Annual Report 2006

SWINBURNE UNIVERSITY OF TECHNOLOGY

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SWINBURNE
UNIVERSITY OF
TECHNOLOGY

Contents

April 2007

The Honourable Jacinta Allan, MP
Minister for Skills, Education Services and Employment
Level 1, 2 Treasury Place
East Melbourne VIC 3001

Dear Minister

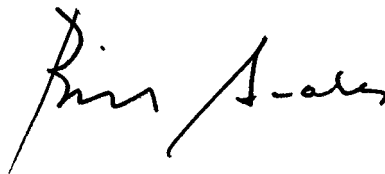It gives us great pleasure to submit the 2006 Annual Report, including the Report of Operations and the Audited Financial Statements for Swinburne University of Technology, in accordance with the *Financial Management Act* 1994.

The Annual Report was approved by Council at its meeting on 2 April 2007.

Yours sincerely

Professor Ian Young
Vice-Chancellor and President

Mr Bill Scales
Chancellor

By almost any measure, 2006 was a great year for Swinburne. Both the TAFE and Higher Education Divisions achieved all of their respective student load and delivery targets, with high levels of articulation between the two sectors based on effective pathways and sound access arrangements.

Therefore, it was particularly pleasing when the Minister for Education, Science and Training, Julie Bishop, announced that Swinburne will be allocated 96 new Higher Education places in 2007 – in accounting, engineering, design and psychology. This number will 'pipeline' to 258 by 2010. The 258 places represent almost 10% of all additional places awarded nationally and more than 30% of those awarded in Victoria. This outcome is reward for the strong student demand recorded by both the TAFE and Higher Education sectors at Swinburne.

Also pleasing were the 2007 Good Universities Guide ratings, derived from Department of Education, Science and Training data. Overall, Swinburne is rated the top Victorian university for 'the educational experience' of undergraduates, with five stars awarded in the categories of 'overall experience', 'teaching quality', 'generic skills' and 'overall satisfaction'.

Swinburne also performed well in comparison with its competitors in the Good Universities Guide breakdown of outcomes for particular fields of study. Swinburne graduates rated their programs for overall satisfaction, teaching quality and acquisition of generic skills higher than 80 per cent of graduates in similar fields in other universities. These results are consistent with Swinburne's excellent Learning and Teaching Performance Fund results, and they should be further strengthened by the recently-launched Professional Learning Model (see right).

Learning and teaching

Once again, Swinburne performed at the highest level in the Commonwealth Government's 2006 Learning and Teaching Performance Fund ratings. These ratings are based on learning, teaching and employment outcome measures, and additional funding of $2.5M was secured by the University as a result.

In July 2006, the Academic Board approved a range of initiatives that will give students new options to widen their discipline specialisations and to speed up, slow down or spread their studies to suit their lifestyles. The Swinburne Model of Professional Learning is an innovative approach to curriculum renewal that builds on the University's existing strengths in project-based learning, industry connections and integrated career skills development in undergraduate teaching. These changes will be in place for the 2007 intake.

In this context, in 2006 the University has approved a revised academic calendar for trial in 2007. This will have several benefits for Higher Education students. In particular, there will be a single academic calendar, replacing the five different calendars that currently run across different campuses or programs. The new calendar will allow part-time students to 'slow-track' if required, and allow full-time students, to 'fast-track' if they so desire. As this calendar allows for a summer and winter term to be operated in the 'gaps' between the existing semesters, it also provides an opportunity to evaluate alternative calendar models selectively. Commonwealth Government funding of $1.02M under the Department of Education, Science and Training's Workplace Productivity Program is supporting this initiative.

Swinburne's commitment to quality and to responsiveness in meeting stakeholder needs was rewarded by much success in the commercial fee-for-service market during 2006. For example, the TAFE School of Business and eCommerce won a 3-year Commonwealth Government contract to deliver the New Enterprise Incentive Scheme (NEIS) program. The contract is valued at approximately $1.8M, and it will see more than 500 new businesses established during 2007–2009.

The quality of Swinburne's learning and teaching received further recognition during 2006 through outstanding success at the Victorian State Training Awards. Swinburne won three Victorian Training Awards, as announced by the Minister for Education and Training, Lynne Kosky:

▹ First Stop – Swinburne's Youth Employment, Education and Training Resource Centre won the Victorian Government's Training Initiative of the Year Award. This service is located at the Croydon and Prahran campuses, providing a first point of contact for young people – especially those at risk of dropping out of school or work, but desirous of navigating a path into and through further education and training.

▹ Dr John Butler was awarded the Outstanding Teacher/Trainer of the Year Award. Dr Butler, is the course coordinator for the Diploma of Theatre Arts at Swinburne TAFE and he has been an integral part of TAFE arts programs at Swinburne since 1989. He was awarded for his outstanding contribution to vocational education and training in the arts field, including the arts program at the Melbourne Commonwealth Games.

▹ Swinburne TAFE graduate Kirk Gibson won the Outstanding Student of the Year Award (Vocational). Kirk has played a key role in supporting a school in Cambodia through a not-for-profit organisation, Australians for Cambodian Education (ACE).

In the Higher Education sphere, another testament to the significant contribution that individuals and teams are making to the quality of student learning was the award of seven Citations for Outstanding Contributions to Student Learning at this year's Carrick Awards for Australian University Teaching.

Research

Swinburne had a successful year in research in 2006. The Finance Unit estimates research revenue at $15.91M, a new record, including $4.04M in ARC Discovery Grants and $687,000 in National Health and Medical Research Council (NHMRC) Grants. Success breeds success in research funding, and the University has recently been notified of increases in its DEST Research Block Grants for 2007 – with increases in each of the three relevant schemes, the $9,354,305 to be received in 2007 represents a 4% overall improvement.

Much work was undertaken in 2006 in preparation for the introduction of the Commonwealth Government's Research Quality Framework (RQF), which will see research funding in Australia concentrated into areas of clear research strength, as measured by a national research evaluation. The bulk of this preparatory work was undertaken within Swinburne's Tier 1 and Tier 2 research centres, established in 2005 on the basis of size, research reputation and impact. In 2006, Tier 1 Centres received funding through the University's Strategic Initiatives Program Fund, while Tier 2 Centres received support from their respective faculties.

International activity

Swinburne achieved quite remarkable growth in international TAFE and Higher Education student commencements in 2006. Commencements grew by more than 40% compared with in 2005 – the highest growth recorded by any university in Australia.

Within Swinburne's TAFE Division, the newly established Swinburne College is contributing to this success. The College opened during 2006 in the TD building at the Hawthorn Campus, and it delivered foundation and degree transfer programs to 540 international students studying onshore and 244 students studying offshore.

A number of important international partnerships were forged in 2006, including a ground-breaking initiative with Northeastern University based in Boston. Northeastern is the fourth-largest private university in the United States, with around 24,000 students. Following recent approval by Swinburne Council and Northeastern's Board of Trustees, the two universities will offer two joint masters degrees. The US 'half' of the degrees will be taught by Northeastern academics seconded to Swinburne or flown out for short lecturing stints. Students will receive an Australian degree taught by Australians, and will also get a North American degree taught the way it is in the US. The joint masters program will consist of a Master of Business (International Business)/Master of Science in Leadership and a Master of Accounting/Master of Science in Leadership. A Study Centre will be set up on Swinburne's Hawthorn campus to provide support and information services for enrolled and prospective students.

Building works

All building works completed during 2006 were delivered within projected timeframes and within budget. Some of the works included:

- refurbishment of five levels of the Hawthorn Library, incorporating a 160-station 24-hour computer access laboratory
- relocation and complete fit-out for Swinburne Industry Solutions on Level 6, 60 William Street
- relocation of the offices of Information Technology Services, the Council Secretariat, the Chancellor and Vice-Chancellor, and the Strategic Planning and Quality Unit to Swinburne Place South, including complete fit-out of Level 1
- stage 6 refurbishment of the BA and EN buildings at Hawthorn
- refurbishment of the TD building to house Swinburne College
- refurbishment of Level 7, 60 William St. for the Office of Research and Graduate Studies
- works at Croydon Campus including an upgrade of the Student Information Centre (SIC) reception area, an upgrade to the reception area in the CA building, new facilities for Swinburne Press, and a new TAFE teaching barn.
- minor works at the Lilydale Campus
- a major upgrade of signage at all campuses

Swinburne's National Institute of Circus Arts (NICA) received $2.3M from the Federal Government in 2006 to extend its facilities at Prahran. Coming on top of an initial grant of $6.0M, this funding will ensure the final stages of construction and fit-out of a new training and performance venue, as an extension to NICA's current premises. The new facility will greatly benefit students studying Swinburne's circus arts programs, and provide a space for emerging artists and the established circus and performing arts industry to develop new physical work. This, in turn, will support the evolution of Australia's unique physical performance style.

Building works continued apace at Swinburne's branch campus in Kuching in Sarawak, East Malaysia, during 2006. With an overall budget of RM110M (c. $A40M), construction of the present development should be close to completion by the end of 2007. This will provide capacity for some 5,000 full-time students at the 6.7ha Sarawak site.

Work is also underway on the construction of the National Centre for Sustainability Building at the Wantirna Campus. During 2006 the Premier, Steve Bracks, announced $10M in funding for the Wantirna development, and the Office of Training and Tertiary Education (OTTE) has confirmed that the additional $2.6M required for the total construction will be funded by the State Government. The building will incorporate environmentally sustainable design principles in its construction, and accommodate facilities for training in horticulture and environmental sciences, visual merchandising, retail and renewable energy, and also the development of an EcoShop. This major project will reinvigorate the Wantirna campus, incorporating a new main entrance and new student service facilities while providing a much stronger visible presence for Swinburne on Stud Road.

Student services and sport

In response to the passage of the *Higher Education Support Amendment (Abolition of Compulsory Up-front Student Union Fees) Act* 2005, Swinburne created a highly innovative system to provide student services. The University ceased all funding to the Student Union and created the Swinburne Student Amenities Association (SSAA). The SSAA comprises both University and student representation and is charged with overseeing funding and delivery of core universal services such as student advocacy and club-based activities. The SSAA has entered into a partnership with the City of Boroondara to allow Swinburne students to use the Boroondara Community Swimming Pool at a reduced rate.

With the demise of the compulsory General Services Fee levied on students, Swinburne's sports and recreation facility would have become insolvent had the Swinburne Sports and Recreation Association ('Swinergy') not worked with Swinburne TAFE to transfer the operation of the facility to the University. Swinergy now operates as a training facility for students enrolled in sports and recreation courses at Swinburne, while continuing to offer cost-effective sports and recreation facilities for Swinburne students. This innovative solution of combining student services with a TAFE training facility has ensured the continued provision of this valuable student service.

Other significant 2006 achievements

The University, staff representatives and the National Tertiary Education Union reached understanding on a new Enterprise Bargaining Agreement (EBA) for Academic and General staff early in 2006. This agreement, which does not apply to TAFE teachers, operates from 1 July 2006 (when the existing EBA expired) to 30 September 2008. It provides guaranteed further pay increases for Academic and General staff of 12% in the period to 30 September 2008. A key consideration was to ensure that the new agreement complied with the Higher Education Workplace Reform Requirements (HEWRRs) because compliance ensures that the University receives approximately $3M in extra Commonwealth funding per annum.

In 2006 the Commonwealth Government provided Swinburne with $800,000 under the Workplace Productivity Program Funding scheme to assist in a Business Process Management (BPM) project. The BPM project is identifying, standardising and documenting a range of business processes across the University.

Swinburne Lilydale was incorporated into the Higher Education Division in 2006. This decision opened up a broader range of courses and options for Lilydale students, as well as providing administrative savings to be reinvested into academic activities.

Swinburne was established in 1908 as the Eastern Suburbs Technical College by the Honorable George Swinburne, a former Mayor of Hawthorn and member of the Parliament of Victoria. The first students were enrolled in 1909, when classes began in carpentry, plumbing and blacksmithing. In 1913, the institution changed its name to the Swinburne Technical College.

Swinburne Council was given power to grant bachelor degrees in the 1970s, with the first of these awarded at a conferring ceremony held on Thursday, 21 May 1981 at the Camberwell Civic Centre.
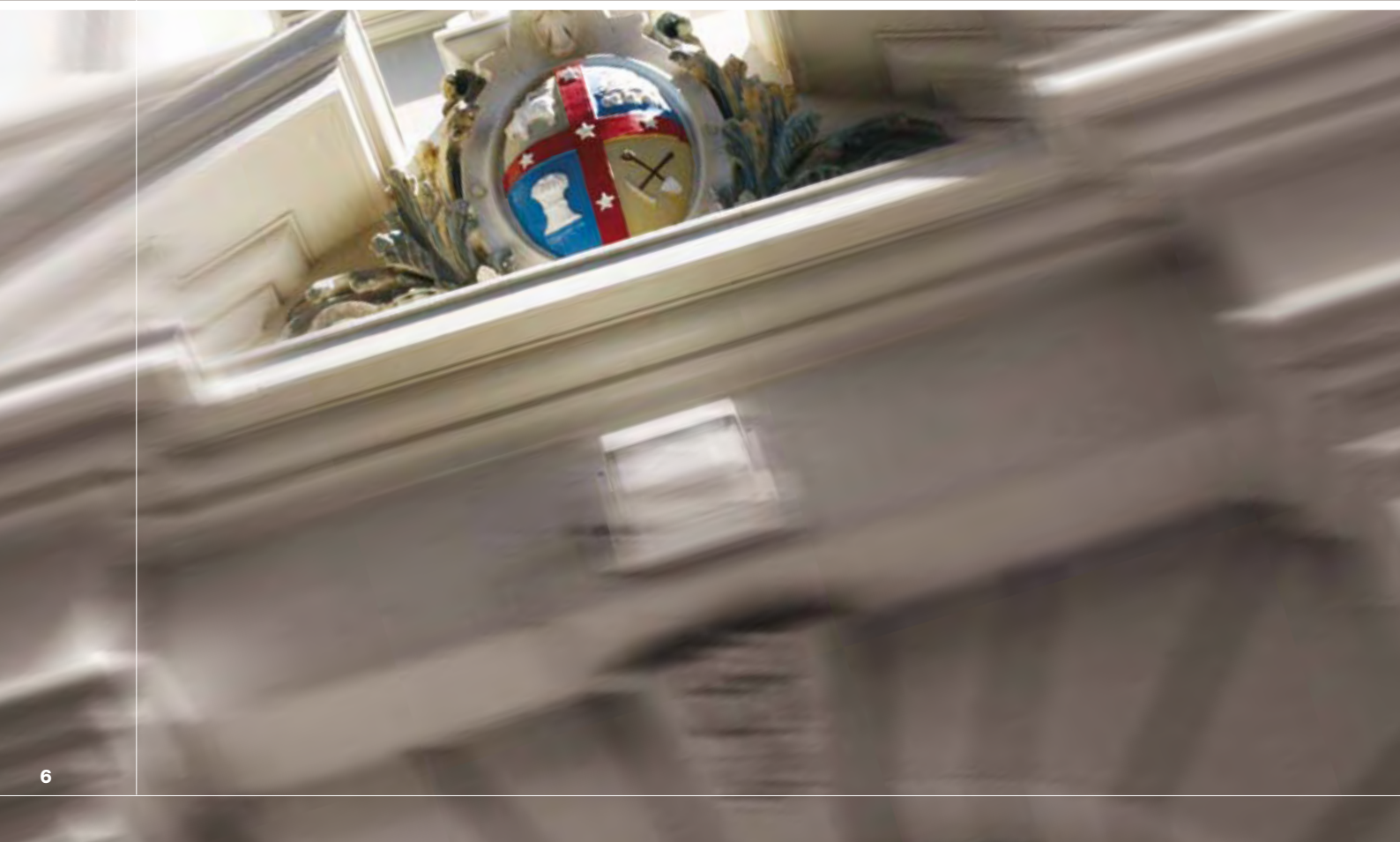
The 1992 proclamation of the *Swinburne University of Technology Act* by the Parliament of Victoria marked not only recognition of Swinburne's distinguished history, but the beginning of a new period of growth and innovation. Noted Australian businessman, Mr Richard Pratt, was installed as Swinburne's Foundation Chancellor on 15 March 1993, with Professor J. G (Iain) Wallace the inaugural Vice-Chancellor. Professor Wallace retired in 2003 and was replaced by Professor Ian Young.

From its establishment in 1908 in Melbourne's eastern suburbs at Hawthorn, through mergers with Prahran Institute of TAFE in 1992 and Eastern Institute of TAFE in 1998, Swinburne has grown from being a local provider of technical education into a multi-disciplinary, multi-campus provider of education, training and research of national and international significance.

The coat of arms

Swinburne holds a unique position among educational institutions in Australia in the link that persists between it, the founder and his family. The conferring of a modification of the family's coat of arms preserves and strengthens that link.

The arms: the basic colours of red and white, and the cinquefoils charged on the shield, commemorate the arms of the Swinburne family. The four Mullets in the Cross symbolise the Southern Cross.

The crest: the demi-Boar and the cinquefoil perpetuate the Swinburne connection; the book is symbolic of learning.

The motto: the College of Arms' translation of the motto is 'Achievement through learning'.

