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WOMEN IN THE IT WORKPLACE: LEARNINGS FOR MANAGERS

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Abstract

This paper discusses the experiences of women working in the Australian IT workforce. With increasing demand for information technology professionals, organisations need to both attract the best qualified people as well as keep those they already have. In western developed countries in recent years we have seen a decline in women’s participation in the IT workforce. Exacerbating the problem is the fact that most IT workplaces are male dominated which many women find less comfortable than more gender balanced workplaces. Based on survey responses and interviews with Australian women working in IT, our research explored women’s lived experiences. We found that women continue to find the environment of their workplaces challenging yet report that they enjoy working as IT professionals. Further we identified what would make a difference to women’s working lives to ensure they stay and advance in the IT profession. If we are to keep women in the IT workforce we need to be aware of the challenges women face and begin to address these challenges by providing mechanisms to better support women.

Keywords: Gender and IT, workplace, IT profession, retention, recruitment, advancement.
1 Introduction

In many western developed nations including Australia, the Information Technology (IT) profession is male dominated (Nielson and Von Hellens, 2006). A recent Australian Government report of the IT profession established that only 18% of the Australian workforce are women (Department of Innovation, 2010). The USA, National Science Foundation reports a slightly higher percentage of women (25%) working in mathematical and computer science (National Science Foundation, 2011). In Europe, despite an increase in the number of students undertaking computing courses, the number of women studying such degrees has barely moved and stands at 24% (Durando, Wastiau, Joyce, 2009)

This paper relates to women working in the Information Technology (IT) / Information and Communication Technology (ICT) profession in Australia. The world of computing and technology generally is dynamic and constantly changing making it difficult to conceptualise exactly what comprises the computing industry (Beekhuyzen, Nielsen and von Hellens, 2003) and the terms ICT and IT are often used interchangeably. We accept that the term ICT “lacks clarity of definition” (Webb and Young 2005) and equally it is difficult to draw boundaries around what are ICT occupations (Department of Communication Information and the Arts, 2005). In this paper we use the term Information Technology (IT) in reference to the entire spectrum of IT and ICT.

In Australian a strong demand for experienced IT workers is predicted due to growth resulting from the current National Broadband Network roll-out (Department of Innovation, 2010). Skill shortages are already apparent with the following occupations all included on the Australian Government’s Skilled Occupation Lists for Migration (Department of Immigration and Citizenship, 2011): ICT Business and Systems Analyst, Analyst Programmer, Developer Programmer and Software Engineer.

There is little doubt that the IT industry needs more skilled workers. There are also strong arguments that society needs more women at all levels of the IT profession. Diversity in design and development teams often leads to teams with “enhanced abilities to perform tasks, greater creativity, and better decisions and outcomes for all” (Klawe, Whitney and Simard, 2009). Further, a lack of diversity can impact on the competitiveness of companies (Ahuja, 2002). Equally the business case for increasing diversity in organisations and on boards is to prevent ‘groupthink’, where those of a similar type express similar opinions, is as valid in IT as in any profession. A recent study found that “the mere presence of socially distinct newcomers and the social concerns their presence stimulates among old-timers motivates behaviour that can convert affective pains into cognitive gains” (Phillips, Lilijenquist and Neale, 2009 pp. 336).

Retention issues compound the lack of diversity in IT. Statistics from the USA show “Female Quit Rates” across Science, Engineering and Technology careers. Technology has the largest attrition rate at 56% compared to 39% for Engineering and 47% for Science (National Science Foundation, 2011). This is almost double the same rate as males (NCWIT, 2010). While there are many reasons why women change direction, or leave their company, it is clear that in IT the retention of qualified women, already a scarce resource, is a major issue.

Given the demand for IT skills and the breadth of job opportunities our research sought to understand what workplace factors are impacting on women’s participation and retention in the Australian IT workforce. Our research explored women’s perception of their workplace and the impact this might have on their future career intentions using the theoretical model proposed by Ahuja (2002). The two questions we sought to answer therefore were:

- What encourages women to continue working in IT and be able to progress?
- Why do women leave the IT workforce?
2 Gender, women and the IT workplace

Several decades of research has sought to understand why western women in particular have lower participation rates in IT than men (Klawe et al. 2009, Lang, Craig, Fisher, Bennetts and Forgasz, 2010). Several Australian researchers (Wajcman, 2000; Nielsen and von Hellens, 2006) maintain that the IT industry has constructed itself to be male and therefore constrained women, further impacting on women’s participation and retention.

