ADDRESSING ICT WORKFORCE CHALLENGES

APESMA's response to the Australian Workforce and Productivity Agency's ICT Workforce Issues Paper

Association of Professional Engineers, Scientists and Managers, Australia (APESMA)

February 2013

APESMA

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Foreword from APESMA CEO Chris Walton

Australia needs an innovative and competitive economy – and central to this is a high technology future and a vibrant local ICT industry with appropriate levels of local skill and specialist expertise. With increasing demand for high-level ICT skills, ICT professionals – who constitute two-thirds of the ICT workforce[1] - will be central to productivity improvement over the next decade. To achieve productivity gains, ICT professionals need to influence the future of their industry to create new and challenging opportunities. In turn, the recognition of the input of ICT professionals, their remuneration and conditions, career development and skill currency will be essential to developing a diverse, innovative, responsive and committed Australian industry.

The Association of Professional Engineers, Scientists and Managers, Australia (APESMA) has several thousand members registered with the Information Technology Professionals Association (ITPA) – a special interest group of APESMA. We welcome the opportunity to consider the kind of support, structures and practices at both the structural and enterprise levels that will be necessary to create a sustainable ICT workforce capable of realising optimal levels of innovation, productivity and competitiveness.

APESMA also welcomes the opportunity to ensure the debate about productivity and ICT moves beyond a simplistic and short-sighted push for further IR deregulation – a very basic approach by some sections of the business community which treats employees as part of the problem rather than part of the solution. With various commentators having highlighted the fact that wages' share of GDP has decreased in the last decade, it's clear that there's a need to look beyond labour for long-term productivity gains.[2] APESMA advocates a wider suite of public policy initiatives to ensure effective solutions ranging from better management capability, career development, workforce skills development aligned with business objectives and industry demand, effective strategies for attracting and retaining quality ICT staff, building an innovation culture and broadening the talent pool which is the pipeline for the ICT workforce.

APESMA considers it critical that we play an active and considered role in identifying and responding to ICT workforce challenges - challenges that can only be tackled effectively with the shared cooperation and commitment of major stakeholders including government, industry, the tertiary sector, professional associations, unions and ICT practitioners themselves.

We thank the Australian Workforce and Productivity Agency (AWPA) for the opportunity to participate in this process.

Chris Walton
APESMA CEO

Background information

What are APESMA and the ITPA?

The Association of Professional Engineers, Scientists and Managers, Australia (APESMA) is an organisation registered under the Fair Work Act 2009 representing over 25,000 professionals including professional engineers, scientists, veterinarians, surveyors, architects, pharmacists, managers, transport professionals and information technology professionals throughout Australia.

APESMA represents several thousand members working directly in Information Technology and in IT roles across industry through its special interest group - the Information Technology Professionals Association (ITPA).

To be eligible to join APESMA, IT professionals require a minimum 3-year IT degree, or have equivalent experience and be employed or usually employed in a professional position which requires the exercise of professional IT skill, knowledge or expertise. Pathways to the profession are varied and range from software engineers and computer scientists with engineering and science backgrounds, to programmers, testers, analysts and IT managers who have undertaken IT courses.

In 1995, the Australian Industrial Relations Commission approved the amendment of APESMA's eligibility rules to provide coverage for independent contractors. APESMA can cover any professional engaged as an independent contractor who would be eligible for membership of the Association if they were an employee performing the same work. With a significant proportion of the ICT workforce engaged as contractors, this broad and exclusive coverage means APESMA is a strong and genuinely representative voice for IT professionals regardless of their method of engagement.

APESMA's submission

In 2010, Skills Australia released its Workforce Futures report recommending that the Australian Government adopt a workforce development approach in its skills agenda. Workforce development models incorporate both structural and workplace initiatives to ensure an appropriate fit between skills development and demand.

This submission will outline a range of factors which have the potential to constrain or enable innovation, productivity and competitiveness at the structural and workplace levels and detail initiatives that would not only improve retention rates and provide more stability for employers but enhance innovative capacity and economic opportunities in the ICT industry and beyond – all of which are critical to Australia's future growth and prosperity.

What does APESMA/ITPA do for members?

In addition to providing services, information and assistance for individuals about issues relating to our members' working lives, APESMA offer an extensive range of supplementary lifestyle services, as well as actively providing a voice for the professions we represent at the structural, industry, professional and policy level.

Workplace advice and support

APESMA/ITPA offers advice, and when needed, representation before a range of tribunals on employment contracts, leave entitlements, underpayments, reclassification, superannuation, workers compensation, bullying and unfair treatment, unfair dismissal, redundancy and other common workplace problems.

Remuneration and conditions

The Association was responsible for making the first IT Award in 1999 and in 2010 this Award was consolidated into the Professional Employees Award 2010 [MA000065]. In conjunction with the Australian Computer Society, APESMA also conducts an annual market rates survey for IT Professionals. APESMA advises members on the National Employment Standards and Award and market rates.

Career development

IT career development is a major priority for the ITPA and in line with this focus offers a comprehensive range of career support services to ICT professionals.

These include:

- an annual professional development scholarship called IT Upskill;
- mentoring for IT professionals transitioning from employment to self-employment;
- resume reviews and mock interviews;
- a jobs board to assist our graduate members with finding jobs; and
- assistance with preparing a position description.

We are currently developing a dedicated IT Career Insights series. The titles available to date include:

- When people and systems clash: the role of the IT professional;
- IT experts: How's your business acumen?;
- The importance of soft skills for IT professionals;
- Getting your IT career off to a good start: a Guide for graduates and young IT professionals;
- Managing your IT career;
- IT Consulting - is it for you?;
- Strategic perspectives on technology
- Retaining IT talent; and
- Managing knowledge workers.

