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Women in ICT Project Management and Society: Snapshot of a decade and a conduit for sustainable progress

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Abstract

In the past decade, the power of pervasive Internet has permeated global businesses, as the world became interconnected. During this momentous decade, the proportion of women working in the information communication technology (ICT) industry as project managers increased, triggered by the opportunities presented by this brave new networked world. This trend posed new complexities in organizations and resulted in some significant changes in the societal composition. This paper provides a snapshot of the progress of women project managers in the ICT sector over the past decade, their challenges and the approach of some businesses to address these, leveraging on opportunities presented by emerging or evolving technologies. The research reported in this paper synthesizes literature reviews, previous research and a cross-sectional global survey that was conducted in 2010, within ICT sector that sought perceptions of women who work in the ICT sector regarding the constructive role of organizations and ICTs in their progress over the decade.

Keywords

Women, ICTs, Project Management

1. Introduction

In the past decade, the world has undergone many transitions. From 1993, the Internet had become a catalyst for change in workplaces, organisations and businesses. The emerging innovations in mobile technologies and digital convergence made it possible for the world to become closer, as distances were no longer considered a constraint by businesses. Teleconferences, videoconferences and virtual teams became a reality by the turn of the century. This decade also saw a growth in outsourcing and particularly, offshore outsourcing of business processes in organisations, particularly the ICT sector. The process had become an alternative to expatriation of employees in multinationals.

During this momentous decade, women in workforce increased triggered by the opportunities presented by the networked world. The 1980s literature, as reflected in the separate-spheres model (Chow and Berheide 1988) indicates two domains during that period: work, which is inherently the male domain, perhaps sporadically accepting single women, and family, which was the female domain. It was assumed that this segregation was necessary. A study conducted by Adler (1986) on women in multinationals during that period revealed that although they were equally interested in international careers as their male counterparts, organisations were reluctant to deploy them or promote them into long term careers. The attitude was attributed to the concern on female safety issues and existing prejudices, including the impending break period

where women had to focus on children and family (Unnithan 2010). However, the closing decades of 20th century witnessed an increasing number of women in the workforce, in every nation, and notably married women with children reflected in the overlapping spheres model – denoting changes in societal values, a more egalitarian approach focused on a work-family balance for both sexes (Barnett, 1999). At the same time, as socio-demographic trends shifted, traditional families had given away to double income households and single parent families rapidly (Lingard and Francis 2005) by the close of the century.

A follow up study on 1986 work, conducted by Adler in (1994) found that a number of multinationals had accepted the reality that women, particularly as project managers, were performing successfully and have leveraged this fact in multinational corporations. Shankar (1995) confirmed that women as managers had become increasingly visible in many countries particularly in the ICT sector, which seem to have influenced the societal composition. Seemingly, organisations were promoting equal opportunities and an increasing participation of women in workforce, while on the other hand, technological innovations were enabling “work at home” options as well as “mobile work”, negating the need for expatriation, which often deterred women from pursuing international careers and employers from deploying them. Nonetheless, this trend brought along with it complexities and challenges to organizations.

This paper reports on the results of an exploratory study conducted to trace the progress of women project managers in the ICT sector employed in multinational corporations, over the past decade. It sought to identify their challenges and the methods deployed by some organisations to successfully address them, leveraging on opportunities presented by emerging technologies.

We used *historiography* supplemented with *discourse analysis* techniques, to identify the issues that have changed or have become obsolete, due to the emergence of technological innovations, training, societal attitude changes and other work practices. Subsequently, we reflect on some current issues and provide an outlook for sustained progress over the next decade and beyond. This research is significant in that it draws from a previous research investigation conducted on women in ICT based on the period 1980-1995 (Unnithan, 2010), and compares the same with 1995-2010 periods, which has witnessed many a transition. While there are surveys conducted specifically on gender issues, under-representation of women in workforce or discrimination etc, the authors have not cited any academically published comparable research study at the time of conducting this research. The scope of this study is limited to a representative sample of women ICT project managers employed in multinationals.

2. Literature Review

In this section, we present some discourses in literature and theoretical frameworks that have been discussed in the last two decades, that informed our analysis.

