A woman wearing a purple headscarf with a white and red floral pattern and a red dress with a gold sequined collar is looking down at a smartphone. The background is a blurred, colorful pattern of red and blue horizontal lines.

AT THE INTER-SECTION OF GENDER AND TECHNOLOGY

How non-governmental organizations and civil society actors are harnessing technology to promote gender equality

Written for Fingo, 2021

Lead author
Emma Winiecki

Advisor
Mika Väitalo, Fingo

Table of contents

PART I: THE DIGITAL GENDER DIVIDE

Executive summary	3
Introduction	4
The digital gender gap persists	5
Causes behind the digital gender divide	7
Affordability	7
Literacy and skills	7
Safety and security	7
Root cause: harmful gender stereotypes	8
Why digital skills matter	10
Representation and replication of existing biases	10
Access to information and ability to participate	10
Skills for the labor market and economic opportunities	11
Meaningful connectivity – moving beyond access	12

PART II: HOW TECHNOLOGY IS USED TO PROMOTE GENDER EQUALITY

Overview of gender and technology programmes	13
Category A: Technology plays a primary role in the programme	14
Category B: Technology plays a supporting role in the programme	19
Category C: Technology is used to educate users about a particular gender equality-related issue or challenges	21
Promoting gender equality in tech through advocacy and research	23
Overview of programmes implemented by Finnish or Finland-based organizations	25
Overview of programmes implemented by international organizations	27
Conclusion	28

ACRONYMS

AI	Artificial intelligence
CSO	Civil society organization
FGM/C	Female genital mutilation / cutting
GSMA	The GSM Association / The Global System for Mobile Communications
ICT	Information and Communication Technologies
ITU	International Telecommunications Union
ICT	Information and communication technologies
NGO	Non-governmental organization
STEM	Science, technology, engineering and math

EXECUTIVE SUMMARY

THE IMPORTANCE AND role of technology in promoting human rights and gender equality, and reaching the Sustainable Development Goals is broadly accepted and understood - but non-governmental organizations are in very different places with respect to their ability and resources to use technology and digital platforms to support their programming work, broaden their reach, and strengthen their impact. While some organizations are at the frontlines of implementing technology-focused or technology-supported programmes that promote gender equality and girls' and women's rights and empowerment, for others this might be a much more unfamiliar territory. Often this has to do with limited resources and funding with which to implement technology programmes, but it can also be a result of somewhat rigid requirements from the side of many funders and partners that can make it hard to try out new and innovative approaches and pilot new technologies.

That being said, there are many examples both from Finnish non-governmental and civil society organizations, and international actors of using technology to promote gender equality. Organizations are developing smartphone apps that provide information about sexual and reproductive health, partnering with gaming companies to use games as a vehicle for social change, taking advantage of modern technologies like blockchain to enhance their effectiveness and improve privacy, and developing digital tools that bring attention to gender equality challenges and stir up conversation about important topics. The organizations presented in this report vary from multinational and large global entities to small grassroots actors. Our hope is that the initiatives and programmes presented in this report can act as a conversation starter for new ideas on how technology can be harnessed as an accelerator for gender equality and a tool for women's and girls' empowerment. It goes without saying that technology should not be seen as the starting point or as a face value on its own, but that programmes should always begin from identifying a challenge or a need, and then identifying the best tools that are locally adaptable and suitable to address that issue - and sometimes, technology can be one of those tools. Sharing of lessons learned and best practices, but also being open about failures and mistakes, is an important part of NGOs and CSOs being able to take full advantage of the opportunities that technology and digital tools can offer.

This report provides an overview and analysis of the different kinds of programmes and initiatives that use technology for realizing gender equality and girls' and women's rights, both by Finnish /Finland-based organizations as well as international NGOs and CSOs. While this report does not provide a prescribed set of strict recommendations -- mainly because the position, resources, experiences and needs of the different organizations are so vastly different from one another -- the report does offer some suggestions on how Finnish / Finland-based NGOs and CSOs can work together to ensure that best practices, lessons learned and also mistakes and failures with technology programmes are shared and learned from. The importance of finding the right partner for technology programmes came up during the research from several organizations.

The report is divided into two sections: Part I offers a broad overview and background on the current state of the digital gender divide, the reasons behind it and the impact it has on women's and girls' rights and gender equality. Part II provides an overview of examples of technology programmes that aim to promote gender equality and women's and girls' rights, and an analysis of these programmes implemented by Finnish organizations or organizations/entities with presence in Finland, and international organizations. Part II also describes the role of advocacy work and research in ensuring that women and girls can benefit from technology equally.

