



Leonardo da Vinci



## EXECUTIVE SUMMARY

### BENCHMARKING ANALYSIS ON WOMEN ENTREPRENEURS AND WORKERS IN ICT INDUSTRY ©

**Authors:** Beltrán, Maria Eugenia; Ursa, Yolanda (INMARK)

**Partners Contributing:** TermNet, Intercollege, EBS, OPI, EMF

The ICT industry is increasing its share in the global economic activity as well as in the services and products markets. It reached 614 € billions market value during 2005 in Europe and its EU market share accounted for 30% of world wide market value during this year (2,040 € billion).

At present, the Information and Communication Technologies (ICT) are considered main drivers of the countries' industry structure and labour market changes, which are necessary in the process of building a knowledge-based society. The pervasiveness of new technologies in all parts of the economy is creating a high technology based economy as well as significant changes in the composition of the EU workforce. In the same way occupational fields in employment are becoming more technology reliant and ICT are the basis of many new developments in other disciplines.

One of the more significant facts in the labour market in the EU is the increasing trend for women labour force participation. However, women participation in the ICT labour force continues to lag in Europe. The predominance of men with sciences and engineering backgrounds as well as extended working schedules and shift-based working style in the ICT industry have posed significant obstacles for women to participate in this industry, especially for those with children in families with both parents working.

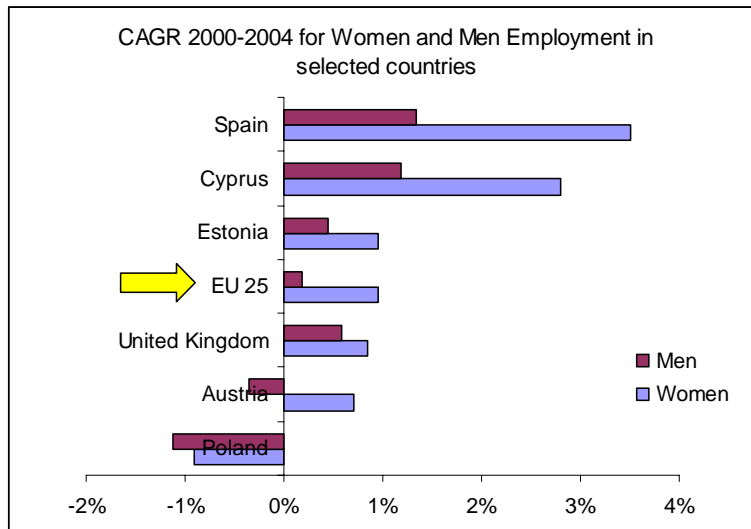
For the purpose of this study, seven variables were chosen to benchmark selected countries: educational attainment, employment and gender gap, women entrepreneurship trends, ICT market, ICT employment and gender divide, SMEs in the ICT industry and ICT educational attainment. The first four variables set out the country background, which conditions female "gender" positioning. The last three variables aim evaluating women's status in ICT industry.

**Women education attainment.** There has been an overall increase in the number of women entering into and graduating from tertiary education in the EU, mainly in social, health, service-oriented and business careers. Men in all selected countries tend to have a higher presence than women in vocational studies.

**Women employment and gender gap.** Substantial disparities in the activities and employment rates, between women and men, have produced a gender gap between

women and men (see the following figure), where skills represent an important factor. Total unemployment for women in the UE25 was 9.8% in 2005, higher than the overall unemployment rate (8.7%). The gender pay gap was 15% in 2004, observing the highest salary gaps in Cyprus, Estonia and the UK among our selected countries.

**Figure - CAGR 2000-2004 for Women and Men Employment in selected countries**



Source: Calculations from Eurostat database, data 2004-2004 by gender and selected countries.

