

## ITU CWG-Internet: Online Open Consultation (October 2017- January 2018)

### Responses from the International Network of Women Engineers and Scientists – INWES Europe

I am responding to this consultation<sup>1</sup> on behalf of INWES-Europe, a network of European women working in STEM, representing over 2,000 or more women in Europe.

#### Presentation of INWES-Europe

INWES-Europe is a regional group of the International Women's Network of Engineers and Scientists [www.inwes.org](http://www.inwes.org). Other regional groups include Asia Pacific, Africa and Americas. In April 2008, INWES became an official non-governmental organization (NGO) partner of the UNESCO. This partnership involves a dynamic cooperation to help women and girls worldwide to have access to education, especially in Science and Engineering. INWES' membership includes Organizational Members, Corporate Members, University/Institute Members, and Individual Members, representing over 250,000 women from over 60 countries around the globe.

INWES-Europe enables the voices of European women engineers and scientists to be raised at national and regional levels so to establish true equality and achieve success all across European countries in a sustainable manner. Our vision is that it should be an open, inspiring, and influential network at European level that every woman in science technology engineering and mathematics (STEM) wants to join, with the following key strategic objectives:

- To enable international cooperation among national associations of women in STEM
- To represent the interests of all women in STEM on a European level
- To reinforce the key role of women in STEM in building a sustainable and inclusive society
- To leverage European diversity and create innovative synergies
- To promote a balanced life in modern ways for all

INWES-Europe members include:

- The *Women's Engineering Society (WES)* in the UK, a membership organisation of women that has inspired and supported diversity and engineering since 1919. [www.wes.org.uk](http://www.wes.org.uk)

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<sup>1</sup> <http://www.itu.int/en/council/cwg-internet/Pages/consultation-oct2017.aspx>

- *Deutscher Ingenieurinnen Bund e.v. (dib)*, the German Association of Women Engineers, is an association, founded in 1986, of and for women who work in engineering or study engineering. *dib* is dedicated to achieving equal opportunities for women in education and employment. [www.dibev.de](http://www.dibev.de)
- *Elles Bougent* is a French association that aims at developing gender balance in industrial and technology companies. *Elle Bougent* promotes women in STEM, and more specifically in engineering, encouraging girls to consider careers in STEM in France. [www.ellesbougent.com](http://www.ellesbougent.com)
- *Swiss Engineering's* membership lists 15,000 members and about 10% are women engineers and architects. [www.swissengineering.ch](http://www.swissengineering.ch)

## Summary of the responses

INWES-Europe is a network of European women working in STEM is a regional group of the International Women's Network of Engineers and Scientists.

Good practices in order to reduce the gender divide in internet access include role models, coding classes, equal opportunities for job progression. Learning ICT skills through a variety of ways including gaming needs to be recognised and adapted to ensure girls are included, as cultural and personal preferences may affect the uptake.

International organisations and governments should work together with women networks in order to support women in SMEs, through mentorship schemes, financial support, facilitation, and recognition of individual time management needs and business risk-attitude cultural approaches.

The gender divide should be monitored at local, national, regional and international level and robust mechanisms should be develop to that effect.

The role of government and international organisations is key to the bridging of the gender divide. Through the development of appropriate policies, including regulations to protect women online against harassment and cyber-crime, women in STEM and ICT, entrepreneurs, and in SMEs should be supported.

Women networks are key to achieve this objective, through the development of programmes and projects, connecting women through events, informal meetings, social media, and being a voice for women at all levels will allow to support this key agenda item. And of course, men need to support these networks and gender diversity in order to ensure a sustainable success of these actions.

## Responses

The following responses include comments from representatives of the above organisations:

## 1. What approaches, and examples of good practices are available to increase Internet access and digital literacy of women and girls, including in decision-making processes on Internet public policy?

A large variety of approaches and examples of good practices exist and are promoted by women in STEM organisations such as INWES Europe, and should be further applied in a sustainable manner. These include role models, opportunities to try (training/work experience/projects), target 50-50 representation on boards and leadership teams, targeted activities, coding classes dedicated to girls and women, and mentorship schemes.

