



**AUSTRALIAN  
COMPUTER  
SOCIETY**

## **SUBMISSION TO THE AUSTRALIA 2020 SUMMIT**

### **ICT SKILLS IN AUSTRALIA**

#### **ISSUE**

This paper puts forward the ACS position and recommendations on development and addressing skills shortages for the Australian ICT sector.

#### **BACKGROUND**

ICT skills are an area of critical importance to Australia. ICT contributes around 6% to the Australian GDP and underpins operations in all other sectors of the economy. Studies undertaken by the OECD, Productivity Commission and ABS indicate that around 50% of all business productivity can be attributed to the application of ICTs.

The recognition of the critical role ICT now plays in supporting our economies was highlighted in a recent article in SearchCIO.com<sup>1</sup> which reported that key Gartner strategist Ken McGee and President of the Information Technology and Innovation Foundation, Robert Atkinson, believe that ICT will be the primary factor in lifting the US out of recession. ICT is credited with underpinning around 65% of the productivity growth in the US from 1995 to 2004.

Australia currently has an accelerating shortage of skills within the ICT sector. Skills availability positively affects Australia's ability to absorb, use, adapt and innovate new technologies. Without access to appropriate skills:

- projects and developments will be delayed and Australia's ability to use ICT to support and drive productivity in all economic sectors will be affected;
- because of falling number of students interested in studying ICT, and to the extent that university entrance results are an indicator of student ability, the quality of intake is falling as many universities lower entrance standards to ICT courses; and
- with significant decreases in the number of students taking appropriate ICT tertiary degrees, the pool of people qualified and capable to undertake basic research leading to new invention and innovation in ICT is reaching critical (low) levels.

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<sup>1</sup> [http://searchcio.techtarget.com/news/column/0,294698,sid182\\_gci1311986,00.html?track=NL-981&ad=638041&asrc=EM\\_USC\\_3584409&uid=3688235](http://searchcio.techtarget.com/news/column/0,294698,sid182_gci1311986,00.html?track=NL-981&ad=638041&asrc=EM_USC_3584409&uid=3688235)

## **FACTORS AFFECTING ICT SKILLS DEVELOPMENT**

Factors affecting the skills shortage are:

- a significant decrease in the number of students enrolling in ICT courses at the University and TAFE at a time when there is a growing demand nationally and international for ICT skills;
- graduates are often not considered 'work ready' and so are not as employable as they should be;
- the ICT sector has a bad reputation for 'churn and burn' and so insufficient professionals are moving across from other disciplines into ICT, but there is strong movement from ICT to other employment sectors;
- skills learned have a limited lifespan due to the rapidly changing nature of ICT – employees need to constantly update their skills to those the market is going to need;
- employers are not doing sufficient skills foresighting or developing rolling 3 to 5 year skills forecasts that will allow them to re-train or up-skill their workforce in areas of future skills needs; and
- the retention of women in the ICT sector is poor.

There is now wide acceptance of ongoing skill shortages in Australia in many areas including ICT. State and Federal Government, industry, industry associations and academia are mobilizing their efforts towards addressing this issue, although not yet with a sense of urgency that is demanded by the situation.

Current approaches to solving the ICT skills concern are:

- increasing short term migration 457 visas;
- Industry Leadership Group – a joint initiative of the ACS and AIIA with wide ranging industry, government and academic participation. It is looking to develop a supply/demand model for the ICT sector.
- raising awareness of the benefits of a career in ICT with students to help increase enrolments in ICT courses – being done by industry, industry associations, governments and academia;
- various forums and activities being conducted by industry, industry associations and governments to attract women back to ICT;
- ACSF through providing scholarships for students to study ICT – funding from industry;
- ICT career awareness initiatives such as National ICT careers week;
- encouraging employment agents and firms to consider older workers – there appears to be significant discrimination against employment of older workers in the ICT sector;
- programs on the benefits of a career in ICT aimed at parents and career guidance officers;

- programs such as the ACS Professional Year Program, ACS CPEP and ACS graduate diploma aimed at making graduates more work ready;
- changes to the ACS accreditation process to encourage universities to make their courses more relevant to the work place and include work placement programs in ICT courses to improve industry readiness of graduates.

### **ACS RESPONSE TO ICT SKILLS ISSUES**

The ACS is taking a leadership role on skills development and is actively involved on a number of fronts.

