

SYDNEY & NEW SOUTH WALES

Information & Communications Technology



New South Wales
Government

sydneyaustralia.com

WHERE IT'S @

A quick look at the ICT industry in Sydney and New South Wales.

Right now, right around the world, Information and Communications Technology (ICT) is changing the way we live.

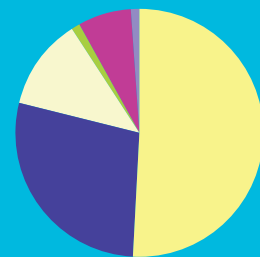
The way we talk to people, the way we get anywhere and the way we stay in touch. Economies are inextricably linked to ICT development. Thanks to new forms of social media, society is changing in millions of ways, every day. And new businesses and opportunities are quickly being created to take us even further ahead.

New South Wales (NSW) has long been at the forefront of this technological change. Did you know that Google's Sydney office developed Google Maps; that a team in Sydney produced crucial technology at the heart of WiFi; and that a spin-out company, Open Kernel Labs, from National ICT Australia (NICTA) has produced software that is deployed in more than 1.5 billion mobile phones worldwide?

ICT is an essential element of the entire NSW services sector – in terms of employment, value of production and even exports. It's especially important in supporting high-growth industries in all areas of the economy, thanks largely to the higher value / lower cost ratios of ICT-driven products and services.

With the spread of high speed broadband this already burgeoning ICT industry is taking off for a more high-tech tomorrow. And we hope to see you there.

AUSTRALIA'S TELECOMMUNICATION, COMPUTER & INFORMATION SERVICES EXPORTS 2008-2009



- 1) ABS, Cat. No. 8165.0, Counts of Australian Businesses, including Entries and Exits, Jun 2007 to Jun 2009.
- 2) Data is for 2010. IBIS World Industry Value Added Estimates, for Australia and IBIS business count shares by State.
- 3) ABS, Cat. No. 5368.0 International Trade in Goods and Services, 2009-10.
- 4) Based on ABS data by ICT Occupations (ABS6291.0.55.003).
- 5) Department of Education, Science and Training, Higher Education Statistic, Student Statistics 2009. **Note:** the Australian Catholic University is counted as one of the 11 universities in NSW, however it should be noted that it is a multistate university and therefore it cannot be determined what proportion of award completions are solely for NSW student residents. In 2008 there were 292 award course completions in information technology at ACU.
- 6) National Centre for Vocational Education Research, Students and Courses, NSW, 2009.

PLUG IN TO OPPORTUNITY

One of the leading ICT centres in Asia Pacific.

There's a very good reason that the vast majority of Australia's ICT regional headquarters and operations centres are based in Sydney. NSW is where the information technology action is – a hub of sophisticated and innovative global businesses, operating in a strong and diverse economy.

We have a highly skilled workforce and cutting edge research capacity. We have a wide range of industries – including finance, creative industries, defence, transport and logistics, manufacturing and mining – that all draw heavily on ICT. And we have a world-class telecommunications infrastructure that is being enhanced by the spread of ubiquitous high speed broadband.

You only need to look at some figures to see how integral NSW is to Australia's ICT industry and what opportunities this presents:

- NSW accounts for 39 per cent of ICT businesses¹ and 39 per cent of industry value-added output in Australia².
- NSW dominates Australia's telecommunication, computer and information services exports. In 2009-10, NSW exports of telecommunication, computer and information services were valued at almost \$0.9 billion, representing over 50 per cent of the national total³.
- In 2009-10, about 164,000 people were employed in the ICT sector in NSW, representing 4.7 per cent of total employment in NSW and 37 per cent of Australian employment in the ICT industry.
- NSW leads all other Australian States and Territories in ICT research capabilities, being the headquarters of National ICT Australia (NICTA). The State also has five national centres of excellence in ICT-related research fields, two cooperative research centres, four R&D facilities under the National Collaborative Research Infrastructure Strategy (NCRIS), and the Australian Centre for Advanced Computing and Communications (ac3).
- There are nine landings of international high capacity optic fibre cables into Sydney, linking

Sydney to the US, Europe and Asia.

ICT IS IN OUR DNA

Being Australia's most populous State, and with Sydney internationally recognised as Australia's global city, NSW is well positioned to lead the nation's future growth, and be a major player in the development of Australia's ICT sector.

We also have a large number of firms with competitive strengths in specialist niches in the ICT industry, such as:

- security solutions
- banking and finance solutions
- digital media and content
- health and education
- wireless communications
- smart internet based technologies
- robotics and autonomous systems
- medical devices
- mining applications
- engineering design.

WORKING SMARTER, NOT HARDER

NSW also offers excellent higher education and vocational training institutions. This infrastructure has allowed us to develop a highly skilled ICT workforce. In 2009, for example, we had over 14,000 students studying information technology courses at the 11 universities in NSW⁵. And a further 14,400 students were studying in information technology fields at NSW TAFE Colleges and through other vocational education and training providers⁶.