An example includes TechMums ([www.techmums.co](http://www.techmums.co)) which targets women in disadvantaged areas who are not able to access technology. The women not only get to develop technical skills but are able to act as role models and ambassadors for technology to their daughters and sons.

Coding programmes for children are of course to be encouraged, but what is more important is to understand how young people get engaged in digital skills. In practice, boys get very involved in computer gaming, and this is a gateway to higher level skills (from detailed searches on forums to work out “cheats” to understanding how to “mod”/re-programme games). Girls do not engage with games in the same way – partly for cultural reasons (girls are not encouraged to become interested in guns and first-person-shooter games – the majority of commercially successful games) and partly because the existing forums and game-based education programmes are overpopulated with boys.

ICT education organisations (e.g. Minecraft Edu, NESTA in the UK) should be called upon to re-focus games-based programmes for girls, in order to make games playing as attractive and as accessible to girls and their families and teachers.

In addition, these ICT education global organisations should support local non-governmental organizations (NGOs) for education (e.g. <https://ironline.american.edu/ten-innovative-ngos-in-education/>) in order to bring more technology content into their programmes, particularly those aimed at girls and women.

In 2016, INWES members participated in a World Trade Organization (WTO) Forum round table and signed a declaration to realize action for a sustainable, technological and inclusive society. A copy of this declaration is attached to this response (appendix 1).

Women in STEM groups and networks, such as the European Group of the International Women in Engineering and Science Network and the Network of Women for the World Radio Conference (NOWRC) of the ITU also represent excellent opportunities to test approaches and develop good practices to increase Internet access and digital literacy of women and girls.

INWES-Europe is ready to contribute to the development of good practices and support the ITU in this action.

## 2. What approaches, and examples of good practices are available to promote the access and use of ICTs by SMEs in developing and least-developed countries, particularly those owned/managed by women, in order to achieve greater participation in the digital economy?

As an example, I am a woman, CEO of a SME. Because I am familiar with the gender divide issue, my teams are made with competent women and men. Therefore, raising awareness of the importance of a gender balance and its benefit is key in small organisations.

This action should come with encouragement and support in risk taking so that more women start new businesses, and offer time management for those who manage a family, provide flexible work, and task sharing, while offering schemes for women returners and retraining.

There should be cross-country and regional opportunities to develop mentorship schemes and networks, bringing SMEs led by women together and support them.

In order to foster the creation and management of businesses by women, support should be given to access and use ICT in terms of connectivity, time, terminals.

Providing mentoring and networking opportunities to enable women to support each other in the take up of ICTs, as well as peer to peer learning and transfer of knowledge where human resources are limited is also a good practice.

There are tech community mechanisms for sharing and selling code over the internet (e.g. GitHub). These can work well – and for women, some unconscious bias can be removed by not providing their gender (see <https://www.theguardian.com/technology/2016/feb/12/women-considered-better-coders-hide-gender-github>). Why not provide independent or even state run hubs to enable coders and other tech specialists deliver business-to-business services remotely?

An example of a very imaginative use of ICT in developing and least-developed countries that could be translated for decision-making elsewhere is the use of Minecraft to support local town-planning (see <https://unhabitat.org/un-habitat-utilising-minecraft-in-the-development-of-public-spaces-in-east-jerusalem/>).

At the session organised at WTO December 2016 (see Appendix 1), INWES presented how various stakeholders are helping to enhance the participation of women in engineering worldwide in order to achieve a greater gender balance<sup>2</sup>. Despite a high female presence in studying engineering, only 5 per cent pursue a career in this traditionally male domain.

Adopting the right governmental policies — such as the introduction of quotas — can be a game changer, panellists said. Access to finance, information and communication technology, capacity-building, peer mentoring and greater transparency were highlighted as important tools in working towards greater equality in the engineering sector. The panel also stressed the important contribution

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<sup>2</sup> [https://www.wto.org/english/news\\_e/news16\\_e/pfor\\_29sep16\\_e.htm](https://www.wto.org/english/news_e/news16_e/pfor_29sep16_e.htm)

women can make towards achieving the United Nation (UN)'s Sustainable Development Goals — particularly regarding gender equality, education, decent work and economic growth.

