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Focus

ACT, Ideal Ground for
Fostering Knowledge
Communities

WA & India can
Grow Together
Much Stronger,
Much Faster

Art & Culture

A Rich Blend of
Migrant Cultures

Higher Education in Australia Setting the Global Benchmark



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Art & Culture

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Dear Reader,

Greetings. One of the key factors bolstering India's overall economic growth in general and the knowledge industry in particular, is education. The government has been laying more and more emphasis on higher education and technical skills in order to meet the demand for professionals required by the various sectors of the economy. Against such a backdrop, it is not amazing to see a large number of Indian students wishing to study abroad, especially in the United States, Britain and Australia. While the US and the UK have traditionally been the higher education destinations for the Indian students, Australia has emerged as a tough competitor for both in recent years. Many Australian universities offer global standards of teaching, faculty facilities and a better quality campus life. Besides, Australia's fast growing economy offers plenty of job opportunities. Equally important is Australia's invitation for bright students and professionals to settle down in that country as immigrants. No wonder, a large number of Indian students are getting enrolled in Australian universities every year. As of now, about 27,000 Indian students are studying in Australia. This number is likely to swell further in the coming years. The current issue of Indo-Australian Business carries in its cover story details of the Australian education reforms and study opportunities and facilities available for international students. There is a special write-up by Professor Brendan O'Connell of James Cook University and an exclusive interview with Mrs. Ranveet Pawha, Country Director, Deakin's India Office. There are also separate articles on Southern Cross University and Sydney University. There are inspiring success stories of Kate McFarlane and Balavelan Thanigaivelan, students respectively from Australia and India. Alan Carpenter and Jon Stanhope, Premiers of Western Australia and the Australian Capital Territory (ACT) respectively, were in India recently, leading high-powered business missions. The current issue carries their speeches in its focus section. Carpenter spoke at a dinner held in his honor and he talked about the role his state could play in India's transformation as a global economic power. Stanhope addressed the annual Leadership Forum of the National Association of Software and Service Companies (NASSCOM), strongly promoting ACT as the ideal region for fostering knowledge communities and investment in the flourishing IT sector there. Then there are separate write-ups about Australian life, arts and culture. These touch the various aspects of Australian performing arts, including theatre, music and cinema and the exciting food and wine industries of that country. All these write-ups plus other regular features constitute a compelling content for the current issue.

Wish you happy reading,



Satya Swaroop
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Australia is emerging as one of the most sought-after destinations of higher education for students across the world, especially India. Global standards of teaching and faculty facilities, better quality of campus life, plenty of job opportunities and, most important, an invitation to migrate and settle down in a country of great promise are the key factors drawing international students in large numbers to Australia. Australian universities vie with each other, in a healthy competition, to offer scholarships and better facilities to students from abroad. They successfully conduct road shows every year across many Indian cities, drawing enthusiastic response from students having potential. In a way Australia is attracting the cream of educated youth from across the world. The Australian government's policies and education reforms, constantly reviewed to dovetail them with the growing demands of global professional standards.

The Australian Government has also established a running scheme called "Endeavour Programme" to showcase Australia's education sector and its research strengths and attract high-performing students from around the world to study in Australia.

Currently the Australian Government invests \$25 million per year for the Endeavour Programme. This is an academically elite, two-way global programme. It

currently brings about 1,000 high achieving students and scholars from Europe, the Americas, Asia, the Middle East, Africa, and the Pacific to Australia each year to undertake short or long term study or research in a broad range of disciplines. It also encourages Australian students to undertake study or research overseas as part of their undergraduate or postgraduate education and to learn other languages.



Australian universities offer a number of scholarships that open up a variety of educational and professional opportunities to high achievers from the Asia-Pacific region. These scholarships offer two-way opportunities for citizens of Asia-Pacific countries to come to Australia; and Australian citizens to go to countries in the Asia-Pacific region. Australian Scholarships aim to strengthen partnerships and links between Australia and other countries in the Asia-Pacific Region.

Australian states openly invite students and other professionals to migrate to Australia. Urging potential candidates to "join the thousands of people who have immigrated to Victoria," the states Website proclaims: "Our safe community, world-class education system, seasonal climate and strong economy help make Melbourne one of 'the world's most livable cities' - and Regional Victoria the future that you are looking for. So why not see if you can immigrate and live in Victoria?"

"Though Australian higher education enjoys a domestic and international reputation for excellence, we must take steps now to ensure its future is built on solid foundations," says Australia's Minister for Education, Science and Training Brendan Nelson, in a policy statement.

Our Universities: Backing Australia's Future presents the Government's blueprint for reform. It proposes increased Commonwealth investment of \$1.5 billion over four years linked to progressively introduced reforms in areas as diverse as teaching, workplace productivity, governance, student financing, research, cross sectoral collaboration and quality.

"Globalisation, massification of higher education, a revolution in communications and the need for lifelong learning, leave Australian universities nowhere to hide

from the winds of change," says Nelson. "Resilience, both economic and human, is driven by education, and universities in particular. The kind of Australia, the standard of living enjoyed by its citizens and its values, will be largely driven by research, teaching and scholarship undertaken by Australian universities," he adds.

"To their great credit, the numerous stakeholders in the higher education sector, from academics, unions, students, and vice chancellors through to industry and regional communities, engaged in the 'Crossroads' review constructively," Nelson says.

Under these proposals, students will contribute through an income contingent loan, on average approximately 27 percent of course costs. No student, including those who take up a full fee paying position, will be required to pay fees 'up front'.

"This package represents a balance of sound policy with the pragmatism required to deliver what Australia needs and the future demands. It also meets the reform priorities of Sustainability, Quality, Equity and Diversity," Nelson says.

"We must appreciate that these changes are driven by a world of higher education in which increasingly the only benchmarks that count are international ones. Australian universities are on a long-term collision course with mediocrity that can only be avoided by embracing change now," he adds.

Five years ago, the Commonwealth Government conducted a review of Australia's higher education system. The Reform package lays the foundation for a 10-year vision for Australian higher education, with more than \$2.6 billion of additional Commonwealth funding being invested in the sector over five years.

The reforms are aimed to establish a partially deregulated system of higher education, in which individual universities are enabled to capitalize on their particular strengths and determine the value of their course offerings in a competitive environment. There will be renewed emphasis on learning and teaching outcomes, greater recognition of the role of regional campuses and institutions, and a framework for research in which all Commonwealth funding is either competitive or performance-based. New arrangements for student financing will encourage lifelong learning, and ensure

equity of access to higher education - no eligible student will be required to pay their fees up front when they enrol at an eligible higher education institution. Greater access for disadvantaged groups will be supported, and the market for private higher education will be opened up, while still enhancing quality control. Diversity will be encouraged through the creation of performance-based incentives for institutions to differentiate their missions. Higher education in Australia opens the door to a world of study that will fill your life with knowledge, skills, and enthusiasm.

The Australian higher education sector offers a complete range of programs and courses that lead to highly regarded and internationally recognized qualifications. Australia is now the destination of choice for students from around the world looking for a quality education at an affordable price in a safe and supportive environment. Take some time to check out the various universities and see what they have to offer you.

Learning and studying in Australia is the perfect way to launch one's career. Employment opportunities open up to those who have degrees from any one of the universities, whether they study in Sydney, Melbourne, Brisbane, Perth, Adelaide, or at any of the other higher-education institutions located around Australia.

Students can read these brief descriptions about some of the institutions before they select the university they would prefer over others. Following are some of the better known universities that are in the forefront of Australian higher education.

University of Western Sydney (UWS) Sydney, NSW.

With over 32,000 students, the University of Western Sydney (UWS) is one of the largest of the universities Australia has to offer. Over 2,800 international students from 70 different countries choose to study at UWS each year. UWS is a young, energetic and rapidly growing university with six campuses located in the Sydney region

Victoria University Melbourne, Victoria.

Victoria University is one of Australia's largest dual-sector institutions of higher education, with a TAFE college offering a unique combination of academic and vocational skills in a modern and supportive environment. It has built a strong reputation for providing a broad range of courses that are up-to-date and relevant to the modern employment environment and is considered an innovative institution amongst the universities in Victoria.

Deakin University Melbourne, Victoria.

Deakin University is one of Australia's most progressive and visionary universities. It has been noted for providing a superior and student-centered education, Deakin has become increasingly popular as a destination for international, with around 70,000 students studying on its various campuses, including ELICOS studies.

Bond University, Gold Coast, Queensland.

Bond University is Australia's first and largest private university and has grown to become one of the Queensland universities with an excellent international reputation. At Bond you will experience personalized education by highly qualified teachers, innovative courses and teaching methods, an international student body and a

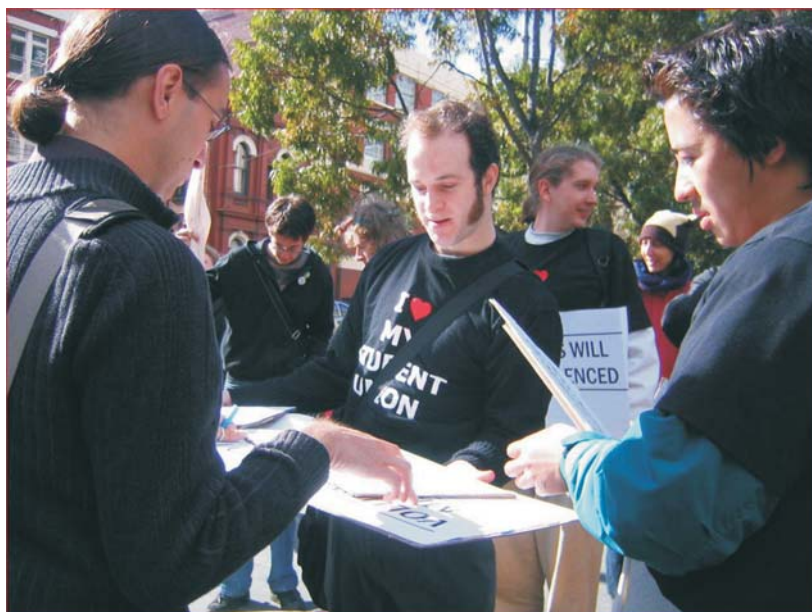
beautiful secure campus. Bond's staff to student ratio is the best in Australia

The University of Adelaide. Adelaide,

South Australia. The University of Adelaide is one of Australia's oldest and one of the highest ranking universities Australia has in any guide to higher education institutions and is regarded as one of the best Australian universities. Established in 1874, it is a member of the 'Group of Eight'. There are more than 1,800 international students among the 14,000-strong student population.

Southern Cross University Lismore,

Queensland. Southern Cross University is an internationally-recognised Australian government university. It has a



reputation for academic excellence, and has won many prestigious international and Australian awards and grants. The quality programs offered by the University have high academic standards.