- Through accreditation of ICT courses for higher education providers by ensuring appropriate content and engagement with industry in the development of their courses to improve the industry readiness of graduates;
- Reviewing the ACS Core Body of Knowledge that defines what it is to be an ICT professional to ensure its relevance to the ICT industry sector. ICT industry and higher education providers are actively involved in this process;
- Ensuring the development of a relevant and professional ICT workforce by introducing the Computer Professional Education Program for ACS members. This ensures ICT professionals undertake continuing education and have the up-to-date skills and knowledge needed by industry;
- Development and introduction of the Professional Development Year (on behalf of the Department of Immigration and Citizenship) for new overseas graduates who wish to permanently migrate to Australia to improve their work readiness;
- Joining forces with the Australian Information Industry Association to establish the Industry Leadership Group, which has wide ranging representation from industry, industry associations, government and academia, and is actively examining how to improve skills shortages in the ICT sector. The ILG has established National ICT Careers Week to promote careers in ICT to school students;
- The ACS Careers Portal which provides information and encouragement to students to take on careers in ICT;
- Establishing the Young IT Board and holding an annual YIT conference to get young people more involved in ICT;
- Establishing the ACS-Women Board to develop programs to attract and retain women in ICT;
- ACS Foundation which has provided around \$12M in scholarships to ICT students and student work placements to improve their skills;
- Advocating the introduction of skills assessment for 457 temporary stay visas to ensure that people coming to Australia under this program have the skills that are in shortage within the Australian ICT sector.

The ACS has also recently established a Skills Leadership Committee to formulate further activities for the ACS in tackling the skills shortage issue.

### **WAYS TO IMPROVE THE RESPONSE TO SKILLS DEVELOPMENT**

The ACS believes that Governments, industry, higher education providers and schools, industry associations need to better coordinate their activities and take a united and consistent approach to their marketing initiatives to encourage students to take up courses and careers in ICT.

### **National ICT Careers Week**

The ACS and AIIA, through the Industry Leadership Group have developed National ICT Careers Week. The response from industry, government and industry associations has been exceptional with around 120 organisations participating in this inaugural event, showing a strong will on the part of industry to be involved in addressing the ICT skills issue.

It is the intention of the ACS and AIIA that National ICT Careers Week will be an annual event. Greater participation by Governments through senior Federal Government Ministers participating in and endorsing the event and with relevant Federal agencies conducting significant events as part of National ICT Careers Week would ensure even greater participation by industry in the event and achieve greater general media exposure, helping to publicise National ICT Careers Week and promulgate its messages.

### **Skills Foresighting**

The ACS believes that while Government allocates considerable resources to predicting, analysing and planning for roads, schools, communications and other essential infrastructure, it allocates very little to predicting and building our equally essential ICT skills capability and human capital.

The ACS considers that government must develop and encourage stronger skills foresighting capabilities and knowledge along with the relevant data linkages to feed this information to ICT higher education providers, employers and employees so that we have the people with the necessary skills to underpin future technology assisted economic growth at a time when they are going to be needed.

To this end, the ICT Industry Leadership Group, which is supported by industry, state and federal government, has developed a report and data to underpin the development of an econometric supply/demand model for the Australian ICT labour market, to help better predict the number of workers that are going to be needed in the Australian ICT sector.

The ACS believes the Government should continue to support this Industry Leadership Group initiative so that the supply/demand model can be developed.

The ACS believes a key element to improving skills foresighting is encouraging ICT businesses and government to undertake rolling three to five year skills needs analysis as part of their annual reporting cycle so they can better plan for their future skills needs.

This information can be channeled to higher education providers to increase the industry relevance of their ICT courses and the industry readiness of their ICT graduates.

### **Retraining and Up-skilling**

The ACS considers that industry and government should give greater emphasis to addressing their skills needs by retraining and up-skilling the ICT workforce by providing ongoing training and skills development (including student work placements) to new or recent graduates and their current ICT work force.

### **Temporary Skilled Migration**

The ACS believes that 457 Visa are an important source of labour for the Australian labour market and should be used wherever particular skill shortages are impeding productivity and development and the appropriate skill sets cannot readily be sourced from the Australian labour market within a reasonable time frame.

However, it's important to ensure the temporary migration is not adversely impacting the development of our local ICT skills base or new graduate employment. To minimise these impacts, the ACS considers that skill searches should be in the following order:

- Skills available within the domestic market;
- Cross training or upskilling of existing staff;
- Use of 457 Visas to source appropriately skilled labour from overseas where those skills are not readily available domestically.

In deciding which of the above options to take, employers should consider the time and cost needed for up-skilling or cross training in comparison to sourcing applicants from overseas. The ACS also advocates verification of the skills possessed by 457 visa applicants in a similar way skills for permanent visa applicants are assessed.

## **RECOMMENDATIONS**

1. The Government should take the lead in better coordinating ICT skills development issues across its departments and in facilitating a more consistent approach with industry, ICT industry associations and ICT higher

education providers and vendors and state governments in marketing ICT skills development and ICT courses to students.

2. ICT Skills foresighting should be considered a priority issue by the Government and a key aspect of this is the development of a supply/demand model for the Australian ICT labour market to help better predict the number of workers that are going to be needed in this critical area.
3. Encourage three to five year rolling skills needs analysis as part of the annual planning processes for government and industry to help businesses better understand their future skills needs. This information should be collected and made available to higher education providers and vendors so they have a better understanding of the future skills requirements of government and industry.
4. Encourage and introduce incentives for governments and industry to provide more training and up-skilling for their current work force (based on their identified three to five year skills needs analysis), along with incentives to achieve greater participation of women and older workers within the ICT workforce.
5. Introduce skills assessment for ICT 457 Visa applicants to ensure they have the skills that are considered to be in shortage.