We also have a Management career development series available; many of these titles are highly relevant to career development for ICT professionals. The titles of these include the following:

- Managing workplace conflict: perils and possibilities;
- How can I manage them? They're more qualified than me;
- Risk management: an introduction;
- Dispute resolution: an introduction for managers;
- From following to leading: finding your pathway;
- Leading and managing change: people in focus;
- Getting the best out of your team;
- Motivation and the manager's role;
- Dealing with workplace stress;
- Being more strategic: developing a helicopter mind;
- Managing your professional image for career success;
- Am I a leader or manager or both?;
- Understanding people's behaviour at work: an essential management competency;
- How can I manage them? They are older than me;
- Understanding workplace culture;
- Performance pay for professionals - the basics;
- Managing upwards;
- Collaboration and the manager's role;
- Credulous listening;
- Reflective practice - a personal productivity tool for managers;
- Social media in the workplace - sound management the key;
- Are you promotable?;
- Staff engagement - what's the bottom-line?;
- Traits of effective leaders;
- Facilitating team member performance;
- Social media - employer takeup, productivity, protocols and policies;
- Flexibility at work - the business case;
- Effective management - the link between organisational performance and people;
- Avoiding burnout;
- Office politics: more than a game;
- Bad career move?;
- Completed your MBA and ready for a bigger role?;
- Power in the workplace - what managers need to know;
- Being sidelined? Find out why;
- Managing diversity - some practical suggestions;
- The qualities of successful managers;
- Leadership success - do you have what it takes?;
- Managing knowledge workers;
- Management incompetence - what does it look like?;
- Are you a workaholic?;
- Overworked or underpaid? A management perspective;
- Boosting employee retention: why people leave bosses not jobs;
- Improving workplace morale;
- Management decision-making;
- Too much on? Learn to say No;
- Are you at risk of a bullying claim? Sound management practices the key;
- In a management role with no training? The way to succeed;
- Unfair dismissal remedies for managers;
- Making the most of generational differences;
- Assertive or aggressive? Knowing the difference;
- Transitioning to management;
- Project management guide;
- Strategic planning;
- Ethical decision- making;
- Motivation and teams;
- Performance management;

- Financial management for managers;
- Corporate sustainability;
- Team effectiveness;
- Managing performance;
- Managing organisational change;
- Quality management;
- Time management;
- Managing innovation;
- Employee involvement & participation;
- Mentoring guide; and
- Leading change.

Information and services for IT contractors

Because so many IT professionals are engaged as contractors via labour hire agencies, we provide a range of resources for those in non-standard work arrangements including contract for service review by a solicitor, a Guide to Contracting through an Agency, discounted Professional Indemnity insurance, recommended IT hourly rates and information on the Personal Income Rules.

Research

In 2011, the ITPA produced the *At the Crossroads* Report which explored staff engagement and motivation to assist with staff retention, and the *RADAR Report* which considered recruitment, development and retention strategies as part of the solution to skills gaps and shortages at the enterprise level. The content of these reports will be referred to in Part 3.

Submissions

APESMA has made the following submissions on behalf of IT Professionals:

- ***Harnessing the potential of the flexible workforce*** to the Moran Review of the APS (the APS is the single largest purchaser of IT services in response to the Ahead of the Game report;[3]
- ***Inquiry into the Role and Potential of the National Broadband Network*** - this submission outlined our view on the potential of the NBN, particularly in relation to leveraging the potential to expand Australia's existing telecommunications technology and product industry;[4]
- ***Skills Australia Review of the Skilled Occupation List*** for 2012;[5]
- ***PSI for IT professionals*** - a tax issue which particularly affects those in IT;[6] and
- the ***Gender Pay Gap in ICT***[7].

Other information

The ITPA also provides members with the following to provide career support and up-to-date on industry trends:

- a quarterly IT Market Update;
- complimentary member access to the Australian Standard on IT Governance;
- access to the ATO's work related expense guide for IT; and
- discounts on public courses on the Skills Framework for the Information Age through Ensys.

Lifestyle services

APESMA offers a range of discounts on services including health insurance, motor vehicle salary packaging, dining and entertainment, travel and accommodation and financial planning.

Part 1 – Why is the ICT industry and ICT infrastructure important?

The ICT industry

The ICT industry is one of Australia's most critical sources of employment, a significant enabler of innovation and productivity and a consistent driver of economic growth. OECD, Productivity Commission and ABS studies estimate that 50 per cent of all Australian business productivity can be attributed to the application of ICTs.[8] While ranked 54th by population, Australia's ICT market is the 14th largest in the world and the fifth largest in the Asia Pacific region after Japan, China, India and Korea.[9] According to the Economist Intelligence Unit's 2012 report, Australia's digital economy ranking - which assesses the quality of a country's ICT infrastructure and the ability of its consumers, businesses and governments to use ICT to their benefit – was 17th out of 70.[10] In the five years to 2010, Australia's ICT industry's annual growth rate exceeded that of the US, UK, Singapore, South Korea and Taiwan[11]. By 2013, Australia's total spend in ICT is projected to be A$64 billion, with an annual growth rate of eight per cent over the period 2003-17[12]. In total, there are around 543,992 ICT workers Australian workforce, with around 381,010 being professionals and managers[13] and the ICT industry contributes 7.74 per cent of Australia's GDP[14] - equivalent to that of the mining industry[15] - and $4,528 million in ICT exports.[16]

ICT Infrastructure

The National Broadband Network

It is widely acknowledged that consistent, reliable, high-speed national broadband infrastructure is a critical enabler of not only improved innovative capability, economic growth and productivity for Australia but also of individual and community engagement and enhanced service access. Australia's globally-leading initiative National Broadband Network (NBN) will provide the infrastructure for realising, as Stephen Conroy put it in Australia's Digital Economy: Future Directions,[17] "all the activities that networked technology makes possible".