Griffith University, Brisbane and the Gold Coast, Queensland. Griffith University, one of Australia's leading universities has over 2,500 teaching staff, 27,000 students including 4,000 students from over 80 nations. Griffith has become a popular choice for students deciding that they want to study at one of the universities in Australia. Learning never got more enjoyable or rewarding than this.

The University of Southern Queensland Toowoomba, Queensland. USQ has been recognized as a world leader in the fields of and tertiary study initiatives. USQ is a dynamic, flexible and innovative University whose staff and students pride themselves on being responsive to the technologically aware global market place.

Swinburne University of Technology Melbourne, Victoria. Established in 1908, Swinburne has a strong reputation in Australia and overseas as a provider of career oriented education. Swinburne is a small, innovative university, which is rapidly forming a distinctive character including the study of accounting business commerce computing law management marketing nursing tourism a character which reflects purpose, achievement and the genuine quality of its educational outcomes.

University of Tasmania Hobart - Launceston - Burnie, Tasmania. The University of Tasmania is the fourth oldest University in Australia. It is highly regarded internationally as a teaching and research institution. The University of Tasmania offers a pleasant, enjoyable environment for study at all levels of higher education.

Northern Territory University Darwin, Northern Territory, NT The Northern Territory University was established on 1 January 1989 through the amalgamation of the University College of the Northern Territory and the Darwin Institute of Technology. The NTU is the major tertiary education institution in the Northern Territory and is unique in that it offers both vocational and research based programs and substantial student guidance.

Queensland University of Technology - Brisbane - is a dynamic and innovative institution that not only satisfies the requirements of its local and international student



body but also has one of the highest MBA Australia rankings according to the Financial Times 2004 world listings.

Macquarie University Sydney, NSW. Macquarie University is one of the leading NSW universities and is a modern, sophisticated and cosmopolitan leading provider of education in Australia. With over 24,000 students including 4,000 international students, Macquarie is a university which prides itself on outstanding academic achievement and has excellent resources for distance learning and study online.

Edith Cowan University Perth, Western Australia. Edith Cowan University is noted for its innovative course content, specialized research and creative pursuits. Responsive and forward thinking, it is one of the universities in Perth that is internationally focused and an Australian leader in the provision of professionally focused degree programs.

University of Technology, Sydney, (UTS) NSW. The University of Technology, Sydney (UTS) is well known as a leader of professional career-focused education and is




regarded as one of the best in Australia. It offers one of the most comprehensive ranges of innovative and internationally recognized degrees in Australia. When people consider one of the universities in Sydney then UTS is a natural choice.

University of Canberra Canberra-ACT. Internationally focused, the University of Canberra enjoys a diverse student population from more than 80 countries worldwide on the Canberra Campus. Offshore, the University teaches programs in countries such as Hong Kong, China, Singapore, Malaysia, Thailand and Vietnam.


Monash University Melbourne, Victoria. Monash University is one of the top Australian universities and is leading the way with its international focus, ground-breaking research and academic excellence. Since its first student intake in 1961, Monash has grown into a diverse, multicultural and energetic institution with six campuses around the state and has an excellent international reputation that attracts many students.

The University of Notre Dame, Perth, Western Australia. Inspired by one of the greatest Catholic universities in the world, the University of Notre Dame in the United States, Notre Dame Australia brings to Australian education the vibrant traditions of a Catholic university together with the rich history. ■



DEAKIN UNIVERSITY

relevant, innovative, responsive



From campuses in Victoria, Australia, Deakin offers degrees designed for employment, ensuring our graduates are job-ready and in demand. Many of our courses are accredited with professional associations and have internship or work-placement options – giving a practical relevance to your degree.

- > International reputation for scholastic excellence, top quality research and industry partnerships
- > Australia's fastest growing research university
- > Graduate Medical School commencing 2008
- > First Australian university to be named University of the Year twice
- > Internship/practical placements available for many academic areas
- > Outstanding services, facilities and student support
- > Popular courses include: MBA (International), Bachelor of Nursing, Master of Information Technology, Master of Professional Accounting, Master of Engineering



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In a Competitive Global Accounting & Commerce Industry...

JCU Gives Students Cutting-Edge Advantage Through Personal Skills



By Professor Brendan O'Connell, PhD Monash, CPA, CMA, ASIA
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There is a global shortage of accounting and finance personnel that is expected to continue for many years to come. This scarcity of qualified professionals reflects the need for companies that operate in increasingly competitive markets to have timely and relevant financial information to support management decision-making. The result of this shortage has been an increase in salaries worldwide and many western countries such as Australia giving priority for immigration to people who are trained in this area. But what does it take to really succeed in

the world of high-finance? Is career success guaranteed? I will now discuss these key questions with reference to my experience of the Australian and US markets and how we, at James Cook University, are preparing our graduates to succeed in the accounting and finance fields.

Success in the accounting and finance professions requires a blend of important skills, both technical and personal. The technical skills required include a strong understanding of the foundations of accounting such as the conceptual framework and debits and credits together with knowledge of the international accounting standards which have become mandatory in many countries over the past few years. The move toward international standards by many countries is good news for students as not only will it mean that people with this knowledge will be able to work across many countries but the move will also enhance the comparability of financial reports of companies worldwide. It should also be noted that in the past 20 years the world of accounting has moved away from a focus just on book-keeping to the much higher value-added area of analysis and interpretation of financial reports.

My experience of teaching accounting in Australia, the US, Hong Kong and Singapore over 15 years is that many students do develop quite good technical accounting skills but for many students their downfall can be in the area of personal skills. What I mean by personal skills is the capacity to communicate at a high level. Accounting and finance professionals are essentially advisors to senior management and business people. It follows that they must be able to write and present in a way that will instil confidence in management that this professional is valuable and worthy of a high salary.

Recent research by CPA Australia indicates that the greatest barrier to new entrants obtaining the best jobs in the accounting profession is perceptions by employers that some students are sadly lacking in the communication skills area. At James Cook University we pride ourselves on ensuring that our graduates are well prepared in the critical area of communication skills. Our class sizes of 15-30 students are small when compared to the large, capital city universities thus fostering more interaction between teachers and students. Furthermore, we embed into the curriculum and assessment various techniques designed to ensure that students develop their communication skills to a high level. For example, class presentations by students to their peers are common.

James Cook University is located in the booming cities of Townsville and Cairns. These locations provide a large benefit to students, especially those who have come from overseas, in that they will be exposed to the "real" Australia which significantly enhances their English communication skills. My experience indicates that many students from India flock to the big universities in Melbourne or Sydney. In my view, this can be a mistake for many of them. This is because they will typically

"I am studying the MPA at JCU and having a great time. The lecturers are friendly and helpful, the class sizes small and the course content is very interesting. I have already found good employment in Townsville and made lots of new friends." - **Pallavi Barat**



end up in large classes that predominately comprise of other students from India and China. Moreover, they end up primarily living and communicating with people from the same country, often in their native language. The result is that after a couple of years of study many of these students have failed to develop their English communication skills and cultural understanding to a level that will enable them to compete for the better jobs. They really have missed out

on much of the benefit of an overseas education! At James Cook University this is not likely to occur as our classes have a healthy blend of local and overseas students meaning they will mix with the locals. This location gives them an edge over those graduates from the capital city universities.

Our flagship accounting program at James Cook University is the Master of Professional Accounting (MPA). It is fully accredited by CPA Australia and the Institute of Chartered Accountants in Australia and will lead to an outstanding career in accounting either in Australia or overseas. It is open to graduates of all disciplines and consists of 12 subjects in total. There is also an MPA Advanced or combined MPA/MBA which are both 16 subjects. If you would like to learn more about these programs please visit the following site:

[Http://www.jcu.edu.au/flbca/public/business/mpa.shtml](http://www.jcu.edu.au/flbca/public/business/mpa.shtml) ■

A Dream Come True



Tanveer S. Khan

It was a single, one-hour meeting with a Professor from an Australian University that changed the course of Tanveer Sharafat Khan's life. Like most bright students, he wanted to build a career by studying abroad. He completed B. Com and acquired diplomas in Accounting and Aptech

(computers). Armed with these qualifications, Tanveer made enquiries about universities abroad that offer Degree/Masters courses in Accounting. The list of his choices included the US, England and New Zealand. Australia was not on Tanveer's mind when he was writing to universities abroad for applications. But all things changed on 15 March 2006, when Tanveer met Professor Brendan O'Connell of James Cook University, who was in Mumbai at that time doing promotional work for his university through meeting prospective students wishing to study in Australia. The meeting was set up by **Veerendra Bhargava**, of New Media, publishers of the Indo-Australian Business magazine. Veerendra had met the Professor at a get-together the previous evening, and he knew of Tanveer's plans for study abroad from a colleague. The day of that crucial meeting, the day India was celebrating Holi, the festival of colours, turned out to be very auspicious for Tanveer. The youthful and soft-spoken Professor saw the bright spark in the boy aspiring

to study accounting abroad. He convinced him how good JCU is for higher studies and how good Australia is in terms of life-time opportunities. Professor O'Connell offered Tanveer a seat in his university then and there, through some simple paperwork. What a difference from the time-consuming cumbersome processes usually associated with admissions in India! It was all over in just an hour. Tanveer promptly began preparations for the mandatory English language test. A year later, as he got ready to fly to Australia to join the Graduate course in Accounting at JCU, Tanveer spoke to Indo-Australian Business.

"I feel excited because my career is taken care of," he said. "At JCU, I'm assured of individual attention and good teaching. Now, I want to really work hard and prove that I am worthy of being a student of that prestigious university," he said, adding, "Professor O'Connell has been very helpful and inspiring, guiding me all along. I also thank Mr. Parag Mehta, Director, Asiatic International Consultants, for counseling and organizing everything for me." It is a long journey for Tanveer whose family had moved from the remote village of Kiratpur in Uttar Pradesh to Mumbai two generations back. "The whole village will be proud of my son," said Sharafat Khan, Tanveer's father, a journalist.

Tanveer is aware of the opportunities that Australia offers, including immigration, if you are well qualified. "I'll study to be a Chartered Accountant," he said. After six months or so, Tanveer's wife Niloufer and his small son Armaan, will join him in Australia. "That country is very safe and people are English-speaking and very friendly," he said, adding, "and more importantly, the climate is good and suitable to Indians." ■

Deakin, Where Specialist Knowledge Sharpens Competitive Spirit

Mrs. Ranveet Pawha, Country Director of Deakin University's India office, is fully aware of Deakin's popularity among the international student community. In an interview with **Veerendra Bhargava**, Mrs. Pawha talks about Deakin, one of Australia's most progressive and visionary universities, which has been noted for its superior, student-centric higher education. Excerpts.

What advantages do the Indian students studying at Deakin University derive and the opportunities that await them after they finish their courses?

