

Advisory Committee on Equal Opportunities for Women and Men

Opinion on GENDER EQUALITY AND THE DIGITAL SOCIETY IN EUROPE: OPPORTUNITIES AND RISKS¹

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¹ The Opinion of the Advisory Committee does not necessarily reflect the positions of the Member States and does not bind the Member States

1. Introduction

OPPORTUNITIES

With this opinion the Advisory Committee would like to draw attention to the new opportunities for gender equality as a result of the development in new technologies. In addition, we would like to explore ways in which we can most effectively benefit from these opportunities and use the technological innovations as drivers of progress towards gender equality.

The ICT sector is rapidly growing, creating around 120,000 new jobs every year. As it proves to be more and more difficult to find ICT professionals, Europe could face a shortage of up to 900,000 ICT workers by 2020. It is crucial that Europe uses this opportunity to enhance its digital competitiveness.

In October 2013 the Commission published a study² on "Women active in the information and communication (ICT) sector". Despite the evidence, which proves that women's access to an ICT career is essential for the sector's long-term growth and the sustainability of the European economy, the ICT sector is still characterised by a large gender gap.

With the campaign "Women in the ICT sector", which was carried out in 2014, the Commission celebrated digital role models who could encourage young women and girls to study and pursue careers in IT. The Commission invited women and men to create a video and share³ their own digital success story to inspire girls and women to think about tech. As part of the campaign, the Commission also published the following facts about women in the digital economy:

- Only 9 in 100 European app developers are female;
- Only 19% of ICT managers are women (45% women in other service sectors);
- Only 19% of ICT entrepreneurs are women (54% women in other service sectors);
- Less than 30% of the ICT workforce is female;
- Women represent around 33%⁴ of total graduates in science and technology and around 32% of employees of the ICT sector⁵

These figures reflect the main challenge: women are still under-represented in the ICT sector. A policy change is needed, first of all, because of an alarming drop in ICT female graduates in recent years: today only 29 out of every 1000 female graduates have a computing or related degree, and only 4 go on to work in ICT-related activities. An additional challenge is that women leave the sector mid-career (leaky pipeline) to a greater extent than men: 20% of women aged 30 years with ICT-related bachelor degrees work in the sector, whilst only 9% of women above 45 years old with these degrees do so.

² European Commission Study on women active in the ICT sector (2013):
http://bookshop.europa.eu/is-bin/INTERSHOP.enfinity/WFS/EU-Bookshop-Site/en_GB/-/EUR/ViewPublication-Start?PublicationKey=KK0113432

³ <https://www.facebook.com/girlsdigital>

⁴ Source: Eurostat (2011): Human Resources in Science and Technology (HRST).

⁵ Source: Eurostat (2012): Labour Force Survey2012Q4. Data for EU27.

Women are also particularly underrepresented in managerial and decision-making positions. Although this is a general problem, the percentage of female bosses in ICT is much smaller than in other sectors: 19.2% of ICT sector workers compared to 45.2% of non-ICT sector workers have female bosses.

'With regards to computer literacy, **women aged 16-54 tend to outnumber men in the low and medium internet & computer skills**, but for the highest level of skills the situation is opposite: **more men appear to have high internet & computer skills than women** - reaching a male-female gap in computer skills of 16% in the age group of 25-54.'⁶

When considering economic arguments for increasing female participation in the ICT sector, the Commission's study found that more women entering the digital jobs market can create an annual € 9 billion GDP boost in the EU area. Furthermore, women working in the ICT sector earn almost 9% more than women in similar positions in the non-ICT service sectors.

Women active in the ICT sector enjoy higher flexibility to arrange their working schedules and will be less susceptible to unemployment. In view of the good job and salary prospects, the Commission is keen to promote the many interesting aspects of working in the ICT sector, and to encourage girls and women to consider a career in ICT⁷.

In addition to increased career and economic opportunities, women's participation in decision-making positions in the ICT sector also translates into greater influence in socio-economic and political affairs given the increasing influence of ICT in all aspects of society. Female technology producers and leaders will facilitate the construction of a more gender responsive set of technologies, products and services. Moreover, in the public sector, this should also result in more inclusive policy, regulations, planning and investments.

The UN's sustainable development goals explicitly cite ICT as an important means of implementation of the new global development agenda and underline that women must be at the heart of these efforts. In addition, the Agreed Conclusions of the 57th Session of the Commission on the Status of Women (CSW)⁸ have urged governments to support the development of information and communications technology and social media as a resource for the empowerment of women and girls. This includes the improvement of access to information on the prevention of and response to violence against women and girls, and the development of mechanisms to combat the use of information and communications technology and social media for the perpetration of violence against women and girls.

RISKS

Definitions:

- **Cyber violence:** violence that takes place online or through the use of new technologies, including the forms of violence defined below.
- **Cyberbullying:** online or through the use of new technologies, repeated behaviour aimed at hurting or frightening a smaller or less powerful person, often forcing that person to do something they do not want to do.

⁶ http://ec.europa.eu/eurostat/statistics-explained/index.php/Quality_of_life_indicators_-_education

⁷ In parallel, we need to consider the same opportunities to boys and men in order to promote their active participation to family life and household and so enhance career opportunities for women specifically in ICT.

⁸ [http://www.un.org/womenwatch/daw/csw/csw57/CSW57_Agreed_Conclusions_\(CSW_report_excerpt\).pdf](http://www.un.org/womenwatch/daw/csw/csw57/CSW57_Agreed_Conclusions_(CSW_report_excerpt).pdf)

- **Cyber harassment:** online or through the use of new technologies, any form of unwanted verbal, non-verbal or physical conduct of a sexual or non-sexual nature, with the purpose or effect of violating the dignity of a person, in particular when creating an intimidating, hostile, degrading, humiliating or offensive environment
- **Cyberstalking:** intentional conduct of repeatedly engaging in threatening conduct directed at another person, causing her or him to fear for her or his safety, online or through the use of new technologies.
- **Sexist hate speech:** threats of violence or public incitement to violence or hatred directed against a group of persons or a member of such a group defined on the basis of sex (also by the public dissemination or distribution of tracts, pictures or other material)

The increasing digitalisation of society also poses some threats to gender equality. The safety and security of internet users and their protection against harm online form part of a shared responsibility to ensure respect for the rule of law and human rights on the Internet. This includes the protection against sexual abuse and exploitation of children through the internet, cyber bullying, cyber harassment, cyberstalking and sexist forms of hate speech.