Although there is a perception, particularly among girls, that IT is boring (Craig, Lang, Fisher, 2008), research has found that many women working in IT report their experiences as anything but boring, describing their careers as exciting, challenging and engaging (Trauth, 2002; Beekhuyzen et al. 2003). A recent longitudinal study established that the negative stereotype associated with careers in IT in Australian society was indeed ‘corrigible’ or could be improved (Courtney, Lankshear, Anderson and Timms, 2009). Yet IT is still not regarded as a profession preferred by women (Lang, 2007).

Why IT is not an attractive career for women is not the focus of this paper. The research for this paper explored women’s ‘lived’ experience in the IT workforce to help understand the influences on women’s IT careers. This work is important as highlighted by Ahuja (2002) as there is a paucity of studies specifically looking at gender, IT and career progression, in particular, the lack of research on the career paths of Australian women working in IT (Bandias and Warne, 2009).

The literature discusses a range of factors which may influence women’s participation and progression in the IT workforce and why women do not stay. Where possible we have focused on literature from this century because of the changing nature of the field and detailing research specifically on women and the IT profession rather than studies discussing the experience of women in the wider workforce.

2.1 Reasons to stay, reasons to go

The literature on women and the IT profession discusses three main issues: recruitment, retention and advancement. Research by Ahuja, (2002) theorises that the factors impacting on women’s IT careers are: choice to work in IT, persistence with an IT career, advancement. Ahuja (2002) proposes the two factors impacting on all three are social (women’s view of their career) and structural (the workplace). Our research using the model proposed by Ahuja (2002), explores persistence with an IT career and IT advancement. We begin with a discussion around the IT workplace.

2.1.1 The Workplace

It is suggested that IT workplaces, because they are male dominated, can be challenging environments for women resulting in women leaving to pursue other careers (Von Hellens and Nielsen, 2001; Trauth, Quesenberry and Huang, 2009). Webb and Young (2005) suggest, that having a low number of women impacts on the workplace climate leading to a "dominant male culture". This results in discriminatory behaviour and women having lower levels of influence (Ahuja, 2002). Male dominated workplaces also offer fewer opportunities for promotion because of a lower recognition of women’s work and skills. Roldan, Soe and Yakura (2004) note that ‘chilly’ is a term often used to describe unfriendly workplaces for women and contend that such a climate impacts on women's participation and their employment outcomes.

2.1.2 IT Retention

Researchers in the USA identified three ‘career anchors’ which influence women's intention to continue to work in IT (Quesenberry and Trauth, 2007): technical competence and managerial opportunity described as women wanting to work in an area where they would continue to build technical skills, placing value on a career in management, and work security.
Work-family tension has an impact on women remaining and progressing in the IT workforce and is well reported in the literature (Griffiths et al. 2007; Croasdell, McLeod and Simkin, 2011). This tension includes the long hours demanded of the job, a lack of flexibility at work and balancing expectations at home and at work. However, for some women the flexibility of IT work which allows women to work at home or vary their work times, is attractive and it could be argued is a reason why some women remain in the IT workforce (Griffiths et al. 2007; Trauth et al. 2009).

Pay inequities also influence a woman's intention to remain at least within a given organisation (Diamond and Whitehouse, 2007). Bandias and Warne (2009) found that almost a third of the women they surveyed reported that they do not receive the same remuneration as their male counterparts at the same level. While there is no direct evidence of overt discrimination against women in IT (in fact any such action would be deemed illegal), Byrne and Staehr’s (2005) analyses of Australian census data concluded that in reality women in IT were paid less than men.

2.1.3 IT Progression

With fewer women participating in the IT workforce it is not surprising that there is a lower representation of women at management level. Klawe et al. (2009) argues that senior managers are often unconscious of their own biases when considering women for promotion.

