

CIER

ICT SKILLS WORKSHOP
REPORT

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**REPORT PREPARED BY THE CENTRE FOR INNOVATIVE INDUSTRY ECONOMIC
RESEARCH, FIVENINES CONSULTING AND WHITEHORSE STRATEGIC GROUP.**

INTRODUCTION

The ICT Skills Snapshot is an annual report produced by Multimedia Victoria. It reviews the supply of and demand for ICT skills in Victoria at that time. This is particularly important for a sector as dynamic as ICT in which change is both continuous and often fundamental.

To support the report's analysis, a workshop was held at which representatives of industry, government, recruitment and academia provided a broad picture of the current ICT skills landscape.

The 2005 workshop was hosted by the Centre for Innovative Industry Economic Research (CIIER) at the Melbourne Exhibition and Convention Centre on Wednesday 23 March. It was entitled "**ICT Skills and Employment: Marrying the Two in Victoria**" and together the representatives explored four topics:

- a) Employment in 2005? Hot Jobs
- b) Life after 45: ICT or a new career?
- c) Industry Trends: Lies, Damned Lies or Statistics?
- d) ICT Education: Hiccup or Crisis?

Although each group was looking at key issues previously identified as being critical to the issue of skills and employment, the end result was a significant level of commonality. Details of discussions undertaken in these break-out groups are set out in the report.

OVERVIEW

While not explicitly stated, the conclusions of the CIIER workshop indicated that ICT in Victoria (and, indeed, Australia as a whole) is currently lacking direction. This is not necessarily a bad thing. As one participant said, "ICT in Victoria is currently in a hiatus, waiting for the next paradigm to emerge." There are things that industry, academia and the Victorian Government can do (and are doing) about this and as such, this is as much an opportunity and a challenge as it is a problem.

Anecdotally, a number of features appear to typify ICT in Victoria at present. These include:

- a predominance of contract workers in the industry (one estimate suggested that 80% of ICT placements are contract);
- fragmented employment—to such an extent that a very substantial majority of ICT businesses have fewer than 20 people working for them;
- very low participation by women in the ICT industry. This is seen to be to the detriment of the industry given the different contributions that can be made by men and women in ICT;
- an unwillingness by the ICT industry to employ those over 45 years of age even though these people are qualified and have abundant experience;
- competition from overseas ICT industries — a challenge that the Victorian industry is yet to properly address;

- the lack of an Australian or Victorian niche in global ICT; a contribution that it can strongly and sustainably make both on its own benefit and for that of the rest of the world;
- an apparent anomaly is that at times there are too many people with ICT skills who are unemployed and at other times, a deficit of ICT skills in the ICT industry. This was seen by the participants of the workshop to be more a mismatch of skills rather than a skills gap;
- a growing sense of confusion regarding ICT training, with evidence of:
 - a major decline in numbers of students studying ICT in universities,
 - a drop in internal ICT training budgets by employers,
 - a strong, vibrant and diverse VET sector, and
 - employers apparently seeking people for their skills and competencies rather than qualifications or accreditation; and
- “hot jobs” are seen by the group to be concentrated at present in two areas:
 - “super specialist” categories; and
 - business-aware roles where skilled professionals can apply their ICT skills to the specific needs of a business.

The discussions at the workshop indicated that ICT is changing and will continue to change. These changes will not be gradual but often fundamental and disruptive to any paradigm that preceded it. Further, there was a strong feeling that re-training is doing little to help re-employment chances of those caught in the change.

A range of issues associated with education (especially university education) and the development of ICT skills was discussed. Participants noted that more than half the enrolments in Victorian universities came from overseas but that fewer students residing in Victoria are applying for ICT-related courses.

The group also observed that employers now spend less on the ICT education of their staff than they did in the past. Indeed, given that so many ICT businesses were small – employing less than 20 staff – or were contractors, there was little resourcing or willingness to support in-service education. There is a strong feeling that the sector is exhausting its skills and doing little to cultivate these for the future, such as re-training older staff or by cultivating new staff.

Young graduates were also seen as being difficult to place since these people require a lot of additional learning before they can be suitably employed. Those with good business skills as well as ICT skills can be readily placed, however.

The group saw a place for the government to become more involved in this sector.

