

Digital agenda



Relevance of gender in the policy area

The Digital Agenda for Europe was established with a view to stimulating economic growth while at the same time addressing social challenges through information and communications technology. In both cases, gender has particular relevance.

In terms of economic growth, the so-called knowledge economy is a key economic factor underpinning national and EU development. The World Bank suggests that every 10 % increase in access to broadband results in a 1.38 % rise in GDP in developing countries. The 2015 progress report on the EU Digital Agenda confirms this correlation: digitalisation accounted for 30 % of growth in GDP in the EU between 2001 and 2011.

According to the Broadband Commission report, the presence of women online can boost GDP: bringing an additional 600 million women and girls online around the world will result in a GDP increase of up to USD 18 billion.

The report underlines that, for women, having access to the Internet means:

- increased efficiency/productivity in their work and businesses;
- improved access to markets to sell and buy goods;
- improved education;
- wider networks;
- new innovations;
- faster access to relevant information.

In addition, the European Commission report *Women active in the ICT sector* concludes that including more women in the digital economy could create an annual GDP boost in the EU of EUR 9 billion.

In terms of addressing social challenges, access to modern ICT and the Internet enables the exercise of human rights, freedom of expression, cultural rights and the right to assembly. It can also confer a sense of identity. Internet access also encompasses the right to participate and fully engage in policy and decision-making processes, thereby making the Internet a gateway to new ideas and opportunities and a driving force for innovation.

Women's digital inclusion is an empowering process, giving women a voice and enabling them to effectively participate in governance processes and innovate to build and shape the future they want.

Furthermore, ICT also enables people to acquire new skills and acts as a catalyst in the delivery of public services such as education, employment, healthcare and financial services. In this light, ensuring equal access to ICT and the Internet is not only a matter of human rights (e.g. freedom of expression); it would also improve women's health and the health of their families and communities, support women's access to education and other social services, and contribute to women's employment, economic independence and the sustainable development of their livelihoods.

However, the full potential that women can bring to the digital field – in terms of economically sustainable growth, human rights and social achievement – is still blocked by persistent gender inequalities. First of all, there is a gender divide in Internet use among women and men. This may be related to the lower take-up of digital education among women: for example, the use of ICT and the Internet is usually part of scientific education pathways, where women are present in smaller numbers. Women are also underrepresented in ICT employment and are generally employed in low-quality digital jobs, despite research suggesting that gender balance in high-value ICT positions, both in management and operational roles, improves business performance.

Second, ICT has been increasingly associated with cybercrime, which is increasingly becoming an instrument to harass and harm women while at the same time reinforcing existing structures of inequality.

The Digital Agenda is thus an area that remains influenced by a set of persistent gender inequalities. These are as follows:

- gender gaps and differences in access to and use of digital technologies;
- gender gaps and differences in digital-related education: segregation across fields of study among women and men and girls and boys;
- gender and the digital labour market: women's low participation in the digital labour market and in particular in high-quality jobs and top management positions;
- ICT, cybercrime and gender.

Gender inequalities in the policy area - Main issues

Gender gaps and differences in access to and use of digital technologies

According to 2015 Eurostat data, 81 % of EU households have access to the Internet. This ranges from 96 % in the Netherlands and Luxembourg to 57 % in Bulgaria. Even though these data are not disaggregated by sex, studies suggest that access to the Internet is probably less widespread among women-headed households for various reasons, such as lower income, lower digital skills and less interest in Internet technologies.

Eurostat data also show that 54 % of men aged 16–74 years use mobile devices to access the Internet, compared to 48 % of women in the same age group. In the EU-28, Internet use is widespread among both women and men in the 16–74 years age group. However, women tend to use computers and the Internet less than men (62 % of women compared to 68 % of men). Between 2010 and 2014 the percentage of women aged 16–74 frequently using the Internet increased by 13 % (compared with a 9 % increase among men over the same period), considerably narrowing the gender gap. The Broadband Commission’s report finds that gender gaps in Internet use tend to increase when it comes to more complex uses of the Internet. For instance:

- 18 % of women aged 16–74 use the Internet to download software content, compared to 33 % of men in the same age group (2013 data);
- 35 % of women aged 16–74 use the Internet to listen to the radio or watch television programmes online, compared to 41 % of men (2014 data);
- 42 % of women compared to 47 % of men aged 16–74 use Internet banking (2014 data);
- 17 % of women aged 16–74 use the Internet to sell goods compared to 22 % of men in the same age group;
- 13 % of women aged 16–74 use the Internet to buy online compared to 20 % of men in the same age group.