Often women do not have the same professional social networking opportunities as men which are important for career progression and in providing support. Von Hellens and Nielsen (2001) note the importance for promotion of socialising outside the workplace and that women have fewer opportunities for such socialising. This was also noted by Griffiths et al. (2007) whose survey found that women believe important decisions are made outside of the office, in social situations. Limited mentoring opportunities and other organisational factors often work against women’s advancement (Ahuja, 2002; Trauth, 2008; Von Hellens and Nielsen, 2001). A lack of role models for women also has a negative impact on women's intention to stay in IT (Ahuja, 2002).

3 Research Approach

An interpretive approach was used for this research. Such approaches are considered to be particularly valid when looking at rich phenomena that cannot be easily described or explained by existing concepts or theories (Walsham, 1995). A key objective of our research was to understand the reality of women working in IT. We wanted to explore the way women as members of the IT workforce, as proposed by (Cecez-Kecmanovic, 2011), “engage in, interpret and mutually construct their particular realities” with a view to understanding what keeps women working in this field, what causes them to leave and what helps them progress.

We report on research that was undertaken in two phases between 2008 and 2010. A mixed methods approach was considered the most appropriate for this research. As argued by Neuman (2003 pp 139), qualitative and qualitative research can complement each other. A survey of women in the IT workforce in Victoria (Australia) was undertaken which allowed us to explore what was happening in the IT workforce from the perspective of women. Interviews with Australian women helped us garner greater insight on their work experiences. Although we collected both quantitative and qualitative data, this paper focuses primarily on the qualitative data from both phases of the research to provide a richer understanding of the current climate for women working in IT.

3.1 Survey

A survey was developed in conjunction with and supported by the Victorian ICT for Women Network in 2008. We invited women registered with the network and those who had some association with the network to respond to an online survey. These women represent the majority of Australian women...
working in IT: the demographic data of Victorian women is similar to women working in IT Australia wide. The survey was sent to 530 women with 125 usable surveys returned (24% response rate).

The survey instrument was constructed around a number of the themes identified from the literature. Free text response questions explored work place flexibility, workplace climate and career direction. Demographic data (age, qualifications and length of time working in IT) was also collected. It should be noted that there was a very high response rate to the open-ended questions with the majority of the participants (66%) responding to two or more of the five questions requiring a free text response. This suggests women wanted to be heard on these issues.

### 3.2 Interviews

Qualitative exploratory interviews were conducted with 22 Australian women working in IT professions during 2009 and 2010. The profile of the women interviewed that is, the time they have worked in IT, their role and qualifications, was similar to the profile of the survey respondents.

Interviews (20-30 minutes long) were conducted and digitally recorded then manually transcribed. Women invited to participate were from two professional IT networks. To allow for rich descriptions to be gathered, the interviews were semi-structured and guided by a set of key questions again informed by the literature (Nielsen et al. 2003; Trauth 2002). The interviewer asked the women to describe their current position, title, activities and work environment. A precise script was not adhered to, encouraging participants to expand on their perceptions, stories and work relationships as the interview progressed. They were asked to reflect on what drew them to an IT career and to comment on the best and worst aspects of working in this profession. The women were also asked to comment on whether gender disparity in the profession affected their working lives.

### 3.3 Data Analysis

Initially the qualitative data were entered into a meta-matrix (Miles and Huberman, 1994). The data were entered into the matrix using the key themes of persistence with an IT career, career advancement and workplace climate, as previously identified from the literature. The meta-matrix allowed the data to be analysed in a number of ways. Miles and Huberman (1994) argue that using these techniques allow conclusions that generate meaning to be drawn.

Data were then entered into Microsoft Access using the identified themes. This step allowed a greater depth of analysis through the generation of reports enabling a structured analysis of responses. This method was adopted because it enabled a series of responses on the same topic to be analysed independently or in conjunction with, associated and previously coded complementary themes. To mitigate any bias the data were coded by one member of the team and then reviewed by two other team members independently. Where differences in coding were found, they were discussed between the researchers to reach agreement. We acknowledge as with any interpretive study, that the analysis of data is subjective. Walsham (2006 pp. 235) supports this method stating “I believe that the researcher’s best tool for analysis is his or her own mind, supplemented by the minds of others when work and ideas are exposed to them.”