Some further findings and topics were raised by participants:

- there is a skills mismatch rather than a skills gap;
- broad range of skills need to be synergistic with business skills;

- discrimination against over 45's. Employers need to appreciate the benefits of experience and flexibility;
- re-skilling requires government support;
- older workers need to sell themselves better;
- industry, in general, does not define its needs well. This creates a negative view of ICT when things do not go according to plan;
- create a think tank to better sell the capability of ICT across the board by using a common taxonomy to minimise confusion;
- drop in internal training budgets;
- need national plan for ICT employment;
- encourage company involvement in ICT training and short courses;
- improve perception of ICT as a career ;
- school students do not want to do ICT so we need to make ICT "cool" again;
- continuing drop in female participation is of concern; and
- curriculum content of ICT in secondary schools has the wrong focus. It should either be removed from curriculum or raised to the level of the pre-requisites for relevant university courses.

SUMMARY OF DISCUSSIONS FROM BREAK-OUT GROUPS

a) Employment in 2005? Hot Jobs

The current employment balance indicates that 80% of ICT placements are contractors. Companies want flexibility in obtaining the requisite skills and ICT workers want flexibility in applying them. However, in this environment there is no loyalty in either direction between employers and employees.

One participant commented on the relatively large pool of contractors, which keeps the market liquid. This flexibility is heightened by the growing use of online recruitment, with quick response times, and the shrinking of newspaper recruitment adverts, meaning that particular skills can be found more quickly.

Another reason for the use of contractors was that universities are not producing ICT graduates with sufficient understanding of business and how it operates. It was felt that universities need to work more closely with business to ensure graduates have a better understanding of the business paradigm.

There was also a view expressed that graduates require too much training (in business) and then leave as soon as they are trained. Companies are becoming less hierarchical and more cellular in their structure, adding weight to the view that the need for ICT people with business skills is growing. This reflects a growing need to apply specialist technical skills in

business savvy ways - that the technical expert often must also have a sound understanding of the business they are working in.

Fundamentally ICT has changed over the past decade and it is now an integral part of business. In fact today, there are almost no occupations/businesses that do not use ICT as a key driver or as basic support. However, some business people see that ICT can be a waste of scarce financial resources and they are concerned about getting a return on their ICT investment.

The introduction of packaged / foreign software is resulting in a reduction in demand for programmers. If this trend continues, even fewer students will embark upon courses that offer programming as a key element of the curriculum. This situation has the potential to remove one of the basic skill groups that exists in the ICT sector today.

b) Life after 45: ICT or a new career?

There was almost unanimous agreement that every other profession and trade faces a major problem in the coming 5 years when the majority of the "baby boomers" are eligible to, and most will, retire from the permanent workforce.

The potential chasm that will occur when this happens is going to be deep unless there is a concerted effort to address the underlying issues now.

There are potential solutions to this problem, including:

- removing any adherence to a mandatory retirement age;
- addressing the problem of knowledge transfer from mature workers to graduates;
- addressing the potential of mentoring as one key element of knowledge transfer; and
- establishing a program to inform students (especially female) and their parents of the potential of a career in ICT.

Some participants commented that there seems to be a polarisation between those in this age group who are succeeding and those who are not, with few in between.

One of the reasons for this situation is that a large proportion of mature aged workers have not updated their skills over the life of their career. Thus they are handicapped in the jobs market as their skills base is too narrow. A participant commented that this effect is heightened by the unwillingness of some older workers to accept that they may no longer command a high salary.

Some of the discussion centred on:

- changes in skill requirements;
- software which used to be built in-house is now bought as off-the-shelf packages; and
- changes in the way in which ICT is utilised.

It was also felt that employers did not always recognise the potential disruption to their business by the retirement, either voluntary or otherwise, of mature aged workers. There was a "lack of recognition of tacit knowledge of the mature aged worker", and "companies

do not know/realise what knowledge they have lost in shedding staff". The inflexibility of managers who hire ICT staff sometimes means that they don't consider the benefits of hiring skilled staff in part time roles and being more flexible in their working practices.

There was general agreement that a lot of experienced ICT people have been discarded at 45-55 years of age. It was accepted that there are some valid reasons for this situation e.g. downsizing, mergers, offshoring, however it was also agreed that it was "difficult for re-entry after time off work, i.e. unemployed or maternity leave".

