



Women Technology Entrepreneurs

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Executive Summary

A pervasive digital infrastructure, maturing broadband and wireless capabilities, and changing economic policies have struck down many barriers to global competition and opened up entirely new distribution channels for micro enterprises. Today, firms with only five employees are increasingly able to conduct business on a global basis. The opportunities for women technology entrepreneurs, given the right training and support, are significant and growing.

Women's role in the formulation and construction of technology and entrepreneurship is best understood not in terms of their essential differences from men but in terms of material conditions that include them in the market and institutions, or preclude them from these. WTE aims to firstly develop a hybrid curriculum to encourage women to explore their technological and entrepreneurial potential and secondly provide appropriate training for VET professionals to deliver WTE training in a personalised, inclusive and gender appropriate fashion.

The Women Technology Entrepreneurship project consortium is currently developing hybrid curricula that place the needs and potential of women at the centre of the education design, development and delivery process. Through extensive and ongoing engagement with rural women and educationalists across partner countries, WTE will produce an integrated technology and entrepreneurship course to facilitate the increased participation of women in what have historically been gender biased fields. The training programme developed by the Consortium will be centred on the soft skills of entrepreneurship such as creativity, initiative and self-confidence allied with the practical elements of technological application in business environment. The holistic, learner centred nature of course modules under development ensures that participants will be in a position to explore different aspects of entrepreneurship and technology as appropriate to them in a way that supports self-directed learning. The curriculum will also include the development a country-specific Digital Opportunities Roadmaps for women, outlining supports available to them in their countries, links to resources and opportunities for progression and further development.

In the knowledge economy, innovation in the realm of business processes, business models, and even management places significant demands on educators to adapt their service provision to keep pace with emerging market needs and trends. In many cases the lack of appropriate induction training reduces their capacity of VET professionals to meet these demands and results in de-motivation and disaffection. VET professionals who will deliver WTE training will receive appropriate training and knowledge of issues such as gender bias, gender sensitivity and the importance of maintaining a work life balance. WTE will address these topics through the development of the WTE Pedagogic Strategy and Induction Training Programme.

The project website provides more detailed information on the project, introduces the project consortium and charts the development of WTE for clients, customers and members of the public, visit www.wteche.eu.

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1. Project Objectives

The ICT sector is the major source of new innovations that fuel competitiveness. It is the bedrock of the modern economy and the single most important source of growth accounting for 40% of EU productivity. Technology entrepreneurship is a relatively recent phenomenon and the very nature of online activity makes it relatively free from any historic gender division. Most technology based careers or entrepreneurial opportunities are potentially free of any historic gendered division of labour and women in the technology sector have fared better than in traditional professional jobs, such as engineering.

Entrepreneurship has been viewed and cited by researchers as an important and key contributor to the industrial development of the EU as well as a significant driving force in the economic development of individual regions and countries. An analysis (Nickels et al, 2004) of the rich and poor countries in Europe to determine what causes the difference in the levels of wealth show that entrepreneurship and knowledge are the most dominant cause of wealth and entrepreneurship is the most critical and necessary factor for effective economic development. Educationalists can either fuel entrepreneurship or stop it in its tracks and when one considers that entrepreneurs create jobs and wealth for their communities, commercialise innovations that make people's lives better and contribute to national economic growth, there is significant need for educational and training interventions that make the ground fertile for entrepreneurship to thrive.

Disparity in the development of technology and entrepreneurship is not just evident between nations. Even within the individual populations of EU Member States there is a considerable gender imbalance with a significantly lower percentage of female entrepreneurs in Europe in relation to that of male entrepreneurs and to the percentage of women in the population. Additionally, women in the IT workforce in the EU account for only 28% of the total despite research indicating that gender diversity in the technology workforce fuels problem solving and innovation - the driving force of knowledge economies. The technology and entrepreneurial potential of women are latent sources of economic growth and new jobs and should be encouraged. The need for policies and programmes designed specifically for women rather than relying on generic entrepreneurship and e-strategies is clear.