The quantitative data from the survey were analysed using SPSS. With the focus in this paper being on the qualitative data only descriptive statistics are included in this paper.

### 4 Results

In this section we provide a demographic overview of the participants followed by the results which are organised around the themes of women’s persistence with an IT career, their advancement and the impact of the workplace climate.
4.1 Participant demographics

The demographic data indicate a balanced spread of survey participants in terms of the roles they performed, the number of years working in IT and their qualifications. The participants performed a variety of roles both technical and non-technical. The largest group worked as business or system analysts (18%), in sales and marketing (11%), or as project leaders or project managers (11%). Seven were IT managers, one a Chief Operating Officer, and one a Chief Information Officer. The majority of survey respondents had worked in IT for less than five years (29%), 25% had worked between five and ten years, 21% between 10 and 15 years and 25% more than 15 years. More than 84% had a post graduate or under graduate qualification. Most participants were experienced, well qualified and worked fulltime (84%). For many women IT was not their first career (59%).

The interviewees covered a wide range of job roles similar to the survey respondents and time working in IT. Sixteen of the woman had worked in IT for more than 10 years (73%). Both survey participants and interviewees reported working in a wide range of organisations (private and public).

4.2 Persistence with an IT career and career advancement

Women overwhelmingly indicated that they like working in IT. When presented with the statement ‘I am very satisfied with IT as a career’ 79% of respondents agreed or agreed strongly with that statement. With so many women leaving the profession it is clear those who remain are very positive. We explored why women would stay or go and what would help women progress in their IT career.

4.2.1 Flexibility in the workplace

The literature highlights the importance of workplace flexibility given that IT related work can put pressure on families because of travel and the need to work late (Ahuja, 2002). On the other hand workplace flexibility it is often argued is a reason why IT is a good profession for women (Griffiths et al. 2007). Our survey and interview data of Australian women present a mixed picture. An open ended survey question asked respondents if they saw their workplace as family friendly. Seventy-six per cent said definitely ‘yes’, with comments such as “Yes, people can work flexible hours around children” and “Yes. The organisation has some very progressive policies and I am very happy with the family friendliness”. Twelve per-cent of respondents said definitely ‘no’ indicating the long hours made flexibility difficult. For example “No, IT in fact makes it the opposite because everyone wants you around just in case something happens.” The other 12%, gave a qualified ‘yes’ suggesting the company policy supported flexibility in theory but not in practice, for example “Not overly so. As with most workplaces, allowances are made, however they don’t appear to be encouraged.”

Eight of the women interviewed stressed the importance of workplace flexibility, particularly those with children. One woman remarked that flexibility was “Real important, and I suppose that’s another aspect of what I enjoy about my work. It is quite flexible. If I am working on a big project I might spend a week or two weeks at home which is really good”. Another mentioned the value of flexibility for women to work from home when they have sick children “If they [mothers] come into the office they’re going to be worried anyway. So it’s better for everybody. It’s better for the employer because it’s better than down-time for them and it’s better for the staff member because they’re still productive and still part of everything and still taking care of their loved ones too.”

There was a downside however; some women felt that although the organisational rhetoric suggested that flexibility was supported in practice this was not always true and could make life more difficult for women. A point made by one woman was because she had flexibility around managing her children the cost of this flexibility was the expectation she would work longer “in order to show dedication to my work”. Another said, “With the department being headed by men, I do find that the rules that apply to the company don’t always apply to our department, although in theory, our
company has flexible working arrangements”. Another said: “there’s a lot of flexibility when it’s not busy”. Finally, a comment that highlights the issue women often face:

*Most of our roles are classed as having to be full-time. So they claim [to be flexible] but they don’t really follow through. They promote work/life balance, so they say if you’ve got to pick up your kids, go, don’t hang around work and be late and miss out on that, but then again, you don’t know what will happen.*

### 4.2.2 Support networks and mentoring

The literature emphasises the importance of different forms of support for women in the IT workplace including informal networks and mentoring (Trauth et al. 2009). Networking is clearly identified as an important factor for progression in any organisation, our research found that family responsibilities often limit women’s opportunity to participate in formal after work networking events. Women recognise that men have a range of informal networks that may include meeting after work for drinks or socialising. It is not always possible for women to establish the same networks. Some organisations are proactive as this interviewee describes: “They [management] have set up some networks and some sort of constructs to support women. There’s a group called Women in Technology which is set up to help women and be a network for women to assist them in their career. That’s really good”. Survey respondents were asked what would improve their satisfaction with IT as a career choice? Table 1 provides the options and the responses.