Objectives

The University's objects and functions are detailed in Section 6 of the Swinburne University of Technology Act:

(a) the development of an institution with excellence in teaching, training, scholarship, research, consultancy, community service and other educational services and products, with emphasis on technology and its development, impact and application

(b) the provision of a multi-level system of post-secondary education programs relevant to the needs of the community covering a range of fields and levels from basic trade to post-doctoral studies with provision for recognition of prior learning and flexibility of transition between programs

(c) the provision of high quality educational, research, residential, commercial, cultural, social, recreational, sporting and other facilities

(d) the advancement of knowledge and its practical application by research and other means, the dissemination by various means of the outcomes of research and the commercial exploitation of the results of such research

(e) the participation in commercial ventures and activities

(f) the fostering of the general welfare and development of all enrolled students

(g) the conferring of prescribed degrees and the granting of prescribed diplomas, certificates and other awards

(h) the provision of opportunities for development and further training for staff of the University

(i) the development and provision of educational, cultural, professional, technical and vocational services to the community and in particular the fostering of participation in a university of technology of persons living or working in the outer eastern region of Melbourne

(j) the provision of programs, products and services in ways that reflect the principles of equity and social justice

(k) the maintenance of close interaction with industry and the community and the development of associations or agreements with any educational, commercial, governmental or other institution

(l) the enhancement through the development of knowledge and skills of the ability to shape technology, social and economic processes and to recognise, understand and take account of the ethical, environmental and other implications of such processes

(m) the conduct of teaching, research, consultancy and development activities within and outside Australia

(n) generally, the development and operation of a university providing appropriate and accessible academic and other programs, courses of study, educational products and research activity such as the Council considers necessary for the attainment of the foregoing in Victoria and elsewhere

A copy of the Act is available at the following website: www.austlii.edu.au/au/legis/vic/consol_act/suota1992422

Relevant Minister

Swinburne University was established under the Swinburne University of Technology Act 1992. The relevant Minister in 2006 was the Victorian Minister for Education and Training. For funding purposes and some aspects of strategic planning, the relevant Minister in 2006 was the Federal Minister for Education, Science and Training.

Nature and range of services

As a dual-sector, multi-campus educational institution, Swinburne offers a range of programs from apprenticeships to PhDs across the broad fields of:

- applied sciences
- business
- design
- engineering
- multimedia
- information technology and communications
- psychology and social sciences
- performing arts
- humanities

The University operates across six campuses in Australia – Croydon, Hawthorn, Healesville, Lilydale, Prahran and Wantirna – and at one international campus, in Kuching, Sarawak, Malaysia.

Swinburne provides career-oriented education and is strongly committed to focused research. Its robust technology base and effective links with industry are supported by a number of cutting-edge, internationally recognised research centres. Learning and Teaching is a strategic priority, reflecting Swinburne's commitment to life-long learning.

Industry-based learning (IBL) is a feature of Swinburne undergraduate courses, reflecting their applied vocational emphasis and industry relevance. Swinburne was a pioneer of IBL, which places students directly in industry for vocational employment as an integral part of the course structure.

As one of Australia's leading intersectoral universities, Swinburne continues to create new approaches to integration between higher education and TAFE. The concept of 'pathways' has a high profile at Swinburne, and is seen as one of the institution's strengths.

Pathways allow students to move between TAFE and higher education, or TAFE-based VCE studies into TAFE programs. Movement between higher education degrees and TAFE studies also occurs, and it is likely to increase in the future. A number of credit transfer arrangements for credit in higher education courses based on TAFE study are also in place and regularly reviewed. Pathways and credit transfer provide students with more flexibility and increased opportunities to complete tertiary qualifications.

Swinburne also offers dual qualifications that enable students to enrol in both TAFE and higher education courses at the same time. Through the use of cross-credits, students can attain a balance of theoretical and vocational learning during their study.

Teaching Divisions

Swinburne has two teaching divisions under the control of the Council: Higher Education and TAFE, each headed by a Deputy Vice-Chancellor. Programs offered in the Higher Education sector include undergraduate degrees, graduate certificates, graduate diplomas, masters (by research and coursework), professional doctorates and PhDs. The Academic Board oversees higher education academic matters, including quality assurance matters.

The TAFE sector offers courses at professional, para-professional and technical levels covering advanced diploma, diploma, certificate, apprenticeship, VCE, access and graduate certificate qualifications. A number of specialist training programs are also provided for industry and the wider community. Academic issues are overseen by the Board of TAFE Studies.

Higher Education Division

Hawthorn, Lilydale, Prahran and Sarawak campuses

www.swinburne.edu.au/hed

There are six faculties within the Higher Education Division, offering a range of undergraduate and postgraduate coursework and research programs focused around the themes of: professional engineering; information technology; business innovation and management; design; multimedia; and health and human services. The six faculties are:

▶ Faculty of Business and Enterprise

▶ Faculty of Design

▶ Faculty of Engineering and Industrial Sciences

▶ Faculty of Information and Communication Technologies

▶ Faculty of Life and Social Sciences

▶ Faculty of Higher Education, Lilydale

In addition, the University has the National Institute of Circus Arts (NICA), which conducts both TAFE and higher education level courses.

TAFE Division

Croydon, Hawthorn, Healesville, Lilydale, Prahran, Wantirna and Sarawak campuses

www.tafe.swinburne.edu.au

Swinburne's TAFE Division is a major provider of technical and vocational education in business, engineering, industrial science, social science, arts and community services. There are four teaching schools in the Division:

▶ School of Arts, Hospitality and Sciences

▶ School of Business and eCommerce

▶ School of Engineering

▶ School of Social Sciences

The TAFE Division also incorporates two Groups: the Educational Development Group and the Strategic and Business Development Group. In addition to its campus-based delivery, the Division provides much training in workplace settings and many programs through various models of distance and blended delivery.

Organisational profile

Corporate Groups

Two Corporate Groups provide a range of services to support the University's mission in education and research. Towards the end of 2006, a decision was made by the University to merge the Student Affairs Group with the Resources Group and other corporate areas.

Resources Group

www.swinburne.edu.au/corporate/ovp_resources

The Resources Group provides strategic and executive management of the physical, human and information resources of the University through the following departments:

- Facilities and Services
- Human Resources
- Information Resources
- Information Technology Services
- Security

Student Affairs Group

www.swinburne.edu.au/corporate/student_affairs

The Student Affairs Group leads and manages the activities of a number of departments focused on meeting the needs of students (prospective, current and past) and on supporting teaching units:

- Alumni and Development
- Careers and Employment
- Marketing
- Student Recruitment
- Student Operations
- Student Services
- Swinburne Press
- University Secretariat

Other corporate units

Chancellery

The Chancellery comprises the offices of the Vice-Chancellor, the Deputy Vice-Chancellors, the Pro Vice-Chancellors, and the Vice-Presidents. The Council Secretariat, Finance Department, Strategic Planning and Quality Unit, Internal Audit and Swinburne Legal are also part of the Chancellery.

The Chancellery, responsible to the University Council, has a range of individual and collective responsibilities. It is concerned with policy development and matters affecting the University as a whole.

Its principal functions include strategy development and strategic planning for the University, distribution of resources to meet strategic and operational requirements, monitoring progress towards the achievement of institutional objectives, and ensuring an effective interface between the University, State and Federal Governments, business, industry and the wider community.

International Division

www.swinburne.edu.au/international

The Pro Vice-Chancellor, International heads the International Division coordinating and leading the development of the University's international operations.

Office of Research and Graduate Studies

www.swinburne.edu.au/research/welcome.htm

The Pro Vice-Chancellor, Research coordinates the University's research function, and leads the Graduate Research School and Office of Research and Graduate Studies.

Governance

An overview of the University's governance arrangements is at:

www.swinburne.edu.au/chance/GovernIntro.htm

Council

Deriving its powers from the Swinburne University of Technology Act (1992), the Council is the governing body of the University and has responsibility for its direction and superintendence. The Act also allows the Council to make statutes relating to "all matters relating to the organisation, management and good government of the University...". Council acts on behalf of the Victorian community in overseeing the affairs of the University.

Members of Swinburne Council

Members of Swinburne Council (continued)

Internal Members

Category of Membership	Name	Expertise (as appropriate)	Other Boards	Qualifications, Honours and Awards	Years of Service
Ex Officio Vice-Chancellor	Professor I (Ian) YOUNG		Swinburne Limited; Swinburne Sarawak Holdings Sdn Bhd; Swinburne Graduate School of Integrative Medicine Pty Ltd; Business-Higher Education Round Table, Open Universities Australia Pty Ltd; National Institute of Circus Arts Ltd; Swinburne Student Amenities Association Ltd; IDP Education Ltd; Swinburne (Holdings) Pty Ltd; VERNet Pty Ltd	BE (Hons), MEngSc, PhD (James Cook), CPEng, FIEAust, FTSE	4
Ex Officio Chair of the Academic Board	Professor H (Helmut) LUECKENHAUSEN	Higher education programs	Victorian Endowment for Science Knowledge and Innovation (Design Subcommittee); National Institute for Circus Arts; International Craft Design Association. Previously: World Crafts Council, Craft Australia, Craft Victoria; Canterbury Girls Secondary College Council	GradDip(Industrial Design) (RMIT), DipEd(Hawthorn), MDIA, AADM	9
Ex Officio Chair of the Board of TAFE Studies	Ms L (Louise) PALMER	TAFE programs		Grad Cert App Sci (Instructional Design) (Deakin), DipTeach (UniSA), (Ass Dip Arts (Health Ed) (WACAE), CertDentalTher (SA School of Dental Therapy)	2
Elected by Higher Education Academic Staff	Professor M (Min) Gu	Higher Education and Research	Board of the International Commission for Optics; Board of the International Society for Optics Within Life Sciences	BSc (Shanghai Jiaotong), MSc and PhD (Chinese Acad Sc)	1
Elected by TAFE Academic Staff	Mr G (Gage) ROSSITER	TAFE teaching	Previously: Liquor Licensing Panel; Australian Society of Wine Education (President)	Cert IV Workplace Assessment and Training	5
Elected by General Staff	Ms V (Vicki) RYAN	General staff		GradDipAcc (SUT)	2
Elected by Higher Education Students	Mr M (Michael) KANDELAARS	Student representation	Previously: Swinburne Student Union		2
Elected by TAFE Students	Ms V (Vicky) KASIDIS	Student representation	Previously: Swinburne Student Union		3

Indemnifying Council Member

Swinburne University of Technology has not, during or since the end of the financial year, indemnified or made any relevant agreement for indemnifying against a liability incurred any councillor or council member, including costs and expenses in successfully defending legal proceedings; or paid or agreed to pay a premium in respect of a contract insuring against a liability incurred as a councillor for the cost or expenses to defend legal proceedings; with the exception of the following matter:

During or since the financial year Swinburne University of Technology has paid premiums to insure each of the responsible persons against liabilities for costs and expenses incurred by them in defending any legal proceedings arising out of their conduct while acting in the capacity of a councillor, other than conduct involving a wilful breach of duty in relation to the University.

Attendance record of Council members

Member	Meetings Held	Eligible to Attend	Attended
Bill Scales	6	6	6
Kathy Bowlen	6	6	4
Trevor Brown	6	6	6
Ben Cohen	6	6	5
David Eynon	6	6	3
Heather Gray	6	6	6
Min Gu	6	5	3
Robert Hodges	6	6	5
David Loader	6	6	6
Helmut Lueckenhausen	6	6	3
Michael Kandelaars	6	6	1
Vicki Kasidis	6	6	4
Louise Palmer	6	6	5
Gage Rossiter	6	6	5
Vicki Ryan	6	6	5
Kathleen Townsend	6	6	5
Jan Trewhella	6	6	5
Stephen van der Mye	6	6	4
Douglas Watson	6	6	5
Ian Young	6	6	6

Swinburne University of Technology Committees

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                              │     COUNCIL     │
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  │ STATUTORY BOARDS OF THE        │          │    COMMITTEES OF COUNCIL       │
  │ UNIVERSITY                     │          │                                │
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 │ ACADEMIC     │  │ BOARD OF     │        │ STANDING     │  │ OTHER        │
 │ BOARD        │  │ TAFE STUDIES │        │ COMMITTEES   │  │ COMMITTEES   │
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ACADEMIC BOARD

Academic Policy and Planning Committee

Academic Programs Quality Committee

Research Higher Degrees Committee

STANDING COMMITTEES

Audit and Risk Committee

Campus Planning and Building Committee

Executive Committee

Finance Committee

Governance and Membership Committee

Legislation Committee

Remuneration Committee

Staffing Committee

Strategy and Performance Review Committee

OTHER COMMITTEES

Animal Experimentation Ethics Committee

Human Research Ethics Committee

Honorary Degrees and Professors Emeritus Committee

Council boards and committees

Swinburne has two statutory boards, the Academic Board and the Board of TAFE Studies. These Boards oversee academic programs of study – for the Higher Education and TAFE Divisions, respectively.

Academic Board

The powers of Academic Board, as set down in Section 30 of the *Swinburne University of Technology Act*, are as follows.

The Academic Board:

▹ may discuss and submit to the Council an opinion on any matter relating to the prescribed higher education programs of the University and, in particular, may make to the Council such recommendations as it thinks proper with respect to instruction, studies, discipline, examinations, assessments, research, degrees and diplomas in those programs of the University

▹ must report to the Council on all matters submitted to it by the Council for report

▹ has such other powers and duties as are conferred or imposed upon it by this Act or by the Statues or Regulations

▹ subject to this Act and, except as otherwise prescribed by the Statutes and Regulations, may regulate its own proceedings

Board of TAFE Studies

The powers of the Board of TAFE Studies, as set down in Section 35 of the *Swinburne University of Technology Act*, are as follows:

▹ academic oversight of prescribed programs and courses of study in technical and further education

▹ providing advice to the Council and the Board of Technical and Further Education on:

(i) the conduct and content of those programs and courses; and

(ii) the awarding of certificates and diplomas in technical and further education

Standing committees of Council

Audit and Risk Committee:
Chancellor, Dr S van der Mye (Chair) Mr B Cohen, Mr T Brown, Ms S Freeman

Assists Council in fulfilling its governance responsibilities and assures the quality and reliability of financial information presented by the University. The Committee establishes and oversees conformance with ethical standards and legal compliance, ensures adequate systems of internal control and risk management operate, reviews the annual internal audit plan and monitors relationships with the Office of the Auditor-General. It also appoints and liaises with the University's external auditor and receives, reviews and acts on reports from this auditor.

Campus Planning and Building Committee:
Chancellor, Mr D Eynon (Chair), Mr R Hodges, Professor I Young, Professor Min Gu, Ms V Kasidis

Advises Council on major matters affecting campus planning and buildings, and on overall planning for the physical development of the University's campuses. The Committee considers strategic directions associated with campus planning and building development, and identified associated financial, physical and human resource implications.

Executive Committee:
Chancellor, Mr T Brown, Professor I Young, Ms K Bowlen, Mr D Eynon, Professor H Lueckenhausen, Ms V Kasidis

Meets to consider matters that require an immediate decision between Council meetings. The Committee advises the Chancellor and Vice-Chancellor on matters which should not be delayed until the next Council meeting, and acts for Council between Council meetings in considering and acting upon matters referred to it by Council.

Finance Committee: Chancellor, Mr T Brown (Chair), Mr D Watson, Mr D Eynon, Professor I Young, Mr G Rossiter, Mr M Kandelaars

Has specific authority to monitor and approve the financial performance of the University. The Committee approves detailed budgets for all divisions of the University, considers and approves the University's annual accounts, and acts on behalf of the University in areas of delegated authority.

Governance and Membership Committee: Chancellor, Mr D Loader (Chair), Mr T Brown, Ms J Trewhella, Professor H Lueckenhausen

Reviews the governance framework of the University, and makes recommendations to Council on the appointment of wider community members of Council, ensuring an appropriate range of skills, experience and expertise, and succession planning.

Honorary Degrees and Professors Emeritus Committee: Chancellor (Chair), Mr T Brown, Professor I Young, Professor H Lueckenhausen, Professor K Pratt

Receives and considers submissions for the conferring of honorary degrees and the title of Professor Emeritus. The Committee meets as required to consider these nominations to the Vice-Chancellor and makes recommendations to Council.

Legislation Committee: Chancellor, Ms H Gray (Chair), Professor I Young, Mr G Rossiter, Ms V Kasidis

Advises Council on legislation matters affecting the University. The Committee meets as required and also considers matters referred to it by Council or the Vice-Chancellor.

Remuneration Committee: Chancellor (Chair), Mr T Brown, Ms K Bowlen, Mr D Eynon

Staffing Committee: Chancellor, Ms K Bowlen (Chair), Ms K Townsend, Professor I Young, Ms V Ryan, Ms V Kasidis

Advises Council on human resources issues including staffing and other appropriate policies, and considers strategic directions in the staffing area.

Strategy and Performance Review Committee: Chancellor, Mr D Watson (Chair), Mr T Brown, Professor H Lueckenhausen, Ms L Palmer, Ms K Bowlen, Mr R Hodges, Mr M Kandelaars

Provides input into development of the University's mission, strategic directions, profile and positioning, and monitors the performance of the University against planning objectives.

Ad hoc committees of Council

Meet twice a year to discuss the performance and remuneration of the Vice-Chancellor.

Ethics Committees are organised through the Office of Research and Graduate Studies and provide a report for Council's information.

Risk management

Council has adopted a statement of its primary responsibilities, which includes to: "... ensure systems of control, risk management, compliance and accountability are in place, including for controlled entities."

Responsibility for oversight of University commercial operations and ventures rests with Finance Committee, on behalf of Council. Finance Committee requires business plans to be submitted for all such operations and ventures on a standard proforma. Where a related company is to be established, Finance Committee requires officers of the University and of the company to ensure that key issues have been considered, due diligence undertaken and procedures put in place. The constitution of a company and business plan must be approved by Finance Committee, as well as any subsequent changes.

In entering into any venture or establishing any company, the Finance Committee seeks to ensure that public assets are protected, and the control of company assets is determined. Finance Committee establishes an approved process for the appointment of directors to related companies, and ensures that University appointees have appropriate financial expertise.

Finance Committee also maintains a list of companies, ventures and major projects that require monitoring. Designated individuals are required to submit progress reports based at designated intervals. Onward reporting to Council is normally via the Finance Committee Report to Council.