APESMA represents a large proportion of the diverse range of technology-management professionals who will be engaged in the implementation of the NBN initiative.

ICT professionals will play a fundamental role in designing, constructing and maintaining the NBN.

Research and development infrastructure

Australia has a well-developed and internationally highly-regarded network of research and development (R&D) facilities run mainly through the private sector and supported by the federal government and the tertiary sector. APESMA concurs with the view of the Australian Computer Society that R&D spending must focus not only on basic and strategic research but on applied and commercial R&D to maximise commercial outcomes, product realisation and re-engineering existing technologies as a means of generating revenue and growing exports.[18]

As set out in Australian Computer Society (ACS)/National ICT Industry Alliance (NICTIA's) 10 year strategic vision for the Australian ICT sector, appropriate ICT infrastructure must in turn be supported by an appropriate and robust regulatory legislative environment which has regard to appropriate consumer safeguards, mechanisms which address the digital divide, the commercialisation of innovation and development of new products and services, and support for industry to attract necessary venture capital to create, exploit and globally license intellectual property.[19]

Link to productivity and economic growth

The capacity to create innovative solutions is at the core of ICT work. As business and the community face new and more complex problems, the capacity to test new ideas and find innovative solutions must be nurtured as a national asset. Planning and investing in ICT infrastructure and in applied and commercial R&D as well as basic and strategic research means investing in our capacity for the future. A strong and competitive technology industry will drive economy-wide productivity growth and underpin innovation across all sectors of the economy,

Part 2 – ICT Workforce development at the structural level - the issues of demand and supply

Demand

The area of ICT demand is a complex one and a comprehensive discussion is beyond the scope of this submission. The aim of this section therefore is limited to very briefly outlining some of the major trends and issues which will impact the ICT sector in the short to medium-term which should inform the workforce development policy agenda.

Trends impacting demand

Demand in the ICT employment sector is likely to be impacted in the medium-to-long term by the following trends:

- **Government's digital economy strategy** - e-Government initiatives will create increased demand for analysts and testers over the medium term;
- **NBN** - it is expected that construction-related services and the design, building and maintenance of the NBN will require the rapid ramp-up of a design and construction industry by an estimated 16,000 to 25,000 personnel over the 10-year period of the project to cope with the rollout of fibre and wireless networks to pass 10 million premises in 10 years;
- **Cloud computing** - forecasters suggest increased use of cloud computing in the medium to longer-term;
- **Mobile technologies -** likely to continue to expand in the medium-term;
- **Data/internet security** - organisations will increasingly need to balance data access with security with the continuing trend toward online transactions and cloud computing;
- **Use of ICT for social communications/networking in a business context** - this is likely to create demand for ICT professionals with experience in social networking applications who can integrate customer relationship management, web and internal communications; and
- **Continuing rapid rate of technological change** - will create new technologies and new ICT specialisations, and, to keep up with rapidly evolving and updated hardware and software, will require a broad-based commitment to ongoing skills development of the local workforce.

Gaps in the definition of the ICT workforce

Because of the new and emerging areas in the ICT sector related to mobile applications, data and internet security and cloud computing, the specialisations set out in the ANZSCO classifications are likely to require updating. This creates in turn gaps or a lag in the ANZSCO occupations which are used to define the ICT workforce including those set out in the AWPA Issues Paper.

Offshoring

It is worth noting that the offshoring of ICT services can distort supply and demand in the local market. APESMA/ITPA is concerned that employers are choosing to offshore ICT and ICT-related work in preference to adequately attempting to source labour from the local professional workforce and/or develop the skills of their existing workforce.

Supply

Projections indicate that ICT professionals are currently and are likely in the future to be in short supply. The supply of skilled labour is critical to a skilled and experienced ICT workforce and ICT skills shortages will constrain Australian innovation and growth.

It is widely acknowledged that the sector will over the next decade be marked not only by cyclical skill and supply issues but also significant systemic supply issues. The ACS/AIIA 2008 skills report[20] forecasts a shortfall of 25,000 ICT jobs by 2020. The complexity of aligning skills development with demand and ensuring the tertiary sector is responsive to industry needs in the short and long-term is complicated by the rapid rate of technological change.

The gap between demand for ICT skills and the supply of skilled ICT professionals compromises Australia's export and productivity potential, innovative capability and employment growth across Australian industry. Industry commentators predict that skills shortages which were in part alleviated by the global financial crisis are set to re-emerge in the short-term.[21] & [22]

In light of these trends, ICT workforce development in relation to the issues related to supply over the next decade has become critical.

Skills shortages

Shortages are in two areas - primarily where industry requires high level skill and experience, and at the entry level.

Workforce planning and foresighting

Investment in training and skills development at the industry level, in line with industry demand will critically underpin ICT workforce development over the next decade. There is evidence that industry adopts a short-term approach to staffing and skills development[23] which negatively impacts skills supply. It is APESMA/ITPA's view that incentives to encourage a commitment to investing in skill foresighting and planning which looks beyond short-term cyclical and/or market fluctuations are needed at both the workplace and industry level. APESMA is committed to working with other industry stakeholders to progress this important work.

Professional ICT skills supply

University commencements and completions

Since 2008 there has been a modest increase of 4.5 per cent in domestic university enrolments[24] after a significant decline of over 18 per cent in the period 2002 to 2005[25] and a slowing but still significant rate of decline of 11.4 per cent between 2006 and 2008[26]. As confirmed in the AWPA white paper there has also been some improvement in domestic completions since 2009 after an average rate of decline of 8 per cent between 2003 and 2005 and 14 per cent decline between 2005 and 2009.[27] Domestic university completions are inadequate to meet demand and the long-lead time needed to develop skills means this is likely to continue to be an issue affecting supply in the medium to long-term.