Women generally use other communication technologies, such as social networking sites, email, video calls, instant messaging, texting and phone calls, more often than men. When using social media websites, women and men behave differently – women tend to disclose more than men. There are also gender differences regarding the type of Facebook friends to whom women and men divulge information. Women tend to reveal more to their face-to-face friends and exclusive Facebook friends than men; men have more intimate discussions with their recently added Facebook friends than women.

Gender gaps and differences in digital-related education

According to 2014 Eurostat data, more women (42.3 %) than men (33.6 %) go on to higher education, yet women are present in greater numbers in the humanities than in scientific fields. According to Eurostat data, the number of women graduates in science and technology per 1 000 inhabitants was half that of men in 2012: 11 % of women compared to 22 % of men aged 22–29. The increase in the percentages of third-level graduates in science and technology over the 2010–2012 period is slightly higher for men (+2.9 p.p.) than for women (+1.2 p.p.).

Furthermore, the 2013 study *Women active in the ICT sector* notes that only 9.6 % of women students in third-level education study ICT-related degrees, compared to 30.6 % of men. This difference leads to a considerable waste of women's talent in maths, science and technology (MST) and ICT. This is an important issue to acknowledge in light of the European Commission's estimations that there will not be enough ICT specialists to cover the number of jobs forecast for the digital sector.

There is a complex set of reasons for this situation, including the perception that some subjects and fields of study and work are 'feminine' or 'masculine'. Indeed, the ICT field is stereotypically depicted as the preserve of 'male geeks' – highly knowledgeable enthusiasts with few social skills.

Another reason relates to the use of ICT in schools and the way ICT is taught. A study to benchmark access and attitudes to, and use of, ICT in schools in 31 countries (including the EU-27 at the time of the study) revealed positive (albeit minor) correlations between students' attitudes towards computers and the number of years they had been using ICT. The longer students used computers at school, the more positive was their attitude towards them. The study also concluded that, at grade 11, boys had a slightly more positive attitude towards computers than girls. This might indicate a lower use of computers at school by girls or the influence of gender stereotypes and the way ICT is taught.

Gender gaps in the digital labour market

Women's low participation in the digital labour market is a key challenge.

Not only do girls tend to avoid ICT-related studies, they also choose careers in ICT to an even lesser extent. According to the European Commission study *Women active in the ICT sector*, in 2012 only 2 % of all women in the labour market worked in the ICT sector, compared to 3.6 % of men. Only around 32 % of employees in the ICT sector are women.

This trend remained stable in 2014, with only 2 % of all women in the labour market employed in technical, professional and scientific jobs, compared to 5 % of men. Attracting more women to the digital labour market is only part of the problem: retaining them in the sector is also a challenge. Women's participation in the digital labour market decreases with age: women under 30 with a degree in ICT make up 20 % of the ICT sector, compared to 15.4 % of women aged between 31 and 45 years and 9 % of women over 45 years. This phenomenon is known in the literature as the 'leaky pipeline' and relates to mid-career women – in this case in ICT jobs – abandoning the field due to a lack of career progression to senior leadership roles. As suggested by the European Parliament, the following factors contribute to the leaky pipeline in the career steps: a poor work–life balance, organisational constraints, a male-dominated environment and a lack of women role models. These are similar to the problems identified for women entering the ICT sector.

Segregation in low-paid positions

When they are employed in the ICT sector, women more often hold low-status positions: in 2010, 96 % of chief executive officers (CEOs) in the ICT and telecom sectors were men. While the low presence of women in top management positions is a problem in many service industries, the gap is particularly large in the ICT sector: women represent only 19.2 % of managers in the ICT sector, compared to 42.5 % in the non-ICT service sector.