The University implemented its Risk Management Policy and Principles in July 2001. The policy, based on the Australian/New Zealand Standard for Risk Management (AS/NZ 4360:1995), provides a comprehensive approach to identifying and managing risk within units. Under it, all unit managers have responsibility for the ongoing consideration, assessment and appropriate action to address risk in their areas of responsibility including:

- occupational health and safety
- employee relations
- financial operations
- emergency management
- insurance protection

A Risk Management Framework supports this responsibility through deployment of a number of approaches including:

- development or review of policies for specific areas
- a risk management workshop program
- ongoing internal audit

The following table details the nature and extent of risk for associates and commercial ventures with a capital investment in excess of $100,000, or turnover exceeding $500,000, and those associates and ventures which have no limited liability.

Associate/Commercial Venture	% (Ownership)	Principal Objects	Level of Financial Risk (High, Medium, Low)	Level of Reputational Risk (High, Medium, Low)
Swinburne Limited	100	Property holding company, for the land and buildings leased to the University	Low	Low
Swinburne Ventures Limited	100	Trustee for the Swinburne Intellectual Property Trust	Low	Low
National Institute of Circus Arts Limited	100	To promote and enhance the cultural development of the Australian arts industry by providing high-level quality training in circus arts and physical theatre	Low	Low
Genos Pty Ltd	24	A vehicle to market the Swinburne University Emotional Intelligence Test (SUEIT)	Low	Low
Nanotechnology Company Limited by Guarantee	25	To conduct development and demonstration projects using nanotechnologies	Low	Low

University Companies and Controlled Entities

BR (Vic) Pty Ltd (De-registered 21 May 2006)

Graduate School of Integrative Medicine (De-registered 21 May 2006)

National Institute of Circus Arts Limited

Swinburne Limited

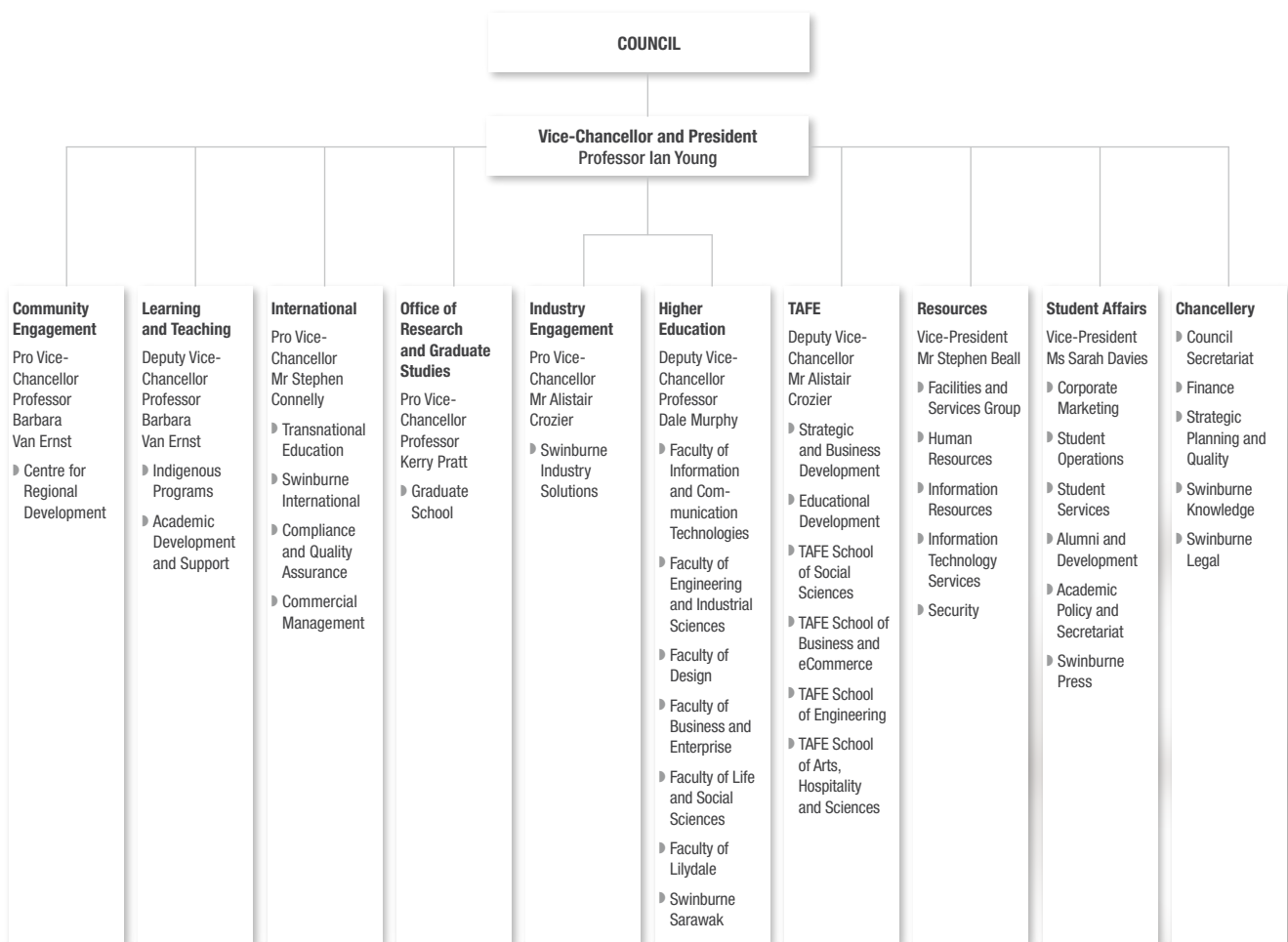Swinburne Students Amenities Association

Swinburne Ventures Ltd

Statutes and Regulations amended in 2006

Statute 21	Board of Technical Studies
Statute 22	The Academic Board
Regulation 2	The Council
Regulation 13	Degrees / Diplomas / Certificates and Other Awards
Regulation 18	Titles for people associated with the University
Regulation 21	Board of Technical Studies
Regulation 22	The Academic Board

Addition

Statute 25	University Divisions, Faculties / Schools and Boards

Swinburne University of Technology Organisation Chart

COUNCIL

Vice-Chancellor and President
Professor Ian Young

Community Engagement
Pro Vice-Chancellor Professor Barbara Van Ernst
▶ Centre for Regional Development

Learning and Teaching
Deputy Vice-Chancellor Professor Barbara Van Ernst
▶ Indigenous Programs
▶ Academic Development and Support

International
Pro Vice-Chancellor Mr Stephen Connelly
▶ Transnational Education
▶ Swinburne International
▶ Compliance and Quality Assurance
▶ Commercial Management

Office of Research and Graduate Studies
Pro Vice-Chancellor Professor Kerry Pratt
▶ Graduate School

Industry Engagement
Pro Vice-Chancellor Mr Alistair Crozier
▶ Swinburne Industry Solutions

Higher Education
Deputy Vice-Chancellor Professor Dale Murphy
▶ Faculty of Information and Communication Technologies
▶ Faculty of Engineering and Industrial Sciences
▶ Faculty of Design
▶ Faculty of Business and Enterprise
▶ Faculty of Life and Social Sciences
▶ Faculty of Lilydale
▶ Swinburne Sarawak

TAFE
Deputy Vice-Chancellor Mr Alistair Crozier
▶ Strategic and Business Development
▶ Educational Development
▶ TAFE School of Social Sciences
▶ TAFE School of Business and eCommerce
▶ TAFE School of Engineering
▶ TAFE School of Arts, Hospitality and Sciences

Resources
Vice-President Mr Stephen Beall
▶ Facilities and Services Group
▶ Human Resources
▶ Information Resources
▶ Information Technology Services
▶ Security

Student Affairs
Vice-President Ms Sarah Davies
▶ Corporate Marketing
▶ Student Operations
▶ Student Services
▶ Alumni and Development
▶ Academic Policy and Secretariat
▶ Swinburne Press

Chancellery
▶ Council Secretariat
▶ Finance
▶ Strategic Planning and Quality
▶ Swinburne Knowledge
▶ Swinburne Legal

Profiles of senior executives

Chancellor

Mr B Scales AO, FIPAA, BEc (Mon)

*The Chancellor is the titular and
ceremonial head of the University.
The Chancellor is also the Chair
of the University's governing body,
the Council.*

Vice-Chancellor

Professor Ian Young, BE (Hons),
MEngSc, PhD (James Cook), CPEng,
FIEAust, FTSE

*The Vice-Chancellor is the Chief Executive
Officer and President of the University,
responsible and accountable to Council for
all aspects of the efficient and effective
operation of the University.*

Pro Vice-Chancellor,
International Division

Mr Stephen Connelly, BA(Hons), DipEd,
MA (Mon), PostGradDipMan (MBS)

*The Pro Vice-Chancellor, International, is
responsible for the leadership, planning
and coordination of the University's
international activity and for the operations
of Swinburne International.*

Pro Vice-Chancellor, Research

Professor Kerry Pratt, BE(Chem),
PhD (Melb), FTSE, FIChE, FIEAust, CEng,
FRACI, CChem

*The Pro Vice-Chancellor, Research, is
responsible for the leadership, planning
and coordination of the University's research
function, and for the Office of Research and
Graduate Studies.*

Vice-President, Student Affairs

Ms Sarah Davies, BA(Hons) (Leic),
DipMarketing (CIM), FAMI, CPM

*The Vice-President, Student Affairs, is responsible
for relations with the community, and services
that support students, including Alumni and
Development, Careers and Employment,
Corporate Marketing and Student Recruitment,
Student Operations, Student Services,
Swinburne Press and the University Secretariat.*

*The Deputy Vice-Chancellors in charge of each Division are
responsible for the leadership, planning and management of
all academic and administrative activities within their Divisions.*

Deputy Vice-Chancellor,
Higher Education Division
(Hawthorn and Prahran)

Professor Dale Murphy, BE,
MSc, DPhil (Oxon), MAIP,
FIEAust, CPEng

Deputy Vice-Chancellor,
TAFE Division
Pro Vice-Chancellor,
Industry Engagement

Mr Alistair Crozier, BSc(Hons)
(London), PGCE (Camb), ARCS

Deputy Vice-Chancellor,
Learning and Teaching
Pro Vice-Chancellor,
Community Engagement

Professor Barbara van Ernst, AM,
BA, BEd (Mon), MEd (LaTrobe),
PhD (LaTrobe), TPTC, MACE

Pro Vice-Chancellor,
Academic

Professor David Booth
BSc(Hons) (Syd), MSc (Mon),
PhD (Melb), DSc (DLSU) (honoris
causa), FAIP, MIEEE, MAOS

Vice-President, Resources

Mr Stephen Beall

*The Vice-President, Resources,
has responsibility for the major
administrative and operational areas
of Facilities and Services, Human
Resources, Information Resources,
Information Technology Services,
and Security.*

Statistical information on student enrolment levels and training delivery in 2006 – TAFE

The Swinburne TAFE Division achieved all of the targets for enrolments (headcount) and student contact hours (SCH) included in its 2006 Performance and Funding Agreement (PFA) with the State Government. This was particularly pleasing because 2006 was the first year of the implementation of a Weighted Training Hours (WTH) funding model with specific floor (minimum) and ceiling (maximum) targets for delivery in various areas of high and low priority. Achievement against the PFA student contact hour and headcount targets set by State Government was as follows:

- L profile (apprenticeships and traineeships) – 683,674 SCH, 103.6% of the PFA target (659,628 SCH)

- P profile ('mainstream' government-funded training) – 5,470,798 SCH, 100.6% of the PFA target (5,437,623 SCH)

- Q profile ('special' government-funded training) – 38,416 SCH, 101.0% of the PFA target (38,320 SCH)

- Z99 profile (youth pathways) – 47,756 SCH, 101.6% of the PFA target (47,000 SCH)

- PRK profile (indigenous programs) – 47,430 SCH, 158.1% of the PFA target (30,00 SCH)

- VCAL – 84 (headcount), 129.2% PFA target (65 students)

- training delivery to people aged < 25 years – 622,121 SCH, 126.4% of PFA target (492,000 SCH) – head count = 10,513 students

- training delivery to people aged > 44 years – 604,050 SCH,139.0% of PFA target (435,000 SCH) – headcount = 12,209 students

- Module Load Completion Rate – 74.26% (government funded), 69.11% (all fund sources)

- Net Operating Margin = 7.69%

- Total cost of delivery per SCH = $11.07 (excludes short course delivery of 118,283 SCH)

- Revenue (excluding capital) per EFT staff member = $101,658 (total revenue excluding capital income = $104,199,131; EFT staff = 1,025; teaching 433; general 382; casual 202; executive 8)

Students, 2004–2006 (TAFE sector)	2004	2005	2006
Total student enrolments (persons)	41,350	32,986[1]	30,738[1]
Accredited VET courses	30,755	23,646	22,902
Short courses	10,595	9,340	7,836
Total student contact hours (SCH)	9,771,388	8,459,035	8,791,929
Total student load (EFTS)	13,571	11,749	12,211
By funding source (EFTS)			
State	8,625	8,695	8,669
Domestic fee-paying	3,795	2,078	2,332
Overseas fee-paying	779	684	914
Short courses	248	200	164
Other[2]	124	92	132
By level of course (EFTS)			
Postgraduate coursework	81	88	93
Diploma	4,706	4,516	4,267
Certificate	7,856	6,285	6,906
Short courses	248	200	164
Other[3]	680	660	781
By teaching unit (EFTS)			
School of Arts, Hospitality and Sciences	1,833	1,928	2,042
School of Business and eCommerce	3,068	2,897	3,000
School of Engineering	2,238	2,248	2,375
School of Social Sciences	2,979	3,054	3,127
National Institute of Circus Arts	110	106	96
Other[4]	3,343	1,516	1,571
By campus (EFTS): excludes short courses			
Croydon	1,527	1,557	1,649
Hawthorn	3,051	3,036	3,313
Healesville	39	143	118
Lilydale	901	779	687
Prahran	2,790	2,658	2,591
Wantirna	1,595	1,697	1,673
Other[5]	3,420	1,679	2,016
By gender (EFTS): excludes short courses			
Female	6,605	5,592	5,660
Male	6,718	5,957	6,387
By attendance type (persons): excludes short courses			
Full-time	6,204	6,296	6,268
Part-time	24,551	17,350	16,634

[1] The decrease in enrolments between 2004 and 2005 relates to a single fee-for-service activity. The decrease in enrolments between 2005 and 2006 relates to a change from part-time to full-time study by students. Student contact hours (SCH) delivered increased between these years.
[2] Includes interstate trainees and VET in VCE
[3] Includes ELICOS, VCE/VCAL and non-certificate programs.
[4] Includes students in Distance Education, ELICOS, Swinburne College and Short Courses, and Industry Consulting (SIS) training that is not linked to Schools.
[5] Includes workplace, distance, outreach and offshore delivery.

Swinburne at a glance

Statistical information – Higher Education

Swinburne comfortably achieved its Commonwealth Grant Scheme (CGS) student load targets in 2006. The CGS student load was 5,955 EFTSL (equivalent full-time student load) – 9% above the minimum target (5,449 EFTSL).

[1] In 2004, a student is defined as a commencing student if commencing after 31 August in the previous year

[2] Includes Bachelor Honours

[3] Full-time = undertaking an annual study load of 6 standard units or more

[4] From 2005 on, a student is defined as a commencing student if commencing after 1 January of a particular DEST collection year

Students, 2004–2006 Higher Education sector	2004	2005	2006
Total student enrolments (persons)	14,907	15,123	16,463
Commencing enrolments (persons)	5,281[1]	5,768[4]	6,679[4]
Total student load (EFTSL)	10,102	10,351	11,478
Commencing load (EFTSL)	3,587[1]	4,045[4]	4,746[4]
By funding source			
Government operating grant (EFTSL)	6,003	5,916	6,481
Fee-paying overseas (EFTSL)	2798	3,097	3,938
Fee-paying local (EFTSL)	1,301	1,338	1,059
By level of course			
Postgraduate research (EFTSL)	375	456	400
Postgraduate coursework (EFTSL)	2,056	1,841	2,061
Bachelors degree[2] (EFTSL)	7,671	8,055	9,016
By teaching unit			
Faculty of Business and Enterprise	1,919	2,345	2,908
Faculty of Design	980	1,143	1,393
Faculty of Engineering and Industrial Sciences	1,542	1,577	1,745
Faculty of Information and Communication Technologies	2,026	1,694	1,708
Faculty of Life and Social Sciences	1,885	1,946	2,220
Lilydale	1,739	1,619	1,473
National Institute of Circus Arts	–	19	23
Academic Support and Development	11	7	8
By campus			
Hawthorn (EFTSL)	7,383	7,265	7,898
Lilydale (EFTSL)	1,739	1,619	1,473
Prahran (EFTSL)	980	1,162	1,416
Sarawak, Malaysia (EFTSL)		305	691
By gender			
Female (EFTSL)	4006	4,195	4,700
Male (EFTSL)	6096	6,156	6,777
By attendance type			
Full-time[3] (persons)	7,496	7,509	8,708
Part-time (persons)	7,411	7,614	7,755

Staffing profile (FTE)* by classification and teaching divisions, 2004–2006
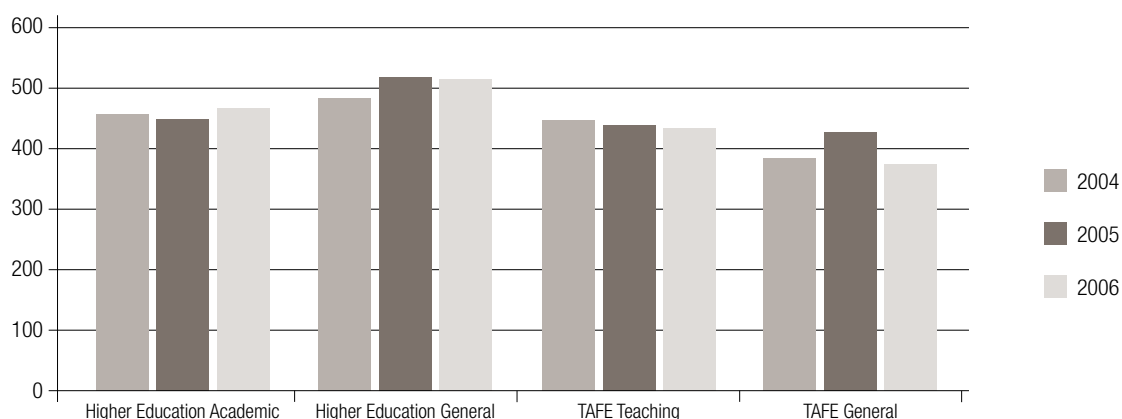
[1] Full-Time Equivalent (FTE) staff: excludes casual and sessional staff for both TAFE and Higher Education, and also TAFE executive officers. Chancellery / Corporate staff allocated to Teaching Divisions in proportion to budget allocations. Data sources: OTTE (as at 31 December) and DEST (as at 31 March)

