

WOMEN AND  
LEADERSHIP IN  
THE ICT BUSINESS  
SECTORS OF  
THE BALTIC AND  
SCANDINAVIAN  
REGION

# EXECUTIVE SUMMARY

The purpose of this policy brief is to outline some of the critical factors that either together or individually determine the lack of progress towards increasing the numbers of women in leadership roles in corporate ICT. Women's participation in the work force with the European Union is at an all time high, women are also increasingly outnumbering men in participation in higher education programmes. One aspect of working life however remains relatively closed to women and that is management and/or leadership. The ICT sector is no exception in this regard and even less so when one considers that women are generally under represented in technical education and jobs. Our pilot study of women in the ICT sector in the Scandinavian and Baltic regions reveals that women are still experiencing difficulty to break through the glass ceiling in the corporate world. We have identified three key areas to which more attention needs to be addressed: (i) increasing the number of female students in technical education programmes, (ii) providing a better infrastructure and range of market and/or public options for caring and household work and (iii) encouraging and supporting the development of strong lobby groups to support the increasing professionalisation of ICT work.

There is a need for a combination of policy entrepreneurship and market measures in order to address these needs and to provide the framework conditions necessary for change to occur. On the first issue, a mix of incentives to individuals as well as the institutions in the Swedish school

and higher education system would be necessary. For example, increasing the number of female students in technical education at the university level could be achieved through measures such as discounting student loans to female graduates from natural science and engineering education. This would signal to both higher education institutions and young women that a natural science and engineering education would be a worthwhile investment. Research shows that as more women enter male dominated professions there has been a tendency for remuneration rates to decrease, this negative trajectory can be combatted through the use of professional groups to lobby for keeping working conditions and wages at the level that the industry can continue to attract competent labour. Last but not least, in all areas, women's willingness and ability to climb the workplace ladder to leadership positions continues to be hampered by the fact that despite legislative and other measures to combat this trend, women continue to bear the brunt of caring responsibility in the family. There is a need for an evidence based approach to tackling this persistent bottleneck to gender equality in the workplace. Research shows that more often than not, the Swedish family is a two career household and this alone would suggest that the challenges of sharing caring responsibilities are greater in the Swedish context when compared to more traditional arrangements in the other EU countries. There is a need for research on what measures are needed to reduce the burden of caring responsibilities on women and thus release the work capacity and potential they represent.

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*The fact that women have practically no voice in the creation of major technological innovations that control our lives is surely to the detriment of the industry and society as a whole. (Selby et al., 1997, p. 6)*

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# INTRODUCTION

The purpose of this paper is to address the question of how to increase the participation of female professionals in management in information and communications technologies (ICT) firms. ICT is a generic technology which has penetrated nearly every area of production and service. It has become an integral component of areas of production and service from automobiles and textiles to banking and book publishing and retail. Seen from the policymaker's perspective, ICTs represent a wealth of potential in terms of their power to transform and give life to old industries and activities while in themselves representing a new source of wealth and competence. Although, it is still rather early to judge, it would not be unfair to state that ICTs have had an impact on the life of the average citizen which can be compared to the mass manufactured automobile or the radio.

Typically, the arrival of any new radical technology gives rise to a great deal of speculation about its potential to restructure and transform our lives. From their inception, ICTs have been inserted into the narrative about the re-gendering or transforming the gender relations of the workplace. One example will suffice to illustrate and explain. Very early in the evolution of ICT technology, the industry settled on the technology's capacity to increase accessibility e.g. linking people in remote spaces to the centre and with each other as one of its chief marketing images. A major part of this pro-

mise was that ICT made it possible to envisage a future in which tele/homeworking was a key component and this was seen as critical to overcoming remaining obstacles to harmonising women's labour force participation and their caring responsibilities. Given the fact female labour force participation (EU, 2004; Standing, 2006) has been increasing, policymakers and employers are naturally becoming more concerned about issues such as balancing work and caring responsibilities. The less attractive side of tele/homeworking narrative is that it undermines women's participation in the public sphere and can exacerbate women's domestic burden. Further, the offshoring or global location of tasks made possible by ICTs seemed to follow the traditional pattern of cost reduction rather than providing the new exciting possibilities that were initially associated with the potential offered by the industry. In this study, we propose to delve further into the ICT/ gender nexus and focus on the issue of female leadership in ICT. The study is based on two data sources, one is desktop work: reviews of the academic and policy literature and the other is group and individual interviews with women working in the ICT industry in the Baltic and Scandinavian regions. The briefing is organised in the following fashion. The section immediately following the present identifies on the basis of literature review three key definitional problems of policy interest with regard to ICT and elaborates on them. The third section focuses on the Scandinavian and Baltic regions and provides a state

