



# Why Technology Needs Women as Much as Women need Technology

*MYRA MUFTI & DR. SUAY M. ÖZKULA  
The University of Sheffield*

## Executive Summary

The increasing digital gender divide has become a pressing concern, which needs to be addressed urgently and effectively in order to combat poverty amongst women, enhance their economic growth and improve their living standard, as part of achieving the Sustainable Development Goals. Despite progress in gender equality in recent years, in the digital era women continue to be pushed behind the screen instead of being promoted and encouraged to join the ICT sector. The severity of the under-representation of women in tech is critical especially in face of an increasing demand for digital skills in the job sector and greater potential for high economic growth through inclusion of girls and women in the field. This brief will illustrate how women's participation in ICT is significant for the near future. We argue that the sustainability of the ICT

sector is problematic and risks not achieving its full potential without the inclusion of women.

## The Widening Digital Gender Divide

The [digital gender divide](#) has been widening globally at a steady and persistent pace, raising serious concerns for policy makers. [Digital gender divide or gap](#) is a frequently used term to describe the broader gender inequality existing in the field of information communication technologies due to women's lack of access to the internet and other technologies, their comparative low level of digital literacy, and other barriers they face towards gaining technological skills. Ever since the [recognition of this divide in 1990's](#), more focus has been placed on including gender in debates relating to access to technologies and resultant empowerment, especially because women continue to be largely consumers

of technologies in the ICT value-chain rather than the producers. Women are facing barriers to ICT on three fronts: access, education, and workforce/leadership. The challenges faced by women in tech become increasingly prominent due to a number of factors including different cultural and contextual factors. There are deeply rooted cultural behaviours and attitudes that not only undermine the potential of women, but also restrict them to take part in the field of science and technology. The systemic practices in the education system continue to force women out of STEM and other science spheres, thus, [minimizing women's ability to acquire digital skills](#). The fundamental differences in pay between men and women working in ICTs, along with the presence of a glass-ceiling restricting women to attain leadership positions, make it further challenging for women to find good opportunities.

In terms of access, recent statistics indicate that women are less connected to the internet than men. The [internet user penetration rate](#) is 12% lower for women compared to men, wherein the UN designated Africa stands with the highest gap (23%) followed by Arab States (20%) and the Asia-Pacific region (16.9%). The

gender divide also persists in mobile phone networks. Despite 95% worldwide coverage by mobile networks, [1.7 billion women](#) in the low- and middle-income countries still do not own a mobile phone.

This gap is mirrored in women's [educational attainment](#) in ICTs, with only 29 per 1000 women graduating with an ICT related degree, compared to 96 men. The low ICT education amongst women is consequently apparent in the [participation of women in tech-fields](#); out of these 29 degree-holders, only 4 women joined the workforce in ICT-related roles. Parallel to the low representation of women in the ICT sector, another persisting challenge is that of the representation of women working in the sector at prominent positions in leadership roles. Female leadership saw a decline in 2016 with only 21 female CEOs (down from 24 in 2015) running the Fortune 500 tech-companies. This issue is reflected in that out of 193 member states of the International Communications Union (ITU), only [21 women hold the position of ministers for ICT](#), the remaining 172 all being men.

### **Why the Tech-world Needs Women to Achieve SDGs**

Narrowing the gender gap has become imperative towards achieving the

[Sustainable Development Goals](#), above all Goal 5 (Gender Equality). However, beyond SDG 5, a very high number of goals and targets are linked to gender equality in ICTs as they are dependent on access to technology and the interlinkages within these goals to achieve economic growth, reduce poverty and improve living standards. Out of the 17 SDGs, [10 Goals](#) mention the issue of technology, and several other targets such as [9.c](#), [1.4](#) and [5.b](#) emphasize ensuring universal access to internet and technological services for women's empowerment.

The achievement of these SDGs through use of technology and potential for economic growth is possible if nations commit to creating an inclusive work, educational and social environment, especially for women. What needs to be considered here is that the emphasis should not be placed on achieving gender equality in the field of ICTs merely in terms of reaching equal numbers for men and women. Rather, focus must be placed on the empowerment of women in absolute terms where they can apply themselves in the field beyond direct reference to men. Men should not be used as a reference group for increasing women's participation in the field; rather, the

conceptualization of engendering IT spaces must stem from the individual capacity of women to grow and prosper, economically and socially, in the tech-field. This is supported by a study that states that empowering women in the digital workforce can create €9 billion annual [GDP boost in the EU](#) and bringing 600 million additional women and girls online can benefit the global GDP by approximately [USD 18 billion](#). The importance of bringing more women into the ICT sector can also be seen in recent [statistics](#) that indicate that companies can potentially enhance their profitability by up to 15% if they increase the female participation in managerial positions by at least 30%.

