment across a range of Australian service sectors.

New South Wales

The Information Industry in NSW is also growing at a much faster rate than the overall economic growth of the State.

The IDC analysis of major computing market opportunities in NSW estimates business worth A\$860 million in 1998 is projected to grow to almost A\$1.8 billion by 2001 (just over a third of the national projected growth figure of \$5.3 billion).

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CONTRIBUTION TO PRODUCTIVITY

Through the use of Information Industry's products and services, all other industries have:

- increased their productivity
- improved customer service
- benefited from computing and telecommunications innovations
- acquired new methods of bringing products and services to market.

No studies are available on the Information Industry's contribution to productivity to the NSW or Australian economy.

But US productivity studies reveal:

- gross margin return from computer usage is 86.5% compared with 8.5% for capital and 1.2% for labour
- gross marginal benefits of computer usage is of more than 60% among Fortune 500 companies
- one unit of computer capital contributes as much to the growth of output as 98 units of other forms of capital
- Dollar for dollar spending on computer capital creates more value than spending on other types of capital
- information systems labour expenditure generates several times as much output as expenditure on non-information systems labour
- Returns on computing and communications capital investment vary from 10%-127% - depending on the industry sector.

Investment in computing resources, both equipment and human, provide a return on investment up to ten times more than investment in any other resource.

Further increases in productivity will be achieved through the adoption of the new technologies of the Information Industry. Strategic and innovative use of technologies can achieve more output with less input, leading to increased value which can be distributed down the supply chain to reach the individual.

No other industry or industry group in this century has enabled and empowered other industries to produce and compete so strategically and efficiently as has the Information Industries do.

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CONTRIBUTION TO EMPLOYMENT

The Information Industry has created many jobs directly in the industry and in all other industries. In the last few years, the number of computing jobs has grown by 50%

The Information Industry is developing a highly skilled and well-educated workforce capable of working with advanced technologies and products. Countries with skilled workforces in a well-developed information economy have significant opportunities for growth and prosperity.

Global

Worldwide the computing industry supports over 8 million jobs representing approximately 2.8% of total global employment. Telecommunications and internet industries are providing additional jobs.

United States

The 7.4 million jobs in the US computing industry in 1996 will grow by a further 2 million over the next ten years. Jobs in the US software and services sectors have increased by 380,000 over the last five years. The number of higher skilled jobs in the US computing industry will grow from 874,000 in 1996 to 1.8 million in 2006.

Australia

Many Australians are now employed in computing and communications occupations. Today, over 500,000 Australians are employed in computing and communication positions, accounting for 10% of the Australian labour force. The growth in computing and communications jobs will continue at very high rates.

New South Wales

In Australia, most people working in Australia's Information Industry work in NSW.

