Introduction

Women in Computing, Engineering and Technology are a formally declared minority in the world. Related statistics indicate under-representation in academy and industry in every country. On the other hand, feminist research approaches have been ignored or
neglected when studying phenomena related to gender issues in science and engineering. There is, however, an increasing awareness expressed for phenomena related to work activities, work-life balance and IT women welfare in general. Achieving, for instance, a balance among a professional career with a family and social life seems to be an impossible mission project.

In this chapter we initially refer to the rationale of adopting gender-based research methods to study phenomena related to women's role in IT, and subsequently we discuss two opposite aspects of IT. Firstly, we search how IT augments the stresses associated with the high-tech phenomenon among women and how this has provided the ground for the investigation of the *Work-Life Balance* (WLB) concept. The term has been coined to define the boundaries between work and life, and explore phenomena that affect professional women in engineering education and technology-related careers. Secondly, we consider ICT advances as supporters of women's consensus participation and empowerment.

Throughout this investigation, we use recent statistical findings and organizational behavior literature, which often addresses work-family conflicts that stand to preclude work-life balance, as well as studies that report the advantages from ICT as supporters for women's activities. We conclude by outlining suggestions to point to further gender-based research and utilization of ICT to provide support and awareness for real change.
Female workers in the fields of Computer Science (CS) and Software Engineering (SE) come from diverse knowledge, cultural and national backgrounds and scientific disciplines. Being at various stages of their lives, they have acquired older or more recent subject-related knowledge, gained from work activities in previous work positions or recent academic education. In addition to all the personal and often compromised (by women) boundaries of working and social life, the familiarization with new ways of work, lifelong learning and training in the frequently changing areas of Information Technology (IT) takes a considerable and frustrating amount of time. The rapid working changes and demands, in turn, cause destruction and threaten the balance between professional work and personal life.

While the male working force does not face the demands of the working environment in such an intensive manner, IT area nowadays is a male-dominating area, where the image of the white male serves as a paragon for academic education, work stability and job experience. Otherwise stated by Pulkkinen (2000), the IT development nowadays is guided from the viewpoints of the 20-30 years old men, who are white, functionally normal, well-educated and technically interested and experienced (Pulkkinen, 2000).

Being employed at shorter term contracts and being out of work for more time than men, female workers have to face more intensively the frequent job changes and alterations in knowledge-driven work procedures. These demand an ongoing adaptation to new skills and new working cultures. The speedy work processes together with the technological
consequences in work tasks and personal life impose changes to the ways we think, react and behave in everyday and virtual life.

On the other hand, the sense of the smooth transition to new forms of working life becomes increasingly a requirement for change. ICT, in particular, offers new ways to support, but also to exploit commercially and emotionally women being at home or work. Considering both aspects and forms of ICT, a contradictory observation could be that, women, and IT women in particular, are lost and found in virtual reality.

**Motivation, Research Questions and Research Methods Employed**

In this chapter, we question if the new technological era and ICT-mediated work could really offer women the opportunity to achieve a financial and emotional stability and ultimately a 'working' balance among work, social and family life. Could the new forms of ICT be supporters for gender equality and promoters for equal rights at work, or will they suppress the female intellectual capital and female working force? These research questions are far from easy to be completely answered in a book chapter, no matter how advanced qualitative and quantitative research methods are used, or how many statistics and phenomena are analyzed. We will also view the study of phenomena by the lens of feminist research, and at the same time provide quantitative data, in order to support the qualitative nature of phenomenology and gender-based approach, from the interpretive and critical research paradigm, respectively.
Different technological solutions are part of everyday virtual and non-virtual life, and they are used by both genders in many groups and communities. Unlike other scientific and professional fields (i.e. psychology, sociology, biology and so on) gender differences in behavior are not formally recognized in engineering and IT. In information systems (IS) field there are not adequate studies that consider the influence of gender on IT diffusion (see Gefen & Straub, 1997). Neither there are sufficient studies to indicate the adoption and suitability of feminist research approaches within the IS domain (see Adam et al, 2004).