Those disparities are partly explained by differences in skills composition of the working population and by differences in the sectors specialization. The ability of mobilising women participation to other areas or countries might be limited since women have focused their education and skills to work in the services and social sectors. The development of these sectors is usually very local oriented and strongly related to a geographic area (local region, country, etc)

Over the last four years, women access to employment has increased significantly in our selected countries. All countries have an accumulated growth higher than male accumulated growth; especially Spain, Cyprus and Estonia; which also have an accumulated growth higher than the EU25 (1%).

In the EU, a combination of social attitudes largely contributes to gender differences in working-time patterns, occupational segregation (horizontal segregation) and differences in the hierarchy of positions within jobs (vertical segregation). Women make up most of the workforce in service sectors, clerk positions and part-time employment in all selected countries; mainly because of their need to care for children or dependent adults. Only a very small proportion of men part-timers limit their hours as a result of responsibilities for children or adults.

The gender activity gap generally increases with age and it is greater for married people than for single people. Although a similar number of women and men (or even higher rates for women than men in the selected countries) graduate from tertiary education, only a few women get to be at high management positions, either at private, public or research areas. They remain a minority in management positions across the EU. Women are consistently under-represented as PhD graduates, as researchers, among senior university staff and as members of scientific boards. Also, they are under-represented as entrepreneurs at business sector.

**SME trends.** New business creation dropped between 20% and 30% (Spain 17%) as well as private ICT business investment initiatives because of sluggish economic growth and September 11 impacts. In the EU, women tend to prefer being employed (59%) rather than

being self-employed (39%), looking for stability, social security and insurance benefits. Men are more likely to start a business than women and there is no country where women are more active in starting and owning businesses than men. Thus the gender gap exists from early-stage entrepreneurial participation to established business ownership. However, there is an increasing evidence of women entrepreneurs becoming interested in small and medium enterprise ownership as well as in self-employment.

Major barriers for women to become entrepreneur are the labour market inflexibility (difficulty for people to re-enter the labour market, move between jobs or stay in employment) and an inflexible view of the nature and way to approach work. Many enterprises require physical presence and restricted work schedules to approach a job or project. There is still low adoption of telework or remote work in the EU.

Women face different barriers when setting up a business from those faced by men; specifically when rising finance, upgrading skills and finding contacts to start up a successful and sustainable business. The EU has been supporting and developing policies in order to encourage equal opportunities for both genders.

**ICT market in selected countries.** ICT investment for Poland witnessed the highest growth in the EU during 2005 (8.2%) and it is expected to grow by 6.5% during 2006. It is estimated that Poland ICT market share will reach 2.4% of the EU market value. Spain and the UK followed Poland growth with 3.1% and 2.8% of market growth respectively.

The services sector can offer to women great opportunities in this billionaire market, especially in electronic commerce and electronic content provision. As ICT infrastructure is rapidly increasing and taken up by the market, the quantity of people and e-business also increase. The need and provision of content as well as of exchanging goods and services through the web will also increase, thus great opportunities as content creators, providers or related services to e-markets could help to increase women entrepreneurship.

**ICT employment and gender divide.** Low women participation in ICT makes women face fundamental barriers to benefiting from ICT as well as to influence ICT development policies (bridging the gap / the digital divide).

**Figure: Women employment as percentage of total employment in technology manufacturing and services**



Source: Eurostat from data in employment in technology manufacturing and services

There is a shortage in ICT employment in most of the selected EU countries but women occupy less than 1 in 3 technology and knowledge employments. The United Kingdom, Austria and Spain show evidence of low women participation in this industry. However, this is not the scenario for Poland, Estonia and Cyprus; women have close to 40% of the ICT job positions; as it can be observed in the figure above.

Women ICT uptake is affected by income, educational attainment, children in the family, age and gender. As women tend to be much less present in the labour market than men, and work is one of the primary places where people have access to IT and Internet as well as where they learn to use it, there is an obvious disadvantage to many women. They tend to have less ICT exposure and as a consequence their ICT skills are underdeveloped. Additionally, women in ICT tend to have different jobs than men (in areas of activity and level of responsibility) and do not participate in high technological areas. Furthermore, there exists a salary differential between men and women.