The seminal work of Hofstede (1983) reflects on the dimensions of masculinity and femininity in project management. Management in organisations often takes on the persona of a nation or society, which may be traditionally, be masculine or feminine. While masculine values render itself to success, fame, money and individualistic attitudes, feminine values are focused on building relationships, caring about quality of life, helping others, preservation of environment

and collective decision-making. Hofstede's work suggest that the masculine values which dominated multinational corporations in the 1980s was giving way to feminine values, as organisations were adapting to globalization. Conversely, Barnett (1999) noted the ascent of single parent families driven by socio-demographic trends.

The Separate Spheres Model illustrated by Barnett (1999), presented by Liu and Low (2010) clearly indicates the two spheres i.e. Work and Family, with a clear boundary separation. Work Sphere that consists of unstructured hours translating into workloads, which were the domain of men and unmarried women, nurtured by prevailing societal values and attitudes such as patriarchy systems. Conversely, the family sphere consisted of housework being conducted by dependant married women, supported by prevailing workforce and family trends – showing that there is a division of labor of men. Towards the end of 1995, due to changes in workforce and family structures such as single parent households, aging population, dual income families, increasing women in workforce; and changes in societal values to a more egalitarian approach, feminism, work family balance for both sexes, the “overlapping spheres model” became part of the academic discourses.

Cultural differences in project management have been in the management and organizational behavior discourse for many years. As multinationals and globalization became a norm towards the end of 1990s, cultural differences in project management styles also became apparent. Kumar and Willcoks (1996) describe projects wherein most of the employees were from one country while the client is headquartered in another. The miles of physical separation, cultural differences or time zones are no longer constraints for the organization. However, there were pertinent issues in managing such projects, particularly with increasing number of women as project managers. Nonetheless, Bredillet, Yatim and Ruiz (2010), in their study that considered the role of cultural factors in project management deployment finds that masculinity and femininity dimensions do not impact it in contrast to the views of Hofstede in 1990s, perhaps indicating the transitions in the period.

As more women enter the workforce, it has become necessary to move towards a softer side of project management, which also correlates with the increasing acceptance of feminine strengths legitimised by organizational behaviour theories, management literature and sciences (Thomas and Tjaeder, 2000). However, project management profession has been characterized as a macho profession (Buckle and Thomas 2003, p. 433), and it is confronting the need to change its style so that expectations can be managed successfully in organizational management. Buckle and Thomas (2003) found that hard masculine logical values have exerted considerable influence on the best practices of Project Management profession, while the feminine logic systems appeared less influential, trusted or valued by the profession. Conversely, the development of project management profession has been strongly influenced by the isomorphic effects of professional bodies such as the Project Management Institute (PMI), which has professionalised it (Thomas and Buckle-Henning 2007, p 552). In their influential research work, the researchers examined the gendered assumptions based on masculine cognitive styles that are predominant in the guide to Project Management Body of Knowledge (PMBOK), by studying a discourse of successful project managers, from both genders. Their findings reveal that both genders studied attributed their success to “dancing in the white spaces” i.e. between the lines laid out by the PMBOK, balancing both masculine and feminine values.

Combined with these discourses are the role of technology itself in project management and participation of women in the profession. As such, the role of a project manager is seen as demanding and no doubt, with the “expatriation” required by multinationals during the early 1980s and 1990s, most women with families opted out after a period due to conflicting commitments (Unnithan 2010). However, towards the end of 1990s, increasingly there were socio-demographic trends towards “double income, no kids” families, with both genders participating in the workforce. Towards the turn of the century, with emerging technologies, working at home or virtual working was slowly introduced, with many organisations. Sullivan and Lewis (2001) explored the perspectives of tele-workers based on gender, synchronization of work and family. Their work drew upon two models: the new opportunities for flexibility model and the exploitation model. The former model offers flexible options of working in support of women with household responsibilities in particular, and suggests that it promotes entrepreneurship and individual freedom (Huws et al. 1996, Dooley 1996). The latter model however suggests that the teleworking only increases the burden on women as they are then expected to spread their domestic and career duties, without the support of their partners. The study conducted by Sullivan and Lewis (2001) recommends that organisations should promote a balanced approach, where work and family are integrated, offering more opportunities for women in the workforce. Imbibing the above discourses, we present the research approach used in the next section.