Our ICT sector has active and well supported industry associations too, and they work closely with Government to develop policies and initiatives that keep us at the forefront of business innovation. They include the Australian Information Industry Association, the Australian Computer Society, the Australian Interactive Media Industry Association, the Australian Telecommunications Users Group, Communications Alliance and the Australian Industry Group.

THE MOTIVATION FOR INNOVATION

How we're championing ICT Research and Development.

We know that great advances and innovations don't happen by themselves. That's why the NSW Government provides substantial support to a number of R&D facilities throughout the State.

NATIONAL INFORMATION AND COMMUNICATIONS TECHNOLOGY AUSTRALIA (NICTA)

www.nicta.com.au

NICTA is the largest research organisation in Australia dedicated to ICT research. Headquartered in Sydney, NICTA drives world-class ICT through high quality research, training and technology transfer. NICTA has a number of spin-out companies including Audinate and Open Kernel labs. NICTA has also partnered with Germany's Fraunhofer Institute to collaborate on solutions to transport and logistics problems.

CENTRE OF EXCELLENCE FOR AUTONOMOUS SYSTEMS

www.cas.edu.au

Robotics and autonomous systems have the potential to offer benefits and solutions in a huge range of areas. The Centre in Sydney has more than 500 research staff and students. Its research applies to industries as diverse as mining, transport, construction, aerospace, forestry, health and hazardous activities such as bushfire fighting, search-and-rescue and defence.

CENTRE OF EXCELLENCE FOR QUANTUM COMPUTER TECHNOLOGY

www.qcaustralia.org

The Centre of Excellence for Quantum Computer Technology is an Australian multi-university and industry collaboration undertaking the science and engineering required to develop the building blocks of quantum computing devices. Encryption provided by quantum computers will play an important role in security applications, the financial sector and in communications.

CENTRE OF EXCELLENCE FOR ULTRAHIGH BANDWIDTH DEVICES FOR OPTICAL SYSTEMS (CUDOS)

www.cudos.org.au

CUDOS' research aims to deliver information hundreds of times faster than is possible today. It's mission is to replace the router and other electronic components in today's networks with a photonic chip that would remove the need to convert light to electronic signals, be the size of a thumbnail, cost less than a router and consume very little power for long distance broadband links.

AUSTRALIAN NATIONAL FABRICATION FACILITY

www.anff.org.au

The Facility links eight university-based nodes with a total of 17 member institutions nationally. NSW is home to three of these nodes, complementing Australia's world-class strengths in the design and development of nanostructured electronic materials, silicon quantum computing and microphotonic devices.

SMART SERVICES COOPERATIVE RESEARCH CENTRE

www.smartservicescsrc.com.au

Smart Services is a research and development partnership between eight major industry and government players and six Australian universities, funded by the private sector and governments under the Australian Government's Cooperative Research Centre program. Research outcomes are associated with the digital media, finance and government sectors.

INTERSECT

www.intersect.org.au

Intersect is the peak eResearch body for NSW. Services include high performance computing; collaboration, data and network services; learning and development skills; and strategic advice.



COMPANY SNAPSHOTS

Home to Australia's largest number of ICT companies, NSW offers scale and breadth, from home-grown champions to multinationals choosing Sydney as the best Asia Pacific base.

GLOBAL SWITCH

www.globalswitch.com

Global Switch is the leading wholesale data centre provider in Europe and the Asia-Pacific. Its existing world class Sydney data centre campus is the largest of its kind in the Southern Hemisphere offering flexible and cost-effective solutions to multinational and Australian corporations. Its rigorous approach to applying and maintaining best practices throughout its data centres delivers the highest quality service and state-of-the-art facilities to its customers. Global Switch's proposed Phase II of its Sydney campus will directly inject \$300 million of investment into the NSW economy as well as provide the infrastructure to reinforce Sydney's role as a global financial and IT hub.

ATLASSIAN

www.atlassian.com

Atlassian is a Sydney-based leader specialising in online collaboration software for technical teams, with customers in over 140 countries. The company has successfully filled the gap between free open source software and high-cost enterprise software, by developing organisational collaboration products, with over 95 per cent of its business revenue now derived from export markets. Atlassian's JIRA and Confluence software suites are the leading products in their respective markets globally.

IBM

www.ibm.com/au/en/

IBM is a global technology and innovation company that stands for progress. By working with major government departments, large Australian companies and equipping a legion of entrepreneurs, IBM makes a significant contribution to the Australian economy.

IBM is currently delivering various projects in NSW including a \$100 million Smart Grid initiative with EnergyAustralia, to design and build Australia's first commercial-scale smart grid, and has also led the roll-out of wireless technology across public secondary and central schools in NSW. With a 79 year history in Australia, IBM has been applying its expertise, global scope and creativity to help Australia compete in the global digital economy.

GOOGLE

www.google.com

Google Australia was one of Google's first offices outside of the USA and now has 350 people based in Pyrmont, Sydney providing a vital sales hub for the region and R&D centre for the world. Google's Australian engineers develop innovative global products such as Google Maps, Google Apps and Google Wave as well as free local products such as Real Estate search, Traffic and Transit. Google chose Sydney because it is a world-class city capable of attracting the best talent.