The Information Industry in NSW

Economic performance of the Information Industry

Contribution to economic growth

Contribution to productivity

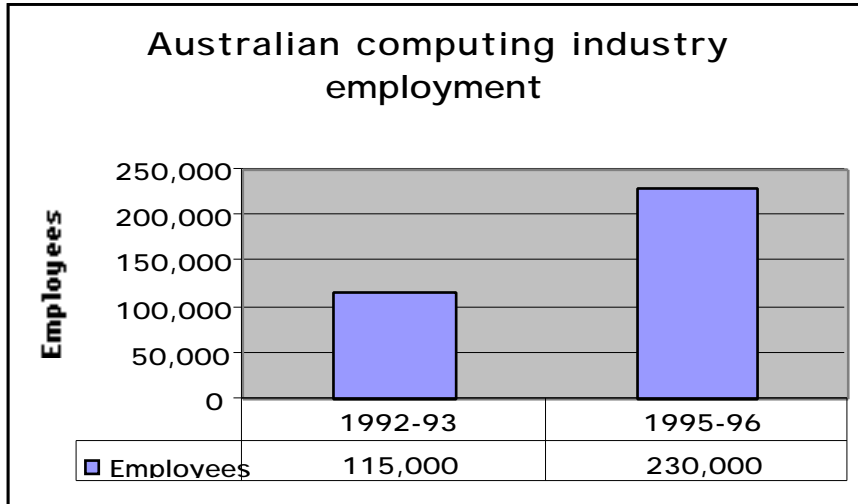
Contribution to employment

Contribution to investment

Contribution to GDP

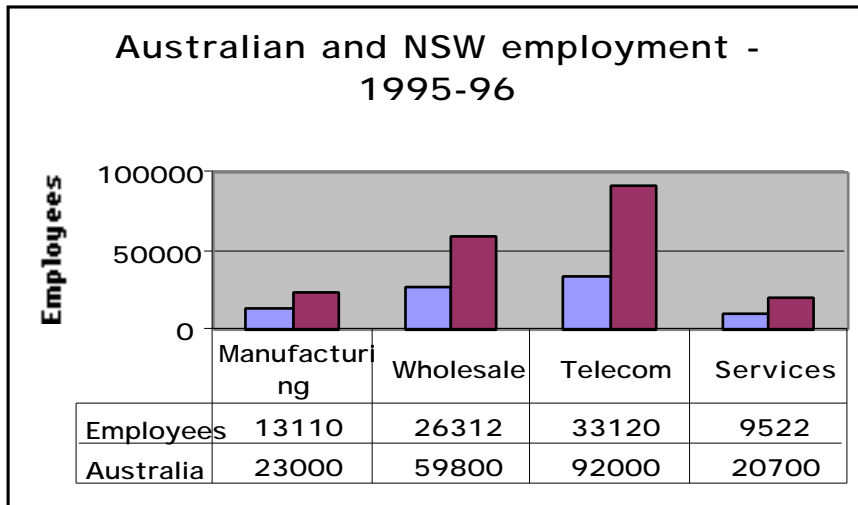
Contribution to trade

Contribution to the information economy



Shortages of skilled people

Current vacancies in US computing professional positions is over 350,000.
 Worldwide, there are over 600,000 vacant jobs in the computing industry.



In Australia, there are some 30,000 vacancies in the Information Industry for people with computing and communication qualifications and experience.

Global competition for skilled people is intensifying with the increasing demands resulting from Year 2000 conversions and the emergence of new technologies.

The Information Industry in NSW

Economic performance of the Information Industry

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Contribution to investment

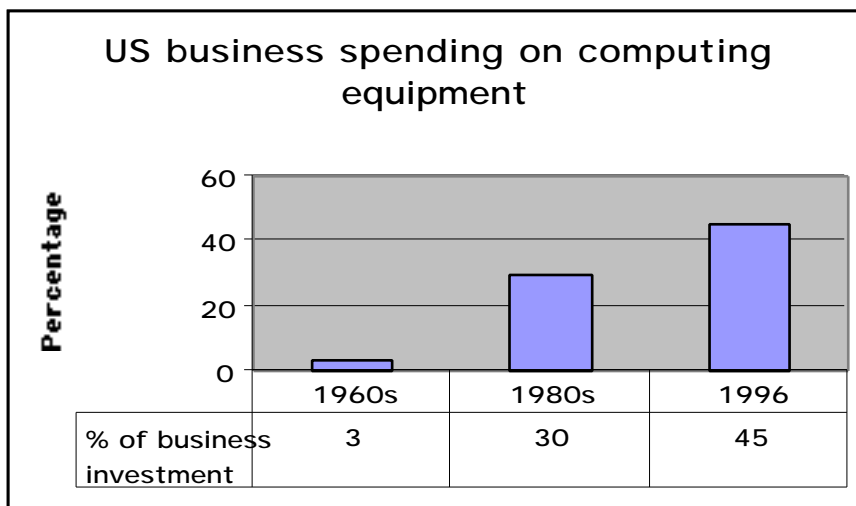
Contribution to GDP

Contribution to trade

Contribution to the information economy

CONTRIBUTION TO BUSINESS INVESTMENT

On a global scale, the Information Industry has invested in a major technological and telecommunications infrastructure which is now driving the world economies.



For US industries such as communications, insurance, and investment industries, their total business investment in computing equipment constituted three quarters of all equipment investment.

In 1997, the Australian Information Industry spent A\$2.7 billion on fixed assets. Imports by the computing and communications industry on products and services continue to rise, spending A\$3.5 billion in 1995-96 and A\$3.9 billion in 1996-97.

Capital expenditure by Australian industry on computing and telecommunications assets in 1992-1993 was A\$5.2 billion.

In June 1994, over 1.6 million computers were used in Australian business, with business using computers accounting for 83% of total employment.

