

# Career Development of Women Executives in Information Technology Sector

Sangeeta Bhatnagar<sup>1</sup>, P. K. Jain<sup>2</sup>

<sup>1</sup>Research Scholar, Dept of Management Studies, Mewar University, Chittorgarh, Rajasthan, India

<sup>2</sup>Director, Faculty of Management studies, MLSU, Udaipur, Rajasthan, India

**Abstract:** *Now days the status of women has undergone a sea change in the past two decades from a simple homemaker to a self-motivated multi-tasker, by providing her mark in every field, which includes even the male dominated professions. In corporate, she is a victim of the insensitive effects of glass ceiling, and pay inequity. Despite the impressive increase of women in the workforce, they continue to be underrepresented in top positions in the information technology (IT) field. This gender gap is most apparent at the senior management and executive levels. A search of the literature, combined with interviews of some successful women at executive levels of the information technology [IT] industry shows that women are considerably under-represented across the field and have been underrepresented since the field's beginnings, despite efforts to attract and retain them. A qualitative study is conducted to develop an in-depth understanding of career development of women working on executive level in information technology sector. The study examines the barriers that hinder the growth and the factors that support the women in achieving executive level positions. Furthermore, this study obtains an in-depth understanding of the challenges and opportunities faced by the women as they progressed up the career ladder to executive level positions.*

**Keywords:** Women, Information Technology, career Development, barriers, challenges.

## 1. Introduction

In today's world, more women than ever enter the labor force but the majority of top management positions in almost all countries are primarily held by men. Female managers/executives generally tend to concentrate in lower management positions and have less power than men. At the same time women are still concentrating in conventionally "female" functional areas of companies such as; HR, corporate communications, community and governmental relations, marketing and finance (Catalyst, 1991; U.S. Department of Labor, 1991). Although women as a whole may place less emphasis on career success than men, there are an ample number of women who strive for top management positions and are sometimes not able to attain them.

Women play an increasing and significant role in today's economy, and their salaries and spending capacity is critical to the country's economic well-being. From a consumer perception, women hold a lot of influence. In the "she-economy," women are frequently referred to as the chief purchaser of the household. More than 85 percent of household spending decisions are made by them.

In recent times women no longer shy away from the typical so called male mainstay, be it education or career. The entrepreneurial expertise of a woman is far more superior to those of a man, for she does not give up easily. It is gratifying to note that the present day women has broken all these medieval shackles and endeavored to stand shoulder to shoulder with man, and all this by not compromising her traditional role. Something remarkable and to be taken note of by every man. The proportion of women in the workforce has grown from just over a third of all workers in 1970 to almost half of the total workforce in 2012.

The information technology field is male dominated at the executive level position. Over several decades, a discrepancy between women and men has persisted in the recruitment and retention of women at all levels of information technology [IT], from girls' experience in schools, to the initial selection women make as undergraduate majors, to the absence of women in the highest corporate and academic positions. (Nancy Ramsey and Pamela McCorduck, 2005)

This recent sharp decline in the number of women pursuing undergraduate degrees in computer-related fields and the attrition of women in advance-degree programs affect the number of women at levels higher in the pipeline in IT (Igbaria, Parasuraman, & Greenhaus, 1997). There are serious problems in attracting girls to engineering and computer-related fields and keeping them in the IT employment pipeline (Farmer, 1997). A limited number of studies and observations have been done to determine the cause of why women are deterred from continuing in the computer science pipeline (Farmer, 1997; Margolis & Fisher, 2002, Roberts, Kassianidou, & Irani, 2002). The American Association of University for Women (1992), reported that even girls with high aptitude for maths and science are less likely to pursue studies in science, engineering, and technology than their male counterparts. Most women drop out of the engineering/computing pipeline when choosing an undergraduate major. Consequently, there are disproportionately less number of women in academic computer science and the computer industry (Frenkel, 1999). Since the number of women at the bachelor's level affects the number of women at levels higher in the pipeline and in the job market, these facts are of great concern

### 1.1 Women in the Workforce

Women have entered the labor market in increasing numbers during the last few decades and currently represent 47% of the total workforce (U.S. Bureau of Labor Statistics, 2003). Despite the impressive increase of women in the workforce,

they continue to be underrepresented in managerial positions in the information technology (IT) field. This gender gap is most evident at the senior management and executive levels. Although many women have advanced to the ranks of middle management, as a group, women hold only 10% of upper-level managerial jobs in the computer field (Igbaria, Parasuraman, & Greenhaus, 1997). Furthermore, for many women the transition from middle and upper managerial positions to positions of organization leadership (executive-level) is improbable. Currently, only 3% of IT executives are women (Balcita, Carver, & Soffa, 2002; Nelson-Porter, 2004).