[2] The significant decrease in TAFE general staff between 2005 and 2006 is largely associated with the transfer of staff to Swinburne Industry Solutions (a corporate unit)

Staffing profile (FTE)[1] by classification and by teaching division	2004	2005	2006
Higher Education Academic	457	453	467
Higher Education General	484	511	509
TAFE Teaching	443	437	433
TAFE General	389	418	382[2]

Financial performance

Summary of financial results (parent entity)	2002 $000	2003 $000	2004 $000	2005 $000	2006 $000
Net assets	305,504	374,237	399,380	405,997	390,570[1]
Operating surplus (deficit)	1,566	18,595	10,328	5,256	26,496
Overseas students revenue	34,148	43,237	46,378	43,779	58,060
Commonwealth government grants	56,335	62,746	61,995	65,664	73,283
State government grants	59,839	61,886	63,660	67,757	69,449

Summary of financial results (consolidated entity)	2002 $000	2003 $000	2004 $000	2005 $000	2006 $000
Net Assets	356,063	429,623	465,224	472,662	441,694[1]
Operating Surplus (Deficit)	1,869	19,537	16,413	5,925	36,048
Overseas Students Fee Revenue	35,648	43,237	46,378	43,779	58,106
Commonwealth Government Grants	57,775	64,106	69,625	67,419	77,533
State Government Grants	60,079	61,886	63,660	67,757	69,449

Financial key performance indicators (KPIs)	2002	2003	2004	2005	2006
Number of days expenditure covered by net liquid assets	42	82	79	63	67
Current ratio (current assets/current liabilities)	152.59%	180.80%	147.20%	175.50%	188.90%
Exposure to long-term debt (LT liabilities/total funds)	33.30%	26.10%	29.50%	31.40%	30.10%
Retention of reserves (surplus (deficit)/total income)	0.80%	7.80%	6.00%	2.20%	11.40%

[1] The decrease in net assets, after allowing for the respective surpluses for the year, is principally caused by significant reductions in asset revaluation reserves, which arose from a revaluation, as at 31 December 2006, of land and buildings. Current accounting standards require buildings to be divided into respective component parts. The 31 December 2006 valuation was the first valuation undertaken in this manner and resulted in the representative of the Victorian Valuer General considerably shortening expected useful lives compared to those previously provided by such representative in the valuation as at 31 December 2003.

For many years, Swinburne has created engaging environments in which students can learn in different ways, in different places and at different rates to achieve their goals. Both within TAFE and Higher Education, the approach is learner-centred, with course development and delivery informed by scholarship, research and industry standards. Many programs are available in multiple study modes, and delivered using innovative approaches and technologies to best meet the needs of the diverse and dispersed student body. Streaming media and podcasts of classes were accessed by students more than 46,000 times in 2006.

In August 2006, the Higher Education Division launched the Swinburne Model of Professional Learning. This is an innovative approach to curriculum that builds on the University's existing strengths in project-based learning, industry connections and integrated career skills development in undergraduate teaching. It features a range of initiatives that provide students with new options to widen their discipline specialisations, and to accelerate, slow or spread their studies to suit their needs.

In support of the Professional Learning Model, work associated with Swinburne's Curriculum Framework Project (CFP) in 2006 increased the range of project-based learning options for students, strengthened industry connections and integrated career skills development more firmly at undergraduate level. Among CFP initiatives were:

▸ the development of ElectivesPlus sequences, approved at Academic Board and subsequently endorsed at Council – all undergraduate students can now choose from a range of 3-unit elective sequences (including units outside their degree discipline) aimed at broadening career skills and strengthening employability

▸ the introduction of a zero-cost Careers in the Curriculum unit, also approved at Academic Board and endorsed at Council – all commencing undergraduate students can now complete this unit, developed by Swinburne's Careers and Employment Unit, to develop their career planning and management skills

▸ extensive professional development for teaching staff, with an emphasis on experiential learning, the fostering of 'generic' graduate attributes, and effective assessment practices

▸ strategies to boost student retention

▸ the development of a common major/minor degree structure across all faculties, ultimately providing students with much greater choice in composing a course to suit their requirements, and the design of a new interdisciplinary degree

The development during 2006 of a common, flexible academic calendar across all Higher Education faculties will also support implementation of the Swinburne Model of Professional Learning in 2007 and beyond, and also support a range of specific CFP initiatives. The new calendar will be trialled in 2007, and it provides for two (summer and winter) intensive 6-week study terms. These will facilitate interdisciplinary study and provide students with new options about the 'pace' of their study.

Funds awarded to Swinburne through the 2005 Learning and Teaching Performance Fund (LTPF) were used in 2006 for a range of curriculum projects, planning for international accreditation for business programs, and for teaching equipment. Further work of this type will occur in 2007 because, as noted in the Vice-Chancellor's report, Swinburne was awarded a further $2.5M in 2006 through the second LTPF funding round as a result of the University's continuing excellence.

Other important initiatives in Higher Education at Swinburne during 2006 included the development of a new academic promotions policy and the development and accreditation of new academic offerings, including Master of Commerce and Bachelor of Business (Business Systems Design) programs. Inter-faculty collaborations were important in this regard, exemplified by agreement to design of a new Bachelor of Communications degree, a joint venture between the Faculty of Design and Faculty of Lilydale. This collaboration was strengthened by the integration of the former Lilydale Division as a faculty within a unified Higher Education Division.

As well, several hundred Higher Education teaching staff participated in professional development related to flexible delivery, with many completing units in the Graduate Certificate in Teaching and Learning in Higher Education.

For Swinburne's TAFE Division, professional development for teaching staff was also emphasised in 2006, as was the design and production of learning resources to support flexible delivery. Some 370 teachers undertook training at various levels in the use of WebCT to support flexible delivery, and more than 180 undertook other relevant ICT training. Importantly, many teachers were able to improve their practice as a result of the professional development undertaken.

Workplace delivery was another professional development focus. Approximately 50 TAFE teachers participated in a forum designed to share experiences in working with organisational clients with diverse training needs in very different settings. This forum followed an earlier Division-wide Teaching and Learning Forum at Caulfield Racecourse, attended by more than 320 TAFE teachers.

The professional development effort was supported by the introduction of Teaching and Learning Advisors in 2006. These Advisors worked with the TAFE teaching departments, the Professional Development Unit and specific teacher groups to assist in building capability across the Division through initiatives including:

▸ delivery of the Diploma in Vocational Education and Training and Certificate IV in Training and Assessment (for 38 and 40 staff, respectively)

▸ delivery of the unit 'Research and Design eLearning Resources' from the Diploma of Vocational Education and Training Practice

▸ implementation of Online Assessment Workshops (for 24 participants)

▸ trade-specific projects (with participation by trade teachers in action learning on instructional design principles and practices)

▸ acquisition and development of culturally-appropriate materials to support delivery of the competency 'Foster and Promote an Inclusive Learning Culture'.

Numerous learning resources were developed or customised to support flexible delivery, especially in workplace settings. These included resources for training in community safety, cookery, retail, e-business, occupational health and safety, various aspects of sustainability and English. In a parallel initiative, a WebCT version of Swinburne's Employability Skills Passport was developed to promote the development and recording of portable 'generic' work skills developed during TAFE training.

A new Flexible Learning Centre was established at the Croydon campus during 2006, as a teaching space to accommodate different preferred teaching and learning techniques. This Centre complements the Flexible Learning Centre already established at Hawthorn, and another planned for Wantirna within the Sustainability Building which is presently under construction. These capital works can be added to the very extensive range of refurbishments to learning spaces at all campuses as summarised in the Vice-Chancellor's introduction.

Swinburne, TAFE Division – professional development training undertaken by staff in 2006

TAFE School	Staff undertaking WebCT training (n)	Staff undertaking other ICT training (n)	Staff changing practice as a result of training (n)
Arts, Hospitality and Sciences	90	48	121
Business and eCommerce	123	68	120
Engineering	97	25	77
Social Sciences	49	33	49
International	11	10	9
Total	370	184	376

" When I commenced my first year of studies, I did not know what to expect, but it has been a blast. Swinburne is a great university "

Noemie Le Coz

Located at the Prahran campus, Swinburne's Faculty of Design comprises the National Institute of Design, the National Institute for Design Research, the Swinburne School of Film & Television and the Design Centre. The Faculty offers undergraduate and post-graduate programs in communication design, industrial design, interior design, multimedia design, product design engineering and film & television.

In 2006, nineteen year-old Noemie Le Coz, was one of 120 Design students who completed first year studies in communication design. The Bachelor of Design (Communication Design) program aims to produce imaginative designers who can work effectively in areas where information is primarily conveyed by visual means – such as advertising, publishing, publicity, printing, merchandising, multimedia, education and research.

Noemie lives in East Brighton, with her family. Her mother and brother are pursuing hobbies and studies in art and design, respectively.

After completing her VCE at MacRobertson Girl's High School in 2005, Noemie gained entry into the Bachelor of Design (Communication Design) course through a very competitive selection process involving portfolio assessments and interviews.

Noemie had achieved an Equivalent National Tertiary Entrance Rank (ENTER) score above 95.00, winning a Vice-Chancellor's Scholarship in the process. In fact, she nearly missed out on the scholarship as she was unaware of its existence until her ENTER score was released. The Scholarship means that Noemie will receive a waiver for her tuition fees for the length of her course, so long as she maintains a credit average.

According to Noemie, her first year of university life went smoothly and she thoroughly enjoyed her studies. She was happy with the facilities provided – the latest computing equipment and software – and with the extensive support she received from her teachers (especially in stressful moments!). She was also extremely impressed by the expertise and attitude of her teachers. "When I commenced my first year of studies, I did not know what to expect, but it has been a blast. Swinburne is a great university", Noemie said of her first year experience at Swinburne.

Noemie is able to fulfil her need to be creative on a daily basis, because her course provides her with hands-on experience in developing various visual design projects. For example, her first project was developing a 'hanging mobile' using Adobe Illustrator design software to represent something important in her life, and Noemie chose to depict the various stages of her life growing up in St Kilda. Perhaps she will have to make some interesting additions to the mobile in the near future – she plans a career in design, hopefully in publication design or advertising.

The TAFE School of Engineering at Swinburne provides a wide range of courses in aviation, building and construction, computing and information technology and engineering to Australian and international students. Courses in software development are offered within the discipline of computing and information technology. All students undertaking software development courses participate in a major project that involves constructing a computerised system for a business or another type of organisation in their final semester.

As part of each project, students collate online portfolios of their work covering all major documents, plans and demonstration systems (see http://cit3.ldl.swin.edu.au for a collection of these portfolios).

In collaboration with the Victorian Bioinformatics Consortium (the Monash University Faculties of Medicine, Nursing & Health Sciences and Information Technology, and the Department of Primary Industries Plant Biotechnology Centre), a team of five Swinburne TAFE software development students developed the Protein Folding Database (PFD) as their project. (Proteins are essentially chains of amino acids folded into a highly specific 'quaternary' structure.) The major stakeholder for this project is the International Foldeomics Consortium (IFC).

The PFD collects all protein folding data into a single, accessible public resource that contains annotated data for many proteins. According to Dr Ashley Buckle, a medical researcher at Monash University, PFD is the first system of its type in the world, enabling scientists to deposit their own folding data, and it gives them free access to the available data on protein folding worldwide. The PFD was launched at Swinburne TAFE in November 2006 and is accessible at www.foldeomics.org/pfd

> " The software development course at Swinburne TAFE gave me a clear understanding of programming principles and provided me with an insight on how the real-world works "

Mark Bate

Twenty-three year old Mark Bate was one of the software development students involved in the development of the PFD. Mark's decision to undertake a Diploma of Information Technology (Software Development) through Swinburne TAFE was influenced by his previous learning experience at Swinburne. Prior to the software development course, Mark completed a Certificate II in Multimedia course through Swinburne's TAFE School of Arts, Hospitality and Sciences.

Mark spoke highly of his course experience as a software development student. The course was supported by excellent classroom facilities with modern equipment and the latest applications. He emphasised that he learnt a great deal from his teachers, who were flexible in meeting his needs and always available to mentor him. A valuable aspect of the course was the learning model, which combined the use of projects for 'real' situations with online portfolios. "The software development course at Swinburne TAFE gave me a clear understanding of programming principles and provided me with insight on how the 'real-world' works", Mark said.

Mark's involvement in the PFD project has led him to his current position as a software developer at Monash University – still working on the PFD to add new features that will improve both the aesthetics and the efficiency of the database. He is looking forward to the challenges certain to arise in future projects at Monash.

Swinburne Institute of Technology achieved university status in 1992, and in the short time since has made remarkable progress in research. From a zero base, Swinburne now sits mid-field in the Australian university system, after adjustment for size, in research performance. The University is currently involved in five Cooperative Research Centres and four of the prestigious Australian Research Council (ARC) Centres of Excellence. In terms of raw dollars won in the most recent ARC grant round, Swinburne ranked 18th overall of 38 universities – ahead of several much larger, long-established institutions.

While key research performance indicators were maintained or enhanced during 2006, it was the findings of a trial Research Quality Framework (RQF) audit implemented jointly with Deakin University that provided authoritative external endorsement of the quality of research emanating from Swinburne's research centres. Four panels comprising assessors of international standing (most with RAE experience in the UK) provided encouraging written assessments of the quality and impact of the research, evidenced by the portfolios prepared by Swinburne's Tier 1 and Tier 2 Research Centres.

Research income and research publications

The key indicators for Swinburne's research performance relate to: 1) research publications; 2) research income; and 3) higher degree by research completions. These indicators reflect those used in calculating Swinburne's entitlement under the Commonwealth Government's Research Block Grants Scheme (c. $9M annually for Swinburne). Each year, Swinburne collects data on research income and publications for the previous year, and these data are reported to the Commonwealth Department of Education, Science and Training (DEST). Thus, the latest 'official' research data relate to 2005, although 'unofficial' data are available for 2006.

With regard to research publications, Swinburne continues to show good growth (a 17.5% increase in 2005 over the previous year). The focus in recent years has been to place more emphasis on refereed journal publications at the expense of conference papers and, in particular, to concentrate on submission to high impact journals. Researchers are encouraged to observe citation rates as a measure of quality, with Swinburne currently performing at about the same level as Australian Technology Network (ATN) universities on a full time equivalent (FTE) academic basis.

Total research income showed strong growth to 2004, but there was a 6.25% decrease in 2005. This was principally a result of a decrease in Cooperative Research Centre (CRC) funding of some 32%, owing to two CRCs nearing the end of their life. Notwithstanding, Swinburne remains a standout performer in CRC funds per FTE staff member.

Industry research income (excluding CRC income) rose by 32% in 2005. This is an encouraging sign after several years of disappointing static performance. In terms of total income per FTE academic, Swinburne is performing at around the ATN average. Perhaps surprisingly, Swinburne's rapidly growing respect as a research university is largely based on the strength and quality of basic research, reflected in growth in funding from national competitive grant schemes and other public sector grant sources.

Unofficial research income figures for 2006 provided by Swinburne's Finance Office indicate that research income ran strongly ahead of forecast. A new research revenue record is predicted to occur when these data are confirmed, signaling a resumption of strong growth.