The Information Industry in NSW

Economic performance of the Information Industry

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Contribution to GDP

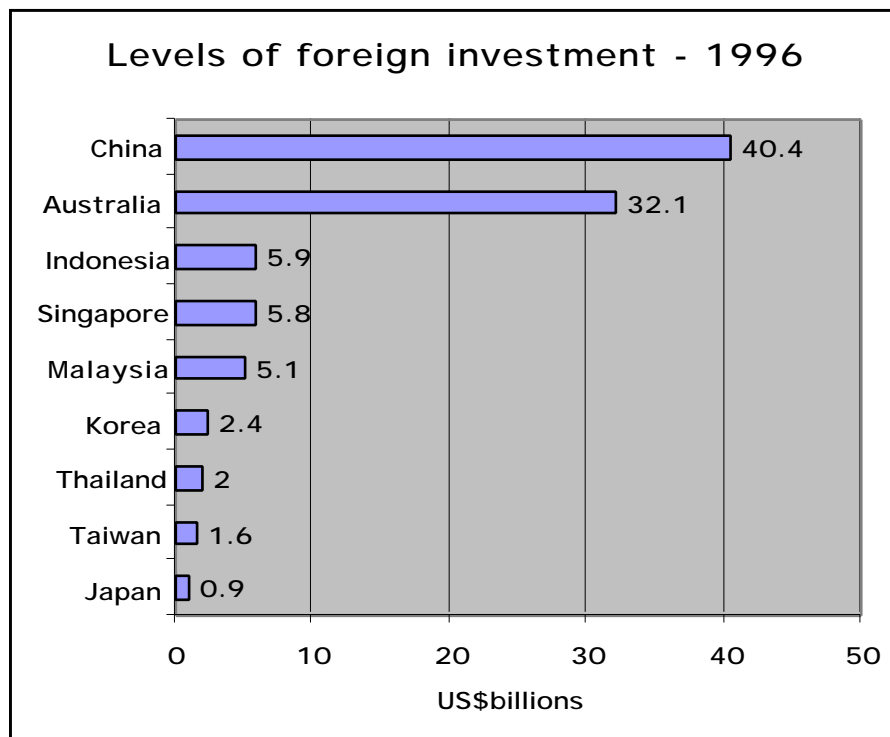
Contribution to trade

Contribution to the information economy

In the ABS 1995-96 report on Information Technology, Information Industry's businesses undertook or contracted out research and development work valued at \$782.2 million.

<i>Industry Class</i>	<i>Software</i>	<i>Computers & Telecoms</i>	<i>Other</i>	<i>Total</i>
Manufacturing	\$19.2 m	\$136.6 m	\$13.1 m	\$170.9 m
Wholesale Trade	\$37.3 m	\$157.2 m	\$1.1 m	\$195.7 m
Telecoms Services	\$21.4 m	\$106.1 m	\$6.7 m	\$134.2 m
Computer Services	\$269.3 m	\$8.5 m	\$3.6m	\$281.4 m
<i>Total</i>	<i>\$347.2</i>	<i>\$410.5 m</i>	<i>\$24.5 m</i>	<i>\$782.2 m</i>

Foreign investment in the Information Industry in Australian continues to rate very high when compared to other Asia Pacific Countries.



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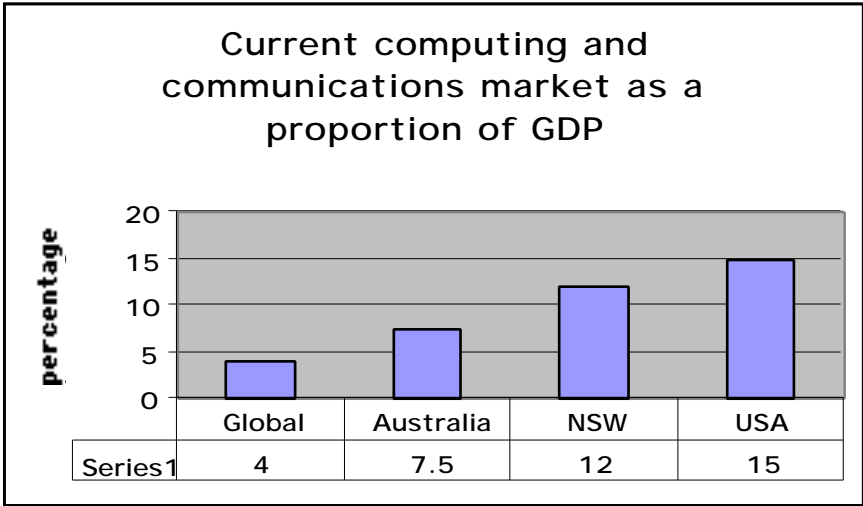
Contribution to trade

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CONTRIBUTION TO GROSS DOMESTIC PRODUCT

Through its power to improve productivity, processing power and competition, Information Industry has had a direct and measurable impact on improving Gross Domestic Product (GDP) and reducing inflation.

On a global scale, the Information Industry accounts for 4% of aggregate global GDP.



Spending on computing and communications has grown 27% - five times faster than the overall worldwide GDP - which has grown by an average of 5.5% annually for the past five years.