3. Research Framework

Many authors (Jarvenpaa 1991; Berg 2004) have recommended *exploratory* studies when there is relatively less information on evolving phenomena, so as to advance the knowledge in the area. Researchers undertake a short-term study, on cross-sectional data, aimed at gathering poignant issues, for a more systematic inquiry, to develop a direction for further research. This study is exploratory, restricted to women ICT project managers in multinationals. The research has taken the philosophical perspective of *interpretivism*, which is the systematic analysis of socially meaningful actions through the direct detailed observation of people in natural settings to make meaningful deductions (Berg 2004). This approach has rendered us with indicatory and practical conclusions, opening up pathways to develop this research project further.

The participants were selected using the *judgment or purposive sampling technique* (Berg, 2004) where researchers use specialist knowledge about some group to select participants who represent this population. Both authors have employed their expertise in ICT project team management area for the selection of a representative sample size, recruiting participants from varied ICT multinational corporations globally. We view that this industry was the most dynamic in the past decades and also influential on the societal infrastructure. We also contend that multinationals had a corporate culture, which often resulted in similar issues, practices and solutions and hence the sample was most appropriate for a homogeneous cross-sectional snapshot. We scoped the study using women participants who had worked in ICT sector, in multinationals, for at least 10 years in senior positions – particularly project management. The researchers felt that this representative sample would provide rich perspectives from active practitioners. The selection has been non-biased, as the researchers are not known to any of the participants.

Data was collected via a web based survey, administered in world-wide organizations. The responses were synthesized and interpreted by both the researchers using the content analysis technique

(Neuman, 1997). The results were compared using the *comparative historical analysis technique*, so as to accommodate a mix of qualitative data reported in previous decade.

The research conducted has drawn from prior work, a web based survey and subsequent analysis. The findings reported in this paper are preliminary in nature and offer pathways to further exploration of this under-researched area. The report is also limited to the framework of the conference and is being offered as a platform for discussion. The researchers welcome collaborative efforts in furthering this research and informing academia and professions.

5. Findings and Discussion

In this section, we have classified the data under two periods for the purposes of analysis. Period 1 denotes synthesis of information from early literature of 1980s as well as results from previous seminal work (Unnithan, 2010), which informed this research project. Period 2 refers to the current work, supported by literature and current survey results. Highlights from each period are classified in tables. Theoretical concepts are then applied to each period to qualify the conclusions and outlook in the section.

5.1 Period 1: 1980-1995

During this period, the women in the workforce were relatively low, but growing steadily (Barnett 1999). Single unmarried women were then reluctantly accepted in most of the multinationals, particularly due to the amount of travel involved. However, their flexibility to travel was often not accepted by staff in other country offices (Unnithan, 2010). The needs of women who were travelling as expatriates differed according to the country of origin (where the multinational was located). Unnithan (2010) study had highlighted few anecdotal examples. A Singaporean project manager found it difficult to earn credibility as an expatriate in Japan. She was not accepted as the “boss” by the people in the office resulting in her having to deploy a junior male officer as her deputy. Conversely, a Japanese project manager found that she was regarded as the “geisha” girl in USA, when she was an expatriate. Cultural differences were more significant and training needs for women were not being met, as it was non-existent. Yet another Australian project manager found that she was not accepted in Asia, as she was not appropriately presented due to lack of sensitivity to the culture. The same study also found that women at that time had to make the difficult choices of having a family or not; and following the partner and family, putting their career on the back burner when the partner was expatriated. All the participants of this study voiced their concern on lack of training to handle situations of possible sexual harassment, cultural issues and flexibility. On the query if they would leave their career eventually for family reasons, when there is no flexibility, 95% of the participants had been affirmative. However, given the flexibility of mobile working or working at home options, all the participants said that they would pursue career options. The 5% of participants who were single women, with or without children, had chosen to pursue their careers. However, the increased expatriation and repatriation had made it difficult for them, particularly in countries where childcare facilities were not that prevalent. According to them, a certain level of role and location stability, with the option of working at home, would have helped them progress much more in their careers. Highlights from the study and literature assimilation are presented in table 1.