Deakin equips its graduates with the specialist knowledge, expertise and personal qualities necessary to be highly competitive in national and international employment markets and professions. It partners with the best in India to know what the Indian student is looking for!!

Could you tell us about Deakin's exchange and overseas study programme?

Deakin faculties have signed MOUs with several institutions in India to facilitate staff and student exchange programmes. Several exchange programmes have already taken place where Deakin staff and students have come to teach/study at institutions in India. These have included Indraprastha College for Women for Architecture or Media/Communications students and IIT Mumbai.

There are also various articulation/advanced standing (credit transfer) agreements where a student can study part of the program here and complete the rest at Deakin.

What do ISAs (International Student Advisers) deal with and in what way they are useful to the Indian students?

Deakin's team of International Student Advisers (ISAs) are located at each campus of the University and are employed



especially to assist international students. They offer advice and referrals on a variety of issues including academic and enrolment matters, personal and social concerns, health referrals, dispute resolution, guardianship, student visa and OSHC assistance.

ISAs also coordinate core programs like the compulsory Enrolment and Orientation Program, the Peer Support Program and the University Reception Service for international students.

What services and benefits are specifically designed for Indian students at Deakin so that they prefer your university to others?

Besides offering high quality courses, Deakin offers a range of student services to ensure our students are well supported while they study. So, in addition to the usual services that universities offer, Deakin offers a number of services designed specifically for international students. These include International Student Advisers who are there for advice, help and referrals; a Peer Support Group made up of Deakin students, which

takes you through the things you need to know like opening a bank account and where to get public transport; and free academic and study support.

How far is Deakin card helpful for the Indian students who are interested in the on-line orientation programme?

The Deakin card can only be used on-campus it is not used in the on-line orientation.

What kind of financial assistance and scholarships are offered to Indian students?

Deakin partners in India benefit through sponsorships and fee waivers. No individual scholarship programme has yet been announced.

Does Deakin University encourage the foreign students to earn while they learn?

Students studying on a student visa are permitted to work up to 20-hours during semester, more during vacation time. You can apply for a Work Rights visa only once you

have commenced your course at Deakin. The Deakin International Office on-campus will advise you on the procedures to follow. Deakin has JobShops on-campus which advertise part-time job opportunities and on-campus career resources centres and programmes are also available to students.

Any message to Indian students, who wish to go aboard for studies?

Deakin University aims to be recognized as Australia's most progressive university by ensuring that all its activities are relevant, innovative and responsive. Teaching excellence, top quality research, industry partnerships and tailored courses are among the factors that attract students from all around the world. A Deakin degree is far-reaching, designed to foster knowledge in a wide range of areas. Upon graduation, not only will you have developed an appropriate level of expert knowledge in a field of study, but you will also have gained the attributes, skills and personal qualities that will serve you in your lives beyond graduation. ■

Forging Academia-Industry Tie-ups in India, the Deakin's Way

Like many Australian universities, Deakin prides itself on its scholastic excellence and top quality research. However, it is Deakin's partnerships with industry, particularly in India, that make this University distinctive.

Deakin University has had an established presence in India for 10 years, through its office operating in New Delhi. In addition to providing course advice and assistance to prospective students wishing to come to Deakin, the office has a focus on establishing and furthering Deakin's long-term partnerships with academic institutions and industry at large.

Country Director of Deakin's India office, Mrs Ravneet Pawha says, 'It is Deakin's constant effort to bridge the gap between the academia and industry and offer employment-ready graduates to the industry.'

Deakin has established relationships with leading institutions across the country including the Indian Institute of Technology- IIT-Mumbai, IIT Kanpur, IIT





Rorkee and the Indian Institute of Science (IISc) in the field of Science and Technology, as well as the Manipal Academy for Higher Education (MAHE), Delhi University, Symbiosis University, Pune and St. Xavier's College, Mumbai, in the field of Arts and Business.

'Deakin University also offers an extensive range of student exchange programmes, study tours as well as internships in Australia. There have been students from both countries who have benefited from this wonderful experience,' Mrs Pawha says. 'Last year we had twenty Australian students visit Mumbai and Delhi for a study tour of over three weeks. This was an exciting experience for them. We have Indian students working with research groups and industry for three to six months; exposing them to an experience they will value for life.'

Enhancing Institutional Bonds in India

Deakin University continues to enhance its links with industry bodies such as the Federation of India Chambers of Commerce and Industry (FICCI), Confederation of Indian Industries (CII), with government bodies like Department of Biotechnology and the Department of Science and Technology. It also has established links with leading institutions such as the International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Center for Cellular and Molecular Biology, and The Energy and Research Institute (TERI).

Deakin India also works closely with the AEI and Austrade.

Bringing together the skills and technologies of a leading Australian University with a like-minded institution in India is

the next step for Deakin in India. Ravneet Pawha is enthusiastic about the significant research, education and economic benefits to both countries and the participants such a partnership could bring.

'Discussions have been held with Indian government departments, universities, research institutes and private companies as well as the Australian government. All of those we have met expressed a strong level of support for the concept of establishing a strong research presence in India', she said.

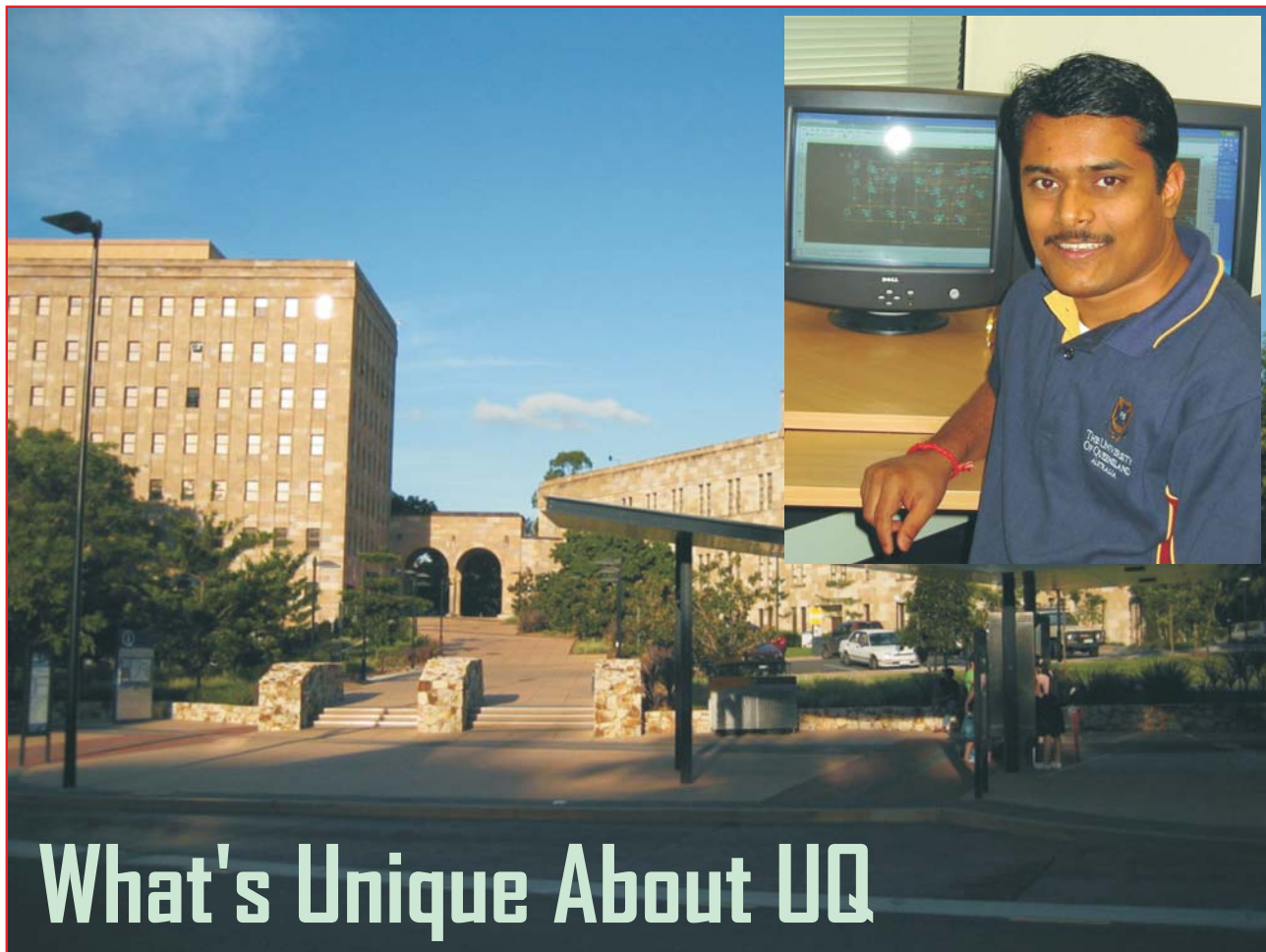
'Our key objective is to establish an institute that will complement the activities at our Geelong campus where we have, in a relatively short period, established a major research program of 200 researchers in advanced materials, nanotech and biotechnology; this includes a number of industry partners ranging from global multinationals to small start-ups.

There are some unique opportunities in India in these technology fields and the research growth in India over the next decade could be staggering. Deakin would like to be associated with this growth and to assist India in growing its research and academic infrastructure. One of the major challenges facing India will, in fact, be to train enough academics to meet the future needs of the tertiary sector.

'We envisage significant interchange of graduate students, post doctoral fellows, senior scientists and interactions with private industry in Australia and in India. The aim is to have at least 100 researchers within three years located in India. These would consist of a large number of PhD (and possibly Masters) students, post-doctoral researchers and a limited number of permanent professorial, research, technical and administrative staff. Close links to start-up entrepreneurial and mature companies in both countries will be encouraged and facilitated wherever possible.' Mrs Pawha said.

Given this type of vision, expect to see more of Deakin in India in the future.

For more information, contact Deakin's office in India in Delhi, email khuranai@deakin.edu.au.



What's Unique About UQ

Balavelan Thanigaivelan, a University of Queensland student studying his PhD in Electrical Engineering completed his undergraduate degree at the University of Madras and went on to complete a course work Masters program at the University of Queensland.

"I finished my masters by coursework here which motivated me to pursue research at the University. This program will give me the expertise to find employment as a VLSI design engineer, my chosen career."

Thanigaivelan's PhD topic, Automation of Analog and Mixed Signal Integrated Circuit Design, is currently a "hot" topic in the electronics industry. Balavelan investigates methods and circuit solutions that can shorten the design cycle of a class of circuits. This is an essential component in modern high speed electronics. He was awarded a scholarship for his research from FTD Solutions Ltd, a well-known Asia based electronics design company.