Fewer ARC Grants were won in 2006 than in 2005, a record year, although 11 successful ARC Discovery Grant applications (attracting $3.5m in funding) were the most ever obtained. Swinburne was also awarded three National Health and Medical Research Council (NH&MRC) Development Grants late in 2006, totaling in excess of $687,000 – this was a pleasing achievement for a university without a medical school.
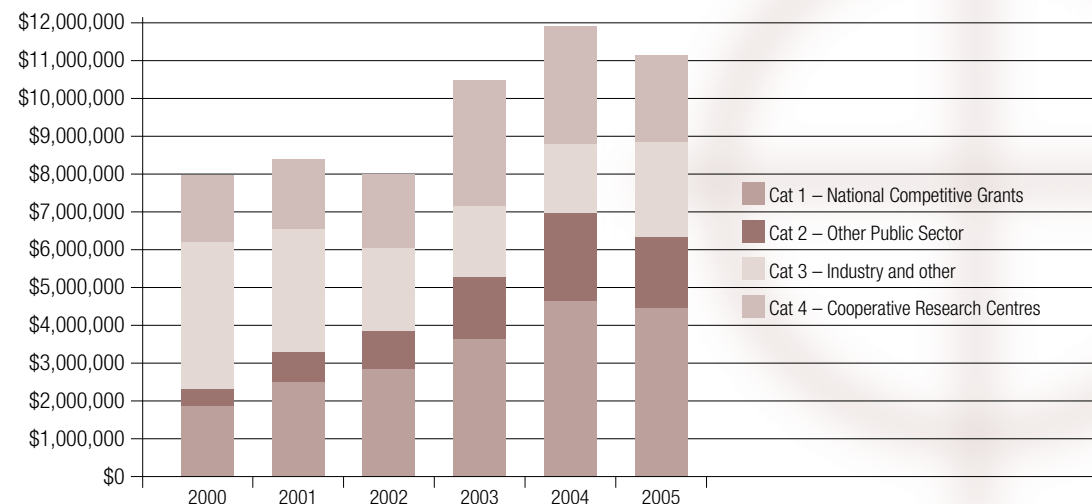
Weighted publications (DEST Categories): Swinburne University of Technology

DEST points
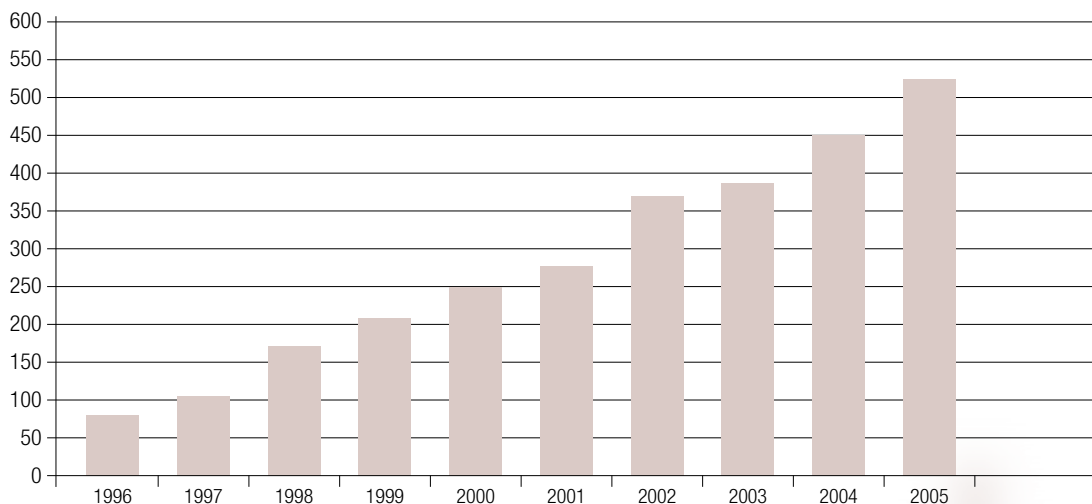
Source: AVCC's time series data for the Higher Education Research Data Collection 1992–2004 and ORGS HERCD Submission 2006

DEST Income categories 1–4: Swinburne University of Technology

Cat 1 – National Competitive Grants
Cat 2 – Other Public Sector
Cat 3 – Industry and other
Cat 4 – Cooperative Research Centres

Source: AVCC's time series data for the Higher Education Research Data Collection 1992–2004 and SWIN HERDC Submission 2006

Focused in research

Perhaps the best indicator, overall, of Swinburne's position in the Australian system is provided by examining the total performance-driven research Block Grant funding – a publicly available government measure of overall performance based on Key Performance Indicators. It shows that Swinburne has increased its share of Block Grant funding each year since the inception of this funding program, an indication that the University has achieved above the sector average increase in research performance each year.

Recently, the University was notified regarding DEST Research Block Grants for 2007. Swinburne achieved increases in each of the three relevant components – the total funding of $9,354,305 represents a 4% overall increase, signifying that Swinburne has again raised its research performance by more than the system average.

Higher degrees by research

The number of higher degree by research completions continues to show good growth, with a Swinburne record of eighty-four completions in 2006.

Other notable achievements, events and appointments

The Department of Defence recently canvassed all Australian universities in connection with providing technical research support for industries that might contribute

to the development, production and support of the Joint Strike Fighter (JSF). Australia has undertaken to purchase 100 of these advanced aircraft, and the prototype has just completed its maiden test flight. The aim is to develop unique industrial capability for the future to allow Australian industry to benefit from the JSF. After lengthy consultation leading to more than 100 submissions, it was announced that funding will be provided for detailed business plans to be developed for 10 proposals. Of these, Swinburne secured two in its own right and one in partnership. Two additional projects involving Swinburne have been referred to the JSF contractors for further evaluation.

During the year, Professor Min Gu from Swinburne's Centre for Microphotonics was elected as a Fellow of the Academy of Technological Sciences and

Engineering. As well, Dr Paul Stoddart from Swinburne's Centre for Atom Optics and Ultrafast Spectroscopy was awarded a prestigious 2006 Victoria Fellowship to develop a new system that could, in the future, be used for monitoring blood glucose levels (refer to the case study opposite for further information on this project).

Moreover, professorial level research staff appointments in 2006 will add to Swinburne's research performance and reputation in the future:

Faculty of Business and Enterprise
▹ Professor Russell Kenley
▹ Professor Janice Langan-Fox
▹ Professor Philip Taylor

Faculty of Engineering and Industrial Sciences
▹ Professor Geoffrey Brooks

Faculty of Information and Communication Technologies
▹ Professor Karl Glazebrook
▹ Professor Warrick Couch

Faculty of Life and Social Sciences
▹ Professor Klaus Neumann
▹ Professor Jock Given

Centre for Regional Development
▹ Professor Peter Newton

Not surprisingly, then, Swinburne improved its position to receive four stars for research intensity (the second highest rating) in the 2007 Good Universities Guide. This is a size-corrected rating, and one the University shares with some esteemed partners.

A forward focus on improving research infrastructure to support key researchers and attract new research activity will consolidate Swinburne's position in the Australian innovation system.

Commonwealth Government Research Block Grants Scheme
Intstitutional Grants Scheme (IGS), Research Training Scheme (RTS) and Research Infrastructure Block Grants (RIBG)
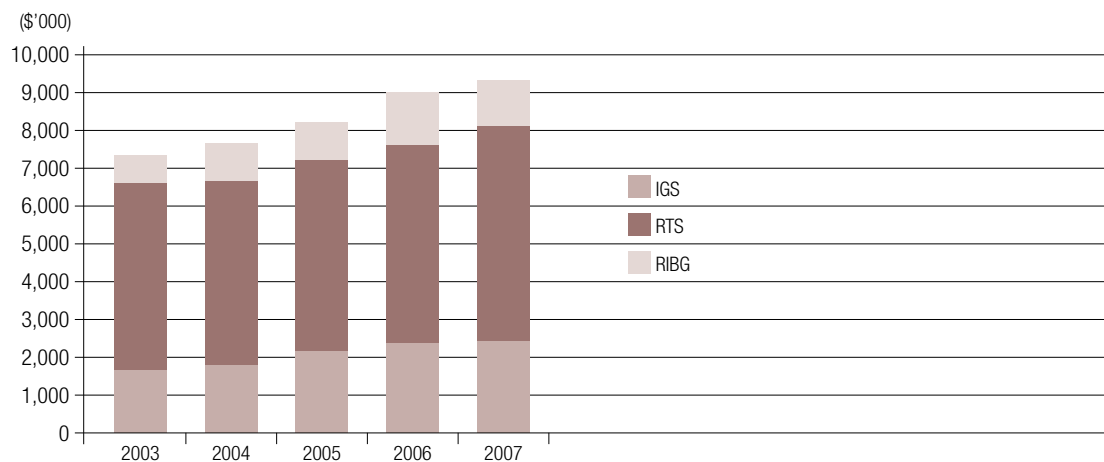

HDR Completions, 2002–2006
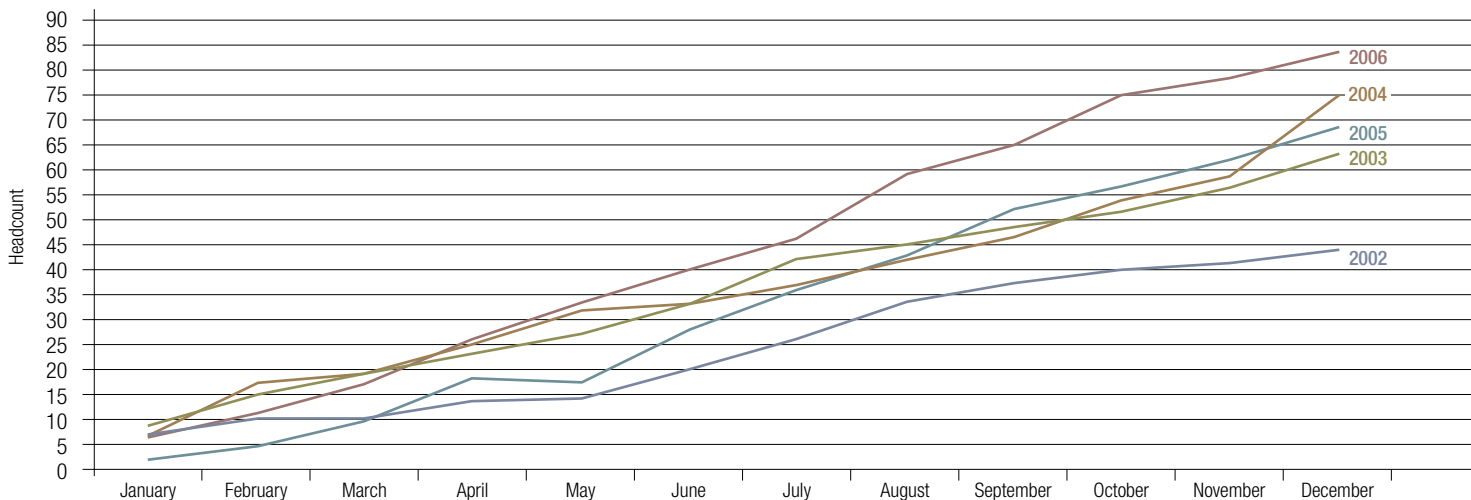
A case study

The Centre for Atom Optics and Ultrafast Spectroscopy was established by Swinburne as a new strategic initiative in 1999. One of the Centre's research fellows, Dr Paul Stoddart, has developed a non-intrusive system that could be used in the future by diabetics to monitor blood glucose levels.

" My visit to Illinois in the United States confirmed that Swinburne is in a very competitive position in this technology arena "

Dr Paul Stoddart
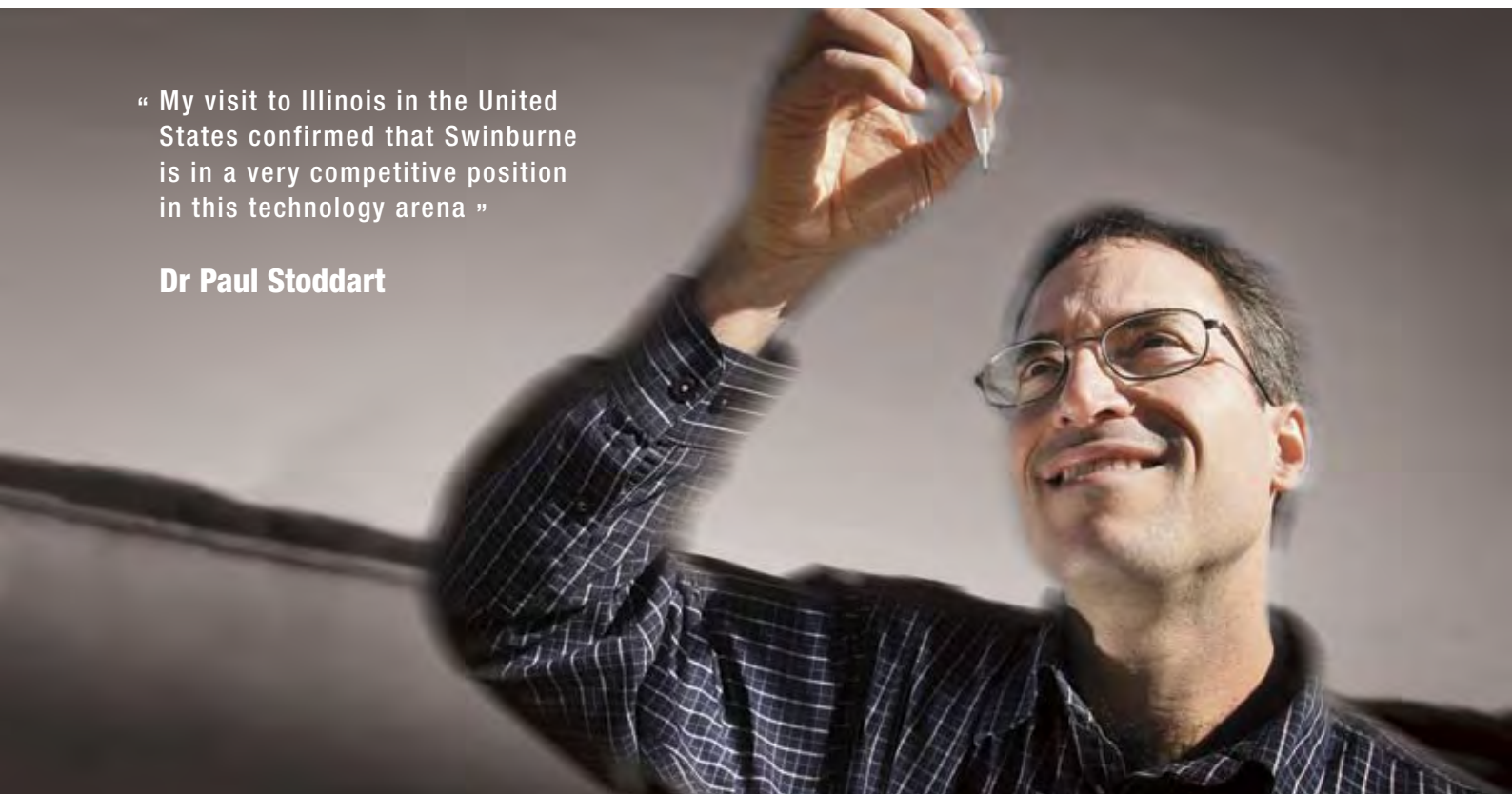
Paul and his fellow researchers have developed an optic fibre probe that diabetics might eventually be able to wear in a wristwatch-sized device. By gently pressing beneath the skin's surface, blood sugar levels can be monitored more precisely and less invasively than with the traditional finger prick test which many diabetics have to undergo several times each day. The development of a continuous monitoring system for glucose levels would allow much more precise control, resulting in an improved long-term health outlook for diabetes patients.

Diabetes is Australia's sixth leading cause of death, and the world's fastest growing disease. The research has been funded by the Diabetes Australia Research Trust and ASX listed company BioPharmica.

Through his Victoria Fellowship, Paul visited Illinois in the United States to benchmark the Swinburne research against that of Professor Richard Van Duyne, an eminent researcher in chemistry and surface science and whose laboratory is a world leader in nano-particle optics. Paul said that, "the visit confirmed that Swinburne is in a very competitive position in this technology arena".

In 2007 he will travel to Japan to discuss manufacturing requirements with a company that can produce the probes.

On top of his receipt of a Victoria Fellowship, Paul was also awarded a substantial development grant from the National Health and Medical Research Council (NHMRC) in 2006, to focus specifically on the glucose application. As well, Daniel White, a PhD student involved in the research project, was awarded a Nanotechnology Victoria postgraduate prize for his efforts.

Paul's work may also lead to portable sensors that can detect terrorist threats to drinking water, such as cyanide, bacteria, nerve agents and toxins. He will visit major water companies in Israel and Singapore to demonstrate how the Melbourne-developed probes could be used to monitor the quality of drinking water on a continuous basis – both countries have major concerns with water security.

Effective industry and community engagement is critical to Swinburne for several reasons. Firstly, the University has a mission to provide education and training courses that are relevant to industry, and to the wider economy, in times of rapid change. Fulfilling this mission is particularly important, because Australia's population is ageing and there are already severe skill shortages in some areas. Strong industry and community involvement in such things as course advisory processes and industrial release programs is imperative if Swinburne's courses are to remain up to date, and if delivery models are to meet the ongoing requirement for workforce re-skilling and human capital development more broadly.
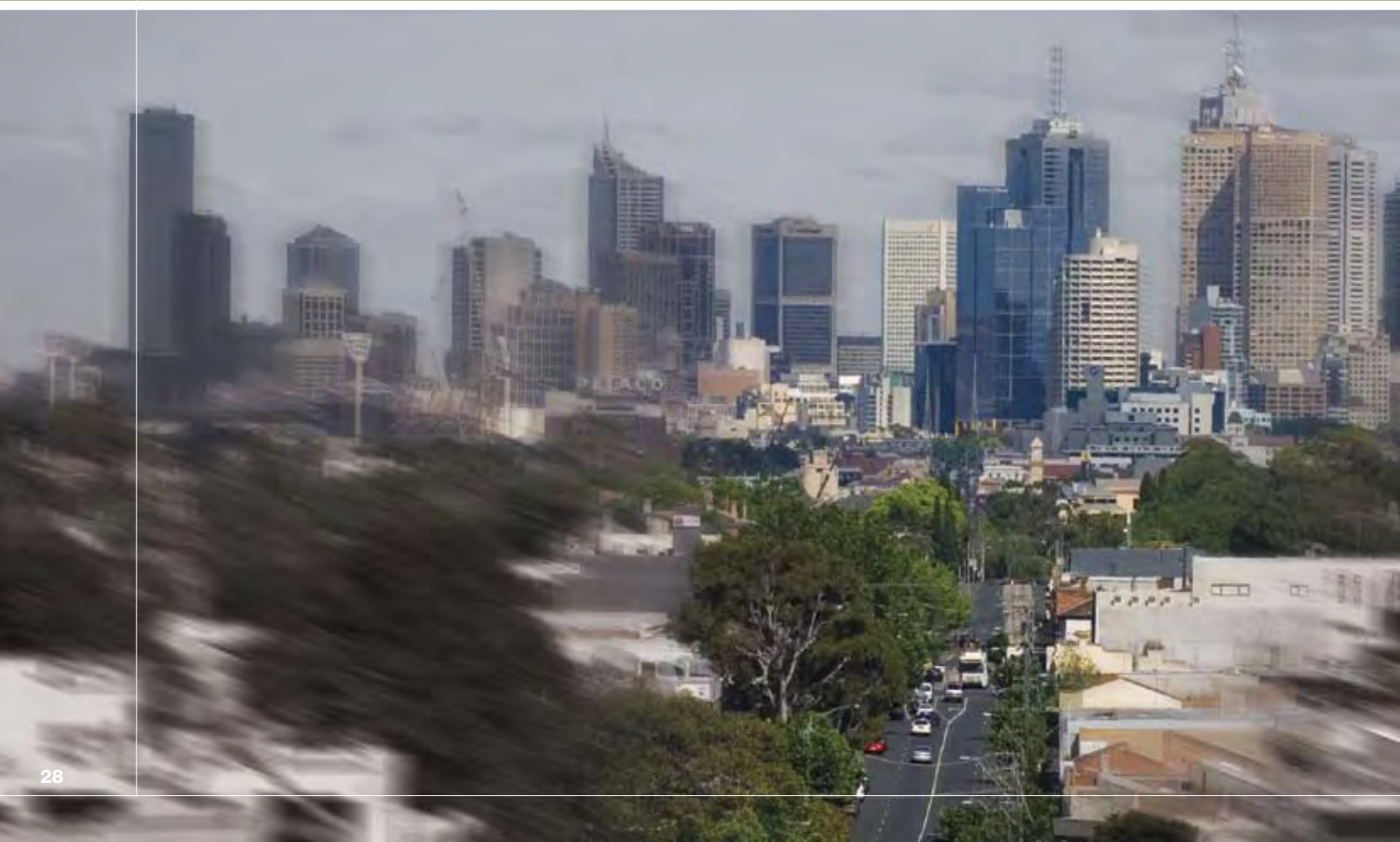
Allied to this, the University seeks to have sound employment outcomes for its graduates. That is, Swinburne students should be 'work ready' on graduation, and able to function effectively within a dynamic global labour market. This implies a need for experiential 'real world' approaches to course delivery, with strategies to foster the development of portable 'generic' skills.

