



## The Gender Gap in the Digital Era: Reaching Algorithmic Fairness and Technological Inclusivity in Network Society

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### Abstract

*Despite women's early contributions to computer science, the field became seen as male-dominated, especially after 1980s marketing of computers mainly to men, reducing female participation. Yet, figures like Ada Lovelace and the female ENIAC programmers, with backgrounds in math and physics, significantly influenced the digital world. This article explores the ongoing gap in digital skills and literacy between genders, focusing on how biases in technology affect women. It highlights the achievements of notable women in tech, from Angela Robles, who created the first e-book reader in 1949, to Hedy Lamarr's work on GPS and Wi-Fi, and Margaret Hamilton's role in the Apollo 11 mission. The article shows the importance of including women in technology, supporting the idea that their participation is key to fair and dynamic digital societies, as suggested by Manuel Castells' network society. The article reviews the McKinsey report on job changes due to automation, showing a likely rise in technology-related jobs, and discusses the World Economic Forum's (WEF) forecast of increased tech spending from 2015 to 2030, noting many new jobs in IT services. This study highlights the shift in future job skills towards creativity, critical thinking, and negotiation, along with technical skills, and notes the WEF's prediction of 6.1 million new jobs in areas like data science, AI, and cloud computing. In conclusion, the article advocates for concerted efforts to bridge the gender gap in digital skills, mitigate biases in algorithms, and support inclusivity in the digital era. It underscores the imperative of empowering women in technology to harness their talents and perspectives for driving innovation and equitable socio-economic development.*

**Keywords:** Algorithmic Bias, Gender Gap, Network Society, Digital Skills, Digital Divide

## 1. Introduction

The widespread use of digital technologies is significantly changing how people learn, understand their world, interact with others, and use these technologies effectively. People will increasingly need to filter through large amounts of digital content, choose and understand the important information, and keep learning new knowledge as digital advancements continue (Gürkan et al., 2023). To take advantage of the opportunities and address the challenges that digital technologies bring, individuals must develop a range of skills. These skills are crucial for understanding and making meaningful use of technology, as well as for recognizing its impact on different areas of life (Colbert and George, 2016; Draft, 2017).

Technology must serve the entire populace, reflecting the diverse requirements and needs of all individuals. Women, constituting half of the global population, are imperative to the realization of the Sustainable Development Goals (SDGs) objectives. Specifically, Goal 5 (United Nations: 2023) aims to achieve gender equality and empower all women and girls, underscoring the necessity of their integral involvement in the pursuit of these aims. Despite the foundational contributions of women academics in the inception of computer science, the field has long been perceived as a male-dominated domain. This perception was exacerbated in the 1980s with the marketing of home computers predominantly to men, leading to a divergence of women from computer sciences and a surge of male participation. However, historical figures like Ada Lovelace, the first programmer, and the all-female team behind ENIAC's programming challenge this narrative. These pioneers, predominantly from backgrounds such as mathematics and physics, played pivotal roles in shaping the digital landscape.

Addressing the digital divide based on gender is imperative for a multitude of reasons (Antonio and Tuffley, 2014; Fang et al., 2019). In the contemporary era, digital competencies and tools have become increasingly vital for accessing a range of services, including healthcare, education, social security, and financial services. Furthermore, digital technologies serve as a conduit for the creation of employment opportunities, particularly on a continent experiencing a burgeoning workforce.

Studies have shown (OECD, 2018) that using digital technologies more at work means there is a higher need for basic skills, digital literacy, critical thinking, as well as social and emotional abilities. Therefore, to address the digital gender gap and support efforts to close it, it is important to know whether girls and women have the skills needed to succeed in the digital economy. This knowledge is crucial for helping make digital communities more inclusive.

In this sense this article explores the enduring gender disparity in digital competencies and literacy, highlighting the impact of gender-specific algorithms and biases. It scrutinizes the contributions of distinguished women in the realm of technology, tracing from Angela Robles' pioneering development of the first e-book reader in 1949 to Hedy Lamarr's seminal contributions to GPS and Wi-Fi technology. Moreover, it accentuates Margaret Hamilton's pivotal role in programming the Apollo 11 mission, underscoring the critical importance of women in driving technological progress. Through this analysis, the article aligns with Manuel Castells' concept of the network society, illustrating how the integration and recognition of women in technological domains are essential for the equitable development and dynamism of networked, knowledge-based societies.