<table>
<thead>
<tr>
<th>Improved Satisfaction Factor</th>
<th>n=86*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved career progression</td>
<td>34%</td>
</tr>
<tr>
<td>Better work-life balance</td>
<td>21%</td>
</tr>
<tr>
<td>Mentoring opportunities</td>
<td>19%</td>
</tr>
<tr>
<td>More networking opportunities</td>
<td>15%</td>
</tr>
<tr>
<td>Flexible working conditions</td>
<td>11%</td>
</tr>
</tbody>
</table>

*Table 1. Factors for improved career satisfaction (*Note not all respondents answered all questions).*

Mentoring nor networking were rated highly. The interviewee responses provide further insights. Some said mentoring was important when seeking advice. “I get a lot of advice from her, and she gives me a lot of hints, but if I didn’t have her, where would I get that information from?” Another woman said mentoring was helpful particularly learning from more ‘successful’ women.

### 4.2.3 Respect and discrimination

Respect and discrimination are closely connected. If you believe you are respected in the workplace logic implies that you are unlikely to feel discriminated against. In any workplace believing you are being treated fairly and equally is important and may impact on whether women remain or leave. Survey respondents were presented with two statements which explored feelings of being respected and being the subject of discrimination. Table 2 presents the statements and the results.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Agree Strongly</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Disagree Strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am respected in my workplace (n=84)</td>
<td>41%</td>
<td>37%</td>
<td>17%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>I never feel that I am discriminated against at work because I am a woman (n=84)</td>
<td>23%</td>
<td>23%</td>
<td>27%</td>
<td>19%</td>
<td>7%</td>
</tr>
</tbody>
</table>

*Table 2. Respect and discrimination.*
It would be expected that where women felt they were respected they would not experience any discrimination however the results as presented in Table 2 suggest otherwise. Women may feel respected (78%) but still experience some discrimination (26%).

Further analyses of the qualitative responses provide some insights highlighting where the discrimination is occurring. Discrimination was raised by three interviewees. One woman remarked that "there’s that suck-it-up sweetheart kind of thing that goes on here". Women see discrimination in management appointments: “Directors, senior management and sales and marketing management are all male.” “Well let’s just say the boys seem to dominate the senior positions :) [sic]”. One woman recognised the impact of male dominated management and suggested that the result was fewer women participating in their workforce.

There is a view that women are penalised career-wise when they have children. Fifty-nine per cent of those surveyed were childless and many said they thought women with children were supported but because they did not have any they could not say definitively. Others, however, believed that there was discrimination if you had children “If there’s a position up for grabs, then they don’t promote the person with the kid, because they know they are going to run off”, and “Most people have kids, but it’s also understood that if family comes first, it is often to the detriment of work. Long hours are expected in higher positions or for career progression.” Organisations may support women with children however women felt there was a cost. Subtle discrimination also occurs with the unspoken expectation of the hours they must work. “There is no appreciation of the difficulties due to early morning meetings and last minute requests to work back late. This can be very difficult for working parents.”

When asked what their expectations were of their workplaces, 12% said that their expectations as a woman in the IT industry were that they be treated with respect, equally and fairly, their comments highlighted that they believed they were being treated unequally. Of the 43 women who provided a free text response to this question, seven said they wanted the same opportunity as men, six expected equality in the workplace, five expected respect, two said they wanted to be treated fairly and two wanted their work to be as highly valued as men’s work. One woman said she expected “Equal rights and pay based on knowledge and experience....that we would be considered and hired for upper management and General Manager roles.” “To be able to have the same opportunities as men for career growth and job fulfilment, even if we have to take time out to have a family”. Another interesting comment was “to be respected and given the freedom to contribute. To have an ICT career to the extent that you want....we all don't want to be CIOs, but do want to contribute and make a difference, use our intelligence and creativity”.