In building engagement, Swinburne seeks not only to provide benefit to students as individuals, but also to respond to real need within communities through the provision of intellectual leadership in areas of community interest and concern. This extends to such things as offering University resources and facilities for community use, and working with communities for mutually productive outcomes. To this end, the University reinforced its commitment to community engagement with the establishment of a Pro Vice-Chancellor (Community Engagement) role during 2006.

As a University with an impressive tradition in engineering, the applied sciences and business, and a present focus on the application of leading edge technologies, Swinburne has the capacity to provide research services of high quality and impact to industry and the wider community. The full potential of this capacity can only be realised if Swinburne is well engaged, and the University's research strengths match community needs.

Finally, an increasing need to be financially self-reliant means that Swinburne needs to establish and grow revenue streams. While government funding and revenue from international activities will continue to be important in the foreseeable future, commercial engagement with industry is necessary to grow the University's revenue base and to ensure that the sources of revenue are sufficiently diverse.

All types of engagement between Swinburne, industry and the wider community necessarily require partnerships that yield mutual benefits. These often include such things as productive research outcomes that are, among other things, socially robust, and regional economic growth through the development of profitable industry. Building social capital is also a fundamental outcome of effective two-way engagement, as is progress towards sustainable regional development through the strengthening and diversity of technical, cultural and intellectual community assets.

During 2006, many of Swinburne's TAFE students undertook industry-based or community-based learning of some kind. Indeed, the TAFE Division delivered more than 1.3 million student contact hours (SCH) of training within the workplace (up by 9.3% on 2005). This included approximately 190,000 SCH of apprenticeship and traineeship delivery (in addition to 494,000 SCH of campus-based apprenticeship and traineeship delivery). As well, many campus-based learners undertook at least part of their course in the workplace – for example, on placement as part of their course in areas including nursing and children's services.

In 2006, 523 Higher Education students participated in industry-based learning (IBL) and the Faculty of Design's Industry Placement (IP) scheme. Participation was strongest for students from the Faculty of Engineering and Industrial Sciences.

Participation in Industry-Based Learning (IBL) by Faculty in 2006
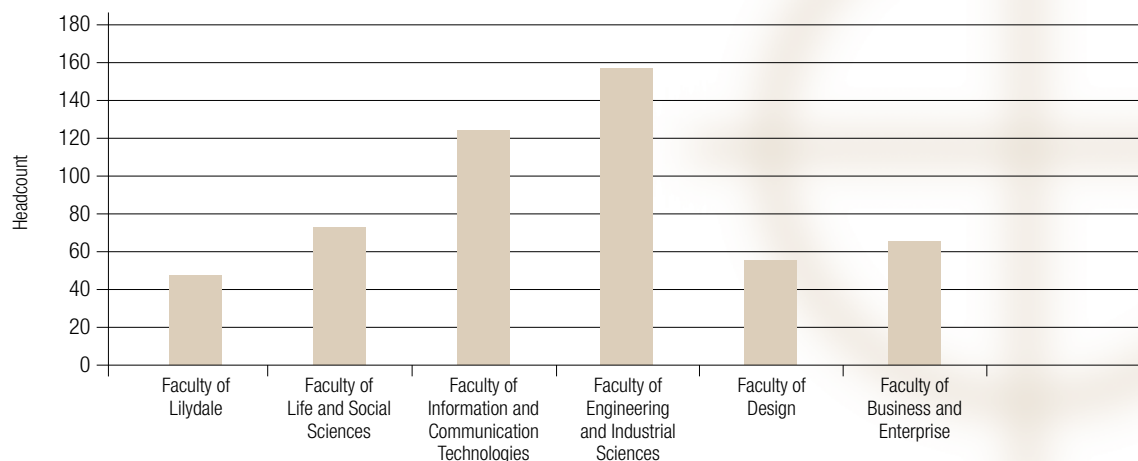
Engaged with industry and community

LTPF funding from the 2005 round was used to support the establishment of a new Cooperative Education Office to oversee Swinburne's range of cooperative education activities including IBL and IP, together with a major curriculum renewal project, 'Integrating Professional Placements into the Curriculum'. This project builds on Swinburne's well established model for IBL to develop and coordinate a wider range of professional placement opportunities which are firmly linked into the curriculum and carry appropriate academic credit.

In 2006, an IBL Scholarship Scheme was implemented, and new scholarship agreements were reached with industry partners to ensure that more than 80 IBL students are supported by new scholarships in the forthcoming year. Also, the coordination of IAESTE (the International Association for the Exchange of Students for Technical Experience) Australia activities came under the banner of Cooperative Education at Swinburne. A key outcome will be the provision of a range of rewarding international placement opportunities for Swinburne students studying in technological disciplines. The in-house coordination of IAESTE Australia will also assist the Cooperative Education Office to build up Swinburne's expertise in international placements for students studying in the non-technological disciplines.

Among other industry and community highlights for 2006 were the following:

▸ Swinburne worked closely with VicSuper in 2006, based on a shared vision around sustainability. VicSuper was one of the first companies in the State to develop a sustainability covenant with EPA Victoria, and CEO Bob Welsh was an honoured guest when Swinburne signed its own sustainability covenant. Swinburne Industry Solutions personnel worked closely with VicSuper in the development of the latter's 'Leadership signature' program, and Swinburne delivered selected graduate certificate units customised to reflect VicSuper's leadership goals and business objectives. This program is continuing as a combined effort between the Faculty of Business and Enterprise and the TAFE School of Business and eCommerce.

▸ 2006 saw the signing and launch of a brand new partnership with VISY Industries. At the launch of the Competitive Manufacturing and Leadership program in August 2006, the Minister for Education and Training, Minister Kosky stated; "I want to congratulate Visy for choosing as its partner in this venture one of Australia's best industry training providers, Swinburne University of Technology. Swinburne is at the forefront of innovation in value-added manufacturing, and Swinburne understands the importance of on-the-job industry training which, the latest research tells us, is the most effective way to improve the skills of mature-aged employees." The TAFE School of Engineering is running the program initially in Sydney and Melbourne over more than 12 sites, and the plan is to expand the program in 2007 to other states including Queensland, South Australia and Western Australia.

▸ Swinburne has had a long and successful partnership with the Commonwealth Serum Laboratories, providing training and education services for team leaders and middle managers through 11 highly successful programs. Late in 2006, the two most recent cohorts graduated at the brand new CSL complex in Melbourne.

▸ The Defence Force Credit Union (DFCU) is one of Australia's larger credit unions, and senior management identified a need for personnel moving into management roles to have the ability to promote individual and team performance. DFCU also highlighted other issues such as being geographically diverse and having difficulty retaining staff. Swinburne suggested a blended training program whereby participants do most of their training online and meet face-to-face for three one-day worshops over a 12 month period to share ideas and knowledge. The first cohort undertook the program in 2006, graduating at a special workplace ceremony in December.

Partnerships with local government are vital to Swinburne, and those with Knox, Maroondah and Yarra Ranges in Melbourne's outer east continued to grow and develop during 2006 – characterised by project work, research and staff training. The Centre for Regional Development undertook projects on the development of community sustainability indicators with these three councils, and with the Shire of Cardinia. Closer to Melbourne, Swinburne has an agreement that provides access to recreational facilities owned by the City of Boroondara, and various faculties, TAFE Schools and research centres worked with Boroondara and/or City of Stonnington personnel throughout 2006, under an agreed agenda for ongoing collaboration in the case of the former. Much of this work was focused on community capacity building, and on the use of indicators to inform council decision-making and local planning.

Swinburne's National Institute of Circus Arts (NICA) epitomises effective external engagement. For example, NICA provides 'social circus' workshops and outreach programs for indigenous communities and marginalised groups, and funding made available through the Rio Tinto Aboriginal Fund in 2006 will enable NICA to take circus to Pilbara communities in 2007. Much closer to home, the City of Stonnington supported NICA in staging two sell-out shows for the local community in 2006, and NICA won the City of Melbourne Encouragement Award at the 2006 Australian Business Arts Foundation Awards for its arts–business partnership with software company Netagi.

Working with schools is always a high priority for Swinburne. For universities to engage effectively with communities, they need to engage prospective undergraduate students and raise their aspirations. Close collaboration with schools by both the TAFE and Higher Education Divisions at Swinburne is working towards this end. For example, a 'Learning Communities' partnership has been successful in bringing together diverse educational providers in the Outer East to develop strategies to address regional educational participation and aspiration. This group involves key education stakeholders and positions Swinburne as a regional education leader.

Other engagements with schools in 2006 included active participation in the Victorian Government's research on participation in tertiary education by young people from rural and regional Victoria, and partnership with Yarra Valley cluster schools in an evaluation of their eLearning Community project. The TAFE 'First Stop' initiative, referred to in the Vice-Chancellor's introduction, also involves close links with schools and the community generally, providing diverse education, training and employment resources for youth in the inner east and outer east. Of particular note in 2006 was the success of First Stop programs for indigenous and refugee students.

A case study

> " Studying at Swinburne allowed me to take responsibility for my own learning. It connected me with a range of opportunities in the community, including public housing, and introduced me to First Stop "

Kirk Gibson
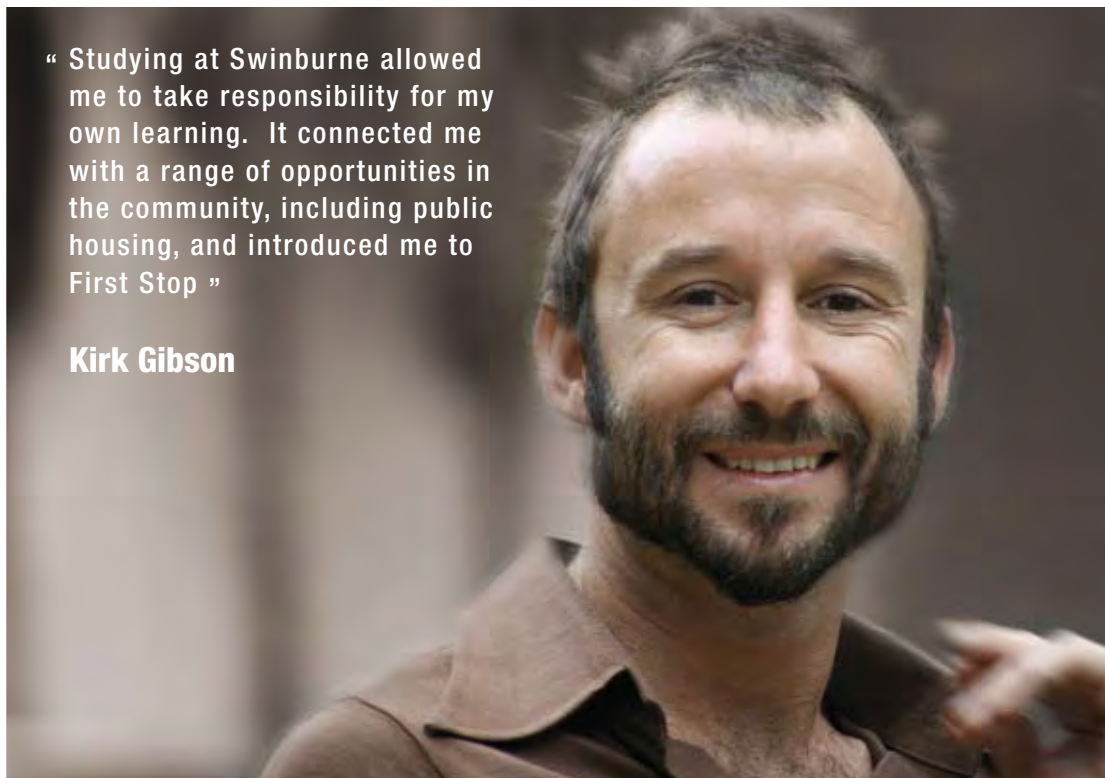
The TAFE School of Social Sciences is committed to providing quality vocational education and training in a supportive environment. The School offers courses in community services, children's services, health, recreation and supported learning, and provides life-long learning opportunities through ACCESS and further education programs.

In 2006, Swinburne TAFE graduate Kirk Gibson won the Victorian Training Award for Outstanding Student of the Year (Vocational). He received a trophy and a $10,000 study fellowship sponsored by the Victorian Learning and Employment Skills Commission.

Kirk found his vocation whilst travelling in Nepal and decided that the Diploma of Community Development at Swinburne would meet his vocational needs. He completed the Diploma, and subsequently played an integral role in supporting a school in Cambodia through a not-for-profit organisation, Australians for Cambodian Education.

According to Kirk, completing the diploma course at Swinburne provided him with a range of opportunities and a pathway to a degree in international community development. The 2006 Training Award will allow him to go on to complete a masters degree in the same field. Most of all, Kirk stressed that the diploma course gave him confidence, enhanced his existing knowledge and strengthened his beliefs; especially his passion to contribute to the community. He also valued the wisdom his teachers offered, and the friendship of his fellow students.

"Studying at Swinburne allowed me to take responsibility for my own learning. It connected me with a range of opportunities in the community, including public housing, and introduced me to First Stop", he said.

As noted elsewhere, First Stop is the service operating from Swinburne's Croydon and Prahran campuses that provides a first-point of contact for young people, particularly those at risk of dropping out of school or work, who want to create a path through further education and training. The service is also for mature age workers interested in apprenticeships and traineeships.

First Stop provides on-line access to information about careers, training pathways, employment, traineeships and apprenticeships.

Kirk is currently busy promoting First Stop at Swinburne's Prahran campus, working with young people to explore their goals, using an 'active-support' model – staying with them till they connect with the right path to further education and employment.

" The Trauma Reception and Resuscitation (TRR) software trial could set a benchmark for the treatment of trauma patients around the world "

Associate Professor Mark Fitzgerald

A case study

The Information and Technology Innovation Group at Swinburne comprises Kon Mouzakis (Director), Pamela Scicluna (Project Coordinator and Software Engineer), Winston Fletcher (Senior Software Engineer), Patrick FitzGerald (Senior Software Engineer) and Pauline Byrt (Senior Researcher). The mission of the Group is to provide quality research and development services to the information technology industry, and the immediate goal is to attain a national reputation for providing innovative and state-of-the-art computing solutions to industry problems.

The Group has provided quality R&D since 1994, with involvement in many successful projects. More recently it has adapted to the needs of medical research, winning a tender for development of innovative software called Trauma Reception and Resuscitation (TRR), with significant results. TRR provides prompts to guide doctors and nurses during the crucial first thirty minutes of reception and resuscitation of patients. Thus, it assists in reducing human error in busy trauma centres by enabling vital data such as time of arrival, type of injury, vital signs and the next step of required intervention to be displayed on a large LCD screen.

The TRR project was sponsored by the Victorian Trauma Foundation, Bayside Health and the Transport Accident Commission. The software was trialled as a 'world-first' at the Alfred Hospital's Emergency and Trauma Centre, with a highly publicised media launch by the Health Minister in September 2006.

The Director of the Alfred's Emergency and Trauma Centre, Associate Professor Mark Fitzgerald, said the trial "could set a benchmark for the treatment of trauma patients around the world" in the Minister's media release.

TRR has generated international attention, and it has been demonstrated in leading hospitals in the United States. Interest in purchase is high, in part for use as a training tool, and the Group is currently collaborating in this with the University of Maryland in Baltimore.

The Group attributes the success of the TRR project to their programming and communication skills, and to their flexibility. However, it is also worth noting that three of the designers involved in the project are Swinburne graduates, exemplifying that Swinburne's tertiary education programs produce innovative graduates with the ability to provide solutions to real problems.

Swinburne recognised the Group for its work through the 2006 Vice-Chancellor's Award for Industry Engagement.

Swinburne's vision is to be an international university, with students from around the world preparing for work and further study in a global context. Much progress was made to this end in 2006, re-establishing Swinburne as a leader in internationalisation activity in Australia.