Some of the IT literature highlights the achievements of a few exceptional women who have reached top level positions and discuss broader issues concerning the opportunities and problems they have faced in the IT field (Laberis, 1992; Leever, Dunigan, & Turner, 2002; Marengi, 1992). However, there is little systemic empirical research on the career development and aspirations of women in executive level positions in IT. Therefore, this program of research seeks to address the gap in the IT literature and examine the career development and success outcomes of women in these positions. Career development for the purpose of this project will be defined as the series of positions held over time and the factors influencing an individual's advancement through those positions (Peterson, Sampson, Reardon, & Lenz, 1996).

## 2. Review of Literature#

According to the U.S. Bureau of Labor Statistics (2003), the "core" IT occupations include: computer scientists, computer engineers, systems analysts and computer programmers, Workers in IT occupations design, manufacture, operate, repair, and maintain the IT infrastructure. The job options in the information technology field can be numerous and can lead to different levels of career growth. Female participation in the IT occupations has varied up to a high of approximately 35% in the early 1990s. From 1990 to 2003, the number of people in IT occupations has more than doubled and the female participation has dropped to approximately 27% (U.S. Bureau of Labor Statistics, 2003). This decline in female participation has caused concern, not only because of the low participation of women in IT occupations, but because there is a significant labor shortage in those occupations and the drop in participation of women further exacerbates the labor shortage (Freeman & Aspray, 1999; Information Technology Forum, 1999; Tyson, 2001).

According to one of the renowned newspaper, dated 15<sup>th</sup> Dec.2005, it is marked that women constitutes of 6 percent of the total workforce in the corporate houses and this percentage decreases in the larger organizations, while in medium organizations it stands to 18 percent, a study by Confederation of India Industry(CII) has revealed.

The shortage of women in IT fields has made it more difficult for them to obtain management positions in industry (Leever, Dunigan, & Turner, 2002; Frenkel, 1999). Women hold only 8.1% of executive positions (VP and higher) at major technology companies (McGee, 2000). One of the major reasons for the scarcity of women executives is that there are fewer women in the technology pipeline

(Catalyst, 2000). There has emerged a concern about the drop in the number of young women entering Computer Science degree programs and a drop in the participation of women in IT occupations (Camp,1997). Research on the career development of women managers in general has referred to the existence of a "glass ceiling" or invisible barrier that restricts the advancement of women to top executive positions (Greenhaus & Callanan, 1994; Igbaria & Wormley, 1992; Morrison, 1992; Wentling, 1997). According to the Federal Government Glass Ceiling Commission (1995), whose mission is to identify barriers to the employment and advancement of women and minorities and to encourage companies to build a diverse workforce, less than 5% of women are in senior-level management positions. The literature indicates that such a barrier also exists in the IT field (Camp, 1997; Johnson, 1990; Laberis, 1992). Several of these authors have suggested that proportional presence of women in higher ranks where decision-making takes place will go a long way toward making the workplace conducive to women's needs (Camp, 1997; Bretts, 1993; Etzkowitz et al., 1994; Frenkle, 1999; Myers, 1990; Marengi, 1992; Mulqueen, 1996; Pearl et al., 1990).

In one of very few academic studies on gender differences in IT careers, Truman and Baroudi (1994) concluded that this field may not be immune to the problems of gender discrimination. They analyzed the data gathered by the Society of Information Management (SIM) and found that women received lower salaries than men even when job level, age, education and work experience were controlled. They also observed that there were a disproportionately high number of men in the managerial ranks. Investigating this issue further, Igbaria and Baroudi (1995) investigated the impact of gender on job performance evaluations, job performance attributions and career advancement prospects. Although they did not find any significant differences in job performance ratings, they reported that women are perceived to have less favorable chances for promotion than men.

## 3. Research Objectives

- Educational qualifications -women IT executives
- Reason for choosing present job positions questions related to positions held.
- Workplace culture characteristics hindering the career development of women in IT. Satisfaction level of women in IT with their career development.

## 4. Research Methodology

### 4.1 Research Design

The qualitative method was utilized to provide a comprehensive understanding of the workplace culture that hinders and assists the career development of women in IT. A semi structured interview method was used to find an in depth understanding of women's aspirations towards their job and to shed further light on the dynamics underlying women's career development. This strategy was used because it allows for rich data, thorough responses, probing, and clarification of meanings (Merriam, 1998).