The unadjusted average gender pay gap, which measures pay inequality as a percentage of men's pay, is –21 % (2010 data) in the ICT sector compared to –12 % in non-ICT sectors. However, when comparing women and men with similar socioeconomic characteristics, it is noticeable that the gender gap is 0 in the ICT sector (2010 data) compared to 5 % in other non-ICT service sectors.

Low levels of women's entrepreneurship in ICT

In 2010, women represented only 19.2 % of all entrepreneurs in the ICT sector, compared with 53.9 % in the non-ICT service sectors. Furthermore, out of all self-employed women in the EU in 2010 (31.1 %), only 2 % worked in the ICT sector (compared with 3.5 % of self-employed men).

Women's insufficient access to and participation in the digital sector may be explained by a range of factors, as set out below.

- Stereotypes about women lacking skills to work in the sector (e.g. lack of leadership skills, weaker aptitudes for science, technology, engineering and mathematics (STEM) studies and careers).

- A traditionally strongly male-dominated environment, with discrimination against women based on stereotypes about women's role in society and the workplace, and the 'old-boy network' culture. Women may be unwilling or lack confidence to engage in struggles and competition in this type of environment.
 - Complexities in reconciling personal and professional life arise due to long working hours and the paucity or inadequacy of policies to balance work and private life. There are few role models in the sector.
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ICT, cybercrime and gender

While ICT has increased opportunities for women to exploit their capabilities and improve their quality of life, it has also exacerbated existing structures of inequality by enabling cybercriminals to access and misuse the technology to abuse, harass and harm women, thereby reinforcing existing structures of inequality.

The UN estimates that 95 % of aggressive behaviour, harassment, abusive language and denigrating images in online spaces are aimed at women and come from male partners or former partners. Perpetrators are also using digital technologies to control and track their victims, such as spyware, wireless technology, logging facilities in instant messaging services and Internet browsers, webcams, and GPS. Cybercrimes are becoming increasingly common, ranging from threats or false accusations about a person in an online space (e.g. social networks and mobile phone calls), stealing identities or data, and spying and monitoring a person's computer and Internet use without permission. This can result in devastating psychological effects on women, particularly young women, who may turn to self-harm or even suicide.

At the same time, digital tools and technologies are playing an important role in supporting and empowering victims of violence (e.g. web campaigns, information and support websites and apps) and in helping combat gender-based violence.

Existing gender-equality policy objectives at EU and international level

The digital sector falls under the responsibility of both the European Commission and EU Member States. While the Member States are in charge of creating favourable conditions for the development of the digital economy, which includes the increased participation of women in the digital economy and society, the remit of the Commission is to create the Digital Single Market. The Digital Single Market is one of 10 political priorities and is defined as a market for the free movement of people, services and capital, where individuals and businesses can seamlessly access and exercise online activities under conditions of fair competition and with a high level of consumer and personal data protection, irrespective of their nationality or place of residence. As one of the pillars of the Digital Single Market strategy consists in maximising the growth potential of the digital economy, the European Commission has been taking action to encourage EU Member States to speed up the development of the digital economy, including initiatives to support Member States in boosting women's participation in this sector.

EU level

European Commission

The European Commission's Digital Agenda for Europe was launched in May 2010 as an integral part of the Europe 2020 strategy to stimulate Europe's economy and help Europe's citizens and businesses get the most out of digital technologies. It includes seven pillars and 101 specific actions. Pillar VI is dedicated to enhancing digital literacy, skills and inclusion. It proposes several actions, including Action 60, which strives to 'increase [the] participation of women in the ICT workforce'. This action aims to address the current low numbers of women in the ICT sector through web-based training resources, game-based e-learning, social networking, studies and research on women in ICT, data collection, and awareness-raising on the relevance of women's participation in the digital economy and society.

The E-Skills for the 21st Century strategy specifies a need for specific actions to increase the participation of women in ICT and STEM fields. These include exchanging information and good practices on Member State initiatives to promote science, maths and ICT as well as related job and career profiles and role models. The strategy also includes plans for teacher training in the area of ICT skills while also addressing gender issues in technical and scientific areas and encouraging women to choose ICT careers by further promoting the 'IT girls shadowing exercise' in cooperation with ICT companies.