During 2005, a basis for growth in international activity was established through a restructure of Swinburne's International Division. In 2006, this growth potential was realised, with a phenomenal increase in onshore commencement figures, the realisation of an offshore pathways strategy via the commencement of collaborative programs with foreign partner universities, and continued growth in Swinburne's student mobility profile. Performance highlights included the following:

- onshore commencement growth of 45%, well ahead of the 11% national average

- implementation of an Online Application System for International Students (OASIS)

- the first comprehensive review of Swinburne's international partnerships

- strong growth in enrolments at Swinburne's branch campus at Kuching in Sarawak (see overleaf)

- commencement of offshore diploma programs with two universities in China – East China Jiaotong University in Nanchang, and North China University of Water Conservancy and Electric Power in Zhengzhou

- graduation of the first student cohort in the Swinburne – China University of Mining and Technology dual degree program, with a ceremony conducted jointly by the universities at Lilydale

- participation in the transnational education quality project for Australian Education International and International Education Association Australia

- successful application for membership of the Community Colleges for International Development (CCID) consortium, based in Ohio in the United States

- a delegation to China led by the International Division and including representatives of the Higher Education faculties, the TAFE Schools and the Office of Research and Graduate Studies

- implementation of a web marketing strategy that includes search engine optimisation and advertising – traffic to the site increased from a semester average of 3,200 unique browsers per week in 2005 to 5,500 per week in 2006

- re-development and launch of a new generation CourseFinder

- design, development and launch of a new database for international agents and partners

- review of the international agent network

- establishment and launch of Swinburne College, a new organisational unit within Swinburne TAFE responsible for delivering ELICOS, Foundation (Uniprep) and Degree Transfer Programs (Unilink) to international students

- appointment of a new preferred provider of Overseas Health Cover, and program-length cover introduced to ensure international students remain covered for the duration of their Swinburne course

- an increase in the 'offer-to-enrolment' conversion rate – up by 8.8% to 33%

- the completion of monthly cost centre financial reports and quarterly budget reviews by cost centre managers for the first time since the implementation of a new financial management system

- the roll-out of new international branding across all marketing materials targeting international students

- a 33% increase in the number of students having an overseas study experience as part of their Swinburne program

Swinburne's National Institute of Circus Arts (NICA) exemplifies Swinburne's multi-faceted approach to internationalisation. For example, during 2006 NICA students participated very successfully in international competition at the Wuhan International Acrobatic Arts Festival in China, and 14 NICA

students performed at the closing ceremony of the 15th Asian Games at Doha, Qatar. The French duo Tr'espace were artists in residence at NICA for two months, and NICA's end-of-year show DiVino was directed by the renowned Italian director Valeria Campo. As well, the Federal Minister for Arts and Sport, Senator Rod Kemp, announced federal funding to bring Madame Wu, a master trainer with the Shanghai Circus, to work with NICA and the Flying Fruit Flies in 2007.

Another significant 2006 highlight was the establishment of a Swinburne Chapter of the Golden Key International Honour Society. All students in the top 15% of Swinburne students, after completing a minimum of one year of their undergraduate degree, are issued with an invitation to join the Chapter, and 238 students accepted the invitation through the payment of a one-off fee for life membership. An induction ceremony was held in October for new members, with the Vice Chancellor presenting membership certificates.

Key performance indicators

Onshore international student commencements

During 2006, 2,444 new commencing international students enrolled in Swinburne College, TAFE and Higher Education programs. Growth in ELICOS enrolments was also very strong throughout the year. Overall, the commencing international student cohort in 2006 was the largest ever at Swinburne.

Onshore international student commencements			
Level of study	2005	2006	% change
Higher Education postgraduate (coursework)	515	982	+ 90.7%
Higher Education postgraduate (research)	n/a	12	n/a
Higher Education undergraduate	753	916	+ 21.6%
Study Abroad	82	57	- 30.5%
TAFE (including Swinburne College)	297	477	+ 60.6%
Total	1,649	2,444	+ 48.2%
Exchange-in	109	102	- 6.42%
ELICOS (Total student weeks delivered)	6,798	7,320	+ 7.7%

Onshore international student tuition fee revenues

For both TAFE and Higher Education, revenue increased appreciably in 2006 compared with in the previous year.

Revenue			
	2005	2006	% change
Higher Education	$36,115,786	$44,253,799	+23%
TAFE	$6,634,540	$8,259,296	+24%

Offshore enrolments

Significant increases in offshore enrolments occurred at Swinburne's Sarawak Campus and elsewhere.

Enrolments			
	2005	2006	% change
Sarawak	1,019	1,607	+57.7%
Other	302	361	+19.5%
Total	1,321	1,968	+49.0%

Internationalisation

Swinburne continues to be a truly international university, with international students comprising 28.7% of higher education enrolments: above the national average of 25.1% (latest available average – 2005). Some 71 nationalities were represented in the 2006 commencing cohort, compared with 60 nationalities in 2005.

Student mobility

Swinburne's achievements in this area gained momentum in 2006, with a 33% increase in student mobility over 2005. Mobility of Australian students is benchmarked through the Australian Universities International Directors Forum (AUIDF) and, against a national average of 8.0%, almost 16% of Swinburne Higher Education students have an international study experience as part of their degree course. In 2006, 317 students worked or studied in more than 19 countries as part of their Swinburne program.

In this context, Swinburne strengthened its relationship with the European Consortium of Innovative Universities (ECIU) in 2006, signing six new student exchange agreements with member institutions and sending Swinburne's first five student ambassadors on ECIU exchanges. A new initiative in 2006 also saw the recognition of high achieving undergraduate Swinburne students as potential ambassadors to exchange partner institutions – a program known as 'High Flyers'. At the TAFE level, Swinburne worked towards increased identification of current and prospective mobility programs that will, in the future, lead to further growth in opportunities. At the postgraduate level, Swinburne's first PhD student to undertake a Cotutelle program commenced a dual PhD at the Université de Technologie de Compiègne in France, a member of ECIU.

In summary, 12 new student exchange agreements were signed with foreign universities during 2006, including 6 with ECIU members:

- Universidad Iberoamericana Puebla, Mexico
- University of Strathclyde, Scotland (ECIU)
- Universita per Stranieri di Perugia, Italy
- Okanagan College, Canada
- Technische Universität Hamburg-Harburg, Germany (ECIU)
- ESAG Penninghen, France
- ENSAD - Escole Nationale Superieure Des Arts Decoratifs, France
- Linköpings Universitet, Sweden (ECIU)

- Politecnico di Torino, Italy (ECIU)
- Universidad del Pacifico, Chile
- University of Twente, Netherlands (ECIU)
- Universität Dortmund, Germany (ECIU)

A further four Student Exchange Agreements were renewed, with:

- Danmarks Designskole, Denmark
- Bauhaus-Universitat Weimar, Germany
- Fachhochschule Mainz, Germany
- Fachhochschule Duesseldorf, Germany

Transnational education agreements signed or programs commenced during 2006			
Country	Overseas partner	City	Agreement type/program
China	Huazhong University of Science and Technology	Wuhan	Dual PhD
China	Nanjing University of Traditional Chinese Medicine	Nanjing	MOU for assisted articulation program: B Bus (eCommerce)
China	East China Jiaotong University	Nanchang	Dip Business Studies Dip IT Studies
China	North China University of Water Conservancy and Electric Power	Zhengzhou	Dip Business Studies Dip Engineering Studies
France	Université de Technologie de Compiègne	Compiègne	PhD Cotutelle
Malaysia	Limkokwing University College of Creative Technology	Cyberjaya and Kuala Lumpur	Extension of moderation agreement to include B Bus and B Sc
USA	Northeastern University	Boston	Joint Master degrees: M Sc in Leadership and M Bus (International Business), or M Sc in Leadership and Master of Accounting
Vietnam	Vietnam Breweries	Ho Chi Minh City	Grad Cert of Management
Vietnam	HCMC Open University	Ho Chi Minh City	MOU – M Management (HR)

A case study

The TAFE School of Arts, Hospitality and Sciences provides a diverse range of courses and training programs in arts, horticulture, environmental science, hospitality, tourism, industrial sciences, sustainability and occupational health and safety. The Advanced Diploma of Hospitality Management is a two-year course offered by the School at Prahran and Lilydale. The course aims to give learners an understanding of the hospitality industry, with an emphasis on skills required by cooks, managers and supervisors. Participants also gain practical experience through kitchen duties at Swinburne's training restaurants.

> " Swinburne is value for money – the learning facilities are great "
>
> **Vivek Khetarpal**

Twenty-four year-old Vivek Khetarpal, who already has a Bachelor in Computing Science, is one of the fifty-four international students who have completed Commercial Cookery, a key component in the Advanced Diploma of Hospitality Management. Vivek excelled in his studies and has attained high marks in all twenty units of the course.
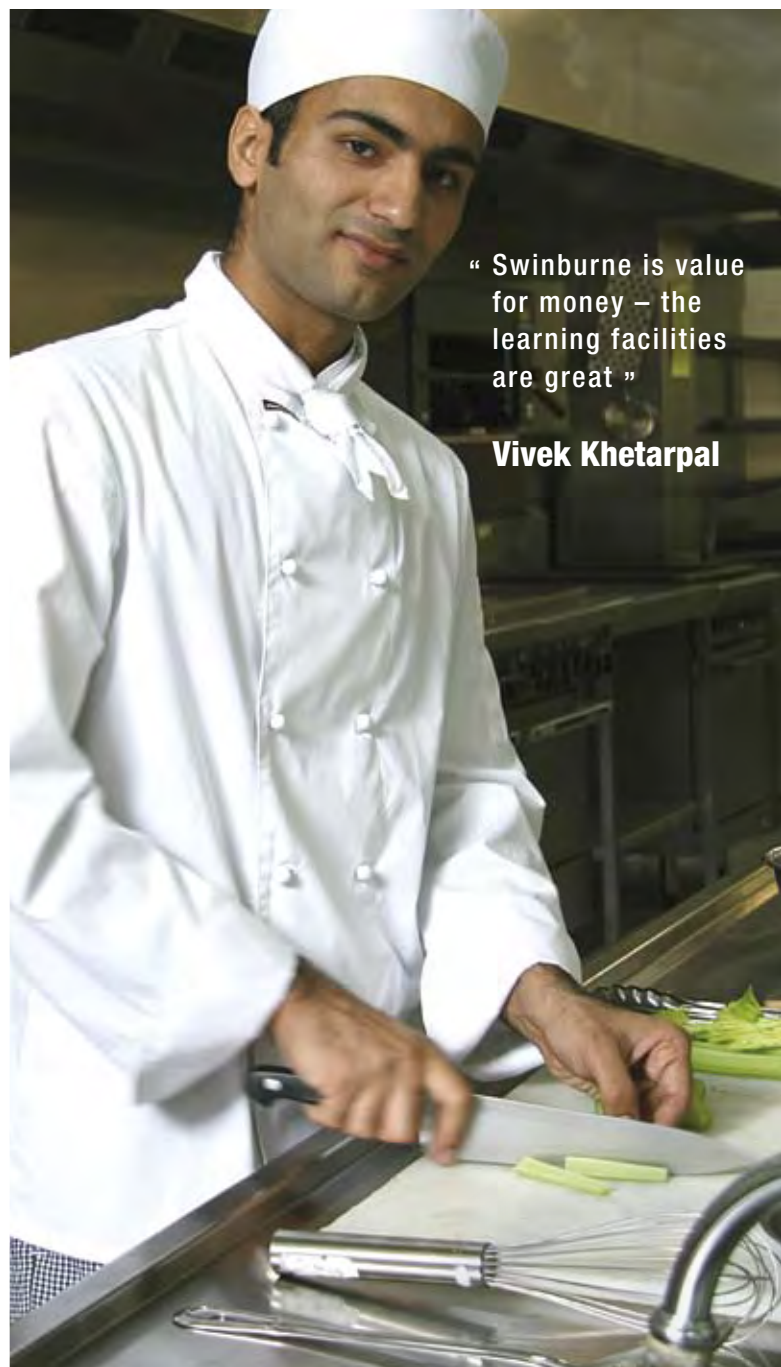
Vivek was born in Panipat, an Indian city renowned for exporting rugs and carpets. Panipat is known as the 'City of Weaver' or 'City of Handloom' in the state of Haryana, about ninety kilometres north of Delhi.

Vivek's native language is Hindi and he comes from a relatively small family. His father, Prem, works as a senior supervisor for National Fertiliser Limited, and his mother, Shobha has a position at the Bank of Baroda. Vivek has a younger brother who is currently studying for his degree in computer engineering.

Vivek feels that hospitality could be in his blood. His paternal grandfather Nandlal, a caterer, loves to cook and entertain. He fully supported Vivek's decision to pursue studies in hospitality management at Swinburne.

Prior to enrolling, Vivek had tried his hand at running his own business. His father provided most of the financial backing and Vivek had a factory with fourteen machines manufacturing rugs and carpets. He 'broke even' with his business, but had problems with cash flow.

Vivek viewed Australia as a country of opportunities, and a key to his future. He thoroughly enjoys his hands-on learning experience in Commercial Cookery, and the course has provided him with an outlet for creativity. He likes making people happy through food and hospitality.

Vivek also looks forward to the other units the course has to offer – such as human resources management, business development and marketing, which could provide him with transferable skills. His goal is to have his own restaurant someday, and to generate an income to provide for his parents and reciprocate the support that they have given him.

"Swinburne is value for money – the learning facilities are great. I have been provided with extensive support and assistance from all the staff including the course convenor and especially my teachers. I have enjoyed my learning experience so far and learnt a great deal, and I am looking forward to the second year of the course."

Swinburne is one of a handful of dual-sector universities in Australia, able to offer education and training programs from certificate level through to professional doctorates and PhDs. This has many advantages for students, staff, industry and the wider community.

For business and community clients, Swinburne provides a 'one-stop-shop' for a wide variety of products and services – especially education, training and research services. For students, the main intersectoral advantage is the ability to move almost seamlessly from TAFE level study to Higher Education, and vice versa.

During 2006, almost 700 students articulated to Higher Education courses from TAFE programs. Approximately half of these students articulated from Swinburne TAFE programs, taking advantage of the University's 'guaranteed access' policies, and they represented 16.0% of the local commencing undergraduate intake. The remainder moved to Swinburne from other TAFE providers.

These levels of TAFE – Higher Education articulation make Swinburne by far the national leader in providing intersectoral study pathways. TAFE – Higher Education articulation is strongest in the various business disciplines. In 2006, 196 students progressed from Swinburne TAFE business courses in accounting, marketing and HR management into relevant Higher Education programs at Swinburne.

In fact, the intersectoral movement is two-way – many Higher Education students at Swinburne complete relevant TAFE qualifications concurrently, or articulate to TAFE studies after finishing their Higher Education studies. For example, Higher Education engineering students pick up practical skills in metallurgy and metal fabrication through Swinburne's TAFE Division,

and PhD students frequently undertake TAFE small business management courses to strengthen their business 'know-how'.

In 2006, 262 students commenced Swinburne TAFE programs after having been enrolled in Higher Education programs at Swinburne the previous year. In some cases, their TAFE studies were concurrent with Higher Education studies, but in other cases the articulation to TAFE was post-completion or after partial completion of a Higher Education course. The 2006 Higher Education – TAFE figure was up from 241 in 2005 and 216 in 2004. In total 2,314 students who were enrolled in TAFE programs in 2006 had previously completed a bachelor degree level or higher qualification at Swinburne or another university.

Swinburne TAFE articulants as a percentage of Swinburne's domestic undergraduate intake, by year
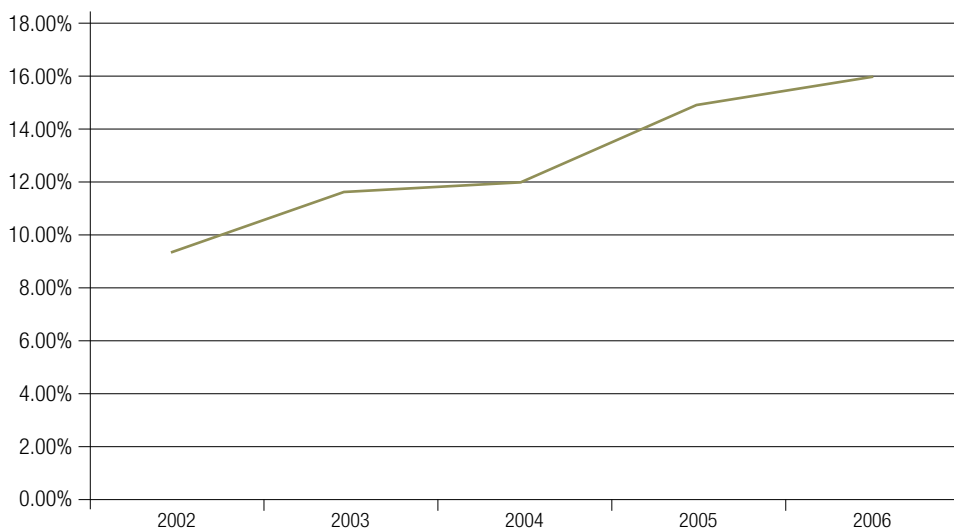
Intersectoral in approach

As noted earlier, business and government organisations capitalise on Swinburne's dual sector nature to access education, training and consultancy services at vocational and Higher Education levels from a single provider. For example, in 2006 Hawker de Havilland contracted Swinburne to provide both masters level business training and TAFE level training in manufacturing. Similarly, Swinburne provided TAFE training in warehousing and retail distribution for Australia Post, together with Higher Education level programs in HR management.

Swinburne's ability to provide both TAFE and Higher Education services has been particularly attractive for the local government sector, in areas including planning, statutory investigation, frontline management, IT and HR management. Among the municipalities involved with Swinburne in this way during 2006 were Bayside, Boroondara, Glen Eira, Manningham, Stonnington, Whitehorse, Yarra and Yarra Ranges.

Many intersectoral initiatives in 2006 related directly to the enhancement of curriculum and study pathways, including the following:

- design of a new Unilink engineering program, through collaboration between the Faculty of Engineering and Industrial Sciences and the TAFE School of Engineering

- establishment of closer links between the TAFE Diploma of Advanced Manufacturing and engineering degrees

- development and implementation of a Mathematics bridging program for TAFE Engineering diploma students, providing them an additional 25 credit points into Swinburne's degree program in mechanical engineering.