**SMEs in ICT.** As public investment grows in vertical sectors (e-health, e-government) and infrastructure, the uptake of ICT, e-business and internet adoption also grows in all industry sectors and pushes e-business growth in both traditional businesses and in SMEs. There are big opportunities for micro-businesses that can emerge directly from an ICT link and digital content. As e-services spread into the EU region the potential of job creation becomes greater in the ICT sector. However, there is at present a shortage and lack of ICT specialists which creates serious growth problems in large businesses, but especially in SMEs, to the point of becoming a barrier for ICT SME development.

Most of the present SMEs in the ICT industry are service oriented, with low patent filing rates and innovation results. About 3% of these firms are high-technology oriented enterprises.

**ICT education attainment.** The number of women graduates in engineering or technology disciplines has slowly increased over the last few years and it is far away from the overall increase in the number of women entering into tertiary education in the EU. Although the gap is slowly narrowing, at present women are still significantly under-represented in scientific and engineering disciplines.

From 1998-2001, the number of women graduates in engineering and related areas increased from 31% to 36%, while they still represent just over 20% of the student body. Estonia and the UK had the highest women tertiary participation in these disciplines whereas Austria showed a declining trend. Central European countries (Poland and Estonia, from our selected countries) are the ones where women have higher tendency to choose these “hard sciences” disciplines.

All countries have launched and continue launching policies and initiatives for new technology take-up accompanying ICT deployment for EU innovation and growth through ICT. They are mainly oriented towards equality of opportunities between women and men, strong development on content and broadband for stimulating cultural diversity, greater promotion of employability and mobility through ICT, SME creation and strong focus on productivity, innovation and growth, training and education with introduction of new technologies (including life-long learning and vocational education) and ICT deployment through public investment.

In order for both genders, women and men, to optimize the benefits that can be gained from new technologies and to minimize the tendency toward a “gender divide, the gender dimension of ICT should be included in countries’ strategies and policymaking. Furthermore, women should be trained in ICT to compete in the market until the “gender” issue disappears, thus policies would become gender transparent and merely labour force and service oriented.

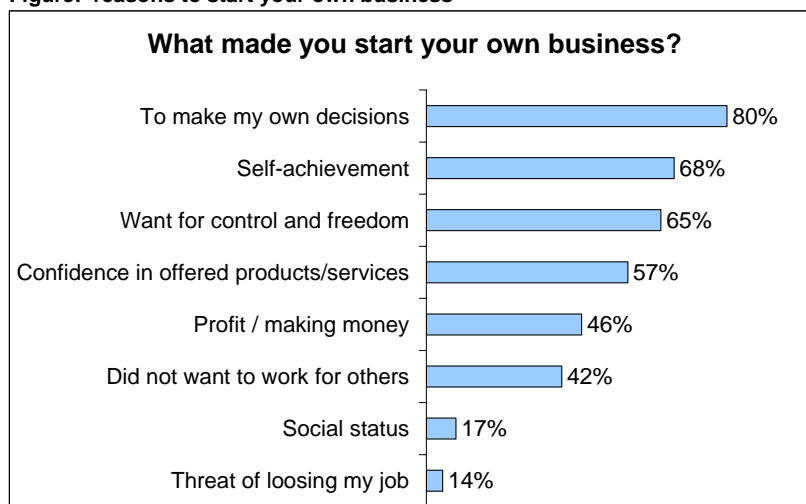
**Survey findings.** This chapter summarizes the findings from surveys targets, ICT women workers and entrepreneurs as well as women institutions. Outcomes from survey analysis strongly support the benchmarking research.

According to ICT workers and entrepreneurs, there is a strong preference for employee status over self-employment or entrepreneurship. 75% of ICT women work in company premises, of which almost 70% in employment conditions. “Large enterprises” (over 250 employees) employ 1 in 3 women and reveal a higher ratio of ICT women workers per enterprise than SMEs.