## Network Society and Digital Skills

The political, economic, technological, and social changes of the second half of the twentieth century have brought human history into a process of development in which information is at the forefront and this accumulation of knowledge has evolved into a more accessible structure.

As a result of this development process, innovations such as the development of mass media, the Internet, the irreversible adaptation of mobile phones to human life and social networking applications of all shapes and sizes have created a global communication infrastructure. This global communication infrastructure has brought about social, productive, political, and cultural transformations. The new global communication infrastructure has completely changed social functioning by affecting the structures for coordinating social activities and organising social interactions, especially the activity of communication. Although this change has fundamentally increased the capacity of many social functions, it has not prevented the emergence of new problems at various points. It has also created new problems that were not previously part of social functioning, such as who has access to digital networks and how, who is entitled to use the new mass media and their derivatives, and the use and manipulation of information.

The structure of the network society operates on a common denominator formed by the network of evolving mass communication and social sharing tools. The network in question is the cornerstone of social movements, shaping perceptions, causing organisational and cultural change, and establishing the relationship between economic, political, and cultural ties. Manuel Castells explains the network society as follows:

*A network society is a society whose social structure is made around networks activated by microelectronics-based, digitally processed information and communication technologies. I understand social structures to be the organizational arrangements of humans in relationships of production, consumption, reproduction, experience, and power expressed in meaningful communication coded by culture. Digital networks are global, as they have the capacity to reconfigure themselves, as directed by their programmers, transcending territorial and institutional boundaries through telecommunicated computer networks. So, a social structure whose infrastructure is based on digital networks has the potential capacity to be global. However, network technology and networking organization are only means to enact the trends inscribed in the social structure. (...) Thus, the network society is a global society. However, this does not mean that people everywhere are included in these networks. For the time being, most are not. But everybody is affected by the processes that take place in the global networks that constitute the social structure. The core activities that shape and control human life in every corner of the planet are organized in global networks: financial markets; transnational production, management, and the distribution of goods and services; highly skilled labor; science and technology, including higher education; the mass media; the Internet networks of interactive, multipurpose communication; culture; art; entertainment; sports; international institutions managing the global economy and intergovernmental relations; religion; the criminal economy; and the transnational NGOs and social movements that assert the rights and values of a new, global civil society (Castells 2009, 59-60).*

Also, Jan A.G. M. Van Dijk stated that:

*The network society concept emphasizes the form and organization of information processing and exchange. An infrastructure of social and media networks takes care of this. So the network society can be defined as a social formation with an infrastructure of social and media networks enabling its prime mode of organization at all levels (individual, group/organizational and societal). Increasingly, these networks link all units or parts of this formation (individuals, groups and organizations). In western societies, the individual linked by networks is becoming the basic unit of the network society. In eastern societies, this might still be the group (family, community, work team) linked by networks (Van Dijk, 2006, 20).*

From all these perspectives, it has become inevitable to define the twenty-first century in an interconnected and interdependent world. Van Dijk explains this situation in the following way:

*At the individual level the use of networks has come to dominate our lives. Counting the time spent on broadcast networks, telephony and the Internet we can add between five and seven hours of leisure time a day on average in a developed society. Not to mention the hours spent with them at work and at school. Observing social networking by individuals we could add several hours spent in all kinds of meetings. Individualization and smaller households packed with technology to make us more independent from others, have not made us less social human beings. Almost every organization in the developed world has become completely dependent on networks of telephony and computers. When they break down, the organization simply stops working. Long before they became so dependent on these media networks organizations had already split in separate organizations, departments and teams that still worked together in an extensive division of labour. These days organizations do not finish products or services all by themselves. This is done in cooperation and competition inside and between economic networks (Van Dijk, 2006, 1-2).*