Gathering the support from the ITU, WTO, and other international organisations, together with the support of organisations such as INWES would create the right infrastructure required to involve women. INWES would be pleased to support dissemination across countries of lower-tech ICT solutions for women-led SMEs and women entrepreneurs.

### 3. Which are the available sources and mechanisms for measuring women's participation in the digital economy with focus on SME's and micro-enterprises?

Online research of measurement mechanisms delivered the example given here<sup>3</sup>. Github and other online communities may be able to offer some measures.

However, we are not aware of a structured and globally agreed mechanism to measure women's participation in digital economy. INWES would be pleased to support this work on data and measures.

### 4. What measures/policies could be envisioned in order to foster the role of women as entrepreneurs and managers of SMEs, specifically in developing and least-developed countries?

The gender divide should be monitored at national, regional and international level. Women-led businesses should be supported through specific grants. Networking between women in a specific country and across countries should be encouraged, through an international platform in which INWES would be pleased to participate.

Women entrepreneurs should be supported in terms of childcare, flexible work time, access to managerial positions and equal pay. There should be also some support through government or NGO for online creation and selling of services (as in the Github idea).

Support can also be given through the deployment of infrastructures or solutions through partnerships (peer-to-peer schemes from various regions, in order to cross-fertilise ideas and networks).

### 5. What are the gaps in addressing these challenges? How can they be addressed and what is the role of governments?

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[https://www.researchgate.net/publication/268259843\\_THE\\_ROLE\\_OF\\_ICT\\_IN\\_WOMEN%27S\\_EMPOWERMENT\\_IN\\_RURAL\\_BANGLADESH](https://www.researchgate.net/publication/268259843_THE_ROLE_OF_ICT_IN_WOMEN%27S_EMPOWERMENT_IN_RURAL_BANGLADESH)

Gaps can be expressed in terms of time available for women, the risk-taking approach not necessarily culturally fostered for women, women who have to look after their family, education and ICT literacy, and financial support.

Gaps also exist in terms of training provision that is easily accessible to women, with reduced intentional and unintentional barriers due to sexism over women's abilities as leaders and technical experts and unconscious bias.

There are gaps in sharing knowledge and solutions to common challenges such as the need for easy-to-use e-commerce mechanisms that are free-to-use, safe and secure. Cybersecurity and security-online is also an issue, particularly for women who are more likely to be victimised or harassed online. The role of government here is clear: to strengthen regulations to minimise or avoid these issues.

NGOs should be supported to access international global ICTs education expertise and to adapt their programmes for local women and children.

Local, national government should encourage inclusive environments especially where ICT is not accessible.

Toolkits and processes should be developed, through the support of governments as a way of developing their own citizens skills and knowledge. Connectivity infrastructure should be extended in order to render ICT more easily accessible to women and girls in remote areas.

INWES could provide access to women experts in ICTs and to share solutions to some of the challenges.

Fight against online harassment and cybersecurity must be pursued as a basic principle sustaining all ICT development. We must never allow women (or men) to suffer from online crime and find their hard-earned monies are lost to international cyber-crime. This is a government issue which requires international cooperation.

Any action carried out in order to reduce the gender divide towards a 50/50 balance should include men as allies and collaborators. Without the understanding and support of men, the problem cannot be solved.

Finally, women networks are key to achieve these goals and to reduce the gender divide. National networks such as WES, regional networks such as INWES-Europe and international networks such as INWES are key to the success of the objective of bridging the gender divide. Through the development of programmes and projects (such as the WES' STEM Returners/transferrers programme), connecting women through events, informal meetings, social media, and being a voice for women at a local, regional and international levels will allow to support this key agenda item. And of course, men need to support these networks and gender diversity in order to ensure a sustainable success of these actions.