Almost 50% of ICT women workers and entrepreneurs develop their activities in the service sector offering diversified services in the hardware, software, consulting and e-services sub-sectors while only 5% of ICT women work in telecommunications. About 1 in 3 women work in related sectors within ICT related jobs. Outcomes show that most of these areas are the same as the ones chosen as most common careers by women in the benchmarking research; e. g finance, banking, human resources and education.

Although women ownership has been increasing over the last three years, ICT women entrepreneurs represent a small share of the women in this discipline (10%). A third (1/3) had set up their business during the last two years (2004 and 2005), looking for self-fulfilment, self-achievement and independence (see figure below).

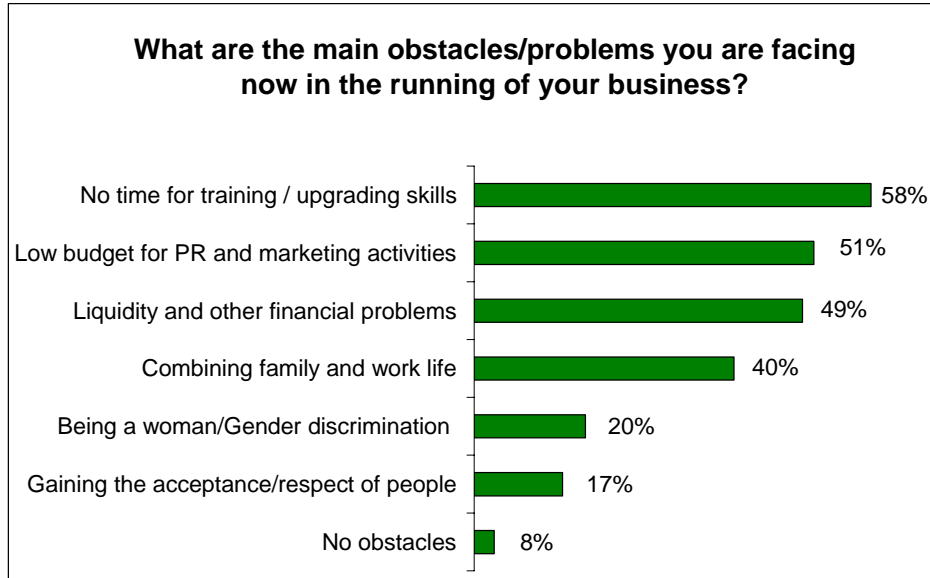
Figure: reasons to start your own business



Source: Findings from WISE Quantitative research to Women workers and entrepreneurs in ICT

ICT women entrepreneurs and women institutions see the following problems as main barriers when starting their first business: lack of self confidence or belief of lack of required abilities to create and manage a business (63%), insufficient finance (55%) problems resulting from having to combine work and family life (49%). Additionally, women institutions see as main barriers the lack of ICT skills and gaining trusted business acceptance as well as respect from people. Most of ICT women entrepreneurs overcame these obstacles looking for support from family relatives in the first place rather than external support. ICT entrepreneurs and women institutions believe that, while running the business, main barriers remain the lack of training and upgrading of skills as well as financial shortage.