The results of the Fundamental Rights Agency survey on women's experiences of violence, published in March 2014⁹, show that:

- Young women (18-29 years old) are particularly at risk of cyberstalking (defined as "stalking by means of email, text messages or the internet"): 4% experienced this form of violence in the 12 months before the survey;
- 11% of women have been victims of cyber harassment (receiving unwanted, offensive sexually explicit emails or SMS messages, or offensive, inappropriate advances on social networking sites) since the age of 15.

The EU Kids Online 2011 report¹⁰, co-funded by the European Commission under the EU safer/better internet programme and based on a survey of 25,000 9-16-year-old children, concludes amongst others that teenage girls are more likely than boys to receive nasty or hurtful messages online¹¹ EU Kids Online also identified that girls are more likely to belong to higher risk/harm groups, which are especially more likely to experience higher levels of harm from online bullying and meeting strangers offline.¹²

All forms of violence against women and girls, including cyber violence, are rooted in gender inequalities and reinforce them. The phenomenon remains one of the most pervasive human rights violations of our time. The EU is committed to fighting against such violence, as affirmed in the European Commission's Women's Charter (2010), the European Pact for Gender Equality 2011–2020, the European Commission's Strategy for Equality between Women and Men 2010–15, and the Stockholm Programme for 2010–14.

⁹ <http://fra.europa.eu/en/publication/2014/vaw-survey-main-results>

¹⁰ <http://eprints.lse.ac.uk/33731>

¹¹ <http://eprints.lse.ac.uk/33731/1/Risks%20and%20safety%20on%20the%20internet%28Isero%29.pdf>.

¹² <http://www.lse.ac.uk/media@lse/research/EUKidsOnline/EU%20Kids%20III/Classification/Country-classification-report-EU-Kids-Online.pdf>

The Council conclusions of June 2014 on "Preventing and combating all forms of violence against women and girls, including female genital mutilation"¹³ called on the Commission to carry out specific actions to combat cyber violence:

- *"support private sector investment in programmes, campaigns and strategies to respond to prevent and eliminate all forms of discrimination and violence against women, including sexual abuse instigated or facilitated through the use of information and communication technology and sexual harassment at the workplace, and to empower victims and survivors of violence";*
- *"review existing legislation and law enforcement mechanisms with a view to effectively combating emerging forms of violations against women and girls, such as on line harassment, various forms of sexual abuse instigated or facilitated through the use of information and communication technology, stalking and bullying".*

In her answers to written questions during her hearing before the European Parliament, Commissioner Jourova affirmed: *"We must also address new forms of violence against women and girls, like the ones linked to new media, such as cyber violence."*

In order to combat the problem, the Commission provides funding for transnational projects that tackle all forms of violence against women, including cyber violence. For example, projects raise the awareness of young people and educators as to the risks of cyber violence and teach teenagers to use social media responsibly. From 2014, this funding is provided under the Rights, Equality and Citizenship Programme.

Article 17 of the Council of Europe Convention on preventing and combating violence against women and domestic violence (Istanbul Convention)¹⁴ states:

"1 Parties shall encourage the private sector, the information and communication technology sector and the media, with due respect for freedom of expression and their independence, to participate in the elaboration and implementation of policies and to set guidelines and self-regulatory standards to prevent violence against women and to enhance respect for their dignity.

2 Parties shall develop and promote, in co-operation with private sector actors, skills among children, parents and educators on how to deal with the information and communications environment that provides access to degrading content of a sexual or violent nature which might be harmful."

To sum up:

Women's full engagement in the digital world is a must. They must not only benefit from ICTs but also be equal players in directing the evolution of our digital world – to realise gains and mitigate risks.

Women must also be free to interact and communicate online without facing sexist hate speech, and be protected from cyber harassment and cyberstalking. Everybody, especially boys and men should be sensitized to respectful online behaviour and be made aware of these existing threats that women and girls face. Governmental programmes for internet

¹³ http://ec.europa.eu/justice/gender-equality/files/jha_violence_girls_council_conclusions_2014_en.pdf

¹⁴ To date, 11 EU Member States (Austria, Denmark, Finland, France, Italy, Malta, Poland, Portugal, Slovenia, Spain and Sweden) have ratified the Convention, and a further 13 have signed it.

security already integrate this issue in their sensitization¹⁵ - such programmes must be developed and expanded.

2. Recommendations

In this section the Advisory Committee will provide guidance to the Commission on concrete steps to fully take advantage of the digital opportunities available to women and girls in Europe. At the same time, it is important to tackle the risks that come with the rise of new technologies, such as the issue of cyber-violence, which disproportionately affects women and girls.

Overall, it is of outstanding importance that the gender dimension be fully mainstreamed as a cross-sectorial topic in shaping the digital transformation process. In addition, there is a need for a mentality change towards ICT in general among all stakeholders.

Further, we need to focus on an efficient coordination between governmental stakeholders, stakeholders active in education, NGOs and private companies. We need stakeholders to take responsibility together.

Realising opportunities

1) European Commission study on women active in ICT (2013) - key priorities for action

The study "Women active in the information and communication (ICT) sector" outlined four several priorities for action, including:

- Build a renewed image of the sector among women and mainstream society, e.g. by tackling gender stereotypes related to the sector and creating role models through visibility of key women in the sector;
- Empower women in the sector, e.g. by promoting training and coaching programmes, fostering clear ICT career paths through harmonised European educational curricula, and ensure that ICT companies implement gender-sensitive diversity policies;
- Sensitize men in the sector by providing gender training, specifically focusing on gender stereotypes and power dynamics;
- Increase the number of women entrepreneurs in the ICT sector, e.g. by improving access to funding for women entrepreneurs and by encouraging member states to create incentives for corporations to invest in women tech entrepreneurs (e.g. tax breaks);
- Improve working conditions in the sector, e.g. by organising communication campaigns informing about the improved performance of companies with women and the foreseeable lack of qualified ICT workers in the future.