WTE aims to design and trial a new pedagogic strategy and tutor induction programme to facilitate the continuous professional development of VET professionals facilitating closer links with the world of work and addressing the current educational deficits in entrepreneurship training. The WTE Project Consortium will develop ICT curricula and progression pathways specifically focussed on four different skill levels and potential work areas for women. These technology curricula will be merged with appropriate entrepreneurship development training tailored to address the needs and potentials of women, particularly those living in rural areas. The curriculum development process will facilitate 'ab initio' engagement of women with no prior knowledge required by participants. A Digital Opportunity Road-map for Women will also be developed to support entrepreneurial activity and continuing engagement with lifelong learning incorporating strategies to move women into higher value markets. Supports to students will comprise group

based and individual based measures. Educational opportunities provided will be accessible in a variety of learning environments and platforms to include self-directed learning, supported distance learning, formal learning environments and communities of learners. All products and tools will be developed in all 8 partner languages.

WTE will specifically target women in rural communities where skills needed for traditional labour-intensive manufacturing or agricultural employment have given way to new requirements for polyvalent, cognitive skills and where e-working possibilities provide excellent potential for self-employment and the development of local economies. WTE will prioritise a development approach that yields policy-relevant results and will aim to disseminate its products and outputs through existing European Networks of Female Entrepreneurs such as, WES and WITS and well as the many national networks associated with the project consortium.

2. Project Approach

The WTE work programme has been carefully designed to incorporate necessary research, design, testing, production, piloting and dissemination phases. Phases are scheduled to allow for essential reflection and inputs both by the consortium partners and the target groups through the proposed Stakeholder Networks and Curriculum Sub-groups. Four partner meetings are scheduled at regular and key stages in the project life-cycle to facilitate monitoring of progress, partner engagement and the development of good working relationships across Europe. To realise the ambitious aims of this project, the consortium are confident that the necessary and appropriate resources are available and will be applied to all key tasks. The full benefits of Web 2.0 technology will be used by the partners through the partner resource area of the project web-site to stimulate constant interaction, exchange information and facilitate best practice exchange amongst the consortium and local project structures. These facilities will be extended to the target group over the project lifecycle providing a dedicated networking space for female entrepreneurs.

The work programme envisaged clearly addresses a significant need both in terms of adult education provision and marginalised groups. The potential for and latent skills of women technology entrepreneurs are central to the project as is the development of appropriate learning tools, technology platforms and pedagogic strategies. Combined, these elements will deliver real value to the project's primary target group. The project clearly identifies the potential of ICT to support innovative learning platforms, content, and environments. Analysis of the potential is solid, evidence based and clearly stated. It is clear how the target groups will be engaged and by whom, as is the role of each partner. There is a clear quality management plan and the organisation of the work in affect to ensure transparency between the partners. An external evaluator has been appointed to support the management of the project and offer objective feedback and opinion of the project's development. A full range of specific work-packages are outlined and the roles of each partner assigned to ensure that progress is achieved and any difficulties are identified at the earliest possible time.

3. Project Outcomes & Results

From our research it appears that there is no curriculum linking ICT and entrepreneurship for women in the EU. WTE will achieve both process and content oriented innovation through the multi-actor project structures established in each partner country and the development of the hybrid technology and entrepreneurship curricula, VET induction and pedagogical strategy. The development of a Digital Opportunity Road-map for Women Entrepreneurs also represents significant innovation and will identify entrepreneurial opportunities appropriate to the target group and facilitate the development of individual entrepreneurship in a range of business areas.

WTE will adopt a 'think small first' approach to entrepreneurship induction for VET professionals, training for target groups and business development models. When people think 'entrepreneur' they invariably think 'Bill Gates & Microsoft', 'Michael O'Leary & Ryanair', etc. While these are excellent examples they are the exception rather than the rule and can be off-putting. Many VET professionals surveyed in the development of this proposal doubt their capacity to deliver real value in the entrepreneurship training area. WTE will address this situation with appropriate induction training designed by VET and business professionals together to reaffirm the important role and contribution of VET in this subject area.

The web platform will be fully accessible in compliance with WCAG 2.0 to support access for women entrepreneurs with a sensory impairment. It will provide a series of forum and links to support women entrepreneurs beyond the initial training and business start-up phases, i.e. mentoring, networking, access to micro-finance, etc. WTE will target women in core VET provision and those who are marginalised by cultural or structural barriers - one-parent families, immigrant women, women from rural backgrounds - thereby extending the potential of the tools and pedagogies developed to sectors which are largely excluded from opportunities of this nature.