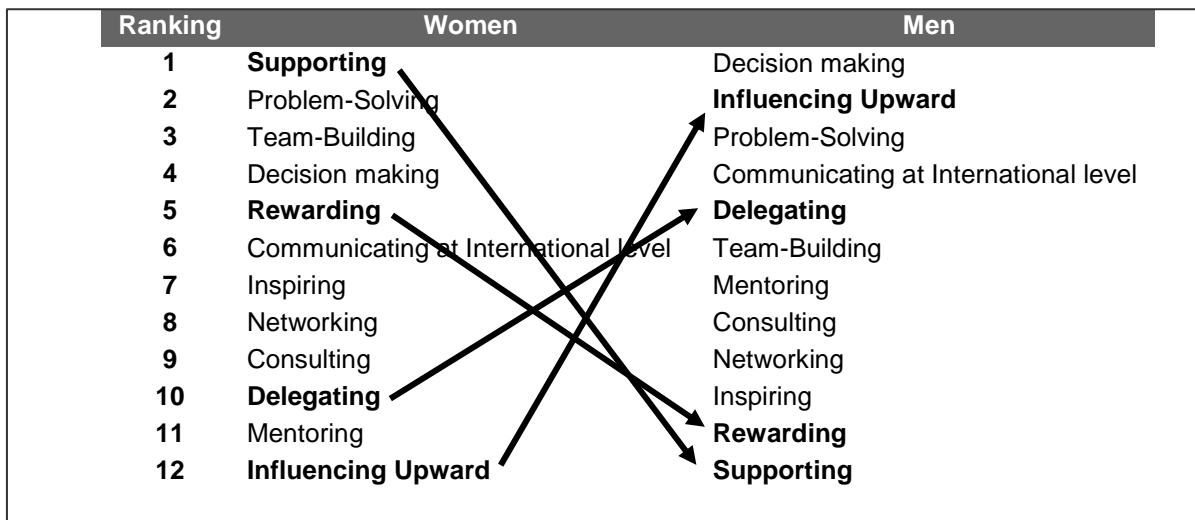
Figure – main barriers facing while running the business



Source: Findings from WISE Quantitative research to Women workers and entrepreneurs in ICT

Regarding to leadership behaviours by gender along ICT, it was found that women are perceived to have a stronger contribution in motivational related leadership abilities (supporting and team building) while men contribute greater in organizational related ones (decision making and influencing upward). Both, ICT women and institutions perceive “supporting” as the main female differential leadership behaviour and “delegating” as the main male differential leadership behaviour.

Figure - Perceived Leadership Behaviours by ICT women



Source: Findings from WISE Quantitative research to Women workers and entrepreneurs in ICT

The gender divide is felt among ICT women especially in progressing to higher management positions and salary rewards. Expectations related to ability to use initiative, career/personal development, communication, financial reward, work/personal life balance are met as good, however it seems that financial rearward expectations are higher than what is actually received.

EU women institutions focus their efforts on providing awareness, business support and information to set up, as well as, sustain enterprises. As they focus towards having a high impact on management skills development, a lot of efforts are concentrated on coaching,

business advice, counselling, supporting qualifications upgrade through presential and virtual education and facilitating networking. From an innovation point of view, only 16% provide access to incubation space and 28% provide technological support. Only 6% of the institutions have developed alliances with ICT suppliers, such as Oracle, SAP, Cisco, etc. With regard to gender policies promotion, women institutions are focussed in “skills generation”, based on training and courses development, including ICT specific ones. Moreover, there is strong support in implementing European and national gender policies.

## NOTES

This report has been co-financed by the Leonardo da Vinci-programme of the European Commission. The findings contained and views expressed herein do not reflect in any way the opinion of the European Commission.

The complete version of the Benchmarking Report is available at WISE web site (<http://www.ubique.org/wise/>).

### QUOTATION

When quoting from this report, please use the following phrase:

“BENCHMARKING ANALYSIS ON WOMEN ENTREPRENEURS AND WORKERS IN ICT INDUSTRY.

Authors: Beltrán, Maria Eugenia; Ursa , Yolanda (INMARK) with contributions by TermNet, Intercollege, EBS, OPI, EMF. WISE project, co-financed by the Leonardo da Vinci-Programme of the European Commission”

### USE OF SUMMARY OR REPORT

The Summary and Benchmarking Report are available free of charge for NON-COMMERCIAL purposes. However, please inform the authors in case you wish to use it: [ebj@inmark.es](mailto:ebj@inmark.es) and/or [yus@inmark.es](mailto:yus@inmark.es)