Encouraging women's participation in higher technical and scientific education is also an objective of the EU Agenda for the Modernisation of Higher Education Systems, which acknowledges that tackling stereotypes and dismantling the barriers faced by women in reaching the highest levels of postgraduate education and research – especially in certain disciplines and leadership positions – can liberate untapped talent. Furthermore, the agenda foresees that one of the key policies to be addressed by Member States is implementing the recommendations of the Helsinki Group on Women in Science.

Increasing women's participation in the labour market and the digital economy and society are also targets of the EU Agenda for New Skills and Jobs. It recommends four priorities to the Member States: better-functioning labour markets; a higher-skilled workforce; better job quality and working conditions; and stronger policies to promote job creation and demand for labour. The ICT sector has envisaged actions to equip people with the right skills for employment and integrate ICT competences and digital literacy (e-skills) into lifelong learning policies.

The Social Investment Package 2020 (SIP) is the Directorate-General for Employment's main contribution to Europe 2020 in the area of social inclusion. It aims to enhance the use of ICT to promote women's participation in the labour market. For instance, it urges EU Member States to address barriers to women's participation in the labour market by encouraging employers to offer suitable workplaces, including e-accessibility, and reconciliation measures (such as childcare services and smart work through ICT-based solutions). It also calls on Member States to ensure that women enjoy equal access to basic services such as the Internet.

While not specifically addressing the areas covered by the Digital Agenda, the EU Strategy for Equality between Women and Men 2010–2015, which was adopted in 2010, includes key recommended actions. These actions involve further promoting opportunities for women to access training, skills and professional experience in the scientific, mathematical and technology fields, as well as promoting women's adult learning and scientific career choices. The recommended actions also focus on improving media literacy (cf. reducing the 'digital gap', as mentioned in the Europe 2020 Digital Agenda).

The European Commission has also promoted initiatives aimed at bringing together different stakeholders to ensure coordination of actions to increase women's participation in the digital economy and society. The Grand Coalition for Digital Jobs and Growth, led by the European Commission, was launched in 2013 and is an EU-wide multi-stakeholder partnership helping to address a shortfall in the number of European citizens with ICT professional skills and to exploit the employment creation potential of ICT. The partnership has included the European Centre for Women and Technology as a stakeholder, which is in charge of mainstreaming a gender perspective throughout the coalition's actions. At present, three national coalitions have been set up (Greece, France and Lithuania) and a specific pledge on gender and digital jobs has been presented.

European Parliament

In 2013, two Members of the European Parliament (MEPs) presented a Motion for a resolution on women and ICT. This motion emphasised the opportunity and need to encourage young people (particularly women) to take up ICT-related careers and to attract more women into ICT jobs. The motion called on the European Commission and Member States to make efforts to establish education and training programmes and to encourage girls and women to develop careers in the areas of mathematics, computer science and new technologies. To improve women's employability in these fields, Member States were also called upon to promote vocations and professions requiring scientific, technical, engineering and mathematical skills among women from an early age.

International level

United Nations

One of the main outcomes of the United Nations Conference on Sustainable Development (Rio+20), held in Rio de Janeiro in June 2012, was the agreement by Member States to launch a process to develop a set of sustainable development goals (SDGs). Amongst the goals developed, the following refer to women's participation in the digital economy and society:

- by 2030 ensure that all men and women, particularly the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership, and control over land and other forms of property, inheritance, natural resources, appropriate new technology, and financial services including microfinance
- by 2030 ensure equal access for all women and men to affordable quality technical,

vocational and third-level education, including university

- enhance the use of enabling technologies, in particular ICT, to promote women's empowerment.

The UN aim to support gender equality in the ICT field is delivered through the gender equality policy in the digital sector of the International Telecommunication Union (ITU), the United Nations specialised agency for information and communication technologies. Its main gender equality policy objectives consist of allowing women and men to benefit equally from ICT to help reduce inequalities and to contribute equally to the work of the organisation. Since 1998, ITU has launched several resolutions to promote gender equality and gender mainstreaming, as follows:

Resolution 7 (Valletta, 1998) – Gender and telecommunication policy in developing countries

This Resolution set out to ensure that the “benefits of telecommunications and the emerging information society are made available to all women and men in developing countries on a fair and equitable basis”. To facilitate these priorities, it recommended to establish a task force on gender issues (TFGI) as well as a commitment from ITU-Development to develop gender-sensitive policies and programmes, to collect and analyse sex-disaggregated data and to develop gender-sensitive indicators.