Education and the **media** play a key role in building a renewed image of the sector. The Advisory Committee recommends the promotion of both **digital training and gender**

¹⁵ www.bee-secure.lu might be an example of such an initiative

training across the design of the school curriculum and **teacher training** in primary, secondary and tertiary education. In this context the Advisory Committee calls for the **promotion of STEM-ICT professions as well as discussion of gender roles and stereotypes** from the very early years of school life. Employment in occupations related to STEM (science, technology, engineering, and mathematics) is projected to grow to more than 9 million between 2012 and 2022 (13 percent between 2012 and 2022). This is faster than the 11-percent rate of growth projected for all occupations over the decade (*Data from the U.S. Bureau of Labor Statistics BLS*).

Finally, there is a need for **better and more data on gender equality and technology**. The work of the Partnership on the Measurement of the Information Society Gender Working Group¹⁶, an international, multi-stakeholder initiative to improve the availability and quality of ICT data and indicators, should be supported in this regard. The monitoring framework of the UN's Sustainable Development Goals also provides an important opportunity improved data collection on gender equality in ICTs.¹⁷ Moreover, a Partnership with EIGE should be supported to measure and highlight gender equality and technology using statistics, documentation, training and networking.

2) Promotion of advantages of working in the ICT sector in order to maximise recruitment and retention of female ICT workers in the future

Promoting the advantages of working in the ICT sector - flexibility, higher salaries, good employment prospects – and raising awareness of the many opportunities of working in the ICT sector, starts early in life. The Advisory Committee recommends that schools and universities better provide girls and boys with information regarding STEM/ IT/ ICTs subjects and possible career options. Primary and secondary schools could introduce special courses (e.g. robotics, project design, architecture, experiment building, design of technology for social or creative purposes such as social media, digital art) to involve children to think more creatively through play from a young age. These courses should be applicable to real-world problems and situations, including social and artistic issues. In order to achieve this objective, **strong engagement from school and university professionals** (including teachers, professors, management, tutors) and parents is required. In this context it will be helpful to provide **digital training to parents** of school-aged children to enable them to see the added value of learning digital skills. Children, **teachers and parents** would all benefit from **gender training aimed at tackling gender stereotypes**.

The message "No professional future without ICT competences" should be widely spread. It is important to encourage women to consider ICT and STEM fields as an opportunity for creative and meaningful engagement in the world, on both professional and personal levels. **Pupils and students** would benefit from **training**, e.g. in the form of workshops, on **how to use practical ICT applications in various professional fields**. These workshops could potentially be organised in partnership with the national employment agencies and/or private companies.

When it comes to recruitment of ICT workers, ensure the inclusion of an appropriate **gender perspective in recruitment procedures**. Recruiters and HR staff should have gender sensitivity training prior to undertaking recruitment. In order to retain more women in the

¹⁶ For more details see <http://www.uis.unesco.org/Communication/Pages/partnership-for-measuring-ict-for-development.aspx>

¹⁷ More information here: <http://unsdsn.org/what-we-do/indicators-and-monitoring/indicators/>

sector, employers should be encouraged to be pro-active in creating or maintaining a supportive working environment for both women and men. It is important to make **(male) managers aware that they have a key role to play in achieving more diversity in their organisation/company**: they can play a major part in raising awareness or supporting women's initiatives (e.g. promoting their growth and leadership) and careers in ICT fields. This is likely to have a positive effect on women who are keen to climb the corporate ladder and thereby help close the 'leaky pipeline'. Companies should be rewarded for having high rates of both male and female work-life satisfaction.

Another element, which would contribute to maximising recruitment and retention of female staff in the ICT sector, is by offering **comprehensive and repeated gender trainings at all levels in digital companies**. Companies should also be encouraged to have a 50 percent quota of women on their board, ensuring a top-down gender equality approach.

In addition to providing gender training to all staff, **specific training and mentoring sessions** should be organised for **female employees** in the ICT sector, in order to raise awareness on the many opportunities and to provide them, if necessary, with the required **skills** to move up the ladder and break the glass ceiling.

Furthermore, companies should be encouraged to examine all of their policies and practices, including recruitment and nomination procedures, from a gender perspective, looking at how the needs or the treatment of men and women might be different. For example: is the investment in career development of women and men equal, do gender based stereotypes influence recruitment/nomination choices, working hours, the timing of social and after-work gatherings, (are they held in male dominated spaces, such as pubs, golf-courses, etc. during hours when a working parent might need to be home) policies on working from home, parental leave for both women and men, sick leave, access to services such as on-site crèches, breast-feeding spaces, etc.

Establishing exemplary projects will serve as a model for other companies: **Awarding tech companies** (e.g. in the form of a label or a specific financial aid to be worked out) that meet a specified level of gender awareness via the completion of these three points: gender training, gender-specific company policy, and promotion of women's growth and leadership.

3) Specific measures to attract more girls and women to a career in the ICT sector

Specific measures at national level

The Advisory Committee recommends **integrating STEM and ICT skills across the school curriculum** starting at primary schools and continuing at secondary schools and universities. Schools and universities should play an active role in presenting STEM and ICT subjects to girls and boys, teachers and parents. Adjusting curricula is important to root out all instances of negative gender bias as well as to actively integrate positive images of girls and women in science and technology that help inform attitudes of girls and boys.

Girl-friendly exposure to the creation and application of technology could be helpful. Girls-only ICT activities are likely to have a positive impact, as they feel more at ease, are not hindered by stereotypes and have fun in a supportive environment. **Opportunities created within the formal educational system** (e.g. coding as mandatory part of the curricula) and through informal opportunities will contribute to attracting more girls and women to studying and working in the ICT sector. Formal education on ICT needs to be **gender sensitive** in terms of pedagogy, content and who teaches tech classes.