As one attendee stated, "the industry needs Federal Government supported training (and re-training) courses, not necessarily in ICT, for older people, especially those displaced by offshoring".

Another group saw this in a slightly different context, "the industry needs to treat the problem, not the symptom. Changing attitudes in employment is treating the problem. Training is treating the symptom". Companies have to recognise that they "must invest in people but need to know in what to invest."

Another attendee stated "age discrimination exists and there is a perception that older workers cannot learn (new skills)". There is also a perception that younger people have higher energy levels and work longer hours - not necessarily reflected in the quality of the work output.

However on the bright side, as the population ages and there are fewer skilled young people coming through, employers may not have a choice and this will benefit older workers.

c) Industry Trends: Lies, Damned Lies and Statistics.

Trends in multiple directions don't necessarily contradict each other. It is quite possible that the number of jobs may be increasing but that skills shortages can exist *and* people may still have difficulty getting jobs.

The ICT scene is changing. The internet, web and ubiquitous computing are all current trends but we do not react to technical change quickly enough.

A view was expressed that the lack of a 'think-tank' for ICT in Australia (c.f. IBM in Kuwait) creates a major problem for the sector.

We do not sell ourselves well internationally to attract R & D etc. Industry bodies and governments need to work together to improve this

Some of the questions raised were:

- should ICT be considered just a business skill?
- is ICT mature enough to be a reference discipline i.e. The ICT perspective is a problem?
- do we need an 'ICT' philosophical base?

All of this in a sector with a proliferation of novel devices - mobile phones, speech novelty, web and PDA, real time technology.

Are our skills just too narrow? 'ICT' in isolation from organisation psychology can make it seem like an orphan. A situation such as this does not make for an integrated business.

On the other hand, should we worry about skills trends outside key areas? For example leading research organisations, CSIRO and NICTA, are only working on six fields for research. Research grants are too few in Victoria. We need strategies to address this issue if we are to contribute to the research field.

Are we too service oriented - rather than product focused? "We need to become ICT landlords not ICT renters to maximise economic return", suggested one participant, emphasising the need to encourage innovation rather than Australia always following an overseas lead in ICT.

The issues of professional status and personal accreditation were raised and the view of the group was that they were losing relevance and importance. In the final analysis the clients don't care, they need people who can do the job.

Do ICT recruiters (HR Managers) understand the ICT industry? The consensus of the group was that they didn't understand it. At best they understand the jargon but don't understand the potential for skills migration. A programmer who is highly skilled in one language can easily pick up a new language thus bringing their experience to the new organisation or role.

One of the most desperate needs is for a common taxonomy of ICT skills / job descriptions, between all parties to the discussion, recruiters/ industry/ education. Until this is achieved there will always be a failure to communicate.

A point made by this group was that graduates are seen by industry as cheap and trainable labour, rather than a valuable resource to be nurtured and retained.

The question was asked, "Why don't recruiters sell teams (small companies) rather than individuals?". The answer is that it is too hard to manage. However this is precisely the way in which tenders are won and carried out.

d) ICT Education: Hiccup or Crisis

Why is an ICT career not the goal of more students and graduates? The feeling of one of the groups was that every time there is a major ICT "crash", for example the "dot com crash" there is a commensurate loss of student interest.

The ICT education, both tertiary and secondary, is facing a major crisis, the continuing reduction in local student numbers shows that it is more than a hiccup. This reduction over the past few years means a reducing number of graduates in the pipeline.

Today, more than half university ICT enrolments are from overseas, a situation that has been brought about, in part, by the pressure on universities to become businesses.

The view of the group was that there was no *official* skills gap - but that there is a gap in the real world. A good example of this is the difference between old telecoms and data / ICT telecoms.

It was felt that as a rule, employers are not satisfied with the skill sets offered by graduates. This again points to the relevance of course subject matter.

It was agreed that there is still relatively low participation by females in the ICT sector. The obvious question was: "Does it matter?" - The general feeling was that the answer was "Yes" it does matter. Some of the reasons for this were:

- women have different ways of working;
- women make a different contribution - for example in their approach to team work; and
- we need a gender balance.

There was agreement that there were problems in the ICT sector, which manifest themselves in the student shortages.

The reasons were:

- students are taught the wrong elements of ICT at secondary level;
- students and parents have mistaken perceptions of ICT as a career; and
- these problems are exacerbated by the ICT image problem where disasters get publicity and smart wins do not.