"My friends suggested to me that I study at this university. My survey indicated that UQ is one of the top research universities in Australia. The University of the Year Award, which UQ got sometime back also supported my decision. I always wanted to study at a top institution," Thanigaivelan said,

During his course work Masters Studies Balavelan felt that it was the project component included in every subject that excited him the most, though it poses a tough challenge. "This kind of a study, where I did a project and learnt the subject improved my way of learning. I was happy that I actually learnt a lot by doing practically rather than learning theoretically."

The progression from his masters project and a PhD seemed only natural. "In my experience students at UQ will get lots of opportunities to learn by practice rather than just theory. I recommend that they do not take their subjects for granted initially, only to discover later that the subject expected more from them. I have found that there is a good depth of knowledge in all the subjects they are learning at UQ and that you need to manage your time well." ■

Kate Scores a 'Hatric' - A Double Degree, New Job & Trip to India

Southern Cross University student Kate McFarlane has every reason to be jumping with joy - she has just scored an astonishing quinella.

Not only will this bright and vivacious young woman graduate with a double degree, but she has already scored a top job in the public service and been selected as a youth ambassador to India.

Kate (pictured) will shortly join 670 graduands, 16 Doctors of Philosophy and eight Doctors of Business Administration recipients, at graduation ceremonies for students from the faculties of Art, Health and Applied Sciences and Business.

Kate will be the graduate speaker at the ceremony, being held in the Whitebrook Theatre at the University's Lismore campus.

After nearly six years of hard slog, graduating from her Bachelor of Social Science and Bachelor of Laws (Honours) degrees feels exhilarating, Kate said.

But Kate is also celebrating the added double bonus of being recently offered a coveted place in the Department of Employment and Industrial Relations graduate program, in Canberra, at a brilliant starting salary, as well as being selected in the highly competitive Australian Volunteers International Youth Challenge Australia program.

Under the youth scheme, Kate would be traveling to Southern India for 10 weeks with a joint Australian-Indian team of 18 - 28-year-olds to work with a rural development organization in remote villages.

Kate is using her savings to fund the trip, hoping she will be able to use the experience and contacts gained as a springboard to eventually gain paid work in the field of international aid abroad.

"This is an enormous challenge and one which I can't get in Australia," she said. "I am more than happy to pay my own costs because I will learn a lot about myself, about international aid issues and about team building. It will also help me decide if this is really the career path I want to follow and hopefully make it easier to gain other

placements overseas in the future."

Kate was the recipient of a Vice-Chancellor's scholarship when she enrolled at Southern Cross University in 2001 after completing her HSC at Richmond River High School in Lismore.

"I wasn't sure that I would stay in Lismore and thought I might move to a larger metropolitan university after the first year or two," she said.

"But when I compared notes with my friends who were studying at these bigger universities, it became clear that I was getting an equally interesting and relevant educational experience and much more interaction and support from my lecturers.

"I found I could pick and choose courses I found intellectually stimulating and those which had a social justice slant. There was a lot of room to follow my personal interests and passions.

"And I found many of my lecturers to be the most inspiring role models you could ever hope to study under. They were people I could respect and learn from and with whom I could engage in really rigorous and deep debate.

"They each had strong social justice values and that really resonated with me and what I wanted to achieve in the world.

"They encouraged me to follow my passion for international politics, human rights, community service and gender issues. I just loved pretty much everything about what I was studying.

"Another good thing about studying at Southern Cross University was that I could live at home, which I loved. It meant I was under less stress during my studies and I was able to save a lot of the money I earned from my part-time jobs to pay for my upcoming travel to India.

"The last five-and-a-half years here at Uni have been great and it is hard to get my head around the fact that I will be gone in a couple of months. It's all so sudden and a bit overwhelming, but also very exciting."

Southern Cross University Plans \$20-Million Campus

Southern Cross University has announced plans to build a new \$20 million campus on a site adjacent to the Gold Coast Airport and to transform its existing Tweed Heads campus into a Graduate College of Management.

The new campus site is controlled by the Gold Coast Airport Corporation.

Southern Cross University Vice-Chancellor Professor Paul Clark said the development of a new campus on a greenfield site would provide great opportunities for future growth.

"This is a really exciting step and a vital element in our vision for Southern Cross University. It demonstrates our absolute commitment to providing for the educational needs of the community from the Tweed Shire through to the Gold Coast," Professor Clark said.

"We have completed a thorough investigation of the alternative sites available, including the expansion of our present site. The site adjacent to the Gold Coast Airport will provide the best opportunity for developing a modern facility to cater for our long-term growth."

Professor Clark said the University would now enter into negotiations with the Gold Coast Airport Corporation to secure a development site. If negotiations are successful it is expected building could start before the end of this year.

"We have had very positive initial talks with the Gold Coast Airport Corporation and are confident we can move ahead quickly," Professor Clark said.

The total cost of the first stage of a new campus is expected to be around \$20 million and is anticipated to include \$4 million in capital funding already allocated by the Federal Government.

Professor Clark said it was hoped the new campus would



have its first intake of students in 2009 and would offer courses in areas including allied health, education, business and tourism.

"This is another stage in the University's overall growth within our region - from Port Macquarie to southern Queensland. Our Lismore campus will continue to be the

headquarters for our operations. We are also planning on continued strong growth at the Coffs Harbour campus."

The existing campus in Brett Street, Tweed Heads, will be transformed into a Graduate College of Management (GCM), including an executive development facility. It will cater for international and domestic students undertaking postgraduate programs.

Professor Mike Evans, the head of the GCM, said the specialised business facility needed room to expand and the existing Tweed Gold Coast campus was a perfect fit for these plans.

"The Graduate College of Management delivers first-class programs, attracting students from around the world," Professor Evans said.

"Our Master of Business Administration program is ranked in the top three of all Australian universities for graduate satisfaction in the country, and the Doctor of Business Administration is the best in Australia.

"The Graduate College is also becoming a provider of choice for many Australian companies' executive development programs, combining its strengths in delivering quality learning outcomes, with a pragmatic approach and a delightful location.

"This new phase in the University's operations will allow us to continue to expand these highly regarded programs." ■

Research on Impact of

Climate on Genetic Biodiversity



New research by the Grain Foods Co-operative Research Centre (CRC) showing a direct link between climate and genetic diversity in wild barley provides new evidence of the risks associated with climate change and water availability.

Grain Foods CRC researchers at the Centre for Plant Conservation Genetics at Southern Cross University and at the Institute of Evolution in Israel have identified associations between genetic diversity and climate in wild populations of barley - the first plant domesticated by humans.

The results of the research are reported this week in the Proceedings of the National Academy of Science of the United States of America, one of the world's leading science journals.

"This research is timely in that it gives us insights into ways in which biodiversity might be influenced by climate change," said Professor Robert Henry, director of the



Centre for Plant Conservation Genetics.

"The diversity and distribution of plant populations is likely to be altered dramatically by changes in temperature or the availability of water in the environment."

Professor Henry said the research found, unexpectedly, that diversity of a defence gene in the wild barley was greater in drier environments.

"Populations from wetter environments displayed less diversity. This may be due to the influence of the climate on the diversity of pathogenic micro-organisms in the soil," he said.

"The populations in wetter environments face strong but uniform pest pressures while in the drier sites in the desert the pathogens are not as abundant but are more diverse.

"This finding illustrates the risks of loss or extinction of populations from more favourable environments if rapid climate change results in their exposure to more stressful environments for which they are not adapted. "The impact of climate change is not as simple as we thought."

Professor Henry said wild relatives of domesticated plants, especially major crops, were key resources ensuring global food security.

"These wild plant populations may be essential to developing strains of our food crops that can be produced in a changing environment," he said.

The researchers involved in the project were Honours student James Cronin, Dr Peter Bundock, from the Grain Foods CRC, and Professor Eviatar Nevo, from the Institute of Evolution in Israel.

The work was supported by the Grain Foods CRC because of the potential influence of the genes on the nutritional and functional value of grain in human diets. The next phase of the research will look at genetic diversity in wild rices in northern Australia. ■



Sydney University's Business Faculty Gets Prestigious CEMS Membership



The Faculty of Economics and Business of the University of Sydney has become the only Australian business school to be admitted into one of the world's most prestigious alliances of University business faculties.

Membership of the Community of European Management Schools group (CEMS) means the Faculty's current and prospective students can be considered for the CEMS Master of International Management, a program conducted in conjunction with CEMS member schools and corporate partners.

In addition, there will be opportunities for Faculty members to engage in collaborative research and for doctoral students to visit member institutions through the CEMS exchange network.

CEMS comprises 17 of the best known business schools in Europe, together with nine non-European academic institutions as Associate Members, with only one school per country being admitted at any one time.

Current academic members include: the London School of Economics, HEC Paris, ESADE Barcelona, Bocconi University, Copenhagen Business School, the University of St Gallen, Erasmus University, the University of Cologne and the Stockholm School of Economics.

Other, more recent non-European members of CEMS include the Richard Ivey School of Business in Ontario,

Tsinghua University, the Chinese University of Hong Kong and the National University of Singapore.

The alliance includes among its members 57 of the world's leading multinational corporations, which support a Master of International Management program that blends high quality business education and professional experience.

Corporate members of the group include internationally-recognised corporations such as PriceWaterhouseCoopers, L'Oreal, Deutsche Bank, Procter & Gamble, Nestle, Nokia and Shell.

The Dean of the Faculty, Professor Peter Wolnizer, said that admission to CEMS was the next step in the development of the Faculty, following dual accreditation of its business and accounting programs by the US-based Association to Advance Collegiate Schools of Business (AACSB International), and accreditation by EQUIS, the European group sponsored by the European Foundation for Management Development (EFMD).





"That we have been selected as the Australian member of CEMS is an outstanding achievement for the Faculty and confirms our rapidly rising standing in the international community of leading business schools," he said.

"Together with our strong positioning within AACSB International, European Foundation for Management Development and the Association of Asia Pacific Business Schools, our admission to CEMS further enhances and consolidates our positioning and profile in the international community of business schools.

"Our membership of CEMS will greatly strengthen our already good standing with other member schools, providing our students with programs that are regarded by international employers as both academically rigorous and integrated with professional experience.

"Being admitted to CEMS is further recognition of the strength of our commitment to high quality, globally-competitive business education."

For interview requests with the Dean, Professor Peter Wolnizer, contact Evelyn Santoro

Phone: +61 2 9351 0155 e-mail: e.santoro@econ.usyd.edu.au ■

\$102-m Australian Intervention Strategy to Improve Educational Standards

The Australian Government is providing \$102 million over four years, from 2005-2008 for strategic interventions under the Whole of School Intervention Strategy. The interventions involve Indigenous communities and parents working with schools and other organizations to improve the educational outcomes of Indigenous school students. The Strategy comprises submission-based funding for Parent School Partnerships Initiatives which must aim to address at least one of the following objectives:

- Improve Indigenous school students' attendance rates
- Improve Indigenous students literacy and numeracy skills
- Improve Indigenous students retention from Years 10-12 of schooling
- Improve the rate at which Indigenous students successfully complete Year 12 or schooling
- Ensure that Indigenous children are ready, and inspired, to learn in the school environment; and
- To strengthen the capacity of parents and the community to work with schools to improve educational outcomes for Indigenous students.