Member States could consider organising **national competitions on ICT projects for girls**, in order to motivate young girls to participate and further develop their ICT skills. These competitions should include clear pathways for girls that assure that their interest continues after the competition. Schools that demonstrate effective performance in promoting ICT skills to young girls and boys could be presented with a special award.

In addition, **job fairs** provide excellent opportunities for presenting the advantages of careers in the ICT sector to women, for example by including presentations of successful women working in the ICT sector, thereby presenting **role models** to girls and women.

Specific measures at EU level

Formal education in computer science/coding/tech is critical but not enough. There also need to be **informal learning opportunities** that allow girls to explore the application of ICTs and pursue skills development on a more regular basis and through creative and attractive courses. In this context the creation of **extra-curricular groups that teach coding and digital skills to girls** should be promoted.

An example of promoting ICT skills to young girls and boys is the **EU Code Week**. The third annual EU Code Week will take place 10 – 18 October 2015, gathering children, parents, young adults, adults, teachers, trainers, entrepreneurs and policy makers in classrooms across Europe so they can learn programming skills. The aim of this grass-root event is to debunk myths around coding, making it visible and accessible to everyone and showing learners how to use this skill to bring their ideas to life.

Looking forward, there is a need to better understand the **implications of technology on future skill sets** and to develop strategies and initiatives that will enable a more adaptive approach to skill development.

4) The role of industry in the promotion of positive role models and tackling gender stereotypes

The Advisory Committee recommends drawing attention to **best practices** of companies in the ICT sector promoting gender equality as part of their innovative, flexible work culture. It is important that companies establish **networks of women professionals and mentors, peer support networks at the level of tertiary studies, “women in tech” groups within businesses, and girls and tech initiatives**. However, change is not the sole responsibility of women. Men and boys must be engaged, as well as broader communities to equally support women’s advancement in ICT.

The UN initiative "**Women’s Empowerment Principles**" (WEPS) serves as a framework for effectively engaging industry in promoting the recruitment, retention and promotion of women as well as women-owned businesses. They also serve to orient corporate responsibility and local community engagement towards gender equality. Finally, the WEPS should also help business promote gender equality in communities where they are present and to orient their

products and services towards women's needs.

A recent study by the Global Mobile Operators Association¹⁸ (GSMA) on women in the ICT sector found that very few companies are taking a holistic approach and this was problematic. In this context, the Women's Empowerment Principles (WEPs) can offer a solution. Within the WEPs framework issues such as **(reverse) mentoring, sponsorship, leave policies, unconscious bias** (an important issue) and others are addressed. Linking the European Code of Practices¹⁹ for the ICT sector with the WEPs may provide a particularly instructive set of practices.

From a behavioural science perspective, there is an interest in **highlighting the behaviour we want to see** rather than focusing on examples of negative attributes. There is evidence that this is a more successful strategy in bringing the non-converted on board. In this context **industry should visit schools to raise awareness**, among young girls and boys, on the array of attractive opportunities of working in the ICT sector. Successful female role models should play a key role in raising awareness activities.

In partnership with ICT companies, computer/online **games** could be aimed at promoting, among young children, STEM/ICT fields of interest. For example, create a "memory game" in the field of STEM/ICT combatting gender stereotypes or working out less stereotypical hero figures in video games²⁰.

Considering the large gender gap within the tech industry, which widens considerably when it comes to management and specialist positions, it is clear that the **current diversity policies** of European digital companies are **not sufficient** to ensure an optimal talent supply for the digital economy.

The consistent under-representation of women throughout the ICT sector reflects the need for better diversity policies, which should provide **more and better gender sensitive conditions for a conducive working environment** for both women and men.

5) Encouraging women's entrepreneurial talents for the benefit of the digital economy

In the EU, women comprise only 30 percent of all entrepreneurs, owning approximately one-third of SMEs which are noticeably clustered in the service sector. When it comes to tech entrepreneurship, globally, only 10 percent of digital entrepreneurs are women²¹. These numbers are getting worse, not better: globally, the percentage of female businesses that are in the tech sector has decreased 19% between 2014 and 2015.²²

¹⁸ See the report at <http://www.gsma.com/connectedwomen/resources-2/gender-diversity-in-the-telecommunications-sector/>

¹⁹ A European effort that set a code of practices around gender in the ICT sector. It was developed a few years ago and mentioned collecting good practices.

²⁰ <http://www.mega.public.lu/fr/actualites/2015/07/media/index.html>

²¹ <http://www.economist.com/news/business/21581740-middle-east-beats-west-female-tech-founders-untraditional-choice>

²² The Global Entrepreneurship and Development Institute Female Entrepreneurship Index, 2015
<http://thegedi.org/2015-female-entrepreneurship-index-press-release/>

In general, women entrepreneurs in Europe face **gender discrimination when it comes to applying for loans and accessing start-up capital**, and have **less robust professional networks** than their male counterparts as a result of historical labour market segregation.

In order to encourage female entrepreneurship in the digital economy, **access to finance** is a key prerequisite. Start-up funding for women run digital ventures is only around 7%²³. Globally, women in tech accelerators/incubators/hubs receive 10% of funding or less. At EU level, the Advisory Committee recommends considering **setting up a programme aimed at funding women tech entrepreneurs** (e.g. ICT start-ups with at least one woman co-founder). National authorities can contribute by setting up **specific loan programmes and start-up funding sources for female entrepreneurs**. Linked to these funding programmes, national and EU level **prizes and competitions** may be organised for technical innovations by women tech entrepreneurs.

National chambers of commerce also have a vital role to play with regards to providing guidance and advice on the various opportunities of entrepreneurship in the ICT sector. And again, **female role models** can set an important example and contribute by participating in a **mentoring programme** aimed at promoting female entrepreneurship in the digital economy.