of the art description of the key issues facing the ICT sector with particular emphasis on the possibilities for improving the participation of women in management in firms in the ICT sector. This section is based on data collected from focus groups and individual telephone interviews with a sample of women working in the ICT sector in the Baltic and Scandinavian region. This data is processed and compared with that from similar studies done with the EU and New Zealand. The last and final section of the paper presents a short list of conclusions that can inform policy discussions about how to move forward for the future.

# DEFINING THE PROBLEM

As mentioned in the introduction, ICT is by nature a generic technology, this creates definitional problems with consequences for policy on the following levels:

- What working definition of the ICT sector would be most useful for policymakers and how can this definition be anchored both with respect to existing problems as well as give potential for future development?
- Given the lack of institutionalised structures such as professional organisations, what organisational actors apart from firms can policymakers turn to as partners in the discussion about creating a better context for the industry nationally, regionally, etc.?
- How can one best avoid the emergence of stratification of ICT work which disfavors women?

The following paragraphs will briefly elaborate on each of these questions with the help of extant research on the ICT sector.

## DEFINING THE ICT INDUSTRY

The generic nature of ICT means that there is an ICT component in several existing industries. This aspect of ICT makes it very dif-

icult to know, to what group of companies one is referring when one claims to be describing the ICT sector. The status quo in the literature favours defining ICT as the management, design, development, analysis, implementation or maintenance of computer telecommunications hardware, software, networks or information systems, Duerden Comeau (2003). The tasks here specified may be found in areas as diverse as pharmaceuticals where drug testing and management of clinical trials require the creation and maintenance of globally spanning information systems to national tax offices which are gradually moving towards online preparation and submission of tax returns as the last leg in a system which is already highly ICT dependent. The factors which shape and determine career opportunities for workers within each of the aforementioned sectors are affected not only by their technical competence in ICT but a range of factors such as the way in which ICT competence is prioritised in that industry, etc. The situation becomes even more complex if one then wishes, as is the ambition of this policy brief, to make meaningful statements about the opportunities for female ICT professionals to emerge as leaders within these settings.

## ICT AS A PROFESSIONAL AREA

Despite its relative newness, ICT is generally seen as a professional competence on par with extant professions such as medicine, law,

accounting, etc. However, this comparison is to a large extent premature since ICT professionals have yet to create the institutional structures and associations that accompany a profession. This lack of organisation creates difficulties for the workers in this sector to make politically effective demands about issues that concern the industry. Here, we refer to the fact that for a problem to be taken up politically, it must be processed and placed within a particular context. Some aspects of this would include having well established and clearly identifiable organisations that can act as spokespersons on behalf of the professional group. This function should be distinguished from having companies in the particular sector speak for the business interests of the ICT sector or labour unions speak for workers' rights, etc. This is a particularly acute situation given that the dominant orthodoxy of new public management in the policymaking sphere in most nation states requires that policymakers make decisions in dialogue with the affected parties. Given that ICT technologies have penetrated so many areas of production and service, ICT professionals inhabit a heterogeneous universe in the public and private sectors. Thus, it would probably be most politically opportune for policymakers and ICT professionals if the latter would follow the lead of other professionals such as lawyers and doctors and organise themselves in relation to their competence rather than in relation to which sector, the firms that employ them inhabit.

## GENDER BASED STRATIFICATION WITHIN THE ICT INDUSTRY

In order to improve the situation of women in management of the ICT sector in the BSR, it is important to preface one's understanding with a general appreciation of the status quo for women in the workplace generally. Statistically, the situation does not match with the amount of policy attention that the issue has received within the European Union. For instance, the EU's office on Employment, Social Affairs and Equal Opportunities claims among other things that:

- The employment rate of women is increasing but remains lower than men's, although women represent a majority of students and university graduates.
- Women continue to earn on average 17.4% less than men for every hour worked and this figure remains stable.
- Women are still very under-represented in economic and political decision-making positions, although their share has increased over the last decade.
- The division of family responsibilities is still very unequal between women and men

Thus according to the above statistics, women earn less than their male counterparts, are underrepresented in decisionmaking spheres and are overrepresented in the sphere of familial responsibilities. On the plus side women are on average well educated as they represent a majority of the students and graduates in and from universities respectively. Seen from the EU perspective, this implies that there is a democratic deficit in the workplace in Europe generally and that the EU is on the whole under utilising the labour that we invest in training.