The net result is that young people don't want to study ICT at present.

Whilst discussion centred on the supply side (university graduates) of the equation, it was felt that the demand side (industry) should be much more specific in its needs.

In this era of lifelong learning, the retraining/upskilling burden is the individual's responsibility. This is due mainly to companies reducing or removing their investment in training. There is a great deal of data, some anecdotal, that when times are tough, the training budget is one of the first to be cut.

Solutions were offered that covered both the short and longer term.

There was a clear need to address both immediate needs and the pipeline. Participants suggested the following ways this might be done:

- develop a 'plan' at the national level (compare our sector with what has been done by Tourism Australia);
- encourage corporate involvement;
- emphasise the importance of short courses and certified courses;
- improve perceptions of an ICT career with teenagers; and
- stop teaching ICT in its current form in schools.

ADDITIONAL DISCUSSION TOPICS

Research

Another area of concern was in ICT research and development. It has been found that key research groups are only working in a small number of research fields due, primarily, to a lack of funding. It was agreed that there is a need to improve the level and availability of Government grants to broaden the R & D environment.

The strong focus today on services rather than products means that there is little investment in developing local Intellectual Property (IP). This situation may prevent Victoria from maximising the economic return from ICT projects.

Work Life balance

Another issue that created much discussion was that of flexible working hours and part-time employment for many traditional full-time roles.

Some of the comments on this topic included:

- “employer has a mindset against part-time roles”. The prevailing attitude was that this (role) has always been full-time;
- “need to educate employers on the benefits of flexible working environments, e.g. 3 days a week can equal 90% productivity required”;
- “larger firms need to address work life balance”. It was recognised that some firms are starting to address this issue;
- “need to recognise changes in work attitudes and priorities, i.e. at 50 years of age, often do not want 40+ hour per week job”; and
- “working conditions apply to both young and old.”

The debate addressed whether the desire for part-time work was only on the mature workers’ agenda. In today’s changing environment, young people are also challenging the status quo of working the standard business hours - 9-5, 5 days a week. There was a growing recognition that there was a life outside the office and that family and health also figured in an individual’s life.

CONCLUSIONS

There was general agreement across all groups that the ICT sector needs to address both immediate needs and the pipeline. This will require co-operation between all those involved. As one attendee said there is a need to “develop a national ‘*plan*’, similar for example to that of Tourism Australia. There is a need to encourage company involvement along the way to ensure success.”

There was agreement that a pool of talent exists in the marketplace of which maximum use is not being made. It was seen as vital that all avenues be traversed to ensure this volume of experience and expertise is not lost to the ICT sector. This will entail some in depth analysis as to the most effective method by which this goal can be achieved.

There can be no doubt that the ongoing development of the ICT industry is critical to the Victorian (and Australian) economy by improving productivity across all industries and professions. Successive governments have espoused this view and the Victorian Government is one leading the charge. However from a national point of view all governments and industries must work more closely to achieve the long-term benefits.

One of the interesting perceptions amongst the participants was that ICT has changed - it is now a fundamental part of business. In fact there is not one industry or profession that would not struggle to exist without its under-pinning ICT infrastructure.

The Workshop concluded that there are a number of areas the ICT industry and other parties need to address to ensure that the Victorian ICT sector remains a vibrant, competitive player in the local and overseas markets.

COMPANIES AND ORGANISATIONS REPRESENTED AT THE CIER ICT SKILLS WORKSHOP ON 23 MARCH 2005

In alphabetical order:

Company/ Organisation

Australian Computer Society	MLJ Consulting Pty Ltd
Bluefin	Monash IT Pty Ltd
Box Hill Institute of TAFE	Monash University
City of Ballarat	Mooroolbark Technologies
City of Whittlesea	NEC
City Software Business Solutions	Nova IT
Coles Myer	POWERflex Corporation
COMET	RMIT
Deakin University	RGH Consulting
Department of Communications Information Technology and the Arts (DCITA)	Rusher Rogers Recruiting Pty Ltd
Department of Innovation, Industry and Regional Development (DIIRD)	Senetas Group
Stockdale ACS	Sensis
Intech Australia Pty Limited	Swinburne University
Kerandan P/L	The Age
Marpeon	The Office of the Shadow Minister of Education
Microsoft	University of Melbourne

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