Finally, it will be necessary to push for **behavioural change**. For example, 'pitch' events may favour male style of communication, thereby placing many women at a disadvantage. Additionally, events and initiatives aimed at female entrepreneurs should understand the unique needs of female entrepreneurs, including balancing unpaid care tasks such as child care or elder care with running a company, which results in an gendered "time gap" between male and female entrepreneurs. This is a challenge that is also felt by women in the traditional work force.

Based on the above, the Advisory Committee calls for a strong commitment, on national and EU level, of **financial resources** as well as **behavioural and cultural change** when it comes to encouraging and facilitating female entrepreneurship in the digital economy.

6) The Digital Single Market and the future EU policy on gender equality

On 6 May 2015, the European Commission published its **Digital Single Market (DSM) for Europe, including 16 initiatives.** At present, barriers online mean citizens miss out on goods and services: only 15% shop online from another EU country; Internet companies and start-ups cannot take full advantage of growth opportunities online: only 7% of SMEs sell cross-border. Finally, businesses and governments are not fully benefitting from digital tools. The aim of the DSM is to tear down regulatory walls and finally move from 28 national markets to a single one.

The DSM Strategy includes a set of **targeted actions** to be delivered by the end of 2016. It is built on three pillars:

- (1) better access for consumers and businesses to digital goods and services across Europe;
- (2) creating the right conditions and a level playing field for digital networks and innovative services to flourish;
- (3) maximising the growth potential of the digital economy.

²³ <http://www.mitvconference.com/blog/2014/7/11/gender-and-funding-are-female-entrepreneurs-really-disadvantaged>

Source for the 10% = <http://afrihive.com/african-hubs-at-the-forefront-of-catalyzing-women-in-technology>

The Advisory Committee believes it is of great importance to fully **consider women as end users of digital goods and services**. In line with this consideration, it should be up to women to determine what they want and need, instead of following misconceptions based on gender stereotypes ('pink it and shrink it approach to technology'). The Commission should ensure that the DSM protects the interests of all people selling services and products on the Digital Single market.

In order to maximise impact of the DSM, it is essential that the EU supports an inclusive digital society where both women and men are provided with the **right skills** to seize the opportunities available to them. The Advisory Committee therefore recommends that policies include **financial incentives** for **women's increased participation in the digital economy and society**, including around access (broadband) and digital literacy, content production, and skill development. Moreover, education, economic development, energy policies, etc. need to reflect the overlap between technology and gender.

Moreover, the DSM should also consider women in the public sector in ICT, by putting in place positive measures to ensure that women are represented in policy, regulatory or monitoring bodies of the government. Furthermore, ICT ministries should implement gender-responsive budgeting and ensure gender balance in government funded R&D and academic positions.

Mitigating Risks:

In order to tackle the risks involved in an increasing digitalisation of European society, policy measures should be taken at the following levels:

- *Conduct research and improve the collection of data*

There is a lack of accurate and comparable data on all forms of gender-based violence. The European Commission and Member States should produce statistics and data on all forms of gender-based violence, including cyber violence.

Cyber violence is a complex and under-researched phenomenon. The European Commission should also conduct, promote and fund research on cyber violence and related issues, including cyber-bullying; stalking; stereotypes in new media as well as sexualisation and sexual discrimination of girls and young women in digital media and their effects; and pornography and its relationship to the promotion of sexual violence.

- *European strategies and monitoring*

The EU should develop a common European strategy against online violence to be integrated in a European Action Plan on gender-based violence and the next European Action Plan on Equality between men and women. This strategy should set precise targets and funding for service provision to victims. It could also serve as a European monitoring framework and mechanism to measure progress in relation to EU commitments on cyber-bullying, cyber harassment, sexualisation and exploitation of girls in digital spaces, stalking and violence in digital spaces. It should be complementary to and assist in the monitoring of the Istanbul Convention carried out by GREVIO (Group of Experts on Action against Violence against Women and Domestic Violence).

- *Communication and awareness-raising*

Communication and awareness-raising campaigns play a crucial role in tackling the issue of cyber violence. Campaigns should, among other things, inform about the relevant results of the EU Fundamental Rights Agency (FRA) survey, for example those on cyber stalking, and

raise awareness of gender stereotyping, in particular in digital media. Particular attention should be given to engaging men and young boys.

- *Education and prevention*

It is crucial that all children and young people are educated to understand the meaning of respectful communication and consequences of cyber stalking and cyber bullying, including those based on gender stereotyping and sexism. To this end, the Commission could recommend the inclusion of gender education and digital education as a priority in educational curricula and prepare educational material to teach children and young people to respond to online risks and provide enough information, knowledge and computer abilities for students to use the internet while safeguarding their intimacy and privacy and those of others. This would also contribute to encouraging children and young people to protect themselves from violence online and to knowing how to act in case of victimisation or witnessing cyber violence.

As cyber violence occurs from a young age and at times on school premises, teachers should be provided with information and training to be able to identify the problem and handle it appropriately.

In addition, family members play a crucial role; yet they often do not know how they can help. Through programmes targeting the family first (e.g. provision of adequate information and methods of control of internet access [i.e., parental mediation], psychological support for young female victims and ways of confronting the perpetrator), parents can be provided with all the necessary knowledge of the problem and how to respond to it.

- *Working with private sector, media industry etc.*

On the basis of sound evidence, the European Commission should promote partnership with the media industry by giving, for example, recommendations to certain industries to offer realistic and non-stereotypical gender representations through their products and to proactively combat sexism in the media and advertising through campaigns²⁴.

Journalists and editors should be trained to respect the rules and avoid sexist phrasing-imaging of women.

The technology sector should be encouraged towards better self-regulation, i.e. strengthening codes of conduct as they exist for the advertisement sector, and should involve women's groups in advisory and monitoring capacities. In this context, it would also be interesting to look at the work of the Broadband Commission Gender Working Group²⁵ and the work of the Internet Governance Forum Best Practice Working Group on Online Abuse²⁶. Both detail actions of society, government and the technology sector.

International cooperation is particularly important, as media and tech companies, including internet service providers, work internationally, making the issue of cyber violence particularly complex to tackle.