The new transforming social structure is information intensive. The concept of the network society emphasises the form and organisation of information processing and exchange. Individuals therefore need to acquire new skills and change their basic organisational patterns to benefit from social interaction. The use of information and knowledge links all parts and units of social functioning, forming an “information society” (Castells 2009, Van Dijk 2006). In an information society the information intensity of all activities becomes so high that this leads to:

- an organization of society based on science, rationality and reflexivity;
- an economy with all values and sectors, even the agrarian and industrial sectors, increasingly characterized by information production;
- a labour market with a majority of functions largely or completely based on tasks of information processing requiring knowledge and higher education (hence, the alternative term knowledge society);
- a culture dominated by media and information products with their signs, symbols, and meanings (Van Dijk 2006, 22).

The process of information work is the defining structure of the network society. This process is determined by the qualities of the production process. These qualities are value added, innovation, work performance, the organisation of production activities, the structure of information technology and the management of production processes (Castells, 2013, 327-328). Value added is the element generated by the innovation of products and processes. Innovation depends on the potential of research and its visibility. In the network society, new knowledge must not only be discovered, but it must also be applied organisationally/institutionally in a specific context. This application structure ensures the efficiency of functioning, as it provides feedback on the execution of tasks. Therefore, information technology provides flexibility and adaptability in its ability to develop innovations and correct errors in the execution of work.

The intensity of information processing in the social base of the twenty-first century is the basis for defining the network society as a new type of society. The common denominator of the new social activities is that the information density is high, and the information processing actions have a semi-autonomous character. Within this structure, information is an independent source of productivity and power. Therefore, the concept of network society emphasises the way information is processed and the organisational structure. The network society links individuals, groups, organisations, and social organisations with the structure of social and media networks. The individual thus becomes the basic unit of the network society within the social structure. For this reason, individuals need to acquire various digital skills to adapt to the network society.

While the Network Society obliges individuals to acquire new digital skills, it also defines concepts like Algorithmic Fairness, artificial intelligence, and gender segregation in automated decision-making systems as important societal problems to solve. Ensuring gender equality in the training and development of algorithmic systems is an important step towards achieving fair and inclusive outcomes. Strategies such as gender-sensitive data collection, increased transparency of algorithms and diversity-focused training programmes should be adopted to ensure algorithmic fairness. Therefore, addressing the gender gap in digital skills is crucial for overcoming barriers in technology and ensuring that advancements like artificial intelligence are developed with fairness and inclusivity in mind.

### **Understanding the Gender Gap in Digital Skills Within the Network Society**

This part of the study serves as a crucial framework for recognizing the significant yet often overlooked contributions of women in the realm of technology and innovation. This exploration begins with Angela Robles, whose foresight and ingenuity led to the creation of the first e-book reader in 1949, a pioneering step that foreshadowed the digital revolution in reading and education. Similarly, Hedy Lamarr's seminal work laid the foundations for modern GPS and Wi-Fi technology, illustrating how female creativity has been integral to the connectivity that defines our contemporary world. Moreover, Margaret Hamilton's pivotal role in programming the Apollo 11 mission exemplifies women's capacity for critical thinking and problem-solving in high-stakes environments, showcasing the indispensable role women have played in critical moments of technological advancement. These examples not only highlight the remarkable achievements of women in technology but also point to a broader narrative of female contributions being critical to technological progress.

However, despite these significant contributions, the persistent gender gap in digital skills suggests a dissonance between the capabilities of women in technology and their representation within the field. This gap not only undermines the potential for innovation but also reflects broader societal biases that limit access to opportunities and recognition for women in technology. Addressing this gap is not merely a matter of equity but also a necessity for harnessing a diverse range of perspectives and skills essential for driving technological progress forward. In essence, by understanding and bridging the gender gap in digital skills, the full spectrum of human talent can be acknowledged. Doing so not only pays homage to the trailblazers like Robles, Lamarr, and Hamilton but also paves the way for a more inclusive and innovative future in technology, where gender is no longer a barrier to contribution or success.

In this respect The McKinsey report (2017:8) on workforce transitions in the age of automation, indicates a potential expansion of jobs related to the development and implementation of new technologies.