OPTUS

www.optus.com.au

Optus is an Australian leader in integrated communications with a head office housing over 6,000 staff members at Macquarie Park, Sydney. Optus has invested more than \$15 billion in the construction of network facilities since its inception in 1992 and has a number of facilities within NSW including the national satellite operations centre at Belrose, Sydney. The company specialises in a range of communications services including mobile, local, national and long distance telephony, business network services, internet and satellite services and subscription television.

MARATHON TARGETS

www.marathon-targets.com

Sydney company Marathon Targets has developed smart robotics technology that promises to revolutionise defence marksmanship training.

Founded by three researchers from the University of Sydney, Marathon Targets has developed the world's first smart robotic targets for live-fire training.

In 2010, Marathon Targets secured a A\$57 million contract to trial its robotic technology with the United States Marine Corps. The target system uses intelligent mobile robots protected by armour plating, programmed to mimic human behaviour to provide realistic, challenging and interactive training for marksmen.

SIGNIFICANT ICT COMPANIES IN NSW

COMPANY	COMMUNICATIONS EQUIPMENT	ELECTRONICS & COMPONENTS	INTERNET	IT EQUIPMENT	SEMI CONDUCTOR	SERVICES	SOFTWARE	TELECOMMUNICATIONS	RESEARCH & DEVELOPMENT	PRODUCT DEVELOPMENT
Alcatel-Lucent Australia	•				•	•	•	•	•	
Andrew Network Solutions	•		•		•		•	•	•	
Atlassian						•		•	•	
Audinate Pty Ltd	•	•	•	•		•		•	•	
Bravura Solutions Limited					•	•				
CA (Pacific) Pty Ltd					•	•		•	•	
Canon Australia Pty Ltd	•	•		•	•	•		•		
CargoWise Pty Ltd						•				•
Citrix Systems Asia Pacific	•			•	•	•				•
CSC Australia		•	•	•	•	•				•
Fairfax Digital			•		•	•		•	•	
Global Switch					•					
Google			•					•	•	
Hewlett Packard Australia Pty	•			•	•	•				
IBM Australia/New Zealand	•	•	•	•	•	•	•	•	•	•
Integrated Research Limited					•	•		•	•	
Intel Australia Pty Ltd		•		•						
Logica Australia Pty Ltd			•	•	•	•	•	•	•	
Macquarie Telecom					•		•			
Marathon Targets						•		•	•	
Microsoft Pty Ltd					•	•				
Novell Inc Pty Ltd						•				
Nuix Pty Ltd						•				•
Objective Corporation					•	•		•	•	
Open Kernel Labs Pty Ltd						•		•	•	
OptiComm	•		•	•	•		•	•		
Optus	•		•	•	•		•	•	•	
Oracle Corporation, Australia				•	•	•				•
Polaris Software Pty Limited						•				
Quantenna Communications				•			•	•	•	
SAP Australia						•		•		
Saphicon Semiconductor		•		•				•		
Sophos Pty Ltd			•		•	•				
Symantec			•	•	•	•		•	•	
Telstra Corporation Ltd	•		•	•	•		•		•	
Unisys Australia Pty Ltd				•	•					
Verizon Business Australia	•		•	•	•		•		•	
Vocus Communications			•		•		•		•	
VMware Australia						•				

THE STATE OF THINGS TO COME

Building a brighter future in NSW.

The ICT industry can be sure of a bright future in NSW. You need only look at our world class telecommunications infrastructure as an example of how we've readied ourselves for the future. Or our highly advanced educational institutions. Or our skilled, multilingual workforce.

It all adds up to a vibrant, dynamic environment – not only to sustain our current level of achievement, but to expand our role in the global economy.

We're committed to maintaining collaborative alliances between government, business and research communities to continue our success in ICT innovation. And we're working to reduce the cost to business of using ICT-related intellectual property that's drawn from our tertiary and research institutions.

BACKING THE FUTURE

The NSW Government is actively involved in supporting and nurturing this growing sector to continually realise our potential. Our involvement can be seen in a number of key areas, such as:

- ongoing research and development of new technologies
- the development of innovative start-up companies
- identifying export opportunities
- expanding skills in ICT through training and education at all levels
- technology platforms and industry development through clustering
- attracting and anchoring ICT investment by major companies, and major international ICT events.

The Collaborative Solutions Program exemplifies our investment in the ICT sector. It supports industry to develop innovative and compelling ICT-enabled solutions, focusing on opportunities, challenges and changing business models brought about by emerging technologies such as mobile and cloud computing and ubiquitous high-speed broadband. The Program awards incentive grants to consortia, catalysing collaboration on new solutions: testing technologies, validating consumer assumptions and accelerating the shift to new business models. It's designed to accelerate the growth of innovative NSW companies and it's just one of the ways NSW is paving the way for a prosperous future in ICT.

**NSW TRADE & INVESTMENT,
A DEPARTMENT OF THE
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