- *Possible legislative measures*

²⁴ See Guidelines adopted by the Council of Europe in July 2013 to assist member states in creating appropriate conditions under which the media can promote gender equality as a fundamental principle of their activities and institutional organisation. [In Appendix to CM/Rec \(2013\)1 on gender equality and media.](#)

[link:

<https://wcd.coe.int/ViewDoc.jsp?id=2087343&Site=CM&BackColorInternet=C3C3C3&BackColorIntranet=EDB021&BackColorLogged=F5D383>]

²⁵ <http://www.broadbandcommission.org/workinggroups/Pages/bbandgender.aspx>

²⁶ <http://www.intgovforum.org/cms/best-practice-forums/4-practices-to-counter-against-abuse-against-women-online>

The European Commission should firstly promote the ratification and implementation of the Istanbul Convention.

Following the implementation of the Istanbul Convention across the EU, and if necessary and within the limits of the EU's competence, the EU could consider bringing forward a legal instrument on violence against women that ensures that all forms of violence against women are addressed, and that provides for full protection and support for girls and women, as well as strong preventive measures and sanctions for perpetrators in both physical and online spaces. Special attention could be given to perpetrators to teach them how to change unwanted/forbidden behaviours and how to communicate with respect and in non-violent ways.

Other possible measures include tackling violent and misogynistic forms of pornography, and proposing new legislation to ensure equality between women and men in education and media. In addition, the Commission could consider establishing a European Media Monitoring Group²⁷ with a specific gender equality branch.

- *Sharing good practices*

The Commission should monitor action at the national level to collect and publicise good practices. An award could be given for the best national practice in this area, in order to encourage further efforts.

Funding

The Commission should promote and fund initiatives and projects to address inequalities in the digital agenda, including helping prevent and combat cyber violence against women and girls, including stalking and bullying, and to expand knowledge and data on these issues, in line with the Council of Europe Convention on Preventing and Combating Violence against Women and Domestic Violence. In particular, the Commission should finance specific training against cyber violence to be given by NGOs in the context of a national digital action plan, also in the context of the new Sustainable Development Goals, including Goal #5 on gender equality, and in the field of development cooperation.²⁸

3. Conclusion

Taking into account all the issues mentioned above, the following steps should be taken in order to make progress towards gender equality and the digital society in Europe:

1. Develop partnerships and co-operation among States, international organisations, civil society, the private sector, technical and academic communities, and internet governance

²⁷ - **The European Audiovisual Observatory** (part of the CoE). It is a public service organisation created in 1992 in order to collect and distribute information about the audiovisual industries in Europe. See at: <http://www.obs.coe.int>

- **The European Platform of Regulatory Authorities** (EPRA): includes 52 regulators from 46 European countries. It is aimed at the exchange of information, cases and best practices between broadcasting regulators in Europe - See at: <http://www.epra.org>

²⁸ Also taking into account the new EU Gender Action Plan in Development adopted on 26 October 2015 by the Council of the European Union: <http://www.consilium.europa.eu/en/press/press-releases/2015/10/26-fac-conclusions-gender-development/>

dialogue platforms: they all have a role to play to integrate gender equality in Europe's digital society. Industry should ensure the inclusion of a gender perspective in recruitment procedures, encouraging companies to mainstream gender among all their policies, taking into account the needs of personal and family life. Awards could be given to companies meeting a minimum level of requirements in their equality policies.

2. Provide digital and gender training for teachers, children (in particular girls), parents, media (journalists, editors) and other professionals, such as child care workers and school counsellors. Raise awareness of careers in the ICT sector and cyber violence (forms, consequences etc.)

3. Ratify and implement the Council of Europe Convention on Preventing and Combating Violence against Women and Domestic Violence (Istanbul Convention) and the Convention on the protection of children against sexual exploitation and sexual abuse (Lanzarote Convention).

4. Create a platform for the recording and exchange of good practices as regards policies promoting gender equality in the ICT sector and combating cyber violence. Evaluate the impact of these policies.

4. Annex: Examples of initiatives from Member States and stakeholders

Council of Europe

- The Council of Europe has published a [compilation of good practices](#) from member states to promote an education free from gender stereotypes. The compilation also identifies ways to implement the measures contained in the 2007 Committee of Ministers Recommendation on gender mainstreaming in education. The good practices and initiatives include, *inter alia*, campaigns to inform and motivate girls and women to choose non stereotypical careers, and gender equality training for teachers.
- The Council of Europe has also published a [compilation of good practices from member states on "Gender Equality and the Media at National Level"](#), including national and targeted media campaigns, specific legislation, prizes/awards for non-stereotyped portrayal of women, electronic databases with experts that traditionally appear less in media coverage, inventorying of best practices in the field of gender imaging, training courses directed at mass media professionals, relevant data collection and competitions.
- The Council of Europe has published a [Handbook²⁹](#) which includes numerous examples of good practices from member states in the field of gender equality and media.
- In June 2015, the Committee of the Parties to the CoE Convention on the protection

²⁹[http://www.coe.int/t/dghl/standardsetting/equality/03themes/women_media/Handbook%20on%20the%20implementation%20of%20Recommendation%20\(2013\)1%20of%20the%20Committee%20of%20Ministers%20on%20gender%20equality%20and%20media.pdf](http://www.coe.int/t/dghl/standardsetting/equality/03themes/women_media/Handbook%20on%20the%20implementation%20of%20Recommendation%20(2013)1%20of%20the%20Committee%20of%20Ministers%20on%20gender%20equality%20and%20media.pdf)

of children against sexual exploitation and sexual abuse (Lanzarote Convention), adopted an Opinion on “Solicitation of children for sexual purposes through information and communication technologies (Grooming)”.