Our investigation is driven by the motivation to examine some significant phenomena that influence women's presence in IT, and, utilizing a gender-based approach to analyze the statistical evidence associated with these phenomena. In so doing, we search to provide a detailed analysis and report on some of the forces of 'virtual life' that influence women in IT education and work. Ultimately, we challenge the legitimacy of research that does not empower oppressed and otherwise invisible or minority groups similar to women in academic, scientific and professional communities of practice.

We draw theory from phenomenology in order to observe, identify and understand IT women's situation, by means of which we are able to typify behavior and come to terms with the social and virtual reality that varies in different situations. Since though ICT enables us to live in a world of 'many realities', phenomenology becomes a complex method to acknowledge the pervasive issue of gender as a category of analysis and organization within a world of multiple realities.
Therefore, we additionally resort to a gender-based approach since the interdisciplinary nature of feminist research permits the utilization of a multiplicity of research methods. Moreover, as Cohen et al (2003) clearly state "the drive towards collective, egalitarian and emancipatory qualitative research is seen as necessary if women are to avoid colluding in their own oppression by undertaking positivist, uninvolved, objective research." (Cohen et al, 2003).

The next sections concentrate on IT work reported phenomena of the last decade, as well as statistical figures and more recent phenomena that have influenced the female working force in the IT sector. We further expose and comment on essential and critical information provided by summarized published statistics on the social and working conditions, and we attempt a data meta-analysis. In so doing, we seek to create an improved understanding of these phenomena by relating them to reported work experiences which, in turn, provide the rationale for introducing and realizing the concept of Work-Life Balance (WLB). The chapter concludes with a summarized review of the current phenomena and consequences that women face at work and in higher education and summarizes points for encouraging and supporting women in their decisions and in problematic situations.

Recent Phenomena in Numbers and Words: Women in Virtual Life and Work for the Last 20 Years
A number of conferences organized by women for women the last two decades indicate the appearance of gender issues in IT. These initiatives, wherein women participated actively, mark a distinct point in the history of Computer Science. The conference entitled "Women, Work and Computerization: Understanding and Overcoming Bias in Work and Education" was held in Finland in July 1991. This conference has been a significant resource of documents to examine the historical evidence required for a view to women's past in IT.

Similar annual conferences of the same series were organized in other countries and revealed a wide-range of issues related to gender equality and equal (or rather unequal) opportunities at work and education. The 4th conference that was held in Finland had 125 participants and offered a plethora of studies and described phenomena related to IT university education and work practices in Europe, the USA, Australia, Asia and Africa (see Tijdens & Eriksson, 1991). Examining the series of the conferences' proceedings, one might assess a rather pessimistic situation for women's participation in the rise of IT era in all over the world, but an optimistic motivation though to change and improve the conditions at work and in higher education.

We quote Elisabeth Rehn, Minister for Equality Affairs in Finland, who gave a welcoming address to the conference participants in 1991: "There was quite a lot of hope that new technology could break down the gender division in the labor market and narrow the wage gap between women and men, especially when we learned in the middle of 80's that more than half of those using new technology in their work are women."
However, it seems that the rapid technological change has not so far had the opposite impact in promoting equality in these essential aspects.” (Rehn, 1991).

More than a decade has passed and the societal and organizational trends made Information Systems Sciences and Software Engineering expand their borders to provide adequate solutions (albeit no revolutions!) and technological support for the demands of the e-academy and e-society. Putting the feeling of the above quotation in 'objective' figures, and searching for evidence for the phenomena that the previous paragraphs described, one could refer to the following facts and statistical figures, 10 years afterwards.

In its 2003 report, Blue Ribbon Panel on diversity, the Information Technology Association of America (ITAA) assessed the United States (U.S.) IT workforce regarding women and under-represented groups (African, Hispanic and Native Americans). ITAA reported that women and under-represented groups made few inroads into high tech, including IT, careers. Using data from the United States Bureau of Labor Statistics between 1996 and 2002, ITAA concluded that the barriers to longevity in the IT domain continue to preclude women and under-represented groups.