Skilled migration

DEEWR trend data based on DIAC migration data confirms a substantial increase in the net overseas migration of ICT professionals over the past decade and skilled migrant ICT professionals account for a significant proportion of the supply of newly-qualified ICT professionals. APESMA/ITPA concurs with the view stated in the AWPA's issues paper that skilled migration is an increasingly significant source of skills supply for the ICT sector and skilled migrants will continue to play a major role in meeting Australia's ICT skills needs in the future.[28]

It is APESMA/ITPA's view that skilled and temporary migration programs must have mechanisms in place to ensure migrant workers are subject to protections in the workplace and that importing skills is not a means for driving down market rates and conditions of employment. It is also our view that skilled and temporary migration in ICT should occur in the context of interventions which assist with reducing attrition rates from tertiary ICT courses, adequate professional development for Australian-based ICT professionals and enterprise-based strategies to ensure optimal retention of ICT specialists in the profession.

Graduate employment

Graduate Careers Australia have recently noted that the discipline employers had most difficulty with sourcing graduates was Information Technology and that this has been the case for two years.[29] While an analysis of issues around ICT graduate employment are beyond the scope of this submission, clearly initiatives which encourage industry collaboration with universities on the skills and attributes required to produce work-ready graduates, understanding and addressing any skills mismatches which exist, and initiatives which maximise opportunities for entry level graduates are critical for ensuring the supply of high-quality ICT graduates whose skills meet the needs of industry.

Declining numbers of secondary students studying STEM subjects

Secondary schools are clearly the critical pipeline for developing Science, Technology Engineering and Maths (STEM) capabilities which support ICT skills. There is an ongoing need for investment in foundational support for participation in science and mathematics subjects in the secondary school system.

Gender imbalance in ICT

Girls studying ICT in secondary school

DICTA in 2006 reporting on the ICT skills shortage, recommended that "action be taken to review and enhance the teaching of ICT in schools". According to those involved in the Digital Divas (DD) project,[30] girls' lack of interest in Information Communication Technology (ICT) is clearly evident by senior secondary school[31] and research shows a steady decline in interest in ICT as a career choice in girls between Years 8 and 12.[32] There is, according to the DD project, an ongoing need to build girls' ICT skills and confidence, increase girls' motivation to continue studying ICT and to enter the ICT workforce.

Differential participation studying ICT at university

The following is an extract from an article called "An Inconvenient Truth: the invisibility of women in ICT[33] which discusses the trend toward declining female university enrolments over the medium to long-term:

> *Whilst the percentage of women participating in ICT courses at Australian universities has fluctuated according to the specialisations within the discipline, apart from the three years after 1997 when there was a growth in aggregate female enrolments of an average of half a per cent per year, there have been declining female enrolments for 20 years[34]. From 2000 to 2005, the popularity of the ICT discipline has plummeted in Australia with fewer women and men entering the ICT field at university: there has been a decline of 29 per cent in males, and an alarming 51 per cent decline for women. The aggregate proportion of females enrolling as new undergraduate ICT students in Australian universities has also declined from 26 per cent in 2001 to 20 per cent in 2005 (DEST 2006) …*
>
> *At a time when the overall participation rates of women in higher education in Australia have increased to 56.7% of all students in 2004 (DEST 2004), and disciplines such as medicine and law have more than 50% undergraduate women (medicine 57% in 2003, law more than 50% since 1996), female aggregate enrolments in ICT courses have decreased to 20% overall. Since 2001, ICT has witnessed a 46% collapse in the number of students selecting ICT courses as their first preference for higher education in Victoria (VTAC 2006, Figure 1). When this figure is analysed by gender, there is an overall decline in ICT course selection of 65% amongst females compared to 40% amongst males (VTAC 2006). With the overall participation of women in the ICT field of study close to 20%, this leaves many ICT courses and year levels with cohorts of women far less than 15% (DEST 2006).*

Attracting and retaining more women in university ICT courses is clearly therefore an issue of both equity and practical supply which must be addressed at the structural and policy level.

Differential participation of participation of women in ICT occupations

The issues around differential university commencements and completions is reflected in industry, where currently only 24.1 per cent of women work in ICT occupations.[35] Again, while a detailed discussion of strategies which would assist with the attraction and retention of women in the workplace is beyond the scope of this submission, some of the strategies at the workplace level include the following:

- transparent salary bands and equal opportunity policies;
- work/life balance;
- career progression which takes account of career breaks;
- maintaining skills and knowledge to keep up-to-date;
- workplace culture;[36]
- ensuring women's skills are valued by using gender inclusive job evaluation and assessment;
- ensuring women have access to discretionary payments and bonuses;
- addressing occupation or role segregation for women;
- ensuring that women do not experience differential access to training;
- ensuring representation at the senior management level and in professional leadership and Board positions;[37];
- the need to provide flexibility aligned with business/organisational objectives; and
- training in diversity management for managers.

Additional workplace strategies are detailed in Part 3 in our discussion of strategies for developing better management capability.

Age diversity

While an analysis of issues around mature-aged ICT professionals is outside the scope of this submission, with over 65 per cent of the ICT workforce in the 25-44 age bracket[38] and the bulk of unemployed professionals over 45 years,[39] there is a need to explore initiatives which address barriers to retaining mature-aged experienced workers in the ICT workforce.