The Whole of School Intervention Strategy also provides funding for Homework Centres which provide a supervised and supportive environment in which Indigenous students study and complete homework. Homework Centres contribute to improving literacy and numeracy skills and homework completion rates.

Parental and community involvement is integral to the Whole of School Intervention Strategy, which encourages their involvement from the development of projects and throughout their implementation and evaluation. The duration of funded projects may vary from a few days up to two or three years and some projects may involve one school or a cluster of schools. Projects which are funded under the Whole of School Intervention. ■

ACT, Ideal Ground for Fostering Knowledge Communities

- Jon Stanhope



Canberra is a city purpose-built as Australia's national capital and is the country's most knowledge intensive city, according to Jon Stanhope, Chief Minister of the Australian Capital Territory (ACT). Promoting Canberra as Australia's most attractive IT investment destination at the National Association of Software and Service Companies 2007 Leadership Forum, held in Mumbai recently, Stanhope said that on practically every knowledge economy measure that one can think of, the ACT topped the ratings nationally and internationally. Following is the text of Stanhope's speech on the theme, Fostering the Growing Knowledge Communities. The perspective that I will share with you today, as the Chief Minister of a city-state of 330,000 people is, I am guessing, quite different from the experience and background that many of you bring to this Forum.

You may know a lot, or a little, about Australia. You may have heard of our vast 'outback'. When you think of Australia you may think of mining, or agriculture. Or cricket. And while these images are still relevant in the 21st century, they represent just a part of what Australia is all about - and what Canberra is all about.

Canberra is a city purpose-built as a national capital, a city that is not yet a century old. It's officially Australia's most knowledge intensive city. On practically every knowledge economy measure you can think of, we top the ratings nationally and are towards the top of international ratings.

- ICT professionals per 1,000 in the workforce

9 STE skills (Science, Technology and Engineering) per 1,000 in the workforce

- Patents lodged per capita
- Gross R&D expenditure as a percent of GDP
- Households with computers and access to high speed internet connections



- Rates of small and micro business formation
- Bachelor's degrees per capita, higher education qualifications per capita
- School retention and completion rates
- Measures of literacy, numeracy
- And so on ...

Indeed, when the term 'knowledge worker' was coined

in the late 1960s, most of Canberra's workforce already fitted the definition.

That gives Canberrans a particular view on the topic of knowledge communities and particular experiences in relation to how such communities are built and how they are sustained.

Any student of history will know that knowledge-based communities have been with us for a long time - long before microchips and fibre optics.

Human activity has always been knowledge-based. Human progress has always depended on the sharing of knowledge and the generation of new knowledge. Books, mass media and the spread of schooling and higher education have gradually created what amounts to the world's greatest natural resource - shared knowledge and understanding.

What we are witnessing now, in the 21st century, is an acceleration in the dispersion of knowledge, thanks to technology. We are creating more information, and its transmission is becoming vastly more efficient. But information is just a commodity.

The measure of any knowledge community is not how deep its pool of knowledge is, but how it drinks from that pool - how it dissects, reflects, organises and shares this knowledge. How it uses knowledge.

Fostering Education

It is no coincidence that the communities we regard as the leading knowledge economies are also those that place great store on fostering education at all levels, that exhibit an understanding of the value of research, and that support and foster innovation and entrepreneurialism,



through information sharing. These are the fundamentals of any knowledge economy.

Concept of Innovation

It is the concept of innovation I would like to focus upon a little more. By innovation I don't mean 'technology', or commercialisation'. Innovation is simply the process of applying new ideas to products or business processes. We say innovation has occurred if a change we make gives rise to something new, or something with greater value.

Innovation doesn't necessarily require science or engineering or ICT for that matter - but it nearly always requires creativity in some form. Innovation might be a technical change to a product, but it can also be managerial or organisational, or a change to marketing, packaging or distribution.

And what we do know is that firms and institutions that are 'innovative', are superior economic performers and economy builders. We also know that innovation never occurs in isolation. Innovation is the product of a system. It is the result of interplay and the flow of information and knowledge.



The players in the innovation system are the firms, the institutions and people. People with skills, and diverse skills sets. But firms are the ones that give economic expression to innovation. Innovative firms are strongly influenced by their interaction with institutions and other 'actors' in the system. The innovation system within which a firm operates determines its possible 'innovative' responses. All innovation systems



Australia's space sciences capability is located in Canberra.

All of Australia's defence technology organisations are headquartered in Canberra and the Department of Defence administers its \$17 billion annual budget from Canberra, about 20% of which is spent directly in Canberra.

are different and reflect the infrastructure, the history and the culture of the area they occupy.

Canberra has a different innovation system to Sydney. Mumbai has a different innovation system to Bangalore. By virtue of being Australia's National Capital, Canberra has built up an incredible, and quite distinct, innovation system.

While some of this has been organic, some of it is located in Canberra by design. We are home to Australia's leading university - the Australian National University - which ranks in the top 20 universities worldwide.

The Commonwealth Scientific Industrial Research Organisation - or CSIRO as it is best known - is headquartered in Canberra. CSIRO delivers around \$1 billion in research support each year to Australian industry and is one of the most capable and influential research organisations in the world.

Canberra has more people in the workforce with tertiary qualifications, and higher qualifications (such as PhDs) than any other place in Australia.

We also have proportionately more people working in the 'creative industries' than any other place in Australia. 12% of Australia's total public research effort is applied in Canberra. We have about 1% of Australia's population.

We are home to Australia's National ICT Centre of Excellence, an organisation that will spend around \$500 million over the next five years on pure ICT research. We are the centre of Australia's biotechnology research industry. Over a third of

On top of this we are home to many of Australia's national institutions and information repositories. Taken together, there is a mass of expertise and concentration of brainpower in Canberra unmatched in Australia, and perhaps the Southern Hemisphere. With this infrastructure behind us, the obvious question is 'what more needs to be done'. There is plenty.

We can make better connections with the emerging global supply chains that are increasingly being driven by India and China. That is why we have brought a small business delegation to India. That is why we will be travelling to China later this year.

We can ensure that the players in our innovation system truly see themselves as being part of a system, and network, share and collaborate. The divide between academia and business is being rapidly closed. Entrepreneurs and researchers are being brought together to jointly solve problems. And that is how it should be.



Building problem-solving capability in firms is probably one of the more interesting challenges for both businesses and government.

What makes one firm more receptive than another to new ways of doing things? What is special about the applied learning environment of some firms? How can we support and better influence that environment across firms and industries?

Australian industry relies to a great extent on external knowledge bases and there is no better example of that than in Canberra - the greatest knowledge bank in the country. Knowledge is maintained, housed and added to our universities, the Australian Government's Cooperative Research Centres, research institutes and government laboratories. These organisations constitute a fantastic knowledge repository. But the flow of that knowledge outwards into the business sector can be disjointed and accidental. How do we make this flow of knowledge work better for both sides?

In Canberra - indeed, in Australia generally - businesses are generally small. We are not a nation of vast multinationals. While small to medium enterprises are rightly credited with being the breeding ground of innovation, their size means they have to work hard to be noticed or to become part of supply chains and connections of global relevance.

In Canberra, we are conscious that businesses need to look at innovation more strategically. Innovation is sometimes accidental, but sustainable firms, the ones that will still be here tomorrow, and next year, and next decade, are the ones that take a strategic and systematic approach to innovation. The successful ones are those that seek innovation and organise for it, that take care to manage and motivate their staff, that create the micro-climates that give rise to new ways of thinking, seeing and doing.

Canberra's human capital base is already without equal, as I have mentioned. Keeping it in that condition means that for ACT education must always be an absolute priority at all levels, and it must be a lifelong process. Adult education is not a luxury. It is vital. And it takes many forms, not all of them based in a classroom or a lecture



hall.

Avenues for Life-long Learning

The challenge is to provide multiple avenues for lifelong learning - formal opportunities as well as opportunities for applied and contextual learning - learning by doing, in a business environment that values innovation and the contribution of all staff.

Lifelong learning is of particular importance in an ageing population like Canberra's. India, with its young population, may not be able to easily imagine a workforce where the pool of new workers diminishes each year. That is the Australian experience. And it is the Canberra experience.

While our population is the most youthful of any Australian capital city, it is almost the most rapidly ageing. Within the next 30 years, a third of Canberrans will be aged over 60. That means rethinking not just our traditional ideas about career paths and retirement, but the better uses we might make of the vast, underutilised repository of knowledge and experience at our disposal.

Ladies and gentleman, the challenges we each face in fostering innovation will be slightly different, depending on the cultures and traditions that have shaped our economies. But I am sure there is plenty we can learn from each other, and plenty we can bring to new kinds of partnerships, designed for a new kind of world.

So, in closing these remarks, try not to see ICT as a standalone input to knowledge communities. See it in the context of the firm. Firms and the people that lead them - entrepreneurs - are the true knowledge community builders. ■



Alan Carpenter, Premier of Western Australia, who led a Business Mission to India recently, is very unassuming for all his accomplishments and the achievements of his state and its contribution to the Australian economy. Dressed informally, he freely mingled with guests at Taj Mahal Hotel in Mumbai and charmed one and all with his easy-going and friendly approach and attitude. Annmarie, Carpenter's wife is of Indian origin and truly felt at home at the Mumbai gathering. Following is the text of Carpenter's speech, in which he talked of what role would Western Australia like to play in India's transformation into a global power.

This is my first official visit to India as Premier of Western Australia. Last April we were pleased to welcome Indian Minister of State for Petroleum and Natural gas Dinsha Patel and his delegation to Perth. I am hoping to meet with the Minister. among other dignitaries to continue our discussions and further the relationship between our governments.

Western Australia has enjoyed a very prosperous commercial and cultural relationship with India for many years. India is one of Western Australia's top 10 trading partners, with two-way trade valued at more than \$4 billion. And, Western Australia accounts for almost half of Australia's merchandise exports to India.

In recent years Western Australia has received close to \$800 million Australian dollars worth of investment from India. Over the years a growing numbers of migrants from India are calling Perth home. Combined with a large nonresident

Indian community who maintain strong links there, they enrich Western Australia.s culture and community.

This makes the development of business links between Western Australia and India much easier, as people can

use existing networks. Also, increasing number of students from India are choosing to study at our fine universities and colleges.

While relations have been very good in the past, I think they are going to become better, stronger and broader as Western Australia and India work together more.

There are many dimensions to the Western Australia-India relationship, but I'd like to focus primarily on resources, education, agriculture and technology, which I see as the foundation for future relations.