4.2.4 The Workplace Climate

The literature highlighted the impact the workplace climate has on women’s intentions to stay. Male dominated workplaces are more likely to result in lower recognition of women’s skills, women believing they must work harder (Griffiths et al. 2007) and reduced workplace flexibility (Diamond and Whitehouse, 2007). The survey respondents and the interviewees were asked what percentage of women worked in their organisation and if they would describe their workplace as ‘chilly’ or a ‘boys’ club’. Where a workplace was less than 10% women, the respondents were more likely to describe their workplace as chilly or a boys’ club (63%) compared with workplaces where more than 50% of the workforce were women, none described their workplace as chilly.

Most of the Australian women surveyed and interviewed (55%) work in an organisation where the workforce is 25% or less women. A male dominated workplace does not necessarily mean that all women felt the workplace climate was “chilly”. Closer examination of the data finds that those women who did not find their male dominated workplaces chilly also said their workplaces were family-friendly and they were respected. A language analysis of the qualitative responses were coded as ‘yes chilly and a boys’ club’, ‘a boys’ club but not chilly’, ‘neither’. The words women used to describe their workplace provide us with further insights. Table 3 contains examples of the words and phrases used by women.
4.2.5 Women as managers

It is not surprising that for those women with female managers the workplace climate is generally better and this has an impact on women’s working lives. A number of women commented that there were women in higher management. The language they used illustrates the impact of women in leadership roles: “We all get along well as we function together as a team. (We need each other!)” and “I have a team that is well balanced and diverse”. Some women reflected on changes to their workplace “Senior management has also recently altered to include more women - so changing times”. Female owners can bring a different perspective “I am one of the business owners and it is not a culture [chilly, boys’ club] we support.”

One woman noted a change in the way the organisation operated once senior level women began having children; meeting times became more family friendly and the attitude towards women generally changed. Another woman said “Our manager is female and tends to hire females, which is very good. [the organisation] has won some award for being an employer of choice for women, they try really hard for diversity.” Continuing she described her boss as a fantastic role model because “she’s a lot like me and she behaves a lot like me. And she says she struggles with some of the same things I do.” Some women commented that because senior management was male dominated this impacted on the workplace climate and “that flows down to female participation in our workforce”.

4.3 What do women want?

How can we better support women so they stay in the IT workforce and progress? The survey respondents were asked ‘How can the network better meet your needs?’ and ‘If there was one thing you would like to see the Network be involved in the future, what would it be? The answers to these questions provide us with some insight as to what women need. The responses were categorised as:

- Supporting women and helping them continue working in IT. There was a strong message that women want more opportunities to socialise and network with other women in particular at times they can attend such as during lunch. Although mentoring was not seen as critical to improving their satisfaction with an IT career, for many women it has been or is valuable. When asked in the survey what they needed by way of support the ideas suggested by the women included providing help and tips on working in IT, assisting and encouraging women to return after children and a chat room for women. Women also want advice and hear recommendations from other women on things such as different types of IT roles and how to deal with a range of issues women face in the workplace such as work/life balance, dealing with ‘entrenched attitudes’.

<table>
<thead>
<tr>
<th>Category</th>
<th>Words/phrases used in answering the question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chilly and a boys’ club</td>
<td>‘feeling on the outer’, ‘dominated by the tech or flash dude with the “knowledge”’, ‘They do not invite me out for Friday drinks or weekends away’, ‘perpetuated by the informal ‘boy’s activities’ and social gatherings’, ‘Swearing is prolific - the boys are given ‘games’ to play during the day ie ‘darts’, ‘fooz-ball’, ‘he refers to us as “darl”, “hun”’, ‘I felt excluded by the boys’, ‘cannot ‘afford’ to be overly sensitive’, ‘You have to work out a way not to be negatively impacted’</td>
</tr>
<tr>
<td>Boys’ club but not chilly</td>
<td>‘the &quot;Values and Behaviours&quot; the company have instilled into the staff have insured that the employees do not act like it is a &quot;boys club&quot;.', ‘‘overall they [males] seem to respect our contribution’, ‘Everyone contributes’,</td>
</tr>
<tr>
<td>Neither chilly or a boys club</td>
<td>‘Everyone is regarded as a professional’, ‘my workplace is based on merit’, ‘overall they [males] seem to respect our contribution’, ‘There are opportunities for me to progress based on my capabilities’, ‘I am lucky to work in a company that employs a lot of women’, ‘warm and friendly team’, ‘respected and treated accordingly’</td>
</tr>
</tbody>
</table>