*Automation technologies including artificial intelligence and robotics will generate significant benefits for users, businesses, and economies, lifting productivity and economic growth. The extent to which these technologies displace workers will depend on the pace of their development and adoption, economic growth, and growth in demand for work.*

Additionally, the World Economic Forum projects a significant increase in technology-related expenditures from 2015 to 2030, highlighting that a substantial portion of new jobs will emerge in information technology services: "the transition to the new world of work will be both human- and tech-centric" (WEF, 2020: 18). Moreover, it is important to underscore the evolving nature of future job requirements, emphasizing the growing demand for creativity, critical thinking, persuasion, and negotiation skills alongside technical expertise.

## **Cansu Arısoy-Gedik and Ahmet İlkay Ceyhan: The Gender Gap in the Digital Era: Reaching Algorithmic Fairness and Technological Inclusivity in Network Society**

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Thus, this aligns with the WEF's anticipation of 6.1 million job opportunities in emerging fields, including roles in data science, artificial intelligence (AI), engineering, cloud computing, and product development.

As societies evolve to become more intricately reliant on digital technologies, the exclusion of women, along with their wider communities and national economies, from full participation in digital economies poses a significant risk. This means that if everyone would not be fairly included in digital activities, good things that it can bring might be missed. If the gap between men and women in digital skills would not be fixed, technology could make gender inequality worse instead of better. So, technology can be both good and bad for gender equality—it is like a two-sided sword.

Also, the gender gap in the digital sector has significant implications for the economy. Occupational segregation, characterised by the over-representation of women in informal jobs, low-productivity sectors, and occupations at risk of automation, as well as under-representation in leadership positions and technology-related fields, affects women's autonomy and economic opportunities (UN - the Division for Gender Affairs of the Economic Commission for Latin America and the Caribbean (ECLAC), 2023).

According to the OECD report (2018: 13), hurdles such as “access, affordability, lack of education, inherent biases, and sociocultural norms” significantly prevent the ability of women and girls to benefit from the opportunities offered by digital transformation. Additionally, the relatively lower educational enrolment of girls in disciplines critical for excelling in a digital world—such as “science, technology, engineering, and mathematics”, along with “information and communication Technologies”—combined with the more limited use of digital tools by women and girls, could lead to widening gaps and greater inequality.

Digital technologies are crucial to achieving the goals set out in the 2030 Agenda (United Nations: 2023), which includes the full development and active participation of women in today's world. Specifically, one of the objectives of the fifth Sustainable Development Goal urges the international community to increase the use of supportive technologies, especially information and communication technologies, to advance women's empowerment.

The Network Society refers to a social structure in which interactions are increasingly mediated by digital networks, affecting various aspects of life, including education, work, and social relationships. The Network Society emphasises the importance of adapting to this networked environment, which requires the acquisition and use of digital skills. This need implies that individuals, especially women, need to develop digital literacy to succeed in a networked world and to participate fully in social and professional life. Therefore, in the context of the digital gender gap, where women are under-represented in technology-related fields, it is crucial that this gap is understood and addressed in the context of the networked society.

Research shows that women's leadership in defining and mainstreaming the Networked Society is critical to closing the gender digital divide (Moreno-Romero, Carrasco-Gallego, 2012). Although digital literacy levels are similar across genders in Europe, women are under-represented in ICT professional jobs and related fields (Levorato, 2021). This inequality underscores the need to empower women in technology and ensure their active participation in shaping the digital environment.

The main causes of the gender gap in the digital age include factors such as access, education, labour force participation and attitudes towards technology. The digital gender gap consists of three elements (Kuroda, 2019: 2): access and use of digital technologies and the internet; development of the skills needed to use digital technologies and to participate in their design and production; advancement of women to visible leadership and decision-making roles in the digital sector.