Some of the strategies detailed in the Australian Computer Society's *Improving Age Diversity in the ICT workforce* include:

- addressing negative stereotypes;
- maintaining skills and knowledge to keep up-to-date and minimise perceived or real skills obsolescence;
- transparency in access to training and promotion;
- transparent merit-based recruitment processes;
- reducing migration of mature-aged ICT professionals across to other occupations;
- the need to provide flexibility aligned with business/organisational objectives; [40]
- training in diversity management for managers; and
- when a restructuring process occurs, ensuring that it does not impact differentially on particular groups in the workplace including mature-aged professionals.

Attracting and retaining greater numbers of mature-aged ICT professionals in the workforce is an issue of both equity and practical supply.

Additional strategies are detailed in Part 3 in the discussion of strategies for developing better management capability.

With:

- projections indicating that ICT professionals are currently and are likely in the future to be in short supply;
- skilled migration playing an increasingly important role in meeting Australia's ICT skills needs in the face of university enrolments and completions inadequate to meet domestic demand;
- barriers to girls studying technology-based subjects in secondary school;
- significant barriers to the attraction and retention of women in ICT courses and in workplaces;
- over 65 per cent of the ICT workforce in the 25-44 age bracket, there is a need to look at barriers to retaining mature-aged experienced workers; and
- an industry having difficulty sourcing high-quality work-ready graduates,

systemic interventions into the education system, the development of enterprise-based retention strategies, a commitment to ongoing skills development for mature-aged workers and greater collaboration between industry and universities to ensure an adequate pipeline of high-quality work-ready ICT graduates are key policy areas that must be addressed.

APESMA concurs with the view of the AWPA set out in the Issues Paper – that it is critical that the supply of ICT professionals go beyond the pipeline available from universities to broaden the mix and diversity of the workforce by improving the participation of women, mature-aged workers and other under-represented groups.[41] APESMA holds the strong view that investment in these areas is a matter of equity and practical supply, and that strategies to improve the participation of women and mature-aged workers must underpin any national ICT workforce development plan.

Part 3 – ICT Workforce development at the enterprise level – workplace strategies

Better management capability

Modern management practices that support staff engagement and innovation and, in turn, competitiveness and growth, will underpin productivity improvement in 21st century organisations. Change management, an innovation culture, collaborative and flexible workplace practices, motivated and engaged staff who are involved in decision-making and strategic planning are just some of the areas briefly explored in this section.

The outcomes of improving management capability in these areas not only make a significant contribution to organisations' sustainability and bottom line, but the value of the nation's economy.

There are no short-cuts but APESMA holds the view that it's a more sophisticated and compelling strategy than short-term cost cutting and one which will pay dividends in the longer-term. Developing and embedding these modern practices in workplaces requires a recognition by employers that their people are the key to future growth and innovation rather than a cost to be cut – that people are not part of the problem but ***part of the solution***. This section details the nexus between improved management capability, the attraction, development and retention of high-quality staff and improving the productivity of the ICT workforce.

Understanding Productivity: Australia's Choice[42] – a report commissioned by the McKell Institute – advocates better management capability as critical to improving productivity. "Australia's managers", they say, "rank poorly for management skills and capability in comparison with other advanced economies, and better training is needed to help managers harness the talent and creativity of the workforce."

According to the Society for Knowledge Economics (SKE) 2011 landmark report Leadership, Culture and Management Practices of High-Performing Workplaces in Australia: The High-Performing Workplaces Index,[43] there is "clear evidence that improving Australia's productivity – or effectiveness at work and performance of our workplaces – is and will be largely a function of our commitment to develop leadership and management capabilities across all organisations in our economy. President of the SKE Steve Vamos advocates investing "in this vital and undervalued lever of Australia's productivity performance."

APESMA has long advocated leadership and management practices which recognise people as central to organisational performance and a key driver of workplace productivity. APESMA's Management Insights title "The link between organisational performance and people" explores in detail the link between organisational performance and well-developed people management strategies:

> *There is strong evidence that high-performing workplaces differentiate themselves from less impressive performers through the value-adding performance of managers at all levels. It has been shown that managers' value to high-performing workplaces is strongly associated with their keen attention to the organisation's 'intangible' assets such as culture, morale, staff skills and innovation capability as well as to financial and other quantitative measures of performance. Whereas managers in lower performing organisations often see their job as primarily process and systems-focused, their higher performing counterparts also understand the bottom line-value of investing a significant proportion of their time in people.*
>
> *As a result, high-performing organisations are better places to work because people are more satisfied with their working conditions, more engaged with their organisation and generally happier at work than their opposite numbers in lower-performing organisations. High-performing managers see that helping staff reach their full potential at the same time achieving the organisation's aims is good for people and good for business.*[44]

APESMA/ITPA's *At the Crossroads* and *RADAR* reports examined in detail some of the management practices which constrain and enable innovation, productivity and competitiveness. The 2011 RADAR report suggested that:

Including effective strategies for the recruitment, development and retention of ICT professionals at the enterprise level as part of a broader workforce development agenda is a way to recognise people management strategies as a significant part of the problem – and the solution – to skills issues; they should form a fundamental part of the innovation agenda and vision for the ICT sector over the next decade.[45]

APESMA holds the view that better management capability in the following key areas will improve productivity in ICT workplaces:

1. Managing innovation;
2. Managing workplace culture;
3. Managing training and skills development; and
4. Fair reward and recognition.

Managing innovation

For the purposes of this submission, innovation is defined as the conversion of creative ideas into valuable or profitable solutions. The AWPA Issues Paper notes the link between ICT, innovation and productivity[46], and with Australia's Global innovation ranked at 23 well behind the Scandinavian countries, the UK, USA, Singapore, Hong Kong, Germany and New Zealand, [47] improving our innovative capability at the workplace level must be a priority.

