Despite recent setbacks, the Australian information and communications technology (ICT) industry is one of the fastest growing and innovative sectors of the Australian economy with a sustained average annual growth rate approaching 12%. This is more than two and a half times the average growth rate of the Australian economy as a whole. The ICT industry is a sector in its own right but is also transforming all other industries and areas. In fact, about 60% of ICT professionals work outside the ICT sector. In 2005, Australia had 355,600 employed ICT professionals spread across all sectors of the economy (DCITA, 2006). This represents 3.6% of the workforce and is higher than in Europe (2.5%) and the USA (about 2.8%) (Petersen, Revill, Ward, & Wehmeyer, 2004).

However, recent figures from the Australian Bureau of Statistics (2003) show women comprising only about one fifth of the ICT workforce. There are different ways of measuring female participation and success but the general conclusion is that women are not only in a minority but also are concentrated in the lower level, lower paid, and lower skilled jobs in this industry. The proportion of females employed in ICT roles varies among sub-sectors; telecommunications services and manufacturing sectors are the lowest (18% and 19% females, respectively) and computer services is the highest (26% females).

The gender distribution across core IT roles shows that women are over represented in the groupings that tend to have lower formal qualifications such as computer support technicians. Statistics do not identify jobs that require “hybrid” skill sets (e.g., graphic designer or business analyst) which may be more appealing to many women. Australian labor force statistics also show that women with a background in marketing and public relations dominate occupations in digital industry management. A significant proportion of females are in occupations in the Internet and multimedia, digital industry management, and industry positions requiring high IT proficiency, such as graphic designers and illustrators.

In the tertiary education sector, admission statistics for core IT programs show declining numbers for student retention generally, and for female students in particular. Women with IT qualifications changed from 36.5% out of the total 90,704 individuals with tertiary IT qualifications in 1996 to 30.5% out of 153,183 in 2001 (Bell & Staehr, 2004). A report on industry statistics prepared for the Women in ICT Summit held in September 2005 revealed that the number of entering university students fell by 24% between 2001 and 2003, and that in 2003, of the 11,866 new students enrolling in undergraduate IT degree courses in Australia 80% were male (Department of Communications, Information Technology and the Arts (DCITA), 2005). The Australian Council of Professors and Heads of Information Systems (ACPHIS) which consists of IS professors in business and information technology schools is extremely concerned with the low student numbers and lack of women. This item has been on the agenda at the annual meetings in both 2004 and 2005. Similar concerns have been expressed by the Council of Computer Science heads. These data exist against a backdrop of overall decline in IT/IS majors in business schools, forcing IS schools to downsize their staffs.

A good deal of research and intervention has been carried out to improve the participation of women in the Australian IT industry, but the field is still too new for any conclusions to be drawn about the effectiveness of the large number of intervention
programs or to understand the impact of research on perceptions of the problem. The WinIT project (discussed elsewhere in this Encyclopedia) is typical of research in this area, aiming to study the results of action programs as well as to investigate perceptions and behavior of potential and existing students and IT personnel. The motivations are also typical, deriving from ethical concerns about equity and representation as well as practical considerations regarding the health of the industry. However, research in this area is complicated by problems in defining the nature of the IT industry and the role that women might play in the industry.

Firstly, a lack of clarity as to what constitutes the IT industry and the rapid rate of change complicate attempts to understand the reasons for the declining participation of women in the IT industry, as well as the declining interest in IT degrees. Concerns regarding equity are based on an “equality” view of women’s participation, in which women can do anything that men can do. A “difference” view of women entails considering how women might contribute “special” attributes and skills to a masculinised industry. However, the notion that women who work in the IT industry may provide some important “female” perspective and influence, which would represent and serve the interests of women as an undifferentiated group, is very contentious. The WinIT project has taken a social construction view, regarding the construction of ideas such as “female” and even “information technology” as an ongoing and negotiated process. However, regardless of how “female” is defined, the exclusion of women from an important industry limits the development of the industry within a wider context of social change and limits the capacity of women to negotiate their social identity in the “information society.”

Research shows that the “masculinisation” of the IT industry makes it unattractive to many men as well as to most women. To what extent this is associated with other aspects of western culture is not yet clear, since many industries seem to transcend national culture differences. Therefore, it is important to understand how the IT industry may change over time and how the participation of women may be facilitated.

There are many programs, initiatives, and interventions aimed at women and female students across Australia which provide the opportunity not only to take action but also to carry out action research. The interventions for female students are generally: awareness raising, demystifying the industry through role modeling and mentoring; presenting career options; and improving the understanding of how technology fits with business and different industries. Interventions aimed at women are more focused on support and leadership, with themes such as mentoring, preparing for board positions and networking opportunities.

Although the effectiveness of these interventions cannot yet be assessed, there is considerable support in Australia for such programs. A prime example is the efforts of the Minister for Communications, Information Technology and the Arts, Senator Helen Coonan. She established an Advisory Group to help her plan a Women in ICT summit that was convened in September 2005. Fulfilling an election promise, the Advisory Group was made up of prominent Australian women from both the ICT and education sectors. The Group was established to help identify key issues that needed to be considered at the summit. The intent of the summit was to feature high profile participants representing the industry, government, and academia. Breakout sessions would then focus on four topics: how the ICT professions should be represented; how to make the ICT workplace attractive for women; how to ensure that curriculum design and career advice address Australia’s ICT needs; and how to coordinate future activity to enhance women’s participation in ICT.

With respect to future activity, the group supported a national approach to enhancing women’s participation in ICT while acknowledging that existing bodies already working on the problem would be playing an important role. For example, a National Communications umbrella organization—AWISE (Australian Women in IT and Science Entity) has recently been formed to represent a collaborative voice connecting ICT networks for women and girls. The Founding Board is populated with women active in the area of interventions for women and girls across Australia who are already involved in the many intervention programs run by state and federal government departments, education institutions, and industry organisations that have been introduced to interest more women in ICT education and careers. The group has five goals: to be a national single point of contact; to encourage more females to enter ICT;
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to share information and initiatives; to be a centralised national body to influence government and media; and to obtain national funding to support agreed upon initiatives.

The group intends to maintain a national presence for certain initiatives that could result in greater exposure for the ICT industry. This would occur through regular planned awareness-raising activities and programs to either encourage females into the industry or to support them working and studying in the industry. One of the planned initiatives is a national role models day that is currently held in three states across Australia, with the support of national funds and media. This would allow the program to become more regular, more supported, have more exposure, and become part of the “norm”. At least three events are planned for 2006. The aim is to have up to 7,000 female students in Australia participating in the events. Another planned initiative is to build on the success of the Queensland WIT scholarships and awards program by running it nationally. In a similar way, having a national scholarship presence would result in greater exposure for women in the industry as well as offer females from all over Australia the opportunity to win a scholarship and be rewarded. A third initiative of the group is setting up a national Board Readiness Program for women working in the industry. Also building on the success of one of Queensland’s WIT Programs, this initiative will help women develop the skills and attributes necessary for them to join and contribute successfully to Board positions. The program will provide support, advice, and a structured program for women in the industry.

Australian research is tending towards action research in this area. The reflexive nature of social science research means that investigations into female participation may also contribute to the perpetuation of those factors amongst the subjects studied, in the same way that media attention on the problems in the IT industry may have contributed to declining student interest. Hence, there is a strong motivation to make change while at the same time studying the effects of these changes. In such a rapidly developing industry as IT, we need to move quickly if we are to have any impact.

REFERENCES