Women's difficulties in accessing and using digital technologies deepen gender inequality and limit women's participation in technological developments. Hence, the gender gap in the digital age refers to the inequalities women face in accessing, using, and benefiting from digital technologies, platforms, and services. This inequality can be addressed by involving women in the design of technology beyond their traditional roles in legacy systems and encouraging their leadership in the networked society. This gap can be prevented by structures such as the digital skills gap and the elimination of gender bias in many areas such as education, employment and social services, welfare, etc. (Wajcman, Young, Fitzmaurice, 2020). This approach will ensure that women have valuable communication and media skills that can be used to overcome long-standing gender inequalities in digital societies such as algorithmic biases. In addressing algorithmic biases, it is crucial to recognize that women's difficulties in accessing and using digital technologies not only deepen gender inequality but also limit their participation in technological developments. This emphasizes the need for targeted interventions to ensure fair and inclusive digital environments.

### **Addressing Algorithmic Biases**

As more reliance is placed on digital technologies, the focus on addressing and reducing algorithmic biases becomes crucial, especially due to the intensification of gender inequality by digital gaps. This effort is closely linked to the issue of the digital gender gap and its societal impacts. By aiming to fix biases in algorithms, the goal is to prevent the widening of gender differences and ensure that digital technology benefits everyone equally. Tackling these biases is a key step in making sure digital tools are fair and offer equal chances and benefits to people of all genders, turning the challenges of technology into opportunities for positive change.

In machine learning and AI, "bias" means that algorithms can pick up and show human prejudices. This problem happens when an algorithm keeps producing unfair or skewed results because of mistaken assumptions built into how it was made. In times when there is a big push for diversity and fair representation, these biases are especially troubling because they can strengthen and spread the biases already present in society.

To accurately capture the essence of algorithmic bias, the context of facial recognition technology algorithm shows higher accuracy for individuals of Caucasian descent compared to those of African descent due to the overrepresentation of Caucasian facial data in training datasets—illustrates how biases in the data used to train algorithms can lead to biased outcomes. This issue is not just a technical problem but has profound societal implications, as it can lead to discriminatory practices that worsen inequality, limit equal opportunities, and perpetuate systemic oppression. The particularly dangerous aspect of these biases is that they are often unintentionally built into algorithms, making them difficult to detect and address until they are observed in use. This underscores the need for vigilance and proactive measures in the development and deployment of AI to prevent and mitigate such biases. This discussion highlights the critical need for thorough examination and corrective actions in creating and implementing machine learning algorithms to reduce their tendency towards bias, thus guaranteeing fair and just technological progress.

A pertinent example of this necessity is seen in the case of Amazon's hiring algorithm. Initially designed to streamline the recruitment process, this algorithm inadvertently favoured male candidates over female candidates due to biases in the training data, which reflected the technology industry's male-dominated employment history. This incident exemplifies how even well-intentioned technological solutions can perpetuate existing inequalities if not scrutinized for bias. Consequently, it reinforces the argument for the importance of vigilance and proactive measures in the development and application of machine learning algorithms to promote fairness and inclusivity in technological advancements.

Despite the high expectations for AI to make unbiased decisions and improve fairness, AI systems can still reflect human biases. This reality falls short of the ideal scenario where AI would help eliminate prejudice, indicating a significant challenge that needs to be addressed. AI has the possibility to help people make more fair and unbiased decisions, achieving this depends on actively working to make sure these AI systems are fair. Often, the biases in AI come from the data used to train it, not the way the AI itself is designed or works.

*As a result of analysing resumes for a decade, Amazon's computer models can spot similarities in candidates' applications. Most were from males, reflecting the industry's male dominance. Amazon's algorithm learned that male applicants were preferred. So, it penalized resumes that indicated that the applicant was female. It also demoted applications of those who attended one of two all-female institutions (Larkin, 2022).*

Algorithmic fairness is crucial to prevent gender discrimination in artificial intelligence and automated decision-making systems. Ensuring gender equality in the training and development of algorithmic systems is an important step towards achieving fair and inclusive outcomes. Strategies such as gender-sensitive data collection, increased transparency of algorithms and diversity-focused training programmes should be adopted to ensure algorithmic justice. Increasing technological inclusion is essential to support women's access to and use of digital technologies. Policies and practices such as education, promoting labour force participation, supporting women's entrepreneurship, and increasing diversity in the technology sector are important steps to strengthen technological inclusion.