Further evidence supports this assessment; that is, fewer U.S. women are receiving computer science/IT degrees, with a decline from 37 percent in 1984 to 28 percent in 2000. Likewise, in its featured story, Why Do Women Hate IT, CIO Magazine (September 13, 2000), concluded that U.S. high-tech workplaces are white male
dominated, favor conformity over diversity and are less tolerant of family issues and personal matters. Given this climate, women tend to opt out of high-tech careers – thereby shortening their tenure clock to exercise other career options.

Black, Boldyreff, Paterson and Ross (2004) report that the percentage of young women considering careers in computing and engineering is declining, rather than increasing, as discussions on the website of the United Kingdom (U.K.) eSkills National Training Organization indicate. On the eSkills website, the U.K. Minister for Women, Baroness Margaret Jay, has expressed concern that figures from the government's March 2000 Labor Force Survey show that the proportion of U.K. women working in the IT industry has actually declined in recent years. Black et al continue reporting that "women now represent less than a quarter of the U.K. IT workforce, down from 29 percent in 1994." Ann Cantelo from eSkills reports the following trend in 2000: "70 percent of women graduates are not working with technology after completing their IT degrees." (Black et al, 2004).

The previous percentages refer to samples drawn from multicultural, multilingual, high-tech countries with Higher Education keeping a role of differences' acceptance and integration, and where industry and academy are formally considered as providers for equal opportunities and access to all groups. As can be seen from the percentages, Higher Education does not boost for equal student numbers of both genders, neither work accessibility is guaranteed after obtaining an IT degree.
In the following sections, we discuss how technology augments the stresses associated with the high-tech phenomenon among women and how it has resulted in the study of the *work-life balance* concept among professional women in academic and industrial IT-related careers. In addition to statistical evidence on the social and work phenomena, we use findings from the organizational behavioral literature which often addresses work-family conflicts that stand to preclude work-life balance (see e.g. Stroh et al, 1996; Eagle et al, 1997; Gordon & Whelan, 1998; Martins et al, 2002).

**The Impact of Technology on Women IT Professionals**

The U.S. IT workforce has been characterized as non-attractive, hostile and unfriendly. ITAA (2003) explains that the environment can be socially isolating, overly technophobic, antisocial and dominated by young, white male images. Some may question how these factors are hindrances to women (!). Yet, irregular and extensive work hours continue to serve as barriers to women. This is predominantly the case for working mothers, who can often experience unexpected disruptions from both the workplace and family. As such, work-life balance unconstructively congregates work-life conflict, and results in bi-directional collisions (Jenson, 1999; Margolis and Fisher, 2002).

So, we, in turn, may also question: why does technology linger over the IT female professional?
Family and Work Imbalance: Conflicts, Compromises and the Glass Ceiling Phenomenon

In their 1996 study of male and female managers, Stroh, Brett and Reilly (1996) assessed variability among family structure, intent to leave an organization, turnover and the glass ceiling phenomenon. The glass ceiling is delineated by artificial barriers that constrain women in the workplace, simply due to gender. The following sections provide information on each of the previously mentioned phenomena.

Family Structure and Turnovers

In a sample of 488 males and 127 females from a variety of industries, Stroh et al (1996) determined that family structure was less likely to predict turnover intentions differentially for men and women. The number of children was a significant predictor of stability intentions even among men. Interestingly, however, when testing for glass ceiling predictions, “females were likely to intend to leave than males, and given the same level of career advancement opportunities, females are more likely to leave than males” (pp 114).

The significance of these findings implies that women in the workforce, in general, and those in the IT domain, in particular, continue to be negatively confronted by the lack of career advancement opportunities. Such deficiencies appear to be systemic to the organizational culture, climate and structure.
The Science Glass Ceiling Phenomenon

Recent work by Rosser (2004) reports that impact is even greater among women in sciences, engineering and technology. In her book, "The Science Glass Ceiling", she indicates that work and family imbalances remain the top challenge for women in “technical” academic domains. Mentoring and family-friendly policies were among her recommendations to address this plight among women in academia.