It was interesting to note that the study also found that there was the increasing trend of both partners working, opting for international careers with no children, as their work demands and aspirations would not conform to families. Few of the participants in the research had indicated that their relationships had suffered considerably due to constant travel. Conversely, the flexibility of the male

partner also suggested high resistance when it came to accommodating a career woman’s goals. The time is more in conformance with the “exploitation model” discussed in the literature review, where women as ICT project managers had the rather demanding dual roles of career and home, and she was expected to perform both to the fullest extent, with no participation from the partner. Nevertheless, it seem apparent that during this period, participation of women as ICT managers were increasing powered by tele-working options and the Internet, although these were offered by a selected few multinationals. The research clearly indicated that these were welcome options for balancing work and family for women and would provide them with sufficient boost to progress in their careers. In accordance with the literature, the period indicates the transition of organisations into a globalisation, project modes of working and increasing women in project management. Towards the close of 1995, it was becoming apparent that the boundary between the “separate spheres” model is fast giving way to a more “overlapping spheres” model.

Shifted jobs due to:	<ul style="list-style-type: none"> • Child birth, • partner going overseas • Better flexibility of hours • Less travelling in the new job • Career progression with teleworking options
Supportive Experiences	<ul style="list-style-type: none"> • Part time working options • Training and empathy
Role of Professional Bodies	<ul style="list-style-type: none"> • None specified
Role of ICTs	<ul style="list-style-type: none"> • Emerging telework for work life balance

Table 1: Highlights from 1980-1995

5.2. Period 2: 1995-2010

The highlights from the latest research survey conducted for this paper are presented in Table 2. All the participants had worked in the ICT industry as project managers for 15 years or more, and hence had witnessed the transitions from the previous period. The participants had changed organisations at least twice during this time. None of the participants had taken a break from their careers due to personal reasons, but had been given flexible options of work or return after a period of absence.

The survey highlighted that women moved jobs for career progression in this decade. 60% of participants agreed that they were supported by organizations in their career path particularly offering flexible time of work. Financial support for further studies funded self development programs and conference opportunities were also highlighted. 71% of the women surveyed had worked approximately 8 years as independent contractors for multinationals – a trend that had emerged in this decade particularly due to the technology based work options that were offered.

Interestingly, 68% of the women surveyed were not part of any professional bodies, such as computer societies or project management institutes. However, many had commented that the only way to progress in their careers is via programs conducted by these bodies. Some remarks were that the professional bodies should market themselves better to corporations so as to be able to subsidise the programs and offer memberships. The survey also indicated that the professional organizations should use social networking tools and need to be more proactive with ICTs.

Participants had changed their job due to:	<ul style="list-style-type: none"> • Better opportunities for career progression (82%) • Market changes • Change of focus in the organisation • Change of organisation location away from home bases • Flexibility of hours worked and time taken for commuting • Work life balance • Change in job role or non-existent role on return from long leave • Redundancy, retrenchment, outsourced, immigration. • Technology diversity
Supportive Experiences	<ul style="list-style-type: none"> • Part time working options • Flexibility of working from home - no micromanagement • Crèche facility on the work premises • Long leave of absence with a return to job option • Good career options such as projects rotation • Performance based promotions • Good training and mentoring programs
Role of Professional Bodies	<ul style="list-style-type: none"> • PMP Certification has been useful in career progression • Six Sigma certification helped
Role of ICTs	<ul style="list-style-type: none"> • Social networking, Email, broadband, telecommunications helped support progression.

Table 2: Synopsis of Experiences 1995-2010 (Survey based)

The women also remarked that most professional organizations are essentially male dominant, which tends to ignore the role of women or are not well represented. Nonetheless, PMP certification and organization based technical certifications were popular, as they were also supported by organizations. Conversely, among the basic academic qualifications, 50% of participants contend that a bachelor degree was the most useful, while 25-28% highlight a post graduate qualification for career progression.

Commenting on the role of ICTs in their career progression, 91% of the participants highlighted the role of Internet, email and social networking tools, which enabled them to network. Provision of these facilities empowered the women and made them more responsible. The participants also felt that the growth of broadband and social media will support them in their career progression beyond this decade.