India's economic awakening has made it a global economic power. You are all part of the business community that has helped India become the second fastest growing country in the world over the last 15 years. A study by Goldman Sachs predict that in the next 50 years, India will be the world's fastest growing economy and that its per capita income will be 35 times what it is now. And in their recently released follow up report Goldman Sachs calculate that India's economy will be larger than the US by 2050.

India is entering a golden age of growth and development that will provide a range of opportunities



and improvements for both its people and its trading partners. We would like Western Australia to play a part in India's transformation into a global power.

Our economy may be relatively small compared to most developed economies, but we are playing an increasingly important role on an international level. And our economies complement each other. If we work together to develop opportunities, then Western Australia and India can grow together much stronger, much faster for much longer.

The first area where we can work together is the resources sector. Western Australia supplies a large volume of commodities to world markets, including iron ore, nickel, alumina, gold, diamonds and mineral sands. I think our large and diversified minerals base is critical to meeting India's demand for raw materials.

The jewellery industry for example is an area of major common interest between us. Over 80 per cent of Western Australia's exports to India are gold and diamonds. An estimated 250,000 Indian craftsmen are engaged in cutting and polishing diamonds from the Argyle diamond mines. No doubt your craftsmen will be pleased at the decision to extend the mine's life by 15 years through the planned underground expansion.

In recent years we've seen some significant direct investment by India in Western Australia's resources sector. The Oswal Group has invested \$630 million in the Burrup Fertilisers plant in the Pilbara region of Western

Australia; Hindalco, a member of the Aditya Birla Group, one of India's largest conglomerates has a significant investment in the Nifty Copper mine in the Pilbara region of WA.

A consortium led by the West Australian firm Oilex has formed alliances with some of India's leading oil and gas exploration companies and are working on a number of

joint ventures in India and Western Australia.

As India's development progresses, I hope many more such cooperative investment opportunities will be identified and developed. Energy, and particularly LNG, is another major area of opportunity for both countries.

India currently imports around 70 per cent of its oil and, without more discoveries, that dependency ratio may increase to 90 per cent by 2020. Like many other countries, a switch to LNG, where it is economically feasible, may be a very attractive option for India.

Particularly given the relative environmental benefits and the knowledge that Western Australia is a reliable and secure long-term supplier of energy.

Around 80 per cent of Australia's massive gas reserves are located offshore from Western Australia. Already, a number of multi-billion dollar LNG projects are lining up for development - making it an exciting decade for LNG developments in Western Australia. Despite our large natural gas reserves, my Government is committed to exploring the as yet unlocked potential of renewable energy.

Already a number of interesting biofuels projects are under way in Western Australia. This is an area where the Government is working with industry to build our capabilities. I think there is enormous potential to explore trade and investment opportunities in biofuels, solar, wind and wave generation to meet the energy needs of our growing populations and expanding economies in the future.

We've already seen the start of the development of an energy partnership between India and Western Australia: LNG has been exported from Western Australia to India;

There is increasing interest by Indian firms in both off and





on shore oil and gas exploration. I also see opportunities in the related area of technology and services to the mining and petroleum sectors. This sector has been quick to adopt and deploy new technologies making their operations efficient, technologically advanced and most importantly, globally competitive.

There are opportunities to develop commercial partnerships in technology and services with the resources sector in India. Last November a record number of 12 Western Australian companies attended the International Mining Machinery Exhibition (IMME) in Kolkata. A clear indication of the private sector's increasing interest in the Indian market.

We've seen a number of Western Australian resources companies and project developers set up business in India and I'm sure there are plenty more investment opportunities in India that are of interest to WA companies.

The resources boom has been a strong driver of economic expansion in the WA economy and enabled us to invest in supporting other emerging industry sectors.

Western Australia has a very successful agriculture sector and 85 per cent of the State's production is exported. Wheat, pulses, wool and horticultural products are already finding markets in India and our farmers are always looking for niche markets for their quality produce. In a state the size of WA we have a variety of climate types ranging from the cool fertile landscape of the south west to marginal arid areas and tropical north. India and WA face many similar challenges and we would welcome the opportunity to collaborate on the issues such as arid farming and agricultural biotechnology.

This would build on the joint research programs into pulses being undertaken by the University of Western Australia and the International Crops Research Institute for the Semi- Arid Tropics (ICRISAT). WA's research capabilities are internationally recognized and I am pleased to mention the work of our Nobel Laureates.

In 2005, University of Western Australia (UWA) academic Professor Barry Marshall and colleague Dr Robin Warren, a Royal Perth Hospital pathologist, were awarded one of the most coveted prizes in the scientific community: the Nobel Prize in Physiology or Medicine

Their groundbreaking research undertaken at Royal Perth Hospital between 1979 and 1984 proved that stomach ulcers leading to gastric cancer were caused by the bacteria and not stress or poor diet. Doctor Warren and Professor Marshall are the first Western Australians to win the award, bringing the total of Australian Nobel Laureates to 12.

Our research capacity is also supported by specialist learning and training facilities, the shipbuilding, defence and engineering fabrication industries, centred at the Australian Marine Complex at Henderson, have developed rapidly.

WA has a growing export market in high-speed ferries and patrol boats and would welcome the opportunity to discuss India's increasing transportation needs. In the information and communications technology and biotechnology sectors, we're also developing industry clusters, around specialist centres of excellence.

I believe there is potential to develop trade and investment with India in areas ranging from health to remote sensing technologies. One sector where there is



huge potential for Western Australian companies to contribute in meeting some of India's infrastructure needs in areas like power generation and distribution, ports, water supplies and other essential infrastructure.

Western Australia is experiencing an economic boom and is investing heavily in expanding our skills and training base. We have considerable expertise in contributing to international infrastructure projects and are actively building capacity to develop the export of knowledge-based skills to valued trading partners like India.

Two other areas where I see great potential for mutual



economic benefits are education and tourism. India is now Australia's second biggest country source of International students with 27,000 Indian students studying in Australia.

Western Australia attracts a relatively low proportion of these students and I would appreciate your thoughts on how to market ourselves as an attractive destination for quality education. Positive steps have been taken with the Perth Education City road show visiting places in Gujarat as well as Mumbai, Pune and Kolkata.

I'm pleased to advise you that an Education Marketing

Manager has been appointed as part of the Western Australian Trade Office and is already working with agents and institutions in India. Boosting two-way tourism would also create new jobs and opportunities in both countries. In 2006 Australia welcomed 81,000 Indian visitors, a growth of 28 per cent over the previous year.

Promoting tourism, education and business links generally would be easier if there were direct flights between Western Australia and India. We need to collaborate and lobby airlines in order to make direct flights between our countries a reality.

Tourism and education also play an important role in promoting economic and social networks and cultural understanding which will help our mutual trade.

The growth of Government-to-Government and industry-to industry networks are crucial in identifying commercial opportunities, creating strategic alliances and opening doors to trade and investment.

In 1996 Western Australia was the first Australian state to establish trade offices in India which are located in Mumbai and Chennai. Western Australia's relationship with India is very important to us, our long standing Regional Office and the great work they do demonstrates this.

Sharing a common ocean can make trade easier. But common values and shared passion is essential in any relationship. Many Indians and Australians share a passion for cricket. and Dennis Lillee is a great Western Australian ambassador for the sport. Dennis has been a Director of the MRF Pace Foundation Cricket Academy since it was established in Chennai in 1987. The Academy aims to provide world-class pace bowlers for India by providing the best facilities and training methods. Over the years it has given its students an opportunity to learn from legends such as the Chapell brothers (Ian and Gregg), Jeff Thompson, Rodney Marsh, Joel Garner, and Graham McKenzie, all of whom spent their valuable time at the Foundation, sharing their knowledge, experience, tactics and, most importantly, their passion for cricket.

It is clear that we share many interests, but I believe it will be our common commitment to developing a long-term partnership that will provide the greatest benefits to our peoples and our economies for the next generation and Beyond. ■

Reproduced below is a letter received from Jon Stanhope, Chief Minister, Australian Capital Territory, shortly after he received Indo-Australian Business Excellence Award in Mumbai recently. It was addressed to Satya Swaroop, Managing Editor, New Media Communication, publishers of Indo-Australian Business. Instituted in 2004, Indo-Australian Business Excellence Awards are presented to corporates and individuals representing different sectors of industry and commerce, besides government agencies, that strive to promote bilateral trade between India and Australia.



Alan Carpenter, Premier, Western Australia (right), receiving Indo-Australian Business Excellence Award and a Certificate of Appreciation from T.C. Venkat Subramanian, Chairman & Managing Director, Export Import Bank of India.



Jon Stanhope, Chief Minister, Australian Capital Territory, (right), receiving Indo-Australian Business Excellence Award from M. Gandhi, Managing Director, UBM India.



A view of the guests at the dinner hosted in honour of W. Australian Premier Carpenter.



Jon Stanhope
Chief Minister, ACT

Dear Mr Swaroop

It was a pleasure to meet with you and your colleagues from New Media on my recent trip to India. I appreciate the interest you showed in Canberra, and indeed Australia.

The award your magazine bestowed on me - the Indo-Australian Excellence Award - was most appreciated and is nice reminder of the successful delegation and the warm and sincere people we met in India.

The company members of the delegation all came back very encouraged by the opportunities in India and are now working with their counterparts to deepen trade and general relations with the Indian community. I feel confident in saying the ACT will lead another mission to India in around 12 months time. We also have strong interest from two business bodies in India for return missions and possibly a mission lead by one of India's regional governments.

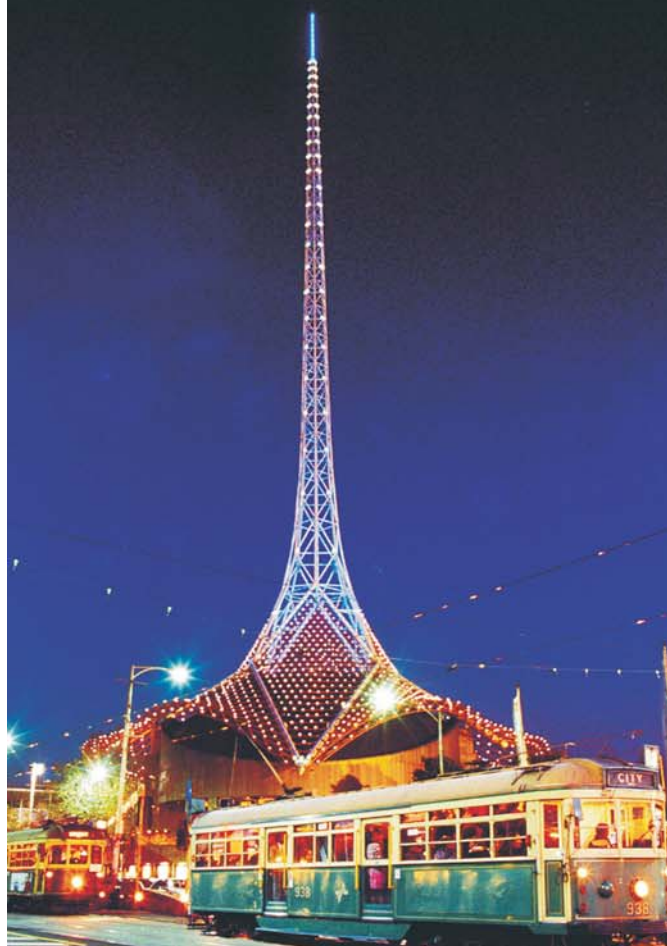
I have just received a copy of the February edition of Indo-Australia Business and I must thank you for the supportive editorial provided to our mission and to Canberra.