## 4.2 Sampling

- i) Sample Population-A small sample of 16 women working on executives positions in IT sector. 5 software companies chosen for the study by random sampling method.
- ii) Participant's profile- The participants were working in reputed IT companies in Gurgaon and Noida. 5(31.25%) of them were working as Systems analysts, 6 (37.5%) worked as Senior consultants and the remaining 5(31.25%) were software engineers .All of them were in 25- 45 age group, 10 were married, 2 were separated and 4 were unmarried. Out of 10 married women 7 had one child and 3 had 2 children .All but two of them lived in nuclear families.
- iii) Procedure –The questions were set and the respondents were interviewed telephonically as and when they showed their convenience. The replies were written, coded, read and analyzed.

## 4.3 Data Analysis and Result

### 4.3.1 Research Question 1

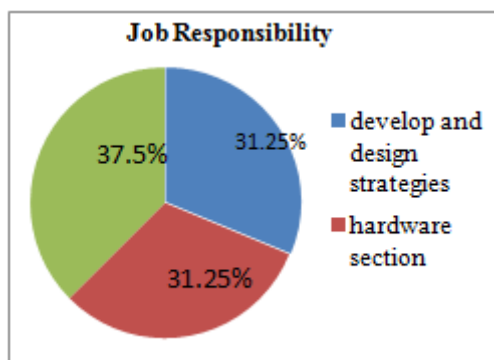
Educational qualifications-Research question number one addressed the educational background of the women in executive positions in information technology. All the participants had earned post graduate degrees and 4(25%) had done MBA .Out of 16 participants 3 (18.75%) had MCA degree, 4(25%) had done additional executive MBA in information technology and 5(31.25%) were engineers by profession before joining IT sector. When asked about their earlier school passion for computers 11 of them identified with it. The reason given was –took computer classes, learned languages and programming, teachers encouraged them.

### 4.3.2 Research question 2

The respondents were asked the reasons for choosing IT as their profession, questions related to their present positions held and job responsibilities. The IT sector as their career choice was quite different from others. The most common factors were high pay, interesting projects, foreign training assignments and one of them said

*"I joined IT sector because my engineering friends forced me .I rather wanted to be a computer engineer and here I get projects, makes me satisfied."*

*One Indian working woman has reflected that she is "professionally looked at with more respect" and has more self-confidence, "a feeling of self-worth for being able to add value and do something intellectually stimulating."*



The job responsibilities held by them was 5(31.25%) of them had to develop and design strategies, 5(31.25%) were in hardware section and needed to consult.6 (37.5%) participants had to be extra responsible for planning and programming .In addition to the participants' IT responsibilities, all of them have direct supervision over employees, which range from systems analysts to project team members. All study participants also have direct control over budgets.

All of them aspire to be on high job positions 3 want to be the Senior Vice president, 2 as MD of a company, 5 as Vice-President of IT Enterprise Architecture Solutions and others wanted to be promoted to two ranks higher than their present position.

### 4.3.3 Research question 3

In addition, the study participants were asked what aspects of their workplace culture and environment had obstructed their development. The major factors that came out after the interview were male domination and biased behavior,(4), high competitiveness,(4), very conservative, (2), work hours and work load,(3), instable policies,(2), threatening environment, (1)

The participants who feel male domination hinders their growth said

*"The men take work for praise and by wrong methods. Many times we feel like outsiders, and this feeling sometimes had an impact on our self-confidence."*

*"The previous organization had quite threatening environment .I felt unsafe and thank god I got another job" narrated one participant.*

*"It's time men realized that women could do everything that they could and probably do even better"*

The participants also pointed out that female role models and mentors are difficult to find in the IT field because it is mostly male dominated. They felt that having female role models to look up to and having the opportunity to talk and share experiences was important for building self-confidence.

As for work hours, work load and policies they felt 12-14 hours per day work and loads of assignments, training sessions, unexpected meetings and lack of flexi time, compressed weeks hindered their career development. They were frequently excluded in the decision making process, and those making the decisions were not aware of their needs. Non consensus decision making sometimes resulted in their not knowing when a decision had actually been reached. From the recent researches done globally, its found that women do two-thirds of the world's work, receive 10 percent of the world's income and own only 1 percent of the means of production, which has come to capture the imbalance between work and remuneration faced by them.

### 4.3.4 Research question 4

Study participants were asked if they had progressed as rapidly as they thought they should.9 of them felt they have not and 7 were positively satisfied with their progress. The participants noted that dealing with politics in the organization hindered their career development. In many instances, the study participants believed they had difficulty

conforming to company norms, fitting in, adapting to the organization's culture, and knowing whom to approach for support.