Notably, the model of “overlapping spheres” has now taken over the period, where both genders, at least theoretically, participate at home and work. The participants also indicated that their partners are often open to the idea of them moving locations for career progression, and following them – instead of the women having to make the choice in the previous period. Conversely, the work-life balance and integration of family and work, is a key agenda seemingly on all organizational policies. Increasingly, women are feeling valued for their work, their skills and abilities, as the results indicate. The more feminist values are being imbibed into work cultures, and there seem to be an increased understanding that both genders are required to balance organisations and project work. Interestingly, some of the participants had taken the choice of shifting organisations because of changes in organizational vision, lack of corporate social responsibility exhibited by her previous employer, and deficiency of ethical practices.

The historic comparison of the two periods in question reveals the transition of organisations from being reluctant to take on women due to socio-demographic trends to taking on women

increasingly and retaining them as valued long term employees. As a reflection on this attitude, women as ICT project managers are not only pursuing careers, but also becoming more aware of professional opportunities and seeking them out. In the previous decade, women were more inclined to give up their careers due to family commitments. Conversely, from a period of expatriation without sufficient training and repatriation without sufficient time and skills for re-integration, organisations have also moved to providing mentoring, support and training to enable women work as successful ICT managers. There is some evidence that the professional bodies are beginning to emerge as being useful for the progression of women ICT managers, as compared to the previous period, when none of the participants mentioned their support. The role of ICTs, particularly social networking seems to emerge as the key facilitator for the progress of women in their careers.

6. Conclusions and Outlook

It is evident that there is increased participation of women as ICT project managers worldwide, supported by tele-working options and flexible/part time home based arrangements offered by organisations. Nevertheless, most of the participants seem to indicate that organisations need to scale up these options such that it becomes a norm without gender bias, so that the flexibility is not scorned upon and becomes an impediment in career progression. The participants also indicate that the levels of training, particularly managerial and leadership skills, could be scaled up with the support of professional bodies such as PMI, for increasing the buoyancy levels. It is also notable that the use of ICT tools need to be improved both by professional bodies and organizations, so as to leverage their potential benefits to support women in the workforce.

Conversely, we cite a recent article (Miller, 2010), which reported on women who are “out of the loop in silicon valley”. The article suggests that women now outnumber men law schools, medicine and overall workforce. However, there is a marked imbalance of genders in the high tech world, where change is dynamic. For many women in ICT project management, the next step in the spiral is to begin their own ventures. However, what happens in the ICT world? The article points to an example, of a candidate with double major in industrial engineering and English from Stanford University, an MBA from Harvard, a management position at Hewlett-Packard and experience as president of a small software company. When she began raising funds for a start-up venture that she co-founded in 2007, one venture capitalist mentioned that she did not need business cards, because all they would say was “Mom” and yet another invited her for a weekend yachting excursion with a naked picture of himself on the boat. A third financier who discovered that her partner was a bike enthusiast spent more time asking her if the riding affected her husband’s reproductive capabilities. None of them were interested in her business plan. Ultimately, she funded her venture through angel investors, many of them with emphasized focus on funding female start-up ventures.

Similarly, women account for only 6 percent of top 100 technology company executives (Miller, 2010). Analysts are of the opinion that women do not participate with creative ideas. According to some women, it is all down to accessibility to education and role models. *In 2010, women seem to be cheering the new avatar of the Barbie doll who is turning a computer scientist, with a new hot pink laptop.* Women in ICT groups are becoming increasingly common in many countries. Ms Watts, who mentors women at Stanford Business School and meets regularly with a group of female CEOs think that the groups are the best ways of networking and support. In parallel, the silicon valley is sprouting up for women such as Girls in Tech and Women 2.0 (Miller, 2010). Yet there seem to be a

lower number of women in the ICT profession as project managers. The question remains as to how much support is real, without bias and progressive.

Seemingly, women in ICT project management today are aspiring for career progression and look forward to the flexibility that organisations are able to offer. Organisations can offer scaled up the support, training, mentoring combined with empathy and in conjunction with professional bodies, so that women can increase their participation in the workforce and become valued long-term employees. Conversely, socio-demographics in the ICT world also need transition into a more credibility-based approach to women, as entrepreneurs – the next level in their progressive path. Organisations, professional bodies and the society could support women in ICT, recognizing their strengths, creating awareness and offering training support with the requisite empathy – which is the key for sustainable progress of Women in ICT sector, in the next decade.

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