Black, Boldyreff, Paterson and Ross (2004) also advise that although the growth in initiatives specifically addressed to IT women in U.K. is encouraging, "it is vital to avoid initiative-overload." Similarly, the ITAA and AAUW have provided analogous guidelines to support women in the IT workforce in U.S.

Salary Differences

The pay gap among men and women exists in many countries for many jobs. Even within European Union wider constitution area, there are countries that do not have equality pay act legislation. While some argue that work-family conflict is not as relevant among IT professional women, pay equity continues to elude those females in the field. According to the Dice 2003 Annual Salary Survey, U.S. women’s salaries in IT increased 5 percent to an average of $62,800 while men salaries moved to an average compensation of $69,700. Yet, the pay gaps between men and women IT professionals remain in the double digitals at 11 percent.

Parenting Responsibilities
In her 2002 *Harvard Business Review* article, Sylvania Ann Hewlett looks at the phenomena of age, childbearing (or lack there of), career and earning power among U.S. women. Hewlett cites economists, who have concluded that childbearing is the penalty factor to the tune of 7% lost wages per child in America. Furthermore, while fathers play vital roles in the family, much of the primary childcare rests on females among high-achieving men and women, as well as corporate women and ultra achieving men between ages 41 and 55.

Partnering with Harris Interactive and the National Parenting Association, Hewlett (2002) found that over 60% of high-achieving females and males reported that activities for children fall to the mother. Over 50% of high-achieving women are mostly likely to take time off for ill children (National Parenting Association, www.parentsunite.org). On the other hand, single high-achieving women, like men, evaluate quality of life and life (non) choices as well.

**The Having-it-All Myth**

Lastly, many women in high-tech and/or high demand career paths can be disillusioned by the “having it all” myth (Hewlett, 2002). The demands for higher education and the particular images of work in our era impose an intensive socialization and sometimes a technological determinism in work and life in general. The inevitable corrosion of character (see e.g. Sennett, 1998) might be the consequence for the conformist, man or woman, while the (virtual) reality orientation can create conflicts and communication barriers.
So, we might ask again, why does technology linger over the IT female professional?

As can be seen from the previous sections, the transition from traditional forms of IT education and work to a virtual, advanced information society gave rise to more demanding work schedules and family responsibilities for women. In addition, the continual inequities often associated with compensation, job structure and lack of career advancements are barriers to achieving some acceptable level of balance. With the demands of 24 by 7 availability and extensive work hours associated with the IT workforce, U.S. women, for instance, will continue to tackle with work-life balance with or without family responsibilities.

Comparing and contrasting the previous figures to the work situation of women in various countries, one might find many similarities and differences that reflect historical changes and societal trends. In many countries, for instance, women have focused on the women's movement for many years such as in U.K. and other European countries, while U.S. women are thirty years into the women’s movement and are, therefore, still struggling with balancing professional careers and personal lives. In a similar way, women's work and human rights have been violated in third world (and other) countries, where, at the same time, there are initiatives that focus on global technology transfer and ICT diffusion as governmental policies for the financial prosperity of the nation.
Even within the European Union, there are cultural issues, which characterize countries with organizational and societal cultures that compile to strong feminine or masculine values; this is a diverse phenomenon, sometimes mirrored in the social systems' infrastructure and work policies. In their recent study, Siakas, Berki and Georgiadou (2003) examine software quality management policies in four European countries, namely Greece, U.K., Denmark and Finland (Siakas et al, 2003). They emphasize the impact of the strong feminine and masculine values, which, combined with other factors, influence software quality management strategies.

Another issue that is related to the emancipation of IT women is the relevance of gender issues, since they are 'virtually' absent (!) from the pedagogical curricula of IT education and research. The next section takes a closer look to this matter, considering the dominating tendencies in the IT academic fields.

**Gender Issues and IT: Different Interests, Tensions and Intentions**

Traditionally, Information Technology, Science and Engineering have been academic and work fields that have dealt with abstraction and empiricism. Abstraction has been considered as the tool to guarantee understanding of the whole, since the IS design deals with highly abstract models that provide information of quantifiable (objectivist) data. Thus, (subjectivist) feelings, ideas and creativity of people have not traditionally been considered to add to the amount of 'objective' views about an IS (see Greenbaum, 1991).
Yet recently a new wave of attention has emerged to focus more explicitly on issues rising from a holistic view of information systems. In their recent work, Koskinen, Liimatainen, Berki and Jäkälä (2005), elaborating on the human context of information systems, support that studies in this area are still scattered, but there seems to exist a common paradigmatic orientation in their basic assumptions of human beings and their interactions. The end-users of IS should be seen holistically as physical, cognitive, emotional and social beings, whose communication is rich and uses multiple media. (Koskinen et al, 2005). Consequently, the designers of IS, incorporating a humanistic viewpoint in IS design, should see the technical artefact as a solution to a human problem (Nurminen, 1988). Moreover, considering the humanization of IS design, Isomäki (2002) states that the most important task of IS design is to adjust IS to meet human characteristics and behaviour.

Considering the dominating forces and tendencies in the IT academy and industry, Evelyn Fox Keller (1985) argues that the most immediate issue for a feminist perspective on the natural sciences is the deeply rooted myth that casts objectivity, reason and mind as male, and subjectivity, feeling and nature as female. "In this division of emotional and intellectual labour, women have been the guarantors and protectors of the personal, the emotional, the particular, whereas science - the province par excellence of the impersonal, the rational and the general - has been the preserve of men." (Keller, 1985).

Twenty (20) years later, Adam et al (2004) presented the case that research on gender and information systems from both quantitative and qualitative traditions is problematic, as
the concept of gender continues to remain under-researched and under-theorised. It is specifically mentioned that "any consideration of gender and IT should be done against the burgeoning literature on gender and technology (and, more specifically, gender and information technology) ..." (Adam et al, 2004).

Nowadays that there is an increasing need for investment to e-work and tele-work, the essence and the principles of IT are re-examined. It is required to approach scientific knowledge and professional practice as the intellectual capital whose constructs will form a knowledge-based society, supported by technological advances. IT jobs and new intensive modes of work are promoted as the basic values for self-achievement and self-fulfillment, and as the means for women IT professionals (see also Ross, 2003) to achieve personal maturity, life quality and career advancement.

The emergence, however, of a knowledge-shaped economy and the shift to the virtual communities and organizations are not always indicators for positive changes in the roles of female knowledge workers regarding empowerment in work and life. Inevitably, there is destruction when the new work style and tasks often become more demanding, and the destruction causes imbalances at work and personal life.

A number of conceptualizations of phenomena and concepts refinements, even new term definitions, have been coined for describing new forms of virtual work and life, and mostly affect women in IT. In the following section we refer to work-life balance, recently coined as a term and developed as an approach for improving the relationships
between work and personal life. In the subsequent section we refer to ICT capability to act as an emancipatory force for women in IT.

**Work-Life Balance (WBL) and IT: Lost and Found in Virtual Reality**

This section discusses two conflicting phenomena that appear through ICT advancements and can influence the balance between work and life in general, pointing at the same time to advantages and disadvantages of information and communication technology.

*Work-Life Balance (WLB)* has been defined as an equilibrium of work and home responsibilities; this concept of balance should create boundaries between work and home life (Jenson, 1999). Conceptually, when professionals attempt to achieve “balance”, work-family conflicts result, and have been termed as a bi-directional, simultaneous construct, which interferes with work and results in family conflict and vice versa.

Alternatively, in order to describe these phenomena, Martins, Eddleston and Veiga (2002) defined work-family conflict as a form of *inter-role conflict*, in which the role pressures from the work and family domains are mutually incompatible (p 399). Evidence of these phenomena as synchronized conflicts is demonstrated in recent research studies referred below:

**Work-Life Balance for Women Lost in ICT Reality**

According to Eagle et al (1997), synchronized conflicts have been observed among women, who are confronted with the challenges associated with childbirth, childcare
demands, family life and work demands (Eagle et al, 1997). While though Eagle and his colleagues concluded that women and men experience similar levels of conflict, they proposed that there were no gender differences regarding the permeability of work and family boundaries. That said, among dual-career couples, men tended to adapt to family pressures at the same rate as women.

Although these researchers indicated that 10% of the 393 respondents worked in security, technical or service occupations, their study does not offer definitions for these jobs, work positions and other classifications. Thus, without an extensive listing of occupations, the researchers' conclusions, while valid, are somewhat limited and definitely not generalizable.

Prior works by Igbaria and Wormley (1995) examined specifically career success among IT professionals. In a survey of 138 IT professionals, job titles included systems analysts and designers, applications programmers, analysts, and systems programmers. In their assessment of job performance and ratings, they concluded that women (as did African-Americans) typically received lower job ratings from their workplace managers, thereby impacting career development and career success. We contend that these outcomes can result in bi-directional impacts on work-life conflict, thus affecting work-life balance.

In a subsequent study, Hill & Miller (1998) examined the influences of the virtual office work on work-life balance. Based of an IBM virtual office implementation, Hill & Miller asked a number of research questions. Particular to our investigation, these scholars
inquired, the following: “What is the perceived influence of the virtual office on work-life balance?” In a survey of 249 IBM employees in multiple U.S. locales, 31% were women, and these tele-workers divided their work among time at a home, IBM office space and client sites. Among the female respondents, Hill and Miller (1998) found a significant relationship between work-life balance and having preschool children. The same was determined for the relationship between hours worked and women tele-workers.

Thus, the convenience of work at home is complicated by family responsibilities, determining when one should disengage from the 24 by 7 demands of technology and finding “balance”. While tele-work enabled the sample to sustain some level of flexibility, the feeling of “always” being electronically connected lingers.

**IT Women and Identity Found in ICT Reality**

Virtual life has increased the possibilities to interact and socialize by ICT means. Eponymously or anonymously 'virtual' people spend a considerable amount of time being online, buying, selling, advertising, discussing, supporting each other, learning and having entertainment. From this perspective, an important dimension of our meta-analysis is the role of ICT in improving the work situation and in providing a team spirit for the female workforce in IT. It is argued that anonymity and eponymity offer possibilities for groups interacting in virtual communities for their needs' expression. For instance, "for many virtual groups such as ethnic minorities or socially suppressed
groups, eponymity seems to be a definite need for expression and a further step to
openness and therefore recognition." (Jäkälä & Berki, 2004).

Virtual communities of practice and e-groups provide sociability. Supporting
socialization is a prerequisite for feelings, facts and information sharing, which all are
proved important to orientate and inform women in IT for similar problems or suitable
job opportunities. Initiatives, therefore, should further be taken by labor unions and
professional organizations to utilize these new forms of communication in order to
establish trust-based relationships through mentoring, advising and meaningful
information exchange among women in IT. Information sharing within an online
community such as an e-mailing group or bulletin board, for instance, could encourage
female workers' active and fruitful participation and expression of personal viewpoints.

Along the same thinking, Black et al (2004) emphasize the local and national initiatives
to support women in IT with a web-based presence. Within the U.K., the formation of a
web-based specialist forum for female members of the British Computer Society (BCS)
has significantly improved both informal and formal networking of women working in
IT. The BCSWomen web-based forum is presented as a case study of how Internet
technology has been effectively employed to support an online community of women in
IT and to break down the barriers that discourage females from IT (Black et al, 2004).
Similar initiatives can be found in the U.S with the Women in Technology International
group (www.witi.com) and the Institute for Women and Technology.
**Conclusive Remarks and Further Research Considerations**

This investigation re-searched and exposed the occurrence of postmodern and post-technological phenomena related to academic and industrial work roles that women undertake. The frequency of these phenomena at work, education and society was supported by critical statistical information and opinions drawn from a number of women that are involved in IT sector.

The most recent IT demands of organizational and academic development focus on the maintenance of traditional synthesis of knowledge and work or tend to create new forms of working life (i.e. learning organizations, tele-working and virtual communities). The meaning of the work role and personal identity for women within these boundaries have not, yet, been clearly known.

Related literature reviews and research practices of observed phenomena, however, indicates that in the current work and education policies there is an absence of feminist research methods to approach the research subject and research object. Being acquainted with comparative knowledge and approaches that exist in the research field of ICT female workforce, it is essential to distinguish among the gender differences that exist in Information Technology, a traditionally male dominated area.

While *positive discrimination* is an established strategy and practice in very few countries, in some other might be recently considered as an unavoidable future option, and elsewhere might not even exist or never been heard off as a term at all.
Improvements in work conditions, equal opportunities, efficient services and work procedures are still key issues for the IT female workforce in academy and industry, which still require a more human- and rather a more female-centered approach to science and work.

Feelings of inadequacy might frequently arise when women (and men, in a less extent though) cannot adjust to rapid changes in working, learning and thinking, and with the fast pace of work changes and decisions within short notice. Tiredness and depression might take the place of self-fulfillment, and reflection might lead to isolation. Disinterest in work tasks and job dissatisfaction could very soon appear. Avoiding withdrawal symptoms and maximizing the potential of utilizing innovation and creativity from different perspectives is a very challenging situation for women in IT.

Work-Life Balance (WLB) is a promising social approach to outline the activities of work and life and provide a balance between them. The female subjects of WBL are troubled workers, who, for reasons that are embedded in the work environment and lifestyle in general, find difficulties to live their professional and private lives in harmony. The primary objective of WLB has been to involve women at work in a process, whereby they can be helped to reflect on, and become more aware of their current work situation and the complexity of their personal needs. Likewise, in order to enable new female workers to initiate and develop new approaches to work and life, and adapt and cope with unfamiliar ones, a suitable mentor or coach should attempt to advise on sensible and balanced practices.
A successful female worker could be someone who does not believe in the *having-it-all* myth. She would rather be a balanced person, whose behavior, however odd or irrational might initially appear in a male-dominated world, has meaning in her scientific knowledge, ethical rationale, professional integrity and emotional and social worlds. The semantic constraints of this behavior should be discovered within a mentoring process in a work atmosphere with equal opportunities and family-friendly policies. Empathy and sympathy might or might not be required; humor and its role (see e.g. Martin, 2004) might be a temporal solution to avoid tension; yet, sensitivity and guidance, sometimes advice, might assist in finding the degree of ethical and professional acceptance within the boundaries of a male-dominated area.

Gaining professional maturity involves a series of changes, through which, every female worker adopts in terms of her own ways and own speeds. Social relationships, working conditions and previous work experiences vary. Dominant social and scientific values influence; personal achievements matter; and work ends up to mean more or less to different women, not at all to others, depending again on the society, ethnicity, culture, country of origin, knowledge, and personal aspirations and values. Very often, women IT professionals attempt to live their job according to their personal lives, or the reverse.

Developing a relaxed and not threatening atmosphere and a balanced life within a highly sensitive work environment is a challenge that IT women of any historical, political and social circumstances, no matter how skillful they are, constantly face. Eventually, any
approach to science education, work and life should attempt a holistic analysis of the situation and suggest dialectical negotiation techniques to assist revealing the gender differences, discuss them and accept them while adopting feminist-oriented strategies.

We firmly believe that the new forms of tele-working and virtual communities could open new, progressive ways for personal and organizational development and for equal opportunities. The new ICT could promote changes in particular working fields and scientific disciplines that have traditionally been considered as male-dominated areas. Moreover, internationalization of knowledge, work and communication requires firstly changes in the ways traditional knowledge, work and interaction schemes are willing to re-organize ways that widen participation and accessibility for minority groups.

Many of the phenomena discussed in this chapter need to be further researched and analyzed in order to establish concrete evidence on sensitive data in different national, cultural and organizational environments. The phenomenon of work change, for instance, and its implications for men and women could provide valuable insights as to whether gender issues influence adaptation and acceptance. The question, however, for women in science domains remains the following: Could a radically planned policy of scientific positive discrimination be an emancipatory solution to the work boundaries set by artificial barriers described in the science glass ceiling phenomenon? How well could this and similar initiatives be supported by virtual forms of work and education in order to achieve work-life balance?
References