*"When I was promoted as senior systems analyst, in meetings I was the only female with 29 men colleagues. They did not ask me or included me in decision making process and thus I lacked self confidence"*

*"Being from western region of India I cannot speak English fluently neither understands Hindi. I am often teased and my work also suffers "*

The study participants also indicated that gender discrimination was a major challenge in their careers. Several of the participants believed that because they were women, they had advanced more slowly, were not given promotions that they deserved, had to work harder to prove themselves, were not taken seriously, or were banned from international job assignments.

*"I fully acknowledge that I have to work twice as hard and be twice as smart as the man I'm competing with. So women must accept reality and not complain about it. Beat them at their own game, be better than them at what you do, and be vigilant. Be smarter and work the system; get to know the next level of management and make sure they know who you are."*

The seven participants who felt a relative progress in their job, (1) out of them said got job opportunities to prove, Constantly learning new things (3), Have control over change and getting things accomplished (1), Opportunity to work in many different areas of business (2).

## 5. Conclusion

The culture and environment in IT sector is fast changing, but still gender discrimination prevails. In today's modern world, it is known that a glass ceiling exists for women in management and it is being studied and remedied from varying perspectives. A few women have moved beyond the glass ceiling into the executive suite, yet their number is not proportionate to their representation at middle management levels and is far below that of their similarly qualified male counterparts. In order to continue to ease the process of women entering the workforce, women must learn from mistakes of other women, and organizations and governments must treat them as equal to men and give them the respect and the responsibility to grow in leadership positions and in entrepreneurial endeavors. Now it is time to identify and understand women's needs and concerns, to address the problems they are facing, and to initiate an honest and straightforward analysis of how these problems can be resolved.

## References

- [1] American Association of University Women. (2000). Tech-savvy: Educating girls in the new computer age. Tech-Savvy: Educating Girls in the New Computer Age, Washington, DC.
- [2] Bartol, K. M., & Aspray, W. (2006). The transition of women from the academic world to the IT workplace: A review of the relevant research. In J. M. Cohoon and W.

Aspray (Eds.), *Women and information technology: Research on underrepresentation*. Cambridge, MA: The MIT Press.

- [3] Camp, T. (1997). The incredible shrinking pipeline. *Communications of the ACM*, 40, 10, 103-110.
- [4] Catalyst (2000). Catalyst census of women corporate officers in Canada. New York: Author.
- [5] DeVoe, D. (1998). Expanding the pool of IT workers. *InfoWorld*, 20, 111-112.
- [6] Greenhaus, J., & Callahan, G. (1994). Career management. Orlando, FL: Dryden Press, Harcourt Brace College Publishers.
- [7] Etzkowitz, H., Kemelgor, C., Neuschatz, M., & Uzzi, B. (1994). Barriers to women's participation in academic science and engineering. In W. Pearson, Jr., and A. Fechter (Eds.), *Who will do science? Educating the next generation* (pp. 43-67). Baltimore, MD: The Johns Hopkins University Press.
- [8] Nancy Ramsey and Pamela McCorduck, (2005) National Science Foundation under Grant No. 0413538
- [9] Shuttleworth T (1992) Women and computer technology. Have the promises of equal opportunities been fulfilled? *Women in Management Review* 7, 24-30.
- [10] Spender, D. (1997). The position of women in information technology – or who got there first and with what consequences. *Current Sociology*, 45(2), 135-147.

## Author Profile



**Sangeeta Bhatnagar** received MBA (HRM) degree from Symbiosis Pune, in 2006. Through out her career she has been a meritorious student and received many awards and certificates and worked as HOD, Examination coordinator, counselor and activity in charge. She has presented and published many research papers in International and national conferences and seminars' journals. She gave Training in soft skills to Executives, Principals and students under programme sponsored and aided by Govt of Rajasthan.



**Prof. PK Jain** holds the position of the Director of the Faculty of management at M L Sukhadia University, Udaipur. Started his career in academics in the year 1978 from University of Rajasthan, then moved to Vikram University and in 1990 joined MLSU as Associate Professor. Later on in 2001 was selected as Professor in the same Faculty. He has been recipient of Young Social Scientist Award from UGC for his Post Doctoral work.

Training assignments – He has trained hundreds of senior and middle level executives of the reputed organizations across the country and abroad in the field of Behavior, motivation, goal setting and personality. He is widely acclaimed as an excellent orator. He has been trainer for the executives of many reputed Business houses including Bajaj, Doordarshan, BSF, CRPF, ITBP, KRIBHCO, ONGC, Adarsh cooperative society, Coal India, LIC etc. He has been a member of advisory board to the LIC of India for 4 years. He has trained the civil servants of Sri Lanka during 2000-2001. Prof. PK Jin has been visiting professor to Texas University, USA, Institute of Technological Studies, Colombo, Sri Lanka, King Faisal University Saudi Arabia and Duke University.