4. Partnerships

The consortium demonstrates a significant multi-player character comprising 8 partners representing eight Member States including representation of vocational education and training, and support agencies in the areas of business development, entrepreneurship and women's development. Collectively, partners have the capacity to contribute to the development of a quality educational service that is relevant at local, national and European level. The consortium also represents a good mix of cultural perspectives and linguistic diversity aiding transferability of the products and tools developed. Partners have significant European experience and all have substantial skills and expertise at their disposal with tasks allocated appropriately to ensure quality and relevance of work. Partners lead at least one work-package to ensure the ongoing input of each partner and the necessary inter-dependence between partners in order to achieve the project goals. Almost all foreseen activities can be undertaken within the consortium with little need for outside support in any of the crucial development stages.

The project envisages the need for significant technical expertise in the design and development of the tools and materials and the necessary skill sets have been secured to include; pedagogical expertise; web architecture expertise; curriculum development expertise; and business support expertise. The establishing and facilitating of Stakeholder Networks and Curriculum Sub-groups in each partner country ensures that the project has continuous and immediate access to a wide range of stakeholders and the main beneficiaries. These structures have been established in each country.

Potential for dissemination and exploitation within the consortium is excellent due to the range of national and international networks that each partner engages with as part of their core activity and the excellent past record of partners in similar areas.

5. Plans for the Future

The project clearly defines the problem it hopes to address and the methodology it will employ to achieving its goals. Implicating all target groups throughout the project design, development and testing phases will ensure that the required outputs are achieved and the potential impact of the project is realised.

The issues that the project addresses are clearly defined as follows; a) the lack of appropriate hybrid technology and entrepreneurship curricula; b) the lack of appropriate pedagogical induction processes for entrepreneurship training provision within VET; c) the need for greater cooperation between educators and businesses in the pedagogic design, development and implementation process; d) the need to develop suitable educational content that can be accessed through remote learning platforms; e) the need for appropriate support infrastructure for fledgling women technology entrepreneurs; and f) the need for positive role models.

The nature of the tools developed will allow for easy updating as new technology demands and facilitate considerable use and re-use over an extended period of time to ensure that the impact can be sustained beyond the project lifetime. There is also potential transferability of the tools throughout Europe due to the diversity of cultures, languages, educational and business realities in partner countries which will influence the final content design and presentation.

During the project lifetime 120 VET professionals will complete induction training; 200 potential women technology entrepreneurs will be engaged and begin training; 400 users of the web portal drawn from all implicated sectors will be registered. Given the importance of technology and entrepreneurship to the continuing competitiveness of the EU economy the potential long-term impact of the project is significant. Courseware developed will be incorporated into core service provision by relevant partners and promoted extensively to VET providers and women's groups.

6. Contribution to EU policies

The European Commission's 2006 Annual Report on Growth and Jobs argues that "most national programmes do not go far enough to foster a more positive attitude towards entrepreneurship and to encourage more people to start their own business". The report also highlights the need to "foster entrepreneurial mind-sets through education and learning". It is widely accepted that coherent entrepreneurship education initiatives are in short supply throughout Europe and that innovative pedagogies are a necessary basis for building an entrepreneurial spirit. Developing entrepreneurship is not just about teaching people how to start a business it is about developing personal attributes like creativity, initiative and self-confidence. VET provision is already at the forefront of developing these personal attributes throughout Europe albeit not in an 'entrepreneurship specific' environment. Through a comprehensive induction programme WTE will support VET professionals to realise their potential as vital cogs in developing entrepreneurial mind-sets.

Changing business models in Europe with an increase in outsourcing across borders ensures that potential for new entrepreneurs is growing. ICTs comprise the most valued and sought after skills in the knowledge economy. Skills at all levels have marketable potential. Curricula developed will reflect the needs of the European economy. Developing pedagogies, curricula and supports for women technology entrepreneurs that facilitate their successful deployment in the wider economy will be best achieved through cooperation between different cultures in the design and development process. Issues of localisation will be addressed at inception to allow for individual country-specific particularities and this will assist transferability even beyond the extensive consortium. A specific training module addressing business cultures in Europe will be developed and incorporated into the curriculum. All tools and outputs developed by WTE will be available in all partner languages.

7. Extra Heading/Section

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