To create a more balanced and diverse digital ecosystem, it is crucial to integrate the concept of the Network Society into discussions on gender inequality in digital skills. This kind of an approach promotes women's empowerment, inclusiveness, and equal participation in technology-related fields. Additionally, ensuring algorithmic fairness is essential, as it addresses the biases in digital technologies that can further impact gender equality in the digital world.

### **The Role of the Network Society for Eliminating Gender Gap and Promoting Inclusivity**

The theme of last year's International Women's Day focused on how innovation and technology can help achieve gender equality. It suggests that the digital age offers a unique chance to get rid of all kinds of unfairness and differences, aiming to build a better future for everyone: "The OSCE as joined efforts to explore the impact of digitalization on widening gender inequalities, how digital technology can be used to support women facing adversity, and how it can open new doors for the global empowerment of women and girls" (Schmid, 2023). In addition to this, Huawei, like many tech companies globally, has initiated various programs to support diversity, encompassing nationality, gender, age, race, and religion. The company is committed to ensuring equal treatment for men and women in the workplace and adheres to all relevant international and local regulations: "For Huawei, closing the gender gap that exists in the digital sector is now a "top priority". Huawei's aim is to inspire a new generation of women to work in technology and encourage the value of diversity, inclusion, and equity in technology" (Ruh, 2020).



## Cansu Arisoy-Gedik and Ahmet İlkay Ceyhan: The Gender Gap in the Digital Era: Reaching Algorithmic Fairness and Technological Inclusivity in Network Society

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In line with the principles of the Network Society, Huawei places a strong emphasis on recruiting women for managerial roles and supporting their career advancement, thereby constructing a more inclusive and diverse digital environment.

Applying the concept of the “network society” to promote gender equality in the digital age requires recognition of the importance of digital literacy, particularly for women’s full participation in digital. The digital gender gap is persistent and tends to deepen over time, with women’s access and use of ICTs and digital technologies lagging men’s. This divide can hinder women’s participation in digital trade, as they may lack access to e-services and online platforms, which are increasingly important in both the public and private sectors. The advent of emerging technologies, such as automation and artificial intelligence, also presents opportunities and challenges for women, requiring mitigating measures to ensure no widening of the gender gap, particularly in developing countries (Sicat, Xu, Mehetaj, Ferrantino, Chemutai, 2020).

The underrepresentation of women in technical fields contributes to a feedback loop. This reinforces gender bias in AI and machine learning systems, affecting women’s opportunities in the changing world of work (Wajcman, Young, Fitzmaurice, 2020). The introduction of automated decision making in social and welfare services can bring both benefits and risks for gender equality, with the human rights of the most vulnerable women in the digital welfare state particularly at risk. Policies and regulations are needed to ensure the implementation of positive measures to protect rights and strengthen gender equality in the digital age, to address the structural challenges of gender inequality, and to ensure that the benefits of digital transformation are shared equitably. The development of relevant digital skills in all contexts and at all stages of women’s life-cycles is crucial to addressing the low labour market participation of women in jobs related to these areas, as the digital divide has the potential to exacerbate existing patterns of gender gap. Developments in the digital sector have significant economic implications, affecting women’s autonomy, economic opportunities, and participation in the digital economy. Comprehensive policies and regulations are needed to address the structural challenges of gender inequality and ensure the equitable realisation of the benefits of the digital transformation (UN - The Division for Gender Affairs of the Economic Commission for Latin America and the Caribbean (ECLAC, 2023).

To promote gender equality in the digital age through the Network Society approach, it is crucial to raise awareness, combat gender stereotypes and provide better, safer, and more affordable access to digital tools. Policies should address long-term structural biases and promote cooperation between stakeholders to remove barriers to girls’ and women’s full participation in the digital world.

There are several strategies to increase women’s participation in the Networked Community and to promote gender equality in the digital age. These strategies can be listed as follows:

**Lifelong Learning Programmes:** Implementing women-specific lifelong learning initiatives to improve women’s digital skills and ensure their active participation in the network community (Moreno-Romero, Carrasco-Gallego, 2012).

