



31<sup>st</sup> July 2008

Secretariat  
Review of Australian Higher Education  
GPO Box 9880  
Canberra ACT 2601

Dear Sir/Madam

Re: Review of Australian Higher Education, Discussion Paper, June 2008

On behalf of the Australasian Association for Information Systems (AAIS), the Australian Council of Professors and Heads of Information Systems (ACPHIS) and the Information Systems Board of the Australian Computer Society (ACS), we are writing to you in response to the discussion paper on the Review of Australian Higher Education.

For your background information:

- AAIS is the Australasian chapter of the Association for Information Systems (AIS), the premier global organization for academics specializing in Information Systems;
- ACPHIS is the peak body established to represent Australian information systems academics in matters of national and international importance;
- ACS is the recognised association for Information & Communications Technology (ICT) professionals; the IS Board has responsibility within the ACS for issues relating to IS professionals.

Our three organizations (the peak bodies representing IS academics, IS academic leaders and IS professionals) represent IS research and IS education interests in particular, working closely with the newly formed Australian Council of Deans of ICT which represents the ICT discipline as a whole. This submission has been jointly developed with the Council and represents similar views. The IS community is, of course, impacted by all aspects of the review but given recent issues with student enrolments in IS and ICT courses is particularly concerned with Section 3.1 *Meeting labour market and industry needs* and Section 3.3 *The student experience of higher education*. This submission specifically addresses these aspects of the review.

In general, we commend the Review Panel on the discussion paper. We believe that there is a strong case for increased funding for the sector as a whole and for special support for the IS and ICT disciplines in particular.

The contribution of the ICT industry is best measured, not as a traditional capital investment, but as a 'general purpose technology' and is now recognised to generate incomes of \$79.9 billion in 2002/03 and exports totalling \$4.3 billion in 2004/05<sup>1</sup>. The IS contribution to the ICT industry is significant and our response is intended to ensure that the IS community continues to be recognised in the national debate on education matters.

Should you have any queries about this letter and response or the IS discipline then please contact Associate Professor David Wilson on (02) 9514 1832 or at [David.Wilson@uts.edu.au](mailto:David.Wilson@uts.edu.au). Thank you.

Yours sincerely,



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President, AAIS



A/Professor David Wilson  
President, ACPHIS



Professor Steve Elliot  
Director ISB, ACS

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<sup>1</sup> *ICT industry overview*, Australian Department of Communications, Information and the Arts (DCITA), 16<sup>th</sup> February, <<http://www.dcita.gov.au/ict>>

### **Section 3.1 Meeting Labour Market and Industry Needs**

2. Are there impediments to the higher education sector being able to innovate in the development of courses and programs? What are these impediments and how could they be removed?
3. What are the appropriate mechanisms at the national and local level for ensuring higher education meets national and local needs for high level skills? What is the role of state and territory governments in this area?
4. How adequate are the mechanisms for aligning supply and demand of graduates? How do pricing and labour market signals impact on student choices?
5. Are there particular examples of good practice where you can demonstrate either rapid response to skill shortages or successful initiatives to improve generic skills?

#### **Industry demand for IS and ICT graduates**

Industry demand for skilled IS and ICT workers has been increasing steadily over the last five years whilst high school and university enrolments in IS and ICT have been declining dramatically. From 2001 to 2007, the number of domestic applications in IS and ICT courses in Australia dropped from 15,130 to 5,146 (66% fall) resulting in a 50% decrease in enrolments. Meanwhile, in the five years to June 2008, the ICT Vacancy Index (published by the Department of Education, Employment and Workplace Relations (DEEWR)) rose by 237% to 251.1% (January 2002 = 100). The number of ICT vacancies has more than tripled in this period to a weekly average of around 23,200 in June 2008.

Industry reports confirm that employers are experiencing great difficulty in recruiting across a wide range of IS and ICT skills. Employers are reporting large numbers of vacancies that cannot be filled by local or even overseas personnel. Unless this trend is reversed there will be serious consequences for the future prosperity of Australia.