Resolution 70 (Minneapolis, 1998) - Inclusion of gender perspective in the work of the ITU

This Resolution recognised that society benefits from the “equal participation of women and men in policy and decision-making and equal access to communications services for both women and men”. In addition, it supported the need to ensure a gender perspective in policies and programmes.

Resolution 55 (Doha, 2006). Promoting gender equality towards all-inclusive information societies

This Resolution endorsed an action plan that included the incorporation of a gender dimension when designing, implementing, monitoring and evaluating projects and programmes in developing countries and countries with economies in transition that are either specifically targeted to women or gender-sensitive. It also supports the organisation of capacity-training for staff; the mobilisation of resources for gender-sensitive projects and projects specifically targeted to women; and the development of partnerships with other United Nations agencies to promote the use of ICT in projects aimed at women.

Resolution 70 (Rev. Guadalajara, 2010) - Gender mainstreaming in ITU and promotion of gender

equality and the empowerment of women through information and communication technologies

This Resolution endorsed the previous Resolution dating from 2006, on promoting gender equality towards all-inclusive information societies. It does this by continuing the work performed in promoting gender equality in ICT through the recommendation of measures at the international, regional and national level on policies and programmes that improve socio-economic conditions for women, particularly in developing countries.

Resolution 55 (Dubai, 2012) - Mainstreaming a gender perspective in ITU Telecommunication (ITU-T) standardisation sector activities

This Resolution states that ITU-T should continue to encourage the inclusion of a gender perspective, including the use of gender-neutral language, in the work of all ITU-T activities and groups, including TSAG and the ITU-T study groups.

More specifically, to achieve this goal the EC, in partnership with the European Parliament and the International Telecommunication Union, organised an event in support of the worldwide initiative Girls in ICT Day in 2013. This event aimed to empower and encourage girls and young women to consider careers in the growing ICT sector. Based on the information available on the EC's Digital Agenda website, a study was undertaken to devise a policy toolkit based on the analysis of existing data and replicable best practices including the use of social media for advancing gender equality in ICT. The study was concluded and its report launched in 2013: Women active in the ICT sector.

The Commission has supported the initiation of the first Digital Woman of the Year Award. The 2014 edition featured two awards: European Digital Girl of the Year and European Digital Woman of the Year.

Policy cycle in digital agenda

How and when? The Digital Agenda and the integration of the gender dimension into the policy cycle

The gender dimension can be integrated in all phases of the policy cycle. For a detailed description of how gender can be mainstreamed in each phase of the policy cycle [click here](#).

Below, you can find useful resources and practical examples for mainstreaming gender into the Digital Agenda. They are organised according to the most relevant phase of the policy cycle they may serve.

Practical examples of gender mainstreaming in the Digital Agenda

EU

The gender impact assessment of the specific programmes of Framework Programme 5 – the user-friendly information society consists of an ex post evaluation of the 5th Framework Programme, which served to help shape the 6th Framework Programme based on its findings and recommendations.

Lessons on gender in ICT applications: Case studies of infoDev projects, presents the results of a review that strived to:

- analyse the effect of project activities and outcomes on women's situation
- identify gender issues that affected the project design, implementation and results
- identify lessons learned and make recommendations to ensure that infoDev projects equally benefit women and men.

The Information for Development Programme (infoDev) is a global multi-donor programme managed by the World Bank Group, which supports growth-oriented entrepreneurs through business incubators and innovation hubs.

Norway

The goal of Simula's Gender Action Plan 2010 – 2015 is to increase the percentage of women amongst their ICT employees. The target is at least 25% females within the categories of scientific and support staff by December 2015. As Simula is a public entity, this commitment responds to the objectives of the Norwegian Government of increasing the participation of women in STEM at all levels.

Timeline

The key milestones of the Digital Agenda policy are presented below.