It is clear that there is both keen interest as well as experience and expertise among Finnish NGOs and CSOs in enhancing the impact of their work on gender equality through technology and digital tools. There is also commitment from the side of the Finnish government to strengthen Finland's role as a leader in harnessing innovations and technology for promoting gender equality. This is particularly evident in Finland's role as one of the members in the UN Women's "Generation Equality" campaign's Action Coalition on Technology and Innovation for Gender Equality. The Generation Equality campaign and Finland's role in the Action Coalition offer a great opportunity for Finnish NGOs and CSOs to bring their own experience and expertise to the discussion to ensure that technology and digital platforms are turned into accelerators of gender equality - instead of yet another wedge pushing the gender gap wider.

INTRODUCTION

“The digital revolution is also being used to discriminate against women and reinforce our male-dominated culture. Indeed, there is a deep gender gap in access to digital technologies, widening the digital divide.”

We must dismantle obstacles and create opportunities for women, ensure equality and change on-line and toxic corporate cultures. The technology sector must open up and become more diverse - not least for its own benefit.”

António Guterres, United Nations Secretary-General,
addressing the UN General Assembly 25 September 2018

TECHNOLOGY AND DIGITAL tools are a part of our everyday lives virtually in every corner of the world, from urban centers to rural villages. But access to technology and the opportunities and benefits that come with it are not equally distributed. Many things can impact the ability of individuals and communities to take advantage of the promise of technology, such as location, available infrastructure, socio-economic characteristics - and, unfortunately, gender. Despite progress, the digital gender gap remains an issue in nearly every corner of the world, and the current global COVID-19 pandemic is further widening existing gaps. In an online event organized by the World Bank, focusing on closing the digital gender gap, Boutheina Guermazi, director of Digital Development at the World Bank (2020), said the following in her opening remarks:

“I can’t think of a better cause than contributing to closing the digital gender divide. This is particularly the case during the COVID-19 pandemic, when digital technologies have become our lifeline. The crisis may in fact reinforce the digital gender divide, including through its impact on girls’ education. Now is the time to do something about it.”

The pandemic has forced most aspects of our lives online, which means that for people who do not have equal access to digital spaces and technology, the risk of falling behind is even greater. For girls and women, these risks are multiplied by pre-existing gender inequalities that are now worsened by the crisis. According to a recent report by McKinsey Global Institute, women have suffered

more than half of job losses from the crisis and are 1.8 times more vulnerable to the pandemic’s impact than men (Madgavkar, White, Krishnan, Mahajan and Azcue 2020). This research also indicated that both digital and financial inclusion as well as access to credit from financial institutions and access to mobile banking are closely related to the presence of women in the labor force (Madgavkar et al. 2020). Women, who are still globally underrepresented in the tech sector and overrepresented in sectors like care work and social work, cannot transfer their jobs online - which in turn leads to women either having to leave their jobs in the face of the pandemic in higher rates than men, or being the ones bearing the brunt of the risk as the frontline workers in the face of this pandemic as nurses, caretakers, social workers and teachers.

The virtual world is a mirror of the real world, and it is therefore not surprising that as the shadow pandemic of increased domestic violence against women and girls is raging behind closed doors, instances of online harassment and violence against women and girls are also on the rise (UN Women 2020a, Chair 2020). If women and girls cannot participate equally in digital spaces because they must worry about being harassed and bullied, their ability to participate in society is narrowed even further. Individuals with lower digital skills are particularly vulnerable, and women, girls and minorities are at a higher risk for online harassment, abuse and violence. The pandemic has underscored the importance of ensuring that digital spaces are safe and welcoming for everyone and ensuring that internet users are equipped with the necessary digital literacy and skills to keep themselves safe and protect their data and privacy online.

What does all this mean in terms of technology and gender equality? It means that now more than ever, the global community must take concrete action to ensure that the full potential of technology and digital platforms is efficiently harnessed to promote gender equality and women’s and girls’ rights and participation. This crisis can, and should, act as a wake-up call about the long-lasting and cross-cutting impacts that the persistent digital gender divide has on the lives of girls and women, and about the importance of the global community taking concrete and swift action to bridge those gaps and to ensure that technology and digital tools become a tool for improving equity instead of a wedge that further increases inequality, and pushes women, girls and other vulnerable groups further in the margins of society.