Further ICT workforce information can be found at the Australian Government's SkillsInfo website or [www.skillsinfo.gov.au/skills/SkillsIssues/ICTSkills/](http://www.skillsinfo.gov.au/skills/SkillsIssues/ICTSkills/)

#### **Falling enrolments**

The decline in enrolments in IS and ICT in high schools and universities is markedly affected by the perceptions in the community of the ICT profession and career prospects, particularly those of parents, high school teachers and careers advisors. It is clear that the broad IS and ICT education sector and industry must work together to address persistent erroneous perceptions of the profession and careers. The falling enrolments have affected all the ICT disciplines, including IS. A major concern is that the sector is also attracting a smaller component of the brightest and most talented students and the number of women taking up ICT, as well as other minority groups, has also decreased markedly.

Proactive support from Federal and State Governments is essential to address this crisis. Without a clear message from the government concerning the critical need for further skilled IS and ICT graduates, all other efforts may be seen as furthering self-interest rather than that of the national economy.

## **Addressing the educational and enrolment shortcomings in IS and ICT**

There are three priorities requiring urgent attention:

- Learning and teaching facilities for IS and ICT
- Incentives for student enrolments in IS and ICT
- Incentives for greater industry contribution to education

### ***Learning and teaching facilities***

IS and ICT are currently banded with education, architecture and mathematics. When the bands were set, computing was seen as most closely aligned with mathematics, and this determined the level chosen. Today, IS and ICT are recognised as laboratory-based disciplines with teaching and learning approaches and costs of delivery more in line with the experimental sciences and engineering, and so should be classified in the same funding band as engineering and science.

The higher level of funding would also facilitate work integrated learning in an effort to enhance students' practical experience and job readiness. Wherever possible and relevant, work integrated learning should also be available to academic staff to enable them to keep up to date with rapid technological advances and develop more industry-integrated curricula.

### ***Incentives for student enrolments***

An increase in incentive for students to study IS and ICT could occur through a similar arrangement as currently provided for mathematics and science whereby the university stills get the full HECS but graduates get a 50% reduction in their HECS debt when commencing work (including teaching).

A Government announcement to this effect, coupled with statements on the fundamental importance of IS and ICT to the nation, would reverse the negative perceptions of this important industry as a career. Reversing the decline in enrolments with appropriate incentives would help universities maintain or improve capacity for up-to-date teaching and learning.

### ***Incentives for industry contribution to education***

Many university IS and ICT programs incorporate work integrated (or practice integrated) learning into the curriculum and this approach could be further enhanced if companies could claim the costs of supervising/mentoring/arranging such placements as a tax deduction.

Likewise, the time spent working with academic staff to develop and update industry-integrated curricula could be tax deductible.

### **Section 3.3 The Student Experience of Higher Education**

12. How can the quality of the student experience within Australia's higher education institutions be monitored nationally? Is there evidence that declining student:staff ratios have impacted on the quality of the student experience?
13. How can the quality of learning outcomes in Australian higher education be measured more effectively?
14. How do institutions measure the quality of their learning outcomes and how do they know they are nationally and internationally competitive?

#### **Student Satisfaction**

There are rumours that the Federal Government, and Treasury in particular, do not accept the notion of a crisis in tertiary education and the need for further funding when student satisfaction, measured by instruments such as CEQ, continues to rise.

The continued improvement in CEQ ratings for Australian universities are possibly explained by:

- Australian academics appear to be working longer hours than counterparts in other parts of the world (for example, it is not uncommon for academics to have a teaching load of 14 contact hours per semester compared to academics at Stanford University who teach 6 hours in one semester of each year). Thus they are providing the same or better levels of experience at a significant personal cost;
- Increased attention to good teaching because of emergence of interest in teaching quality by Governments (for example, the early 1990s saw 'Quality Portfolios' and more recently AUQA). This resulted in the emergence of specialist 'Academic Development Units' whose role is to promote improved quality of learning and teaching;
- Australian Government committees such as CAUT, CUTSD, AUTC and now Carrick/ALTC which distributed grants to promote good teaching;
- The combination of the above has also led to increase in research on teaching and the resulting scholarship of teaching (that is, increased knowledge and understanding of the effectiveness of various teaching strategies).

Also, the increased usage of a wide range of information technologies over past ten years has increased student satisfaction and facilitated increased access to education, increased quality of learning, and increased learning productivity. Note that most of these technologies were not invented 10-15 years ago.