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## Appendix 1 - Geneva declaration at the WTO Public Forum 2016 by an International coalition of women engineers & scientists to realize action for a sustainable, technological and inclusive society



Inclusive  
Trade

Geneva declaration at the WTO Public Forum 2016 by an  
International coalition of women engineers & scientists



to realize action for a sustainable, technological and inclusive society

We, members of the International Network of Women Engineers and Scientists (INWES), together with our partners and major stakeholders in scientific and engineering societies for women – including the Digital Coalition in Africa, the South School on Internet Governance, and the undersigned - declare that:

1. We have been honoured to advance the World Trade Organization (WTO) Public Forum 2016 (WTO PF 2016) debate towards building more inclusive trade, through responsible best practice in engineering, scientific and technology. Our working session discussed concrete actions and plans that will facilitate the greater inclusion in trade of women, who represent half of the population worldwide.
2. We note that, in September 2015, global leaders agreed on a new international framework for socio-economic development. The Post-2015 Agenda identifies science and technology as key enablers of development and as an essential component of the innovative development solutions necessary to meet today's sustainable development challenges.
3. The WTO PF16 offered a unique platform to reflect on and discuss the increasing importance of Information and Communication Technologies (ICTs) as a facilitator and driver of inclusive development and reduced inequality in a globalising economy. In light of its significant role, we urge that the involvement of women in trade, in particular those working in small and medium-sized enterprises (SMEs), must be facilitated by increasing and improving their access to ICT, and encouraging its use.
4. We affirm that women in engineering, science and technology around the world are conducive to the achievement of all the Sustainable Development Goals (SDGs) and to the growth of the sectors they work in. Women are capable of playing an equal and vital role in innovating, confronting complexity, improving efficiency, developing infrastructure, and promoting progress in every sector of activity. Gender equality at all levels in organisations is vital to achieve the full capability of innovation, and craft new development solutions that are inclusive, impartial and sustainable in the post-2015 era.
5. We acknowledge, in particular, the role of women in the research and innovation process; the ways in which women are excluded from the creation and implementation of hard innovation, regardless of competency and knowledge-level, and channelled instead into ancillary roles organizing facilities for male-led research and innovation; and the consequent importance of national, bilateral and international measures to encourage women to pursue research.
6. We emphasise the bidirectional relationship between gender equality and technology – and, as stated in the SDGs, the importance of *“enhancing the use of enabling technologies, in particular ICT, to promote women’s empowerment”* (SDG 5b).
7. Through the development of tailored policies and improved access to financial services, particularly for SMEs; opportunities for progression towards leadership and

- within education; and encouragement of entrepreneurship, we argue that women will be empowered to contribute further to sustainable and inclusive growth.
8. We recognise in particular, that finance is an important method of fostering inclusion at all levels.
  9. We want to further the achievement of the Sustainable Development Agenda towards 2030 through approaches that allow us to act effectively, accelerate change, and ensure a positive global impact - in particular, through enabling and improving international cooperation among national organisations of women in science, technology and engineering; and thus expanding the contribution of women towards building a sustainable and inclusive society, while promoting a balanced life for all.
  10. Finally, we want to underline the importance of ethical practice in engineering procurement, design, and execution, in ensuring the quality and sustainability of infrastructure in developing countries.
  11. We conclude that in the interests of improving trade inclusion; and leveraging global knowledge, regional networks, and local know-how:
    - ICTs must be recognised as key drivers for ethical trade and responsible businesses, and vital to development in developing economies;
    - Resilient digital ecosystems need to be built at a large scale;
    - Qualified women entrepreneurs, engineers and scientists must have equal access to leadership positions, particularly in technology companies and organizations;
    - Women entrepreneurs, engineers and scientists must receive equal payment, at the same level of responsibility, as male colleagues;
    - The innovation, entrepreneurship and integration of women in science, technology and engineering must be encouraged;
    - Women must have an equal role in influencing and building Industry 4.0 worldwide;
    - International cooperation among organisations for women in science, technology and engineering is of utmost importance.

**SIGNATURES:**



Geneva, 28<sup>th</sup> September 2016