The McKell Institute report advocates building an innovation culture as critical to improved productivity. The report says that businesses that innovate are twice as likely as others to report increased productivity, while 41 per cent report higher profitability.[48]

It is clear that organisations must innovate in order to respond to changes in their environment and adapt to survive and thrive. And good people management is fundamental to successful innovation. Innovation in the 21st century workplace is important for competitive advantage and often critical to survival for contemporary organisations. Whatever their role, managers need to understand what innovation means in their organisation, the mechanisms for managing innovation and how to create a climate in which innovation can thrive. It calls for a particular mindset in the individual staff who are expected to innovate and across the organisation as a whole, and in the organisational mindset which is about the organisation's culture and the factors which determine culture (discussed further in the following section).

Managing workplace culture

Workplace culture is a concept and set of practices as broad as it is complex. In order to effect *sustainable* change leaders and managers need to develop an understanding of the factors which influence the shared values, beliefs and assumptions which develop over time in workplaces. The influencing factors include management and leadership styles, organisation structure, control systems, communication processes and 'organisational folklore' – the myths and stories which develop in workplaces and often take on 'a life of their own'. Without a full exploration of managing workplace culture, we note here some of the key areas which impact attraction and retention.

These include:

1. organisational change;
2. employee participation and involvement;
3. flexibility at work;
4. staff engagement and motivation;
5. managing diversity; and
6. work/life balance.

Organisational change

Leadership and management of organisational change is one of the most significant challenges facing organisations today. There's little doubt that people hold the key to optimal outcomes from change efforts. To bring about successful change, managers need to ensure staff understand the drivers of change, involve them in planning for change and understand how to deal collaboratively with resistance to change. Effective leaders create a vision of where change efforts are headed and engage others in sharing the vision and determining their part in its realisation.

Employee participation and involvement

Employee involvement and participation in decision-making is widely acknowledged as a characteristic of high-performing organisations. It relies on sound strategic planning and thinking, delegation, decision-making, good communication, a culture of creativity and innovation and robust performance management systems and processes which enable people to be clear about what's expected of them and how this relates to their delegated responsibilities. The evidence confirms that when employee participation is managed effectively, organisations' return on their investment in their staff is reflected in improved customer satisfaction and bottom-line results.

While an examination of the detailed implications of a failure to implement employee participation and involvement in organisations is beyond the scope of this submission, APESMA's report *At the Crossroads: Barriers to rebuilding ICT Capability Post-GFC*[49] examines some of the consequences when employee participation and involvement is not an organisational priority.

Flexibility at work

High-performing organisations have long understood that workplace flexibility is associated with valuing people and creating environments in which staff feel motivated to do their best work and is closely linked to the attraction and retention of quality staff (see also sections below on work/life balance and workload and working hours. The organisation benefits from workplace flexibility and so does the bottom line. The SKE report mentions rotation of tasks, cross-training, mentoring and coaching programs as specific strategies for developing flexibility in employees.[50]

Staff engagement and motivation

Motivation and staff engagement are recognised as central to improving workplace productivity and managers play a key role in these areas. Motivation can be defined as a person's capacity and willingness to perform and the extent to which they feel supported to do so. An understanding of what motivates people in the workplace is critical for managing performance at work, as is awareness of the factors which are likely to contribute to people feeling demotivated. Engagement is about more than motivation and job satisfaction - an engaged employee is satisfied with their work and sees its contribution to the whole. Engaged staff care about the organisation and are committed to investing themselves in its future. As the SKE report confirmed, staff engagement contributes to the bottom line via enhanced productivity, less waste and increased customer/client satisfaction, with managers playing a critical role in providing work that's interesting and challenging, understanding staff motivation, supporting, understanding, utilising and respecting staff differences, keeping staff informed, resourcing the work and providing visibility of future plans and the potential for staff to contribute to their realisation.[51]

APESMA/ITPA's *At the Crossroads* report considered in detail demotivating influences in the workplace.

Diversity

At the level of the enterprise, diversity is good for organisations and good for business. Research has shown that a more diverse workforce increases effectiveness and productivity. Diversity creates opportunities to discover new ways of thinking and alternative approaches to doing things. Diversity can be a distinct advantage in problem-solving and decision-making especially when there is a need for creativity and innovation. It is critical that diversity is built into the ICT workforce in general, as well as into management and leadership positions. (See also section on Supply for a discussion of diversifying the talent pool from which the ICT workforce is drawn to improve the pipeline of ICT professionals.)

Work/life balance

The *2010 APESMA/ITPA Survey of Perceptions of Work/Life Balance for Women ICT Professionals* found that work/life balance was a complex and challenging issue for professional women in ICT. Respondents generally experienced significant difficulties around balancing their work and life/family responsibilities with 53 per cent of respondents indicating that they did not feel they currently had work/life balance.

In looking at experiences of recognition, advancement and career progression, the survey found that 46 per cent of women ICT professionals believed that balancing work/life responsibilities had significantly or moderately impeded advancement of their career.

In evaluating the extent to which work/life balance was impeded by work culture and practices, 27 per cent of women ICT professionals indicated that their organisation did not genuinely encourage a balance between work and life/family. 57 per cent said that showing dedication in their workplace equalled long hours, 39 per cent indicated that their workload was unreasonable, and 49 per cent said that managers and senior staff did not model good work/life balance. 47 per cent reported that unnecessary inflexibility at work limited their capacity to balance work and life/family responsibilities, and 49 per cent said that while their employer had good work/life policies, the culture did not support their implementation and practice.

A significant 56 per cent cited better work/life balance as the most important factor influencing their intention to leave their current employer. A massive 75 per cent indicated work/life balance was the primary reason they were considering leaving the ICT profession compared to 44 per cent for women professionals more generally.[52]

Workload and working hours

Workload

APESMA/ITPA's *At the Crossroads* survey found that increased workload, increased hours of work and reduced staffing levels were found to be present in post-GFC workplaces, and the data suggest they are all potentially significant demotivators for ICT professionals.