Although the Scandinavian region is generally better than the EU average, it is not near the EU target of equality particularly when one factors in qualifying criteria such as equal pay, percentage of women in management in relation to men, division of family responsibility and full time versus part time work force participation. Women's participation in higher education has increased tremendously and they account for about 60% of the university graduates within the EU. This performance is still stratified in so far as the majority of women does not study science and technology or computing.

It is now well documented that women are generally underrepresented in the ICT sector and that the division of labor in the sector is gen-

dered with women doing the work that is generally seen as soft while men dominate the technical jobs. More disturbing however, is the fact that there is a general decline in the percentage of women who choose to study information technology and computing (Trauth and Quisenberry, 2007). This means that the actual pool of women available for the sector to recruit is to begin with rather limited in size.

If we move from the general to the specific issue of women's access to management positions, again the EU figures serve as a good guide to navigate the landscape. According to EU (2009), about 30% of managers in EU member states are female with even lower in a majority of Member States. In summary, this array of statistics suggests that the recruitment base for the ICT sector is likely to be predominantly male and that this taken together with the continued preference for male managers would suggest that the majority of females in the sector would not be clustered in the leadership positions.

# FEMALE MANAGERS IN ICT IN THE BALTIC AND SCANDINAVIAN REGIONS

At first glance it may appear problematic to attempt to address an issue such as female participation in leadership in a cross cultural fashion. Further, the casual observer may assume that the results of such a comparison would be a foregone conclusion given the Scandinavian countries reputation for being early pioneers in gender equality. A brief perusal of available research both conforms and differs from the expectations of our hypothetical casual observer. The confirming instance is that research has established that attitudes to gender are highly culture-dependent, and that European countries vary significantly on measures of gender equality – including gender-based occupational segregation. (Dorfman et al., 2004; Emrich et al., 2004; European Commission, 2006, Prime et al. 2008).

Less obvious is the finding that there is a prevalence of a ‘think-manager think-male phenomenon’ that characterises all business sectors. However, the most surprising finding is that gender stereotypes – including the ‘think-manager think-male phenomenon’ – may be more prevalent in countries that strive for and/or have made the greatest progress toward gender equality (Costa et al., 2001; Emrich et al. 2004; Fullagar et al., 2003). Given the above, the issue of whether there is a glass ceiling for female ICT professionals seems equally relevant a question to pose for the Baltic and Scandinavian countries. In order to do this we polled the views of women working in the industry using primarily the business

network in the BSR Inno Net project. In the paragraphs below we present an analytic overview of the results.

Generally, the responses we got from women polled matched those reported in the literature from countries such as the UK. This is that women are generally in the minority in the ICT sector and form an even smaller minority once one moves to the leadership level in this sector. There is no evidence to show however that this is unique to the ICT sector but rather evidence of a pattern that holds true for all sectors where technical education and competence is decisive. The paucity of women in publicly owned firms is explained by two factors, the small size of the recruitment pool because of the general preference among women for non technical fields and the fact that many women in the ICT industry choose to exit and start their own businesses rather than stay in companies given that their chances of being able to move up the ladder are limited. Women who had chosen the exit option seemed in general to be happier with their professional lives and reported little or no problems that could be attributed to gender differences.

Women who had chosen to work in companies that they did not own themselves reported a number of issues as significant barriers to reaching beyond the glass ceiling. One is the problem of mentorship; the absence of women in top corporate positions functions in itself as a

barrier to the entry of women since the tactical knowledge required to move up the last rungs of the corporate ladder is usually disseminated through mentorship relationships. The dominant pattern for several reasons is that men mentor men, there is little evidence to show that the few women who do occupy positions of leadership are active in mentoring activities.

A second cited problem is that of caring responsibilities and their implications for the ability to climb to the top of the corporate ladder. Even in countries with a strong tradition of gender equality and public infrastructure for child care, women's share of the familial burden of caring responsibility is on average greater than that of their male partners. This is a well known problem not only for the ICT sector but recurs in all discussions about gender and career trajectories. There is however reason to believe that the intensity of the problem in the ICT sector is greater for a number of reasons including the fact that women are in smaller numbers thus it may be more difficult for women working in individual firms to acquire the critical mass needed for getting acceptance for deviations from the 'norm'. Here, the lack of professional associations for ICT workers is a decisive factor since such organisations usually serve as fora for raising problems of this type and for lobbying firms to make the necessary changes needed to accommodate workers.