Table 3. Examples of words/phrases women used to describe their workplace.
• **Helping women progress.** Many women highlight the need for more information on extending their skills, information on the best courses both long and short they can undertake which will help them with their career and information on IT careers. Women want to be successful and want to progress. To do this they want to hear stories from other successful women working in IT, information on personal development, how to progress in their career and future industry trends. In the words of one woman “I would like to hear more from women in the industry and the trial and tribulations of success and what they did to overcome them.” A number of women requested more information on current job vacancies and salaries. This is not surprising as women are less likely to know what others are paid and more likely to be paid less (Bandias and Warne, 2009).

• **Influencing change.** Women clearly want to see change. They want to see more women enter IT and so many respondents suggested better promotion of IT as a career for women. They want networks to influence governments and education bodies. They also want to see change in their organisations “Education and awareness amongst our male counterparts of the difficulties females in ICT often encounter.”

5 **Discussion**

Ahuja’s (2002) theoretical model proposed that the factors impacting on women persisting with an IT career were ‘Occupational Culture’ described as the perception of what an IT career involves and ‘Lack of Role Models’. We found that the culture of the workplace (the level of respect and discrimination) has a major impact on a woman’s decision to stay or go, also the impact of women in senior management roles. We would also add that true work flexibility and managing a work life balance are also an influence on the career decisions women will make. For career advancement Ahuja (2002) identifies the importance of networks, mentoring and institutional structures which are related to women’s participation in senior roles. Again our research confirms this but we would add that concerns management might have regarding women’s ability to juggle work and family impacts on career progression as does work flexibility.

IT workplaces continue to be male dominated with women often less than 25% of the workforce. Consistent with many other professions women at least in Australia, continue to be paid less and there are fewer women in senior management roles. However, women who stay are happy with their decision to work in IT. Our research found:

• Women remain the primary care-givers of children. Interestingly almost two-thirds of our respondents are childless, with some noting that having a family is at a cost of career progression. If managers actively support women to return to the workforce they are more likely to stay

• Previous research has highlighted the importance of flexibility for women with children, what is not discussed however is the reality of flexibility. It is promoted by many organisations but not actively supported. Women value the flexibility but do see it as coming at a cost. To retain women with children policies relating to flexibility need to be consistently implemented.

• The literature stresses the importance of networking which, in many cases is important for career progression. The reality is that women do not have time outside of work to participate in networking activities. Informal work networks could bridge that gap.

• The more women in an organisation, the less discrimination is felt by the female workers. Where there are more women at the senior management level in particular; there is a marked difference in the workplace climate for women in those organisations. Employing and promoting more women will impact on retention.

• For organisations supporting women working in IT there are many low cost, easy to implement support mechanisms that could be provided from details on careers and jobs to training options.
6 Conclusion

With only a modest increase of women working in IT since 2005 there is a need to better understand the issues for women in this profession. In the Australian context at least our research highlights that women working in IT enjoy their work however, there are issues in workplaces that are likely to deter women entering or discourage them from continuing. This research clearly indicates that factors contributing to a satisfied female workforce include, career opportunities, flexibility, respect, professional development and a future career path. Establishing work based networks and mentoring programs will further assist women to progress and keep them in the organisation.

For managers of IT workplaces the messages are clear. A strategy to ensure that a workplace climate where people are respected for their intellectual contribution and not the number of hours they sit at a desk would make a difference. Flexibility must be real, not something paid lip service to, or if given, hinders progression. Women should not be disadvantaged in their future career because they have had a family. Women need to be provided with professional development to assist them to plan their career and progress in the organisation.

Whilst our results are drawn from Australian data we believe the results are more widely applicable. With an increased demand for IT professionals we need to graduate more people with IT qualifications and ensure those currently working in IT will continue. If women are not pursuing an IT career or leaving the IT workforce early this has a compounding effect on IT job vacancies and on the wider business community.

References


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