83 per cent of respondents indicated that their workload had increased over the previous 12 month period, and of those 42 per cent said their workload had increased moderately, 24 per cent said their workload had increased significantly and almost 15 per cent said their workload had increased very significantly.

Of those who reported an increased workload, 83 per cent indicated that they had not been compensated for it, flagging this issue as a significant demotivator for a large proportion of ICT professionals over the last 12 months.

Working hours

Long working hours were a concern for 77% of respondents and 63 per cent said they were concerned about working hours flexibility. 37 per cent of respondents indicated that the level of unpaid overtime they'd undertaken in the previous 12 months had increased. Of these over 50 per cent were doing up to five hours more, 24 per cent 5 to 10 hours more, 10 per cent were doing 10 to 15 hours more, and 7 per cent were doing more than 15 hours additional overtime.

The findings of the Society for Knowledge Economics report found that unpaid overtime was not a feature of high-performing workplaces.[53]

The impact of lack of project planning on work/life balance was also highlighted. This comment sets out the sentiment expressed by a number of respondents:

> *Overall one of the biggest demotivations for myself and those around is lack of effective project planning. A lax management attitude at the start of the project often leads to a rush at the end to get things finished. The work/life balance then disappears.*

Of interest was the finding that women were more than twice as likely than their male counterparts to be very concerned about long working hours (37.9% compared with 18.5%) and to find lack of workplace flexibility very demotivating (34.5% compared with 13.4%). 76 per cent said that lack of work/life balance was a very, moderately or somewhat demotivating factor in their workplace.

Managing training and skills development

Investment in education, training and skills development at the workplace level in line with business objectives will critically underpin ICT workforce development over the next decade.

With ICT skills having a limited lifespan because of the rapidly changing nature of technology, training and ongoing skills development is a critical issue for ICT professionals and the businesses that employ them. APESMA/ITPA's *At the Crossroads* survey found that 75 per cent of respondents were

very, moderately or somewhat concerned about training and professional development, and a significant 77 per cent said the lack of training opportunities in their workplace was demotivating.

While the failure to address knowledge and skills gaps will inevitably impact productivity and innovative capability at the industry level, the survey showed that limiting access to training and development opportunities could also act as a significant demotivating influence for ICT professionals in the workplace and was likely to impact engagement and retention.

Again, while a comprehensive analysis of training and skills development issues for the ICT workforce is beyond the scope of this submission, we will highlight what we consider to be some of the more important areas which go to management practices and workforce development. These include:

1. the use of IT contractors;
2. the related issue of secure employment; and
3. career development.

The use of IT contractors - maximising the contribution of the flexible as well as permanent ICT workforce

With gaps and shortages in a range of ICT skills and global competition for ICT talent expected to impact project delivery in the short-term, ICT contracting professionals will play a significant role in the dispersal of specialist technical expertise across the private and public sectors in Australia over the next decade. On the proviso that it would not be to the detriment of ICT professionals engaged as permanent staff, strategies for attracting and retaining the best contracting professionals alongside those aimed at attracting quality permanent staff should be an important part of an organisation's toolbox of recruitment and people management strategies. APESMA/ITPA therefore proposes that alongside a workforce plan which includes strategies for the recruitment, retention and engagement of the best professionals to permanent positions, workforce plans should also identify strategic measures to address capacity and capability gaps beyond those which can be addressed by the permanent workforce. Where this group is included in an organisation's people management strategy, they have the capacity to contribute significantly to the achievement of organisational goals and projects. Where they are not included, the full potential of this valuable resource may remain underutilised.

Where appropriate, organisations should:

- Eliminate unfair contract for service terms which adversely impact the flexible workforce - ensure contracting and consulting professionals are engaged under fair terms including the elimination of unfair contract provisions involving termination of putative fixed term contracts at the discretion or convenience of the engaging client, and ensure there is an opportunity to negotiate mutually agreed terms;
- Utilise induction to embed more inclusive practices and behaviour toward contractors, and engage them more actively in organisational and project goals; and
- In view of the differential access of non-standard workers to learning and development opportunities, show leadership by using learning and development as incentives to attract quality contracting and consulting professionals.

APESMA/ITPA recognises the increase in the number of professionals operating through non-standard work arrangements, and the potential of this group to help achieve organisational objectives and contribute to organisational productivity and innovation.

APESMA/ITPA supports:

- the inclusion of the flexible workforce in an organisation's workforce planning framework to ensure a strategic approach to meeting capacity and capability gaps (though their engagement should not be to the detriment of the permanent workforce);
- the inclusion of practices which will ensure the dispersal of ICT skills across industry in the face of skill gaps and shortages;
- the inclusion of contracting and consulting professionals in an induction process at the beginning of their engagement to ensure their direct engagement in organisational and project goals, and to encourage a more inclusive culture; and
- providing training and professional development to contracting professionals as an attraction and retention tool, and to address contracting professionals differential access to professional development.

One of the key recommendations of the 2008 Gershon Review[54] was to reduce the total number of ICT contractors in use and increase the number of APS ICT staff which brings responsibility for training and workforce development back in-house. The Australian Public Service however remains the largest purchaser of IT contracting services thus imposing, in APESMA/ITPA's view, a significant responsibility for training and skills development of ICT contractors on Government.

Secure employment

Secure employment has been linked to increased productivity with employees generally having greater access to training and professional development opportunities than those engaged on a contract basis.[55] Secure employment is linked to increased productivity often in the form of reduced absenteeism and increased staff retention. According to ACTU president Ged Kearney "Casualisation [and contracting] erode our skills base" effectively leading to the outsourcing of responsibility for training and a cycle of underinvestment in workforce development[56] and compromised productivity and innovative capability.