Further, the industry's culture is one in which long work hours is tightly coupled to the image of the dedicated problem solver which is part of the 'hacker stereotype'. This may in the case of women be a double bind since they may choose away with a career in this industry because they prefer not to pursue a career where excessively long working days are a prerequisite rather than an anomaly. Alternatively, it may be that women who do choose the industry may opt for positions where this type of sacrifice is not necessary.

As mentioned in our introduction, the takeoff of the ICT industry brought with it promises of liberating workers from the workplace. It

was thought that this new freedom would in turn yield others such as increased sovereignty of the individual worker over his/her work and increasing flexibility about when work is performed. The brave new world that would result from this was also predicted to be a better place for women since they would be able to increase participation in the workforce on their own terms. While, it cannot be said that ICT failed to deliver on these promises, the consequences have been somewhat less positive for women than previously imagined. For example, as women's share of caring responsibility has not decreased as mentioned above, the new flexibility simply provides opportunities for increased frustration as the increased potential that women perceive to be available is not met because of familial and other infrastructural problems.

Some respondents argued that the profile of ICT as a technical education made it unattractive for women since they did not perceive it to be an attractive educational offering. Many women argued that several girls who signed up for a technical education originally opt out during the course of study because the cohort group of women is too small. One respondent from Latvia however reported that women were thriving in ICT in her context and that her department actually boasted a higher percentage of women than men. Her reflection was that it was not that women were uninterested in technical subjects per se but that they found it easier to study in contexts where there were more women.

It is important to bear in mind however that there has been a general decrease in student numbers for natural sciences and engineering subjects at universities in Scandinavia and in the OECD as a whole over the last five to ten years. This means that there is a need to address this issue not just as a gender and leadership issue but as a general problem of capacity building for the future. It is clear that by focusing on remedying the gender problem at this level we will go some way towards tackling the issue. There may however still be a gap and it may be useful to start thinking in terms of initiating a

dialogue coupled with an overview of the sector to get a better evidence base for determining future needs.

While there are clearly many problems to be resolved before we can achieve a better gender distribution within the ICT sector generally and among its leadership cadre particularly, there are also important opportunities which are unique to the industry. One such opportunity is the relative youth of the industry and the concomitant fact that there is still a relatively open culture. Many of the women interviewed felt that this implies for instance that other things being equal it should be possible for women to create opportunities for themselves in this sectoral context in a way that it may not be possible in older industries.

A second opportunity is that associated with the fact that those working in the ICT sector are increasingly arguing that the skill set necessary for the future is a hybrid of technical and communicative skills which many feel come more easily to women than men. This discussion is multilayered since if one takes it simply as a forecast of needs and resulting opportunities, it appears quite powerful. However, a perusal of the literature will reveal that gender and technology experts have mixed feelings about this particular 'opportunity'. On one hand, it is argued that it plays into the traditional stereotyping of roles where once again women get stuck with the label 'soft and communicative'. On the other, from a pure economic point of view, it is not clear whether women may want to take this route to increasing their participation in the industry since historically these skills have traditionally attracted lower wages. Further, there are several jobs that have historically changed hands from men to women and with the shift in gender came a shift downwards in wages. The absence of organised professional associations in the ICT sector is also a drawback in this regard. It is important therefore to ensure that improving the numbers of women in the ICT sector generally and in management particularly does not follow the established pattern. One way to avoid this would be for the professional community to organise itself.

# POLICY IMPLICATIONS

In considering the implications of the above, it may be useful to differentiate what can be done from the point of view of the state and what may be done by industry and individuals within the sector. Further, not all of the data presented above leads to unambiguous policy solutions. One such case is that of the tendency of a subsector of female ICT professionals to exit from large corporate entities and start their own firms. While this is to some extent linked to the conditions for women in the industry, women starting their own firms is problematic for established firms but positive seen from the perspective of the economy as a whole since it creates more jobs, is proof of the diffusion of entrepreneurial skills and increases competition for labour. In the paragraphs below, a number of implications of findings from the perspective of firms, policy and last but not least the state are outlined.