[link to full text:

[http://www.coe.int/t/dg3/children/News/T-ES\(2015\)04_enFinalOpinionArticle23.pdf](http://www.coe.int/t/dg3/children/News/T-ES(2015)04_enFinalOpinionArticle23.pdf)]

UN Women

- UN Women and the International Telecommunication Union³⁰ (ITU) are exploring an initiative to identify good practices on specific interventions on the operationalization of the WEPs in the ICT sector, encourage sharing and alignment of common efforts and provoke action where there are gaps.
- UN Women is working with Technovation to promote young women technology entrepreneurs.³¹ Under this initiative, partners are working to expand young women’s technological innovation around the globe. Together with UNESCO, UN Women co-hosted **Mobile Learning Week**³² 2015 in Paris, France under the theme of “Leveraging technology to empower women and girls”.

iRights

- <http://irights.uk/>

Cybersmile Foundation

- <https://www.cybersmile.org/>

InQube

- Female Digital Acceleration <http://inqube.eu/>

Computing at School

- <http://www.computingatschool.org.uk/data/uploads/newsletter-spring-2013.pdf>

Girls who Code

- <https://girlswhocode.com/>

Coder DOJO

- <https://coderdojo.com/>

Bad Idea

- <http://www.socialenterprisescotland.org.uk/our-story/directory/538>

CISCO

- CISCO, an American multi-national technology company that designs, manufactures, and sells networking equipment, has set up a men’s advocacy group to promote gender equality within their business³³.

³⁰ Find more info at:

<http://www.itu.int/>

³¹ <http://www.unwomen.org/en/news/stories/2015/4/un-women-and-technovation-announce-strategic-partnership-to-support-young-women-entrepreneurs>

³² <http://www.unwomen.org/en/news/stories/2014/11/mobile-learning-week-2015#sthash.wQAnrADq.dpuf>

³³ https://twitter.com/Cisco_MFI

Austria

- The female-specific ALMP-programme “Women in Crafts and Technology” (Frauen in Handwerk und Technik, FiT) offers certified qualifications in handicraft and technology (apprenticeships, technical vocational schools and colleges, universities of applied science), i.e. “non-traditional” professions, to improve women’s income and career opportunities. The programme also includes preparatory and supporting measures, basic technical know-how, counselling and supervision.
- A new online platform “My Technology” (www.meine-technik.at) was presented on 10 April 2015 facilitating access to projects and funding opportunities in order to create interest of women and girls for technology. The online information tool for girls and women, for committed teachers, companies and parents aims at inspiring more women and girls to opt for careers in technical professions. While numerous outstanding projects and affirmative action programs are already in place to reduce barriers girls and women face in accessing technical and science oriented jobs in Austria, the new platform presents a central and focused tool that refines and provides information on existing measures in a comprehensive and attractive way.
- Some of the federal Lander have organised Girls' and/or Daughters' Days since 2001. The idea is to promote a trend reversal in the career choice of girls and to alter their perspective on the world of work. Girls' Day is intended to offer girls the opportunity to become aware of the full spectrum of options at their disposal and as a consequence to widen the range of their career choices to include areas beyond traditional role models. (www.girlsday-austria.at).

In 2015 the Austrian Ministry for Education’s and Women’s Affaires organised the first Girls’ Day MINI which was a great success and which will take place every year. Small girls between 4-6 years have the opportunity to participate in events and workshops of different institutions. The participants gain an insight into the areas of science, technology, engineering and mathematics. The “Girls’ Day MINI” takes place annually on the fourth Thursday of April.

Luxembourg

Gouvernement Initiatives

- **Digital Lëtzebuerg** : <http://www.gouvernement.lu/3966905/strategie-digital-letzebuerg>
- **BEE SECURE** is a governmental initiative promoting actions to sensitize children and young people to a more thoughtful handling of ICT tools: <https://www.bee-secure.lu/fr>
- Partner with Bee Secure : official Youth web site : www.snj.public.lu
- “Stereotypical Gender Roles in the Media”, **research project** on the use and effects of gender stereotypes in song lyrics, video games and advertising on cognitive, emotional and behavioural levels, Dr. André Melzer, Research Unit INSIDE, **University of Luxembourg** andre.melzer@uni.lu. Joint project with the ministry for Equal opportunities Luxembourg.
- Web site for Gender Equality : Ministère de l’Egalité des chances : www.mega.public.lu
- Joint project of 3 ministries to promote non typical professions among young people : <http://www.girlsdayboysday.lu/>

NGO initiatives

- **Girls in Tech Luxembourg** <http://luxembourg.girlsintech.org> : organize networking events & workshops to raise awareness around technology. Activities open to women & men. Monthly workshops on digital culture, initiation to programming languages, entrepreneurship, field visits (e.g.: datacenter ...). Yearly partnerships with Amazon,

Microsoft & BGL BNP Paribas. GIT also organized in 2014/215 regular coding classes for beginners to learn to create their own app.

- **"Girls code their own future"**: an Erasmus + Youth in Action project organized by Girls in Tech Luxembourg in November 2015. Youth workers from Luxembourg, Italy, Spain, Slovenia, Georgia, Croatia & Kosovo will gather together to discuss ways to involve girls in new technology through non-formal education. The participants will meet again in Madrid in spring 2016 to work on new projects.
- **Rails Girls Luxembourg** events 2014 and 2015 (October 24th): A (free) Girls-only event: practical workshop in a friendly atmosphere to learn to make your first app in one day. 50 participants, 20 volunteers. Age range of the participants: 15 - 50.
- **Eskills for Women** at Nyuko: A pilot program funded by the J.P. Morgan and supported by the ADEM. A full-time program for 15 women (unemployed or young entrepreneurs) to gain critical digital skills for the job market & entrepreneurship (social media, security, web design, programming). The losing event was co-organized with Girls in Tech and was part of the "E-skills for Jobs" campaign.
- **Carrot Geek Girls**: A networking initiative organizing regular meet ups & workshops with speakers in the field of tech.
- **HackerSpace**: free programming class aimed mainly to women (starts November 2015)

Germany

- "Girls'Day" has successfully been held in Germany since 2001: enterprises, universities, and other institutions take on girls for a one-day work experience or work placement offering first-hand insights into possibilities and opportunities of jobs and professions usually perceived as atypical for women. A lot of ICT firms participate. (<http://www.girls-day.de/english>)
- "Go MINT" – the National Pact for Women in STEM Careers in Germany brings together politics, business, science and the media with the aim of increasing young women's interest in scientific and technical degree courses. More than 200 partners are already supporting this aim with a wide range of activities and initiatives to advise young women on their studies and career. (<http://www.komm-mach-mint.de/Komm-mach-MINT/English-Information>)

Spain

- In Spain, under the strategy for gender inclusion in the information society, financial incentives were given: to companies that developed web spaces which made visible the contributions of women to all fields of knowledge; for incorporation of ICT in the associations of women; and for software development that promote non-sexist values (e.g. games).