Career development

Career development is critical to staff engagement and motivation. APESMA/ITPA's 2011 survey of just over 200 ICT professionals[57] found that career advancement was a significant issue with around 60 per cent of respondents identifying lack of career pathing and the opportunity to do project work to extend their existing skills as significant concerns.

The following are suggested as work practices which directly or indirectly assist with career development and impact staff retention:

- provide challenging work to facilitate job satisfaction;
- regularly review salaries in line with the relevant market rates surveys;
- provide genuine opportunities and support for career advancement;
- provide access to targeted non-financial benefits as well as discretionary payments such as bonuses;
- provide access to professional development opportunities to support career advancement;
- train existing staff in areas of current and forecast shortage such as project management;
- support/sponsor post-graduate education particularly in areas of shortage;
- provide internal training to meet specific needs of employees;
- assist with fees and expenses associated with structured training with registered training organisations;
- provide paid time off from work for travel, study, exams, residential programs and other features of external education;
- recognise that ICT is a profession by paying subscriptions and membership fees for professional publications and associations;
- provide mentoring from within the organisation to guide and support ICT professionals' development;
- cover travel and attendance costs at conferences, seminars, conventions, symposiums and other professional gatherings, where employees may be delegates or speakers/presenters or both;
- maintain in-house professional libraries; and
- provide job rotation and opportunities to transfer internally.

APESMA supports its ICT members with access to extensive information on career development (refer to the Career Development heading under the Background section for IT Career Insights titles).

Skills development to support commercialisation

As discussed in Energising Australian Innovation[58], while many ICT companies are born out of technological innovation or research, the owners often lack the business skills required to grow their companies. APESMA concurs that it is critical to support entrepreneurship at the micro and small to medium enterprise level to commercialise innovation, contribute to exports, and compete in global ICT markets.

A comprehensive range of services is provided to members via APESMA Contractors and Consultants special interest group and includes:

- advice on business startup and managing the transition from employee to consultant;
- information and advice on risk management practices and documentation;
- access to discounted professional indemnity insurance;
- an online business mentoring program which matches experienced self-employed professionals with those transitioning to self-employment that has been running now for over 10 years;
- information on recommended hourly rates specific to ICT professionals;
- review of contracts for service by in-house solicitor;
- general advice on the Alienation of Personal Services Income (PSI) tax rules;
- information on business planning, invoicing, preparing cash flow statements, etc.;
- a guide to Contracting through an Agency;
- assistance with debt collection; and
- a professional development scholarship to assist member in non-employment-based work arrangements to develop a portfolio of transferable skills in the absence of a sponsoring employer.

APESMA offers these services and information through a website available at http://www.apesma.com.au/groups/contractors-and-consultants/.

Fair reward and recognition

A remuneration package tailored to the particular needs of staff is widely acknowledged as critical to any talent management strategy which has the objective of retaining good people. In APESMA/ITPA's *At the Crossroads* survey, 88 per cent of respondents reported that that they were concerned with salaries keeping pace with the market, and 86 per cent said they found inadequate salary very, moderately or somewhat demotivating. Both these measures were consistent across age groups, gender and public/private sectors. Of those who reported intending to change jobs in the next 12 months, 59 per cent of respondents indicated that a salary review would change their intention.

Recognition and the lack of it was a critical concern for 88 per cent of respondents who indicated that they found lack of recognition or appreciation in their organisations demotivating.

Almost 65 per cent of respondents reported that they had contributed to their organisation surviving the GFC, but only 33 per cent felt their contribution had been acknowledged and recognised. This means the remaining 67 per cent of respondents did not feel their contribution to their organisation surviving the GFC has been acknowledged or recognised either in monetary or other terms.

On being asked about their employer's perception of them, a disturbing 52 per cent said they were seen as a cost which could be cut without impacting on the organisation. Further comments on how ICT staff were regarded by their organisation included the following:

Table 1 - How does your organisation regard ICT staff?

As necessary but high maintenance
A necessary evil that they can't do without
A commodity - cheaper will do just as well
Something it needs but doesn't understand
Factory workers on a production line
Somewhere in between a cost and indispensable - they know ICT is important but would like to get away with spending less if they could

On a positive note, just over 40 per cent reported that they were regarded as an indispensable part of the path towards growth, innovation, increased competitiveness and productivity, and commented that they were seen as core staff.

The Society for Knowledge Economics report also confirmed that "high-performing workplaces are those that reward employees fairly relative to the efforts and contributions they make .. [and is] another important practice used to attract and retain high quality staff."[59]

Clearly management practices around performance review and recognition and reward play a key role in retaining quality staff and have a major impact on workplace productivity.

Part 4 – Conclusion

This submission confirms what the AWPA already knows – that productivity gains, improvements to our innovative capability and economy-wide growth will not be possible without strategic intervention to develop the ICT workforce.

Detailed in Parts 2 and 3 are some of the interventions that, in APESMA/ITPA's view, should be made a priority at the structural/policy levels and at the level of the enterprise.

APESMA looks forward to working in partnership with industry, Government, the tertiary sector, the Australian Computer Society and ICT practitioners themselves to develop workforce development strategies for the ICT workforce at both the structural and enterprise levels.

Further information

APESMA would welcome the opportunity to further discuss this submission and APESMA's Director of National Planning and Development, Mr. Paul Davies, would make himself available to speak to this submission at the Roundtable to be held on 27 February 2013.

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Acknowledgement

APESMA acknowledges the contribution of Dr. Janet Fitzell with the development of information around management and leadership skills. Dr. Fitzell is the author of most the titles listed under the Career Development heading in the Background section.

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