**Participation in Technology Design:** Encouraging women to participate in technology design beyond traditional roles, enabling them to shape digital solutions and innovations (Davaki, 2018).

**Policy Interventions:** Implementing policies that address long-term structural biases, promote collaboration among stakeholders and remove barriers to girls’ and women’s full participation in the digital world (OECD, 2018).

## Cansu Arısoy-Gedik and Ahmet İlkay Ceyhan: The Gender Gap in the Digital Era: Reaching Algorithmic Fairness and Technological Inclusivity in Network Society

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**Increase access to digital tools:** Provide better, safer, and more affordable access to digital tools to facilitate women's participation in the digital economy (Dannana, 2023).

**Digital literacy training:** Provide digital literacy training programmes specifically designed for women to close the digital gender gap and equip women with the necessary skills.

**Women-specific content:** Producing content tailored to women's needs and enabling them to access relevant information and resources through digital platforms.

**Government support:** Governments can play an important role by creating policies and regulations that promote digital access and participation, provide funding, offer training programmes, and ensure women's affordable access to technology.

By implementing these strategies, it is possible to empower women, increase their participation in the networked society, close the gender digital divide and promote gender equality in the digital age.

### Conclusion

The changes in how we use digital technology because of the COVID-19 pandemic have created a big chance to spread education and training more widely, across different countries and time zones, through online programs. This new way of learning is designed to meet the specific needs of women, such as being flexible, easy to access, and more affordable. Also, the ability to work from home provides women with more job options and helps them balance their work and personal life better.

For broader inclusion in the digital world, it is essential to collaborate with educational institutions, organizations capable of providing the necessary equipment, and IT companies that offer Wi-Fi access. Moreover, there is a highlighted necessity for concerted efforts in partnership with national governments and their agencies to ensure that initiatives for digital inclusion are sustained and enduring, rather than being mere temporary fixes. Also, the pivotal role of technological advancements in facilitating support and empowerment for women should be underscored. To elaborate on the strategic employment of digital instruments in the formulation and implementation of legislative measures aimed at safeguarding women from the perils of online violence is also important. Furthermore, there is a need to explore the use of digital platforms for launching informative campaigns aimed at providing capacity-building opportunities. Additionally, it is crucial to challenge prevailing stereotypes and ensure the inclusion and acceptance of women in the fields of science, technology, engineering, and mathematics (STEM).

It is crucial for many women to enter the workforce and for companies to help and promote them throughout their careers. Hiring more women in technology sector is a good and clear solution right now. The demand for technology professionals is not the only or main reason to have more gender diversity in technology. Not having enough women in digital realm can lower performance and profits, missing out on big opportunities for those companies.

Technology plays a vital role in bridging the gender divide and enhancing women's empowerment, serving as a critical tool for levelling the playing field globally. Despite its potential, the ICT sector still presents significant challenges for women, ranging from limited access to digital jobs to experiencing cyber harassment, indicating substantial progress is still required for true equality.

## Cansu Arısoy-Gedik and Ahmet İlkyay Ceyhan: The Gender Gap in the Digital Era: Reaching Algorithmic Fairness and Technological Inclusivity in Network Society

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The digital era promises to offer opportunities indiscriminately to all genders.

To break down the barriers that obstruct women's entry and advancement in the technology sector, targeted efforts are needed. These include implementing women-specific lifelong learning initiatives to enhance digital skills, encouraging women to participate in technology design beyond traditional roles, and developing policies to address structural biases and promote collaboration. It is also crucial to provide safer, more affordable, and better access to digital tools and to deliver digital literacy training specifically designed for women. Governments can further support these initiatives by creating conducive policies and providing funding to ensure women's affordable access to technology.

Through the dedicated efforts of companies committed to fostering a more inclusive environment, the goal of enhanced inclusivity and gender equality in the tech industry is achievable. This transformation, although gradual, promises a future where technology equitably benefits all genders, contributing to a more inclusive and empowered society.

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## Cansu Arısoy-Gedik and Ahmet İlkyay Ceyhan: The Gender Gap in the Digital Era: Reaching Algorithmic Fairness and Technological Inclusivity in Network Society

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