If you are in Canberra at any time in the future, please feel free to contact me.

Jon Stanhope MLA
Chief Minister

Australian Performing Arts

A Rich Blend of Migrant Cultures



Australia's contemporary arts are as unique and diverse as the society and continent they come from. They reflect an ancient landscape that is home to the world's oldest continuous cultural traditions and also to a rich mix of migrant cultures.

Since the early 1970s, Aboriginal and Torres Strait Islander artists have developed new modes of expression that have brought their art and culture to international attention. The transfer of Dreaming designs from sand paintings to boards and canvases by Pintupi elders in the central desert community of Papunya in 1971 was just one of many artistic initiatives that have created powerful new connections between Indigenous and non-Indigenous Australians.

Acclaimed artists such as Rover Thomas, Emily Kngwarreye and Ken Thaiday have also created contemporary art that remains grounded in the spiritual traditions of Aboriginal and Torres Strait Islander cultures. Non-Indigenous artists like Sidney Nolan and Arthur Boyd have imaginatively come to terms with Australia's unique physical and social environment, while immigrant artists such as Olegas Truchanas, Sali Herman and Imants Tillers have brought new perspectives on our natural and urban environments.

Theatre

Australia's performing arts are full of energy, originality and wit. Indigenous companies like Bangarra Dance Theatre and the Aboriginal and Islander Dance Theatre are acclaimed around the





world for innovative, contemporary work that draws on a deep well of traditional ceremony and performance.

Energising and complementing these companies is a large group of multi-talented individual artists.

Choreographer Stephen Page works both with traditional Aboriginal communities and the Australian Ballet; actor Deborah Mailman has won international acclaim for her stage and film performances; and Christine Anu has incorporated Torres Strait Islander traditions into her music and dance, as well as starring in commercial music theatre productions.

Dance

Australian dance is renowned for its exuberance and range. Major companies such as the Australian Ballet and Sydney Dance Company tour regularly, with a diverse repertoire of

Australian and international work. Australian choreographers and dancers such as Lucy Guerin and Gideon Obarzanek produce cutting-edge work that is finding new audiences through seasons at nightclubs and other unconventional venues, and physical theatre companies such as Legs on the Wall can be found performing on the exterior walls of buildings as well as inside them.

Music

Australian music has been greatly enriched by postwar immigration, and covers an astonishing range. Virtuoso guitarist Slava Grigoryan, born in Kazakhstan, explores the Argentinian tango and Brazilian bossa nova, while the Australian Art Orchestra collaborates with master musicians from South India. The Australian Chamber Orchestra has been acclaimed as the best such orchestra in the world and every State capital city has its own professional symphony orchestra. Artists such as violinist Richard Tognetti, pianists Roger Woodward and Geoffrey Tozer and conductor Simone Young are familiar faces in the world's concert halls.



Australia's symphony orchestras have carved out a central role in Australia's cultural history. Other organisations such as Musica Viva promote a wide range of classical and serious contemporary music events. Percy Grainger, Larry Sitsky, Peter Sculthorpe, Richard Meale and Ross Edwards are just some of the Australian composers who have made their mark internationally.

Opera

Opera Australia, the national company, is the third busiest opera company in the world and has as its home the spectacular Sydney Opera House. The legacy of operatic legends such as Dame



Nellie Melba and Dame Joan Sutherland has been handed down to stars such as Deborah Riedel, Lisa Gasteen and Yvonne Kenny.

Rock Music

The past few decades have seen the emergence of a completely original style of contemporary Australian rock music. Success stories include Regurgitator, Natalie Imbruglia, silverchair, Kylie Minogue, Savage Garden and The Whitlams.

Literature

Australian literature is one of the most vital branches of contemporary English language writing. Australian writers make a central contribution to the understanding and definition of Australian culture.

Since Patrick White won the Nobel Prize for Literature in 1973, Australians have won many international awards, among them novelists Thomas Keneally and Peter Carey (the prestigious Booker Prize) and poet Les

Murray (the Petrarch Prize). Helen Garner, David Malouf, Elizabeth Jolley, Archie Weller and Tim Winton are among other Australian prize-winning prose writers.

Leading poets of past and present include A.B. ('Banjo') Paterson, A.D. Hope, Judith Wright, Bruce Dawe and Geoff Page.

Authors of migrant background such as Brian Castro, Fotini Epanomitis and Beth Yahp add an international dimension to Australian literature.

International bestsellers include Morris West, Colleen McCullough and Bryce Courtenay. Tim Winton, Kate Grenville, Janette Turner Hospital and David Malouf are just a few of the other prose writers who have established international reputations over the last 20 years.

Writers like Oodgeroo Noonuccal and Sally Morgan have brought experiences of Aboriginal people into the minds of non-Indigenous Australians.



Cinema

The highest industry accolades, such as Academy Awards and nominations, have been won by Australian films and actors in increasing numbers since the 1940s. More recently, Academy Awards were won by *The Piano* (1993), *Priscilla, Queen of the Desert* (1994), *Babe* (1995) and *Shine* (1996).

Film-makers such as Peter Weir and Bruce Beresford, actors such as Geoffrey Rush, Nicole Kidman, Mel Gibson, Judy Davis and Cate Blanchett, and cinematographers such as Dean Semmler, among many others, are now major figures in the global film community.

From the cramped, modest studios used in the 1970s and '80s, Australia now boasts a number of fine studio complexes. American studio films, such as *Mission: Impossible II* (2000), and the larger Australian productions are now able to use state-of-the-art local facilities.

Australian wine has won an international reputation for quality and value. Australian wines have taken key international awards, competing favourably against longer-established national wine industries. Innovative Australian winemakers are sought internationally for their expertise.

Australia produces a full range of favoured wine styles from full-bodied reds and deep fruity whites through to sparkling, dessert and fortified styles. Prized Australian bottlings grace the menus of many of the world's leading restaurants, while popular varietal and blended wines compete on the shelves of wine shops and supermarkets in some 80 countries around the world.

In global terms, Australia was ranked 7th in the list of world wine producers in 2003, producing 1,085 million litres of wine.



Australian Wine Acquires Global Reputation for Quality & Taste

The wine scene

Wine-grape growing and winemaking are carried out in each of the six States and two mainland Territories of Australia. The principal production areas are located in the south-east quarter of the Australian continent, in the states of South Australia, New South Wales and Victoria.

The older-established concentrations of productive wineries in South Australia's Barossa Valley, in the Hunter River region north of Sydney in New South Wales and in Victoria played a major role in the development of the industry and continue to be important sources of fine wines. However, wine is produced in over 60 regions, reflecting the wide range of climates and soil types available in the continent. These include areas such as Mudgee, the Murrumbidgee and Murray River valleys (New South Wales); the Southern Vales, Clare Valley and Riverland (South Australia); and Rutherglen and Yarra Valleys (Victoria). The States of Western Australia, Tasmania and Queensland have smaller wine industries, which have grown rapidly in volume, quality and reputation. The Canberra region, near Australia's national capital, has a recognised cool-climate wine industry.

A generous range of grape varieties goes into the making of Australian wine. In 2003-04 Shiraz was the most-produced variety, followed by Chardonnay and Cabernet Sauvignon. Premium white varieties other than Chardonnay include Semillon, Riesling and Colombard. Main red wine varieties other than Shiraz and Cabernet Sauvignon include Merlot, Grenache and Pinot Noir.

Wine is very much a part of Australian life, closely associated with both business and leisure. Wine consumption is often linked to the country's outdoor-oriented lifestyle as well as to the cosmopolitan urban way of life of the bulk of the Australian population. Wine festivals are a feature of cultural life in the major wine producing regions of Australia and draw many Australian holidaymakers and international visitors each year.

The Australian wine story

The first vines arrived with the first European settlers to Australia in 1788. Initially wines were produced in the coastal region around the fledgling city of Sydney. John Macarthur established the earliest commercial vineyard.

In 1822 Gregory Blaxland shipped 136 litres of wine to London, where it was awarded the silver medal by the forerunner of the Royal Society of Arts. Five years later a

larger shipment of Blaxland's wine won the gold Ceres medal.

Planting of vines accompanied the spread of European settlement across the Australian continent, and by the beginning of the 20th century Australia was exporting some 4.5 million litres of mainly full-bodied dry red wines to the United Kingdom.

The end of the Second World War saw a rapid influx of migrants from Europe who brought with them a strong culture related to wine. This provided an important impetus to the Australian wine industry. However it is the period 1996 to 2004 that has seen spectacular growth in exports following rapidly increasing appreciation of Australian wines overseas. Major wine producers from abroad have invested in Australian wineries and Australian companies have taken controlling interests in wineries in countries such as France and Chile.

The wine economy

In 2003-04 sales of Australian wine totalled approximately 999 million litres, with 414 million litres sold domestically and 584 million litres exported. Australian wine exports were worth \$2.5 billion, with represented an increase of 12.7% over the previous year. The principal destinations were the United Kingdom, the United States, New Zealand, Canada and Germany.

Australia's largest wine export market in 2003-04 was the United Kingdom (221 million litres worth A\$836 million), closely followed by the United States of America (166 million litres worth A\$838 million). Wine production is a significant industry in Australia. It directly employs 30,000 people in both winemaking and grape growing (2001 Census), with further related employment in the retail, wholesale and hospitality industries.



Tourism adds another dimension to wine's importance. International and domestic tourism related to the wine industry accounts for an important share of Australia's export earnings, employment and taxation income.

During 2003-04 the industry crushed 1.92 million tonnes of grapes to make 1,424 million litres of beverage wine. In 2004 total wine grape vineyard area reached 151,000 hectares of bearing vines, with a further 13,500 hectares of non-bearing vines. The area of bearing vines has more than doubled since 1996-97.

In 2003-04 the domestic market accounted for 44% of total sales of Australian wine. Table wines made up 87 per cent of consumption of local wines, with sparkling wines accounting for 8 per cent and fortified wines 5 per cent.

Regulation, structure and research

Australia maintains national standards for wine which are administered by State and Territory governments. Federal regulations focus on quality control. The Australian Federal government assists the industry by improving the trade environment (redressing barriers to trade) and by improving the domestic economic operating environment. Policy issues are the province of the Australian Government Department of Agriculture, Fisheries and Forestry.