Computing and communications equipment accounts for 6% of world industrial production.

Australia's Information Industry's contribution to the GDP ranges from about 5% to 7.5% of the total Australian economic activity (A\$43 billion – A\$67 billion).

New South Wales' Information Industry's contribution is 12% of the GDP (A\$21.3 billion). On this basis, the Information Industry represents about twice the proportion of the NSW economy as the national economy.

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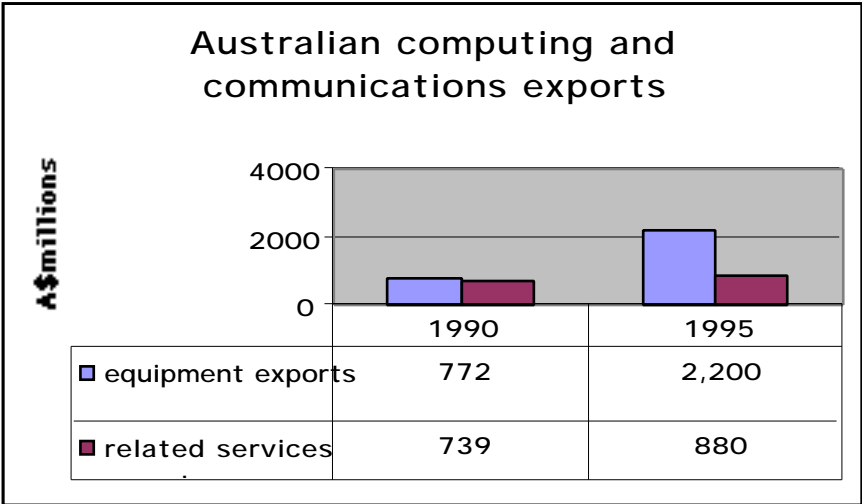
Contribution to trade

Contribution to the information economy

CONTRIBUTION TO TRADE

By 1995, the Information Industry was Australia's third largest exporter earning over A\$4 billion in exports - after mining at A\$20.5 billion and tourism at A\$6.3 billion.

Australian exports of computing and telecommunications equipment, products and services doubled from A\$1.5 billion in 1990 to A\$3 billion in 1996.



NB check billion

In NSW, computing equipment, is the seventh top export earner at A\$500 million.

Computer and information services is the best performing export of the Australian Information Industry. In exporting services, Australia is moving along the same path of other advanced economies such as Singapore.

Through computing and communications products and infrastructure, the Australian Information Industry has improved the efficiency and viability of Australia's other exporting industries.

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CONTRIBUTION TO THE INFORMATION ECONOMY

The information economy is the creation of the Information Industry.

- IDC forecasts almost 100 million people will have access to the World Wide Web by the end of 1998 reaching 320 million by 2002.
- In 1997, the number of devices used to access the World Wide Web was 78 million; by 2002, the number of Web devices will increase to more than 515 million
- In those same five years the number of internet hosts has increased twenty-fold to 25 million. That's a new internet host every six seconds.
- The numbers of PCs installed in schools and homes has risen three times from 36 million in 1992 to over 118 million in 1997.
- In 1997, Australia —with 6.8 million homes—had approximately 3 million PCs representing 42% of all households. According to the ABS, this figure is expected to reach to 3.4 million by the end of 1998.
- It is estimated that current Australian internet access will rise from 850,000 in 1997 to 1.3 million by the end of 1998
- Consumer commerce on the internet is growing by more than 200% per year. The US Internet Retailer's Association have estimated it will collect more than US\$13billion (A\$20.5billion) in 1998 from domestic and global internet customers. The top 10 Web sites of well known US retailers accounted for 50% of the on-line commerce revenue.
- It has been estimated that internet-based trade may contribute up to US\$720 billion to US GDP by 2005.

The on-line economy and in particular, electronic commerce is enabling businesses to be globally competitive.

The potential stake that New South Wales has to play in harnessing the major market opportunities available in Australia through the growing information economy is particularly impressive.

The information economy encourages, and forces, nations and organisations to invest, and to continue to leverage their investment in, the information industries to be able to better compete in international and domestic markets.

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Contact

Australian Information Industry Association

PO Box 246 Deakin West 2600

phone 02 6282 4700 fax 02 6285 1408

email aiaa@aiaa.com.au

web site www.aiaa.com.au

NSW Office of Information Technology

Level 19

Governor Macquarie Tower

1 Farrer Place Sydney NSW 2000

phone 02 9228 3509 fax 02 9228 3599

web site www.oit.nsw.gov.au

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