Plan of Equality Between Men and Women for the Information Society Development:

- Focus Areas: increase women's access to the information society; upgrade and expand the uses of information technology and communication by women; develop content in the information society to promote gender equality; increase the role of women in the areas of ICT; promote awareness of gender equality in the information society; encourage the exchange, dissemination and communication of values of continuous equality in the information society; influence political processes and agents to ensure equality in society information and the integration of ICT in equality policies.
- The Plan includes action around: digital literacy; public access points; ICT training for unemployed women and interrupted careers; continued education; technology training for professional women including in programming, design,

networking, maintenance, etc; fostering entrepreneurship through ICT; support to content development; engaging men in gender equality programmes; citizen participation of women; ICT to support women survivors of violence; code of good practice for content creation that establishes respect for rights on women and promotes equality.

- Critically, the responsibilities of each of the entities to the state are also defined with regard to implementation of this plan.
- Action Plan for Equality of Women and Men in the Information Society 2014-2017: includes 121 measures to be undertaken by 7 Ministries.

<http://www.inmujer.gob.es/areasTematicas/sociedadInfo/docs/PlanAccionSocInformacion.pdf>
(includes text in Spanish and English)

Once the term of the I Action Plan for Equality between Women and Men in the Information Society 2009-2011 was completed, an inter-ministerial working group carried out an evaluation in 2012. The results were the fundamental basis for developing the new Action Plan 2014-2017. Its objectives are to increase the overall participation of women in ICT, raising the number of professional and business women with ICT skills and foster their leadership in the sector, and finally increasing the digital content of interest to women and also the use of digital public services by women as well as increasing the trust and security of women in ICT.

http://www.inmujer.gob.es/areasTematicas/sociedadInfo/publicaciones/docs/EvaluacPlanAccion2009_2011.pdf (text in Spanish)

http://www.inmujer.gob.es/areasTematicas/sociedadInfo/publicaciones/docs/PropuestElaboracion_II_Plan.pdf (text in Spanish)

- Program Innovatia 8.3. aimed at promoting female entrepreneurship in the scientific and technological field

<http://www.womanemprende.org/innovatia>

- Diana Program aimed at introducing creative programming in equality at schools

<http://e-igualdad.net/sites/default/files/videos/creativaenigualdad.mp4>

http://www.inmujer.gob.es/areasTematicas/sociedadInfo/formacion/docs/programacion_creativa.zip

1. the recent reform of the Spanish Penal Code through the organic Law 1/2015, of 30th of March, has incorporated in paragraph 7 of Article 197 as a new offense related to domestic violence and form of crime of disclosure of secrets the fact of spreading cyberbullying, disclose or transfer to third parties images or audio-visual recordings of a person, without authorization, obtained in a home or private place

Slovenia:

- Safer Internet Centre Slovenia promotes and ensures a better internet for kids. It has three components: Awareness Centre Safe.si; Helpline for children and young people Tom Telefon (provides possibility for a confidential and anonymous conversation about problems, hardships, including issues related to the use of the internet and mobile devices for young people on a daily basis; on their webpage topics of safe use of internet and mobile devices are available); and Hotline Spletno oko (spot where on-line hate speech (also on the ground of gender) and child abuse on-line recordings can be reported)

- Rails Girls: Slovenia is joining the initiative Rails Girls. The aim is to give tools and a community for women to understand technology and to build their ideas. In workshops girls learn sketching, prototyping, basic programming and get introduced to the world of technology. Rails Girls was born in Finland, but is nowadays a global, non-profit volunteer community.
- ČIPke is an initiative for researching the conditions for women who are active in the context of science, technology and media art. The goal is to open a space for conversation about women working in these fields and to organise practical educational programme including various workshops on electronics, robotics, open source programming, and the usage of open source programs for graphical design, video editing, sound synthesis ...
- Faculty of Computer and Information Science (University of Ljubljana) regularly organizes workshops for girls (this year as an activity within the Code week Django girls for girls with no computer knowledge will be organized).

European programmes to provide support for women in technology

The [ECWT \(European Center for Women and Technology\)](#), a partnership of more than 130 organizations that support women in technology across Europe

[WiTEC](#), a non-profit European association with 25 years of history of promoting studies and activities related to empowering women in the field of technology, science and engineering

Pan-European awards which recognise extraordinary women in the digital space

[ADAS \(European Digital Women Awards\)](#).

Identifying and celebrating great role models

[Top 100 Women in Tech](#) picked by [Girls in Tech UK](#) in 2012

the [Inspiring 50 list](#) from 2013

Organisations to promote girls and women in tech

[Little Miss Geek](#) – founded by [Lady Geek](#) CEO [Belinda Parmar](#)

[Berlin Geekettes](#) in Germany (which just announced their [global expansion](#))

[Geek Girls](#) in the UK

[TechSisters](#) in Estonia

[Girls in Tech](#) (France, UK, Romania, Italy, Portugal and rapidly expanding across Europe – Luxembourg, Switzerland, Belgium and Scandinavia)

[Ellas 2.0](#) in Spain

[Girlz in tech](#) in France

[Agile Girls](#) in Madrid

[JDuchess](#) in Amsterdam

[Rails Girls](#), which started out in Finland and now operates in several countries like Estonia, Germany, Poland, and even China and Singapore.

Investment in female entrepreneurs

[Angel Academe](#) in the UK, an organization focused on building a female-friendly angel group