The Australian Wine and Brandy Corporation promote and control the export of grape products including wines. The Grape and Wine Research and Development Corporation (GWRDC) is the body responsible for investing in grape and wine research and development, on behalf of the Australian wine industry and the Australian community.





Australia's reputation as one of the most technologically advanced wine-producing nations owes much to the industry's emphasis on research and development (R&D). Key R&D sources include the Australian Wine Research Institute, the Commonwealth Scientific and Industrial Research Organisation, the Cooperative Research Centre for Viticulture, State departments of agriculture and universities. A number of Australian universities and other tertiary education institutions offer courses in viticulture and oenology.

Issues which impact on wine industry R&D include a wide range of social and environmental considerations as well as economic issues.

The peak industry body representing the interests of Australia's winemakers is the Winemakers' Federation of Australia which develops policies and programs to increase the nett returns to Australian wine makers. The National Wine Foundation is an industry-sponsored organisation promoting moderate wine consumption and research into wine and health. ■

Australian Food: Diversity is the Variety

Australia's food industry encompasses a wide range of products. Although predominantly arid, Australia has a range of climates and land types. These range from northern tropical areas, through high rainfall coastal regions to arid and semi-arid climates, most of which are used for food production. This variety, combined with high quality ingredients and cutting edge technology, makes Australia a reliable long-term supplier to global markets.

Australia's Indigenous people, while primarily hunter-gatherers, had long been modifying their environment to improve access to ready sources of food. Examples include 'firestick farming' to attract grazing animals and the use of fish traps. The first food processing industries to appear were the farmhouse and village technologies of milling and baking, brewing, salting, and butter and cheese making. These were brought to Australia in 1788 with the first European settlement. By the 1790s, small quantities of beer, butter and cheese were on offer in the Sydney and Parramatta markets. As the colony grew so did its demand for food. By 1819 around 1000 settlers were cultivating small plots of land while owning some sheep and cattle. They soon realised that greater profits could be made from grazing than cultivation.

For decades, the acceptance of the product in English markets and the plentiful supply of raw material led to the



canning of meat. But in the mid nineteenth century, Australia's processed food industry was to build on its commercial advantages by extending canning to jams



and other products.

The gold rushes of the 1850s brought around 600 000 migrants to Australia. The increased population immediately stimulated agriculture with farm employment in Victoria tripling in the three years to 1857. The late 1800s saw a period of rapid technological innovation with the arrival of refrigeration, which paved the way for a successful export meat industry, and automation, which revolutionised many processes.

The Second World War galvanised the Australian food industry. Suddenly, faced with new and urgent demand for unfamiliar service rations to precise specifications, there was rapid advancement. Technologies were modernised and new ones developed. Better scientific understanding of old technologies gave rise to new and improved processes, products and product applications.

Vital Component of Economy

Today the food industry is a vital component of the Australian economy. Food accounts for 46 per cent of total retailing turnover in Australia. The industry makes a significant contribution to the economies of regional areas through employment, business and service opportunities. The sector employs almost half a million people throughout Australia in over 111, 000 commercial farms and firms engaged in agricultural food production.

Nearly 90 per cent of the total value of Australian agricultural production comes from food. In 2003-04 the value of Australian farm and fisheries production rose by 16 per cent to A\$32.1 billion.

Many new industries were established in the late 1980s and 1990s. For example, new crops in the fruit and vegetables industry such as Asian vegetables, nashi pears, lychees, olives and herbs were introduced to take advantage of emerging market opportunities. A range of new aquaculture activities, such as the farming of Atlantic salmon and growing out of wild caught southern bluefin tuna, has been established.

Recently there has been recognition of the food value of Australia's indigenous flora and fauna. Kangaroo and crocodile, for example, are now accepted meat products. The 'bush foods' industry has worked to integrate a wide range of native products into the Australian food industry.

The food processing industry in Australia covers a number of sectors:

Processed food industry

The processed food and beverage industry is Australia's largest manufacturing industry with a turnover of over A\$65.9 billion in 2002-03. The industry comprises around 3 400 firms and employs over 1 87 000 people. It is estimated that around half of Australia's processed food and beverage firms and 40 per cent of employees are located in rural and regional areas.

Australia's 20 largest food and softdrink manufacturers account for almost 50 per cent of total industry turnover. For individual product categories, it is common for the one or two largest suppliers to own or share over 50 per cent of the market. The retail end of the market is even more highly concentrated, with over 70 per cent of sales of some major product lines realised through the two



largest food retailers.

Food trade

Australia has a worldwide reputation for producing high quality, premium food. Australian food producers are committed to providing the highest international standards of quality management and food safety. This international reputation has supported total food exports averaging six per cent growth per year over the past decade to reach A\$22.3 billion in 2003-04. This represented around 20 per cent of Australia's total merchandise exports.

Australian food trade is focused mainly on north Asian Pacific Rim countries. APEC countries account for around 70 per cent of Australia's food exports.

Seafood industry

Australian fisheries are fortunate in being able to operate in one of the world's cleanest environments. Australia spans a number of climatic zones giving rise to aquatic environments that can be broadly divided into open ocean, reef, estuarine and inshore area, and freshwater habitats.

Australia contains one of the most diverse marine faunas in the world because of its geographical isolation from other continents and wide range of habitat types that encompass tropical to sub-Antarctic waters. The diversity and cleanliness of aquatic environments means that Australia is able to supply a vast array of delicious seafood products to the world.

The commercial fishing industry ranks fifth in value amongst Australian rural industries after beef, wool, wheat and dairy. About 600 marine and freshwater seafood species are caught and sold in Australia (under about 300 marketing names) for local and overseas consumption. Australia is one of the largest producers of

abalone and rock lobster, and south sea pearls are considered the most valuable in the world. In addition to commercial seafood production, an estimated 4 million Australians fish for pleasure, making fishing one of Australia's largest recreational activities.

Prior to colonisation, Indigenous Australians and visiting South-east Asians utilised Australia's marine and freshwater resources for food and trade. A wide range of fishing technologies were used including nets, hook and line, spears and fixed and moveable traps.

Following British settlement in 1788, commercial utilisation of fisheries resources expanded. Whaling and sealing provided Australia's first major marine industries and largest export commodity until 1834. The utilisation of marine mammals, turtles, pearl oysters and inshore species such as prawns, crabs, rock lobsters and fish dominated fisheries until the 1920s.

In the early part of the 20th Century, the catching of additional species and the use of new fishing methods began. Until mid-century, sea mullet was the most common commercial fishery, followed by barracouta.

It is only within the past 40 years that commercial operations for fish, crustaceans and molluscs really developed, mainly in eastern and southern Australia. Significant fisheries development in northern Australia did not commence until the mid-1960s. During this time, Australian fishing activities have diversified through the development of new fisheries and fishing technologies.

Fisheries

Australia has the world's third largest fishing zone covering 11 million square kilometres and extending 200 nautical miles out to sea. Despite this impressive size, Australia only ranks 52nd in the world in terms of tonnes of fish landed due to the low nutrient levels in Australia's waters.

Production focuses on high value export species. Western Australia, South Australia, the Commonwealth, Queensland and Tasmania are the largest producers in terms of the gross value of fish. Australian waters contain over 150 fisheries, most of which target high-value species such as lobsters, prawns, abalone and tuna. Many fisheries operate on a multi-species basis.

The most valuable Australian fisheries include the Western Rock lobster, Northern Prawn, Southern Bluefin Tuna and South East fisheries. Australia has developed significant Patagonian toothfish fisheries in remote



Australian waters in the Southern Ocean and a high seas longline capacity on the west and east coasts, targeting high quality tuna and swordfishes.

Aquaculture

Aquaculture is the farming of fish and other aquatic animals and plants in marine and freshwater environments. Aquaculture is now one of Australia's fastest growing rural industries. Currently more than 60 species are being farmed including pearl oyster, pacific and Sydney rock oysters, mussels, prawns, freshwater crayfish, native fish, salmon, tuna, eels, crocodiles, and algae.

Aquaculture commenced in Australia in the late 1800s, however modern aquaculture in Australia really started in the late 1960s. The value of the industry has increased markedly over the years and this trend is likely to continue with significant investment in research to develop culture technology for new species.

Australian seafood production rose by five per cent in 2003-04 to 267 000 metric tonnes. However, due to the declining unit value of many species, the value of Australian seafood fell by five per cent to A\$2.2 billion. During the past five years Australia's fishing industry has decreased the real value of seafood production from A\$2.7 billion in 1999-2000 to A\$2.2 billion in 2003-04, an decrease of 20 per cent. The value of 'wild caught' seafood still dominates the Australian fishing industry, making up around A\$1.49 billion or 68 per cent of total seafood production in 2003-04. Aquaculture production contributed A\$ 732 million.

However, since 1997/98 the real value of aquaculture production has risen by 22 per cent or A\$132 million, while the real value of 'wild caught' seafood has only risen by 2 per cent. The dramatic rise in value of aquaculture in percentage terms indicates a longer-term trend, which suggests the sector will provide the major impetus for medium to long-term growth in the value of Seafood Exports.

The export value of Australian fisheries in 2003-04 was A\$1.65 billion. Exports account for 75 per cent of the value of our seafood production, but have fallen, in real terms, by seven per cent since 1997/98. Seafood exports are dominated by five key products, rock lobster (A\$427 million), pearls (A\$310 million), prawns (A\$161 million), tuna (A\$273 million) and abalone (A\$238 million), which combined make up A\$1.4 billion or 85 per cent of total seafood exports.



In 1990/91, just over half of the exports of seafood products went to Japan. During the 1990s, China, Chinese Taipei, Hong Kong and the United States became more important destinations for Australian product. Since 1996/97 Japan has retained its dominance as the principal market.

Australia's Commonwealth and State/Territory governments manage fisheries on behalf of the Australian people through consultation with the fishing industry, scientists, economists and other user groups - such as those that represent traditional fishing, recreational fishing and the environment. From this process, fisheries managers decide how much fish can be caught and which fishing methods can be used in order to manage Australia's fisheries in a sustainable way. Sustainable management requires extensive information about fish and their habitats, and other environmental, social and economic data relating to fisheries. The Western Rock Lobster Fishery was the first Marine Stewardship Council certified fishery, providing independent verification of good fisheries management in Australia.

In order to protect marine environmental quality, Australia has instigated a number of initiatives to minimise impacts from fishing and other activities. One of these was the release in 1998 of Australia's Oceans Policy, which establishes the principles and the planning and management approaches necessary to pursue the ecologically sustainable development of Australia's marine resources. Threat abatement plans, by catch action plans, marine protected areas, national approaches to aquatic animal health issues and marine pest incursion risk analyses are also being developed to deal with the most pressing environmental issues. ■

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