THE DIGITAL GENDER GAP PERSISTS

THERE HAVE BEEN improvements in recent years in terms of narrowing the digital gender gap, which can be described as the difference between men and women in their ability and likelihood of having access to hardware such as mobile phones, smartphones and other technology, or their access and ability to use the internet. However, despite the progress, a significant gap persists – and in some locations, there are signs of the gap widening. The gap between men and women is evident across skill levels, from basic skills such as knowing how to use a basic mobile phone or using apps on a smartphone, to more advanced skills such as coding computer software or analyzing large datasets. Women are less likely than men to be able to leverage technology for basic everyday purposes and to have more advanced ICT skills that include, for example, programming and coding. Additionally, only a fraction of technology-related patents are filed by women and are significantly underrepresented as applicants for jobs in the tech sector. (UNESCO 2018.)

According to GSMA's latest annual Mobile Gender Gap report, on a global level the mobile gender gap is showing signs of closing. Currently, women are 20% less likely than men to use mobile internet, which is an improvement from 2017 when this same number was 27% - but still, 300 million fewer women than men can access the mobile internet (GSMA 2020).

Women are also less likely to own a device that allows them to access the internet. Women are 20% less likely than men to own a smartphone, use a smaller range of mobile services compared to men, and 165 million fewer women than men currently own a mobile device (GSMA 2020). In addition, not only is the proportion of women using the internet notably lower than the proportion of men (48% of all women compared to 58% of all men), but the digital gender gap in terms of internet use is also widening in some regions, not shrinking, even though overall access to the internet is improving (ITU 2019a). According to International Telecommunication Union (ITU) data, the internet gender

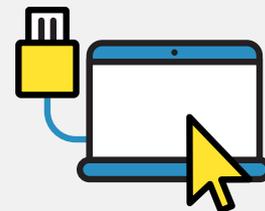
In low and middle income countries...



Women are 8% less likely than men to own a mobile phone, and 20% less likely than men to own a smartphone



300 million fewer women than men access mobile internet



Among mobile phone owners, women use a smaller range of mobile services

Source: The Mobile Gender Gap Report 2020, GSMA.



gap in Least Developed Countries was at 25.9% in 2013 and has increased to 42.8% in 2019. Regionally, the gap has grown in every other region except Europe and the Central and Independent States region. The increase in gender gap is at least partly attributed to the rapidly growing number of male internet users in developing countries. (ITU 2019b.)

The Covid-19 crisis has emphasized what we have globally known for years: that internet access and the ability to use technology should be a universal right. As more of our lives have moved to digital spaces than ever before due to the pandemic and the need for social distancing, not having access to the internet and technology, such as smartphones or computers, has further widened the gap between population

groups - and further marginalized those groups who were already the most vulnerable, such as people living in poverty, people with disabilities, and women and girls. The impact of the COVID-19 crisis has also been two-fold when it comes to women, girls and the internet: on one hand, those women and girls who did not have adequate access to smart devices and the internet are now even less likely to have access to essential services, be able to participate in decision making and voice their opinions, but on the other hand, those women and girls who do have access and are using the internet are now at an increased risk of unwanted online behavior, such as digital gender based violence, sexual harassment in online spaces, bullying, online violence and trafficking.

DRIVERS OF THE DIGITAL GENDER DIVIDE

THE REASONS FOR the digital gender gap are well known. The barriers that people face with accessing and being able to use technology in a meaningful way are largely the same for both men and women, but almost all the barriers affect women disproportionately due to other underlying and pre-existing inequalities.

The digital gender divide is two-dimensional: it is both an access divide, and a skills divide. Affordability, accessibility and lack of skills are among the most common barriers that disproportionately impact women - but quite often, the root cause behind all of them are patriarchal norms and harmful gender stereotypes that limit women's independence and freedom to not just own a device, but also for example to purchase a SIM card, manage their own data plans, or even enter a computer cafe.

Affordability

Affordability, which tends to be the very first and greatest barrier, applies to both men and women (GSMA 2020), but affects women more than men (OECD 2018). According to a recent survey by the World Wide Web Foundation, among internet users in rural areas, women were 14% more likely than men to say that cost limited how much they can use the internet (World Wide Web Foundation 2020). This is at least partly attributed to the fact that in most of the countries where the digital gender gap is either holding steady or widening, women are less likely to earn an income than men. When women do earn an income, their incomes tend to be smaller, less predictable, and they have less autonomy in terms of how to use money compared to men, which makes women more price sensitive in terms of the cost of their devices and data plan. (Lindsey and Wilson 2019.) Countries with highest internet costs also have the lowest numbers of women online and the widest internet gender gaps - which is not surprising, given that women earn on average 25% less than men globally, and are therefore much more impacted by unaffordable device, data and internet prices than men (World Wide Web Foundation 2016).