Green Paper on the convergence of the telecommunications, media and information technology sectors and the implications for regulation. Towards an approach for the information society COM(97) 623 final

Read the Green Paper [here](#) and [here](#).

1997 - 1997

Communication of 8 December 1999 on a Commission initiative for the special European Council of Lisbon, 23 and 24 March 2000. E-Europe – an information society for all

[COM(1999) 687 final – not published in the Official Journal]. Read the document [here](#).

1999 - 1999

Lisbon Strategy objective of increasing gender balance amongst people learning MST

Read the strategy [here](#) and [here](#).

2000 - 2000

Communication of 28 May 2002 from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions. The e-Europe 2005 action plan: an information society for everyone

[COM(2002) 263 final – not published in the Official Journal]. Read the document [here](#).

2002 - 2002

Regulation 808/2004 of the European Parliament and of the Council concerning Community statistics on the information society

Read the regulation [here](#).

2004 - 2004

Communication from the Commission to the European Parliament, the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions

i2010 – a European Information Society for growth and employment COM(2005) 229 final. Read the document [here](#).

2005 - 2005

Communication from the Commission to the European Parliament, the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, Communication to the Spring European Council

Working together for growth and jobs – a new start for the Lisbon Strategy, COM(2005) 24. Read the document [here](#).

2005 - 2005

i2020 benchmarking framework, Riga Ministerial Declaration

Read the declaration [here](#).

2006 - 2006

Communication from the Commission of 31 May 2006: A strategy for a secure information society – dialogue, partnership and empowerment

[COM(2006) 251 final – not published in the Official Journal]. Read the document [here](#).

2006 - 2006

Communication from the Commission to the European Parliament, the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions of 14 June 2007

Ageing well in the information society – an i2010 initiative – action plan on information and communication technologies and ageing [COM(2007) 332 final – not published in the Official Journal]. Read the document [here](#).

2007 - 2007

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. ICT infrastructures for e-science

[COM(2009) 108 final – not published in the Official Journal]. Read the document [here](#).

2009 - 2009

Commission White Paper of 3 July 2009. Modernising ICT standardisation in the EU: the way forward COM(2009) 324 final

Read the document [here](#).

2009 - 2009

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A Digital Agenda for Europe COM(2010)245 final

Read the document [here](#).

2010 - 2010

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. The Digital Agenda for Europe –Driving European growth digitally COM(2012) 784 final

Read the document [here](#).

2012 - 2012

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the

Committee of the Regions. A digital single market strategy for Europe COM(2015) 192 final

Read the document [here](#).

2015 - 2015

Current policy priorities at EU level

The overarching policy priorities of EU policy for Digital Agenda are encompassed in the Europe 2020 Flagship Initiative Digital Agenda for Europe. The main aims of the Digital policy in Europe are:

- increasing access to high-speed Internet and digital content
- ensuring cyber-security
- increasing the development and use of electronic government and new health services
- bridging the digital divide, ensuring inclusion of all European citizens.

In order to reach these aims, in 2012, the Commission revised the Digital Agenda adopted in 2010. The [new agenda](#) includes seven pillars (main objectives) and a subset of 132 actions grouped around seven priority areas:

- Create a new and stable broadband regulatory environment.
- Create new public digital service infrastructures through Connecting Europe Facility.
- Launch Grand Coalition on Digital Skills and Jobs.
- Propose an EU cyber-security strategy and Directive.
- Update the EU's Copyright Framework.
- Accelerate cloud computing through public sector buying power.
- Launch a new electronics industrial strategy.

Full implementation of this updated Digital Agenda is expected to increase European GDP by 5%, or €1,500 per person, over the next eight years by increasing investment in ICT, improving e-skill levels in the labour force, enabling public sector innovation and reforming the framework conditions for the Internet economy.

In terms of jobs, up to one million digital jobs risk going unfilled by 2015 without pan-European action, while 1.2 million jobs could be created through infrastructure construction. This is predicted to rise to 3.8 million new jobs throughout the economy in the long term.

The Digital Agenda policy area intersects with other topics in other policy sectors, notably research and innovation, environment, transport and mobility, and e-health and ageing.

Want to know more?