The technology sector needs women in order to sustain progress, especially because ICTs have permeated all sectors ranging from health to education to industry and manufacturing to transport, retail, banking, and farming, amongst others. According to the European Commission, the demand for digital skills will increase manifold in the next few years as 9 out of 10 jobs will require digital literacy. However, parallel to this, the shortage of skilled workers will also double, creating a '[digital crisis](#)'. The skills

required will include, but are not limited to, the ability to operate computers, software development, big data, artificial intelligence, mobile/app development and cyber-security. Currently only [1.4% women](#) have jobs in applied fields such as development, maintenance and operations of ICT systems, but the potential for growth is vast for women in these areas. The existing workforce gap is expected to worsen in near future but can be mitigated through promoting girls and women in tech fields.

### **How to Promote Women in Tech?**

This year's [World Summit on the Information Society \(WSIS 2019\)](#) put a strong emphasis on promoting gender mainstreaming in ICTs to achieve the SDGs, specifically through ensuring accessibility. One of the ways this was addressed was through the goal of attaining an equal representation of men and women at the summit, a goal that was advertised prior to and throughout the event. The summit also portrayed a consensus for the need to work collaboratively and creation of effective partnership between various stakeholders to map out a plan to achieve gender equality and enhance women empowerment in field of ICTs. Several

sessions were specifically dedicated to bridging the gender divide in ICTs including a High level policy session on Gender Mainstreaming, Women leaders in blockchains, and EQUALS in tech. The gender focus and the individual sessions showed that, despite advances in the field, a more precise action plan is required to overcome the challenges highlighted above.

Realizing the importance of connecting women and girls to ICTs, many organisations are working towards this goals, amongst which EQUALS is a prominent one. [EQUALS](#), a global partnership of multiple stakeholders working to reverse and mitigate the increasing digital gender divide, has propagated practical steps to empower women and ensure gender equality stating that the *one-size-fits-all* preposition will not work. They suggest that specific policies need to be devised, which are tailored according to the local and national contexts in recognition of cultural, ethnic, regional and contextual differences.

The sessions showed that additionally, in order to ensure access to ICTs for women and girls, special attention needs to be paid to the affordability and connectivity of technology such as internet and mobile

phones. Outreach programs and service funds need to be created specifically for women and girls in rural areas, and there is a need for policies and regulations in a comprehensive and inclusive manner that mitigate and address the inequalities arising from ICTs which hinder women and girls' full participation. This may also include questioning the stereotypes and negative perceptions towards women participating in the tech-sector. Finally, more digital avenues should be created for women including tech-preneurship and other online services.

Other significant areas for consideration included women's early development. WSIS participants emphasised that there remains a need to support early intervention in the school environment to encourage more girls to pursue a degree in STEM or other related subjects. Alongside formal education, there is a need to promote lifelong learning in ICTs for girls and women in form of vocational training, digital literacy including e-learning programs, and confidence-building workshops. Providing incentives and opportunities for women's higher education, developing gender sensitive curricula and programmes and motivating inspire girls and women through outreach

were also said to be important for enhancing their participation in ICT sector.

Finally, women's low representation in leadership roles in the ICT sector was raised as a significant concern at WSIS. Participants suggested that the issue of lack of women in the workforce and leadership positions can be effectively addressed through creation of gender-balanced policies for recruitment, retention, promotion capacity building of women in organizations. A holistic approach was seen as particularly beneficial towards ensuring active involvement of women throughout the design, implementation and monitoring of existing and new strategies.

## **Conclusion**

The inclusion of girls and women in the ICT sector is crucial for the attainment of not only the SDGs, but also towards filling the economic gap resulting from lack of female participation in digital and online spaces and the workforce. Despite the global efforts being made by organization such as ITU and EQUALS, there is a need for more private and public stakeholders to take the responsibility of mainstreaming gender in their policies, strategies, and governance frameworks, which are tailored to specific needs of

women and encourage their participation in ICTs. WSIS sessions have already highlighted some key areas for development, but a lot of work towards tackling the global digital gender divide still remains, issues that are becoming increasingly significant as the tech world can only prosper if women are adequately empowered.

*Myra Mufti is an MSc. International Social Change & Policy student at the University of Sheffield.*

*Dr. Suay M. Özkula is a Research Associate and University Teacher at the University of Sheffield.*