Literacy and skills

The gaps and barriers that exist between genders in the digital realm are not separate from other broader gender inequalities. Girls are still 1.5 times more likely than boys to be excluded from primary school (and 2.5 times more likely in countries affected by fragility and conflict) and an estimated 130 million girls are currently not in primary or secondary school worldwide (Global Partnership for Education 2020). Additionally, around two thirds of the world's illiterate adults are women (UNESCO 2015). These disparities are replicated when it comes to digital literacy, and hinder girls' and women's abilities to obtain the necessary digital literacy skills that are needed in today's world. This "learning crisis" also translates into difficulties for girls and women in accessing quality learning opportunities in science, technology, engineering and mathematics (STEM), all subject matters that are still dominated by boys and men (UNICEF and ITU 2020). Research carried out in 25 countries suggested that adolescent boys with access to a mobile phone used it for a variety of different activities, from playing mobile games to using financial services, while girls of the same age used the phones for much more basic functions, such as making calls and using the calculator. Another study found that women were 1.6 times more likely than men to report lack of skills as a barrier for using the internet. (UNESCO 2019.)

While part of the digital skill and literacy gap can be explained by other gender gaps, such as the education gap, it does not explain why the skills gap also affects women in western countries, where boys and girls have generally similar access to education. Harmful, tightly rooted stereotypes and preconceptions about the abilities of boys and girls also hold back girls and women from taking full advantage of technology - and their own digital capacities. These norms and stereotypes are unpacked in more detail further in the report.

Safety and security

In many countries, the internet is a less safe space for women and girls than it is for men and boys. The risks and challenges that online spaces present for women

and girls considerably limit their ability to take full advantage of the benefits of being connected, as well as their ability to participate equally online. A recent report by Plan International titled “Free to be online” includes data from interviews with over 14 000 girls and women across 31 countries, and the results are staggering, though not surprising: over half of the girls and women report having been harassed and abused online, one in four girls who’ve experienced abuse feel physically unsafe as a result, and online abuse is silencing women’s and girls’ voices. (Plan International 2020.) In 2018, similar findings were reported by the Special Rapporteur on violence against women for the United Nations Commission on Human Rights in a report focusing on violence against women online. The Special Rapporteur notes the following:

“Despite the benefits and empowering potential of the Internet and ICT, women and girls across the world have increasingly voiced their concern at harmful, sexist, misogynistic and violent content and behavior online.” (UN Human Rights Council, 2018.)

The COVID-19 pandemic has also increased the safety risks that girls and women face in online spaces. The

pandemic forced almost every aspect of our lives online, which in turn has resulted in more people spending more time in digital spaces than ever before. Given that on average over 50% of women and girls report having experienced online harassment, abuse and violence, it is not surprising that when more people – both male and female – spend more time online, instances of online violence also increase. According to the World Wide Web Foundation, the pandemic has caused a surge of sharing of non-consensual images online that are used to threaten, shame and control women (World Wide Web Foundation 2020b). Online violence and abuse of girls and women is an extension of the same behavior offline, and therefore, as instances of domestic abuse and violence against women have increased notably during the pandemic, it is not surprising that this same phenomenon is being replicated in online spaces (UN Women 2020).

Concerns over girls’ safety online can often lead to parents trying to protect and shield their daughters from harassment, abuse and violence in digital spaces by preventing them from using the internet or technology. Barring girls and women from online spaces is of course not the solution – our focus must be on transforming online spaces to become safer, and to ensure that women’s and girls’ rights are protected and realized both online and offline.



Root causes: harmful gender stereotypes

Behind nearly every barrier preventing girls and women from accessing and benefiting from technology on equal basis with men and boys are harmful and patriarchal norms and gender stereotypes that still restrict the realization of women's and girls' rights, autonomy, participation and empowerment on virtually every aspect of their lives - and there is no app that can fix that.