## INDUSTRY

**WORK ENVIRONMENT:** Firms in the ICT sector need to place more emphasis on ensuring a more inclusive workplace. This could be done via the media of the annual talks between employees and managers in which special attention could be placed on ascertaining to what degree, female employees with the right competence are interested in leadership and what may be done to support them in this effort.

**COMMUNITIES OF PRACTICE:** A wealth of research on knowledge ma-

agement has shown that communities of practice are excellent mechanisms for promoting knowledge transfer and upgrading the competence of the work force. Communities of practice are voluntary and are driven by workers but firms need to encourage and provide incentives for their employees to form and participate in such ventures. ICT professionals have a history of forming such communities and many ICT start ups have their origins in communities of practice. This mechanism can be easily harnessed by firms to promote specific ends such as grooming women for leadership positions.

**INCREASING VISIBILITY OF ICT COMPETENCE:** Develop a portfolio of profiles for the ICT that would make this competence and jobs in this attractive to young women. These can be used in schools and at universities to increase the visibility of ICT as a career choice.

## STATE AND LOCAL GOVERNMENT

**INCREASE THE NUMBER OF YOUNG PEOPLE WITH NATURAL SCIENCE AND ENGINEERING EDUCATION:** Provide more incentives for young people particularly women to study the natural sciences and technical subjects. This could be done through a variety of different mechanisms (financial and social). One immediate measure could be to discount student loans after graduation for students with a degree

in the natural sciences and/or engineering. Discounting mechanisms could be universal within the target group or they could be income based.

Increase the infrastructural support for caring responsibilities. This can be done through a mixture of market and public offerings in the household services sector. This approach has the additional advantage of creating synergies with other policy measures such as the need to increase employment and promote entrepreneurship.

## INDIVIDUALS

**ORGANISE PROFESSIONAL GROUPS:** ICT professionals need to organise themselves in groups that can provide support and improve the status of the profession. This strategy has worked for other professional groups such as lawyers, accountants, medical doctors and engineers across all cultures. This type of arrangement has several benefits including providing the opportunity to create the critical mass necessary to make political demands effective both at the level of the work place and nationally. This strategy would be particularly beneficial for ICT professionals working in sectors where ICT is not the core business.

**COMMUNICATION ABOUT CAREER ASPIRATIONS:** Women in particular need to be articulate and clear about their career aspirations in the work place. The firm is responsible for providing certain structural mechanisms but ultimately leadership potential is an individual characteristic.

# REFERENCES

- Costa, P.T. Jr, Terracciano, A. and McCrae, R.R. (2001) 'Gender Differences in Personality Traits across Cultures: Robust and Surprising Findings', *Journal of Personality and Social Psychology* 81(2): 322–31.
- Emrich, C.G., Denmark, F.L. and Den Hartog, D.N. (2004) 'Cross-cultural Differences in Gender Egalitarianism', in R.J. House, P.J. Hanges, M. Javidan, P.W. Dorfman and V.
- Gupta (eds.) *Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies*, pp. 323–94. Thousand Oaks, CA: Sage.
- European Commission (2004) *WWW-ICT: Widening Women's Work in Information Communication Technology*. Namur: Information Society Technologies.
- European Commission (2009) *Report from the Commission to the Council, the European Parliament, the European Economic and Social committee and the Committee of the regions Equality between women and men — 2009*, Brussels.
- Fullagar, C.J., Sverke, M., Sumer, H.C. and Slick, R. (2003) 'Managerial Sex-role Stereotyping: A Cross Cultural Analysis', *International Journal of Cross Cultural Management* 3(1): 93–107.
- Jeanine Prime, Karsten Jonsen, Nancy Carter and Martha L. Maznevski (2008) *Managers' Perceptions of Women and Men Leaders: A Cross Cultural Comparison*, *International Journal of Cross Cultural Management* 8: 171-210
- Selby, L., Young, A. and Fisher, D. (1997) *Increasing the participation of women in tertiary level computing courses: what works and why*. Proceedings of ASCILITE 97, 14th Annual Conference of the Australian Society for Computers in Tertiary Education.
- Perth, 8–10 December. Available online at <http://www.ascilite.org.au/conferences/perth97/papers/Selby/Selby.html> Last consulted 2 June 2008.
- Standing, G. (2006) *Labour markets*. In Clark, D.A. (ed.) *The Elgar Companion to Development Studies*, pp. 323–328. Cheltenham: Edward Elgar.



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