- collaboration between the Faculty of Business and Enterprise and the TAFE School of Business and eCommerce to strengthen articulation and credit transfer arrangements between TAFE graduate certificates and masters programs.

- re-alignment of the Unilink design program through collaboration between the Faculty of Design and the TAFE Department of Arts

- implementation of a transition program for students undertaking dual (TAFE and Higher Education) award programs across various discipline areas at Lilydale

- joint development of an associate degree/bachelor degree sequence in hospitality management by the TAFE School of Arts, Hospitality and Sciences and the Faculty of Higher Education Lilydale

" The Graduate Certificate program has surpassed the expectations of the students. The lecturers from Australia are intellectual and realistic, with excellent teaching skills. The program provided us with the new knowledge which we are hungry for, but also the way we should think and carry out our daily management "

Phan Khanh, Vietnam Breweries Ltd

A case study

Swinburne has established itself as a major education and training provider for industry and government departments in Vietnam, capitalising on its intersectoral advantage to provide a range of undergraduate, postgraduate and customised education and training courses to joint ventures, private enterprises and state-owned businesses.

Vietnam Breweries Limited (VBL)

A major client, Vietnam Breweries Limited (VBL), approached Swinburne seeking a customised award course for its middle managers. Initially, VBL required a customised management development program at Graduate Certificate level, with the aim of expanding to a graduate diploma program and then to a masters program.

An intersectoral team, led by Jacqueline Tulk from the TAFE School of Business and eCommerce and including Professor John Pidgeon (Faculty of Business and Enterprise) and Chris Wallis (Manager, TAFE International), was able to meet VBL's requirements – the team developed and delivered the Graduate Certificate of Management very successfully.

This was no straightforward task, given the number of areas of the University involved, the organisational re-structure occurring when delivery commenced, and the changes to government regulations that were occurring at the same time.

The four subjects within the Graduate Certificate of Management for VBL were:

▸ Managing Organisations and People

▸ Accounting Fundamentals

▸ Economics

▸ Corporations Law

Twenty-two students took each of these subjects. Teaching was conducted on a fly-in/fly-out basis, with each staff member being in Vietnam for one week. Three of the teachers involved were from the TAFE Division, and one lecturer was

from Higher Education. Classes were held in the conference facilities at a hotel in Ho Chi Minh City, organised by the client. The students graduated with a Graduate Certificate of Management during August 2006.

VBL expressed its gratitude to Swinburne, indicating that the graduates would contribute significantly to the economic well-being of the firm and associated suppliers.

"The Graduate Certificate program has surpassed the expectations of the students. The lecturers from Australia are intellectual and realistic, with excellent teaching skills. The program provided us with the new knowledge which we are hungry for, but also the way we should think and carry out our daily management." Phan Khanh, VBL said.

The program certainly strengthened Swinburne's relationship with VBL, and Swinburne is now delivering a graduate diploma program. This initiative could also lead to similar collaborations with other organisations in Vietnam. Moreover, the program model can also be adapted for delivery to client groups within Australia.

Jacqueline and the project team capitalised on Swinburne's intersectoral advantage in winning and delivering the VBL project. Not surprisingly, the achievement was recognised when the team won the 2006 Vice-Chancellor's Award for Intersectoral Collaboration.

Swinburne has an entrepreneurial culture. Staff and students are encouraged and supported to generate and implement innovative ideas. This applies to course development, teaching methods, student projects, research activity, campus management, administration, and buildings and facilities, and it empowers creativity, flexibility and responsiveness.

During 2006, Swinburne continued to demonstrate this commitment to innovation and entrepreneurship in many ways. For example, within the corporate sector the Student Affairs Group organised the annual SAGE (Student Affairs Group Entrepreneurial) Awards, for the third year running. These awards gave staff an opportunity to innovate via special project funding, and the projects funded in 2006 were:

▸ development of a website called 'Transition-in' to assist first year higher education students in their transition to undergraduate study

▸ special TAFE awards ceremonies

▸ introduction of a regional student ambassador program, with the aim of enhancing Swinburne's relationships with secondary school staff and students in rural and regional areas

Other Student Affairs innovations in 2006 included the establishment of an award-winning stand at the Melbourne International Flower Show (which attracted more than 100,000 visitors) to showcase Swinburne's horticultural programs, and the creation of an innovative marketing campaign featuring 3D billboards based on the W B Yeats quote "Education is not filling a bucket. It's lighting a fire". These billboards had a simulated backlit flame, and the associated strap-line "All the flaming big ideas start with a little spark".

Swinburne International successfully implemented a new Organisation-wide Admission System for International Students (OASIS) in 2006. OASIS is a cutting-edge, web-based system which allows for the submission of electronic applications (including all of the required supporting documentation). OASIS went live in September 2006 and it now contains more than 5,000 records. Applications are processed online by Swinburne International and designated faculty/school staff, and OASIS draws course, agent or partner data from either CourseFinder or the agent/partner database. These secure, web-based systems are the sole data sources, and they are updated according to agreed protocols and workflow.

Much innovation also occurred within Swinburne's TAFE Division during 2006. Examples included the following:

▸ Within the School of Engineering, a range of initiatives commenced to boost training for competitive manufacturing, with the aid of more than $1.5M provided by the Victorian Government – the School also introduced new approaches in the delivery of automotive training and training for building and construction. More than 20 teachers participated in relevant professional development.

▸ An Ideas Gateway grant enabled the School of Business and eCommerce to develop models and resources to support delivery of the Certificate IV in Small Business Management in the workplace – the School also established a new e-business supply chain program for small to medium enterprises.

▸ The School of Social Sciences was particularly active in the conception of innovative and entrepreneurial staff and student projects. These included the development of online learning materials for various courses, the introduction of sustainability concepts into children's services courses, new assessment models for nursing clinicals, and a Supported Learning Network project involving students in the design and production of Swinburne Christmas cards.

As noted earlier, the Higher Education Division successfully launched the new Swinburne Model for Professional Learning in August 2006, and many curriculum innovations were instituted in accordance with this initiative. Further details are provided earlier in the section on Flexible Learning and Teaching.

Since 2000, Swinburne has fostered student innovation and entrepreneurship through an annual competition known as the 'Swinburne Venture Cup'. This competition enables student teams to develop innovative concepts into realistic business plans and operational companies. The business plans are assessed by potential investors, who award the teams points in categories including market need, investment potential and general financial viability. In 2006, the competition attracted 64 teams and 210 students.

Entrepreneurial in endeavours

Swinburne's reputation for fostering entrepreneurship was further enhanced in 2006 when a team of five Master of Entrepreneurship and Innovation (MEI) students won the Victorian Division of the Boston Consulting Group's Business Strategy Competition. Competing against teams from the Melbourne Business School, Monash Business School, RMIT and Deakin University, the team (mentored by Swinburne corporate entrepreneurship PhD candidate, Steven Spring) developed a business strategy and solutions for an American manufacturing company wanting to expand overseas.

Another team of MEI students, mentored by Dr Seth Jones of Swinburne Knowledge, was runner-up in the Australia-wide John Heine Entrepreneurial Challenge (part of the Global MOOT Corp Competition). This team's business plan addressed the development of a narrowcast media solution for marketing through hairdressing salons.

Another noteworthy achievement in 2006 for Swinburne's Faculty of Business and Enterprise and the Australian Graduate School of Entrepreneurship was the publication of Professor Tom McKaskill's new book *Finding the Money*. This book describes how the venture capital industry operates, and provides a detailed checklist of investment criteria for the successful raising of venture capital.

Through Swinburne Ventures Limited, the University is actively involved in 16 companies arising from the implementation and commercialisation of research activities. Notable developments in 2006 included:

▸ Genos Pty Ltd (established to develop and market the Swinburne University Emotional Intelligence Test, developed by Professor Con Stough and Dr Ben Palmer) attracted a significant investment from Divergent Capital to fund the next stage of its growth

▸ Cortical Dynamics Pty Ltd commenced a second round of clinical trials at Royal Melbourne Hospital, to further evaluate a device known as the Brain Anaesthesia Response Monitor — this device is based on intellectual property developed by Dr David Liley of the Faculty of Life and Social Sciences.

As is to be expected in such spin-off activities, involvement in six companies was wound back in 2006 due to the enterprises concerned being unable to meet commercial expectations. Where appropriate, the companies involved have been, or are being, wound up.

Swinburne researchers have played a leading role in developing technology that allows laser robots to carry out on-the-spot repair of power station turbine blades, with the potential to save the power generation industry millions of dollars in costly and time-consuming maintenance.

> " The development is world-leading technology and a real plus for the Group and for Swinburne "
>
> **Milan Brandt**

This development is the result of a collective effort by a team of researchers from CSIRO and Swinburne through the Cooperative Research Centre (CRC) for Welded Structures. The technology developed is called 'In-Situ Laser Surfacing', and it overcomes the challenge of having to remove blades attached to turbine rotors for repair. Moreover, it offers a cheaper option than the replacement of blades damaged by the impact of water droplets.

Comprising state of the art robotics and laser technology, the repair process combines three separate technologies – a programmable robot, a special diode laser, and a 'gun' that feeds a metallic surfacing compound into the eye of the laser, which deposits it along the edge of the turbine blade. The laser is mounted on a coaxial head that can operate at any angle, allowing it to reach otherwise inaccessible places. Because the unit is transportable, repairs can be conducted *in situ* at the power station.

Professor Milan Brandt from the Industrial Research Institute Swinburne (IRIS) led the development. He has been involved with lasers and industrial laser applications for some 25 years, and he is the leading Australian researcher in the field.

His achievements include leading the development and commercialisation of a number of new, laser-based products at the CSIRO Division of Manufacturing Technology in Sydney. He also established the first Industrial Laser Centre in Australia to promote laser technologies to industry. Subsequently, Professor Brandt joined Swinburne to establish high power laser processing activities at IRIS, which is now the largest industrial laser research and development group in Australia.

While the CRC for Welded Structures finished its work in June 2006, a spin-off company, Hardwear Propriety Limited, has been set up to commercialise the technology. Professor Brandt said "the development is world-leading technology and a real plus for the Group and for Swinburne. Already the technology has attracted much interest, both among local power generators and big international firms which make turbines and blades."

At Swinburne, the concept of sustainability incorporates financial, environmental and socio-cultural dimensions, and these are interrelated. Improvements in environmental sustainability, for example, often contribute to improved financial viability (for example, through savings in energy costs). It follows that the University is committed to sustainability, and that sustainability principles are factored into decision-making and the implementation of program delivery, research, capital infrastructure projects, and other activities.

During 2006, Swinburne made significant progress towards becoming a genuinely sustainable organisation. Much of this progress was predicated on, and consistent with, the Sustainability Covenant signed by the University and the Environmental Protection Authority Victoria (EPA) in October 2005. In particular, the Covenant is the driving force for 'education for sustainability' at Swinburne.

Rather than simply developing stand-alone courses and units of study in sustainability, Swinburne recognises the importance of developing intersectoral and trans-disciplinary sustainability initiatives. An example of this is a new Diploma of Sustainability, delivered to more than 60 students in 2006. This course is offered concurrently to Higher Education and TAFE students as an 'add on' to their existing degree or diploma study, and contextualised to ensure its relevance to that study. Another example is the development at Lilydale during 2006 of a new Masters of Commerce program with a strong focus on social and business sustainability.

Infrastructure projects

Swinburne was awarded two community water grants in 2006 – one for water recycling at the Wantirna Campus nursery and one for the installation of waterless urinals at the Hawthorn Campus. The latter initiative is expected to save almost 1,000,000 litres of drinking water per year. Energy efficiency projects include retro-fitting two of Swinburne's most populated buildings at Hawthorn with T5 and motion sensor lighting, and the installation of other energy efficient lighting throughout engineering, automotive and welding workshops at Croydon and Wantirna.

New building management systems were introduced in 2006 for the Croydon and Hawthorn TAFE buildings, and a new emphasis was placed on the recycling and re-use of building materials at all campuses. Similarly, new waste contracts provide for organic recycling at the Prahran and Lilydale Campuses, waste auditing, and improved recycling and waste reduction measures.

As noted in the Vice-Chancellor's introduction, work commenced in 2006 on a new headquarters for Swinburne's National Centre for Sustainability at the Wantirna Campus. Scheduled for completion in 2007, this building will incorporate the latest environmentally sustainable design features such as rainwater harvesting and recycling, waterless urinals, low water consumption landscaping, recycled materials, natural ventilation and daylighting strategies. Thus, it should help to position Victoria (and Swinburne) as a national leader in environmentally sustainable design and construction.

Planet Swinburne and TravelSmart

An important part of becoming a more sustainable university is to inform and involve staff and students directly. For this reason, in 2006 Swinburne rolled out a comprehensive behaviour change campaign called Planet Swinburne. This initiative saw more than 100 Green Office representatives engaging staff and students on such things as saving energy, reducing paper use and reducing waste, with the aid of a poster series and other resources.

Allied to the Planet Swinburne initiative was the launch during 2006 of Swinburne's Green Travel Plan. A result of a collaboration between the University and the Victorian Government's TravelSmart program, the Green Travel Plan makes sustainable travel more accessible to staff and students through the free use of carpooling software, greater accessibility to bike and public transport facilities, and a 'greener' vehicle fleet (including Swinburne's first hybrid vehicle).

The external focus of Swinburne's commitment to sustainability is just as strong as the internal focus. For example, in 2006 Swinburne piloted a community engagement program with the City of Boroondara to deliver a series of workshops on sustainability. The project involved households across the municipality in working towards living more sustainably, and its success (including average annual reductions in greenhouse gas emissions and household water bills of 28% and 16%, respectively) was recognised through nomination as a finalist in the 2006 United Nations Environmental Awards. As a result, a Sustainability Fund grant will see the program extended to a further 1,200 householders during 2006–2008.

Other sustainability initiatives at Swinburne in 2006 included:

- a partnership between Swinburne's Faculty of Design and EPA Victoria to support an EcoDesign website that showcases environmental innovation and stewardship – the website highlights tangible and cost effective examples of how businesses can reduce the environmental impact of products and services to improve long term business sustainability

- development of new short courses on 'Design Strategies for Melbourne 2030 Activity Centres' and 'Retail Futures', the latter dealing with the challenges and opportunities presented by sustainability and climate change for retailers

- implementation by the Faculty of Design of a curriculum pilot project called 'Sustainability by degrees', which involves staff, students and industry in a review of undergraduate courses to ensure that sustainability is adequately addressed

- inclusion in Swinburne's Venture Cup of a category for sustainability, with a $9,000 prize provided by Sustainability Victoria (and awarded to Naomi Toohey, Susan Jones, Khai Mun and Hock Khoo, students in the Masters of Entrepreneurship program, for their business idea called EcoRegen – an eco-friendly organic waste treatment system)

- hosting a two-day Environmental Science Expo at the Croydon Campus in conjunction with the Victorian Curriculum & Assessment Authority (VCAA) and the EPA – the aim of this Expo was to provide hands-on activities for Year 9 and 10 students to increase their awareness of environmental responsibility and to inform them about further study options in environmental science and related fields.

Committed to sustainability – a case study

'Environmental Memoirs' is a global initiative of Swinburne's National Centre for Sustainability. The aim is to illustrate how the health of people and their communities depends on the health of the local ecosystem, and it involves the collection of memoirs from citizens living in degraded environments.

" We used to be worried about boats capsizing in the storms and men dying at sea, but nowadays we are more concerned about getting clean drinking water "

Ulman Kanderova

Phase 1 of the project has involved documenting the memoirs of communities with declining living standards due to degraded environments across 14 countries. Work in Phase 2 will draw on the methods and products of Phase 1 to engage young people in Australia in further related work.

The Environmental Memoirs project is one of UNESCO's demonstration activities in the Decade of Education for Sustainable Development. The memoirs are located at: www.swinburne.edu.au/ncs/environmentalmemoirs

The following memoir is from 73 year-old Ulman Kanderova, a female resident of Kazak Darya, a small village on the banks of the Aral Sea in Uzbekistan.

Uzbekistan has a population of 26,850,000 and its capital city is Tashkent.

In the 1960s, the USSR carried out the 'Virgin Lands Scheme' to irrigate large plots of steppe in Central Asia for cotton production. The scheme diverted water from the Syr Darya and the Amu Darya Rivers via thousands of kilometres of irrigation channel. This, in turn, resulted in the exposure of $c.$ 40,000 km^2 of sea bed.

In her memoir, Ulman lamented the 'Aral Sea tragedy'. The 'death' of the Aral Sea meant the end of a prosperous fishing industry, increased salinity of formerly arable land, the out migration of numerous citizens, reduced access to safe drinking water and an increase in diseases such as anaemia, cancer and tuberculosis.

As a child, Ulman walked to school each morning with a pocket full of fried sour gum. Grains, fruits and vegetables were easy to come by, growing along the channels fed by the Kazak Darya River. There was also a large fishing fleet and factory in town, providing more than enough fish for everyone. The fishing industry also provided work – Ulman worked in the factory, her father was a captain and her husband a fisherman. The town also provided work for people from the surrounding villages.

Ulman's family still eats fish, but they have to get it from a wetland some distance from where they live. Moreover, the fish they eat now are Grass Carp *Ctenopharyngodon idella* – nowhere near as delicious as the Aral Sturgeon and Swordfish they used to eat. The Grass Carp was introduced from eastern Russia. It eats sea grasses and reeds, and it can survive in conditions in which other fish cannot.

According to Ulman, when she was a child in the 1940s the sea came up almost to the edge of the town. Now, the sea is more than 130 km away. She said:

"I find this strange; it feels like it was only yesterday when we would travel out to the islands in the sea to collect wood and reeds for house construction. The people in this community used to worry about their fathers and sons capsizing in the storms and dying at sea, but nowadays they are more concerned about getting clean drinking water".

Aerial view of the Aral Sea