A pilot project implemented by organization CARE in Uganda revealed that even when women had access to phones, they still were not able to take full advantage of them and some didn't use them at all. The reason? Some of the women could not purchase SIM cards, because obtaining a SIM card requires a government-issued identification, which women lack more often than men. In low- and middle-income countries, 44% of women do not own a government issued identification, compared to 28% of men. (Bill & Melinda Gates Foundation 2020.)

Particularly in traditionally patriarchal societies, it is reasonable to assume that even when women do have access to a phone or even own their own device, their ability to use their phones, add data on their phones, or the content they can access with it is often controlled by the men in their family or community. A research conducted among the Maasai tribe's women in Tanzania in 2018 regarding their use of phones and other technology found that even though most women had access to phones, men still held de facto control over these devices and over how and when women could use them. (Summers, Baird, Woodhouse, Christie, McCabe, Tetra and Peter 2020). CARE reached similar findings during their pilot study in Uganda, where women reported that

even if they had a phone, decisions about its use, as well as decisions about how the family's available funds were used, were usually entirely made by men (Bill & Melinda Gates Foundation 2020). A phone does not do much good if women aren't actually allowed to use it, can't purchase a SIM card or add data on their phone plan. Accessibility is therefore not only about whether a device is physically available to women and girls, but also about who holds control over the decisions about its use.

CGAP, a global partnership of more than 30 development organizations, has found that the four most important dimensions of the digital gender divide are: 1) access to handsets; 2) internet connectivity; 3) infrastructure; and 4) literacy and data availability - and that all these dimensions are impacted by gendered social norms. For example, women may be less likely than men to own a handset due to patriarchal attitudes about women and technology. In low connectivity areas, such as rural remote areas, women are less likely to be able to travel from home to an area with better connectivity, and therefore have restricted or no access to reliable data or internet connections. Restricted mobility also negatively impacts women's access to infrastructure, like charging stations or charging agents - resulting in women in remote areas often leaving their phones uncharged and empty for days. (Hight, Salman and Singh 2020.)

Because women's and girls' access both to hardware, such as mobile phones and smart phones, and an internet connection, is more limited compared to men, any initiative that proposes to utilize technology for the promotion of gender equality and women's and girls' rights and empowerment must first and foremost work to dismantle the existing barriers and underlying causes that continue to restrict women's ability to reap the benefits of technology and the internet.

WHY DIGITAL SKILLS MATTER?

Representation and replication of existing biases

“Women and girls are naturally agents of change. If we teach one girl to code, she will go on to teach more - we’ve seen this in our own programs and workshops around the country.”

Kimberly Bryant, Founder and CEO, Black Girls Code

Technology is inherently biased - there is no such thing as “neutral technology” (Lindström 2020). Technology and digital platforms reflect their creators, and when technology and digital platforms are predominantly created by men, they do not adequately reflect the needs, wants, priorities and rights of women, girls or minorities. When girls and women do not see women in the tech field, imagining themselves working in that field is harder. Representation and role models play a huge role in shaping our beliefs and understanding of what is feasible and possible, and what we think others are expecting of us and of our abilities.

When technology is predominantly created by men, the risk of it replicating and reinforcing existing gender biases and stereotypes is greater. In machine learning research, only 12% of the researchers are women (UNESCO 2019). Data has shown that, for example, AI bots and voice assistance programs can promote gender stereotypes. For example, in the U.S., most customer-service providing AI bots and voice assistance tools feature female-sounding voices and names, reinforcing the notion of service people being predominantly female (Chin and Robinson 2020). Voice recognition programs have a harder time recognizing and understanding female and non-white sounding voices than white male voices (Palmiter Barojek 2019). This does not mean that the creators of these technologies include such biases on purpose - but implicit biases are easily coded into the technology and digital tools we use, and one way to minimize this risk is by ensuring that the creators of such technologies represent a diverse range of people from different backgrounds, including all genders.

According to a recent report by OECD, at 15 years of age, on average, only 0.5% of girls aspire to become ICT professionals, compared to 5% of boys (OECD 2018).

A study conducted by an events software company in 2018 used facial recognition to scan the images of more than 60,000 event speakers over a five-year period in countries around the world. The majority of the speakers were men, and the gender imbalance was particularly stark in technology events. In internet-focused events, 79% of speakers were male compared to 21% female, and in software-focused events male speakers dominated the stages with a 75% representation. In IT services-focused events, 80% of speakers were male. (Kumar 2018). A European Commission’s “Women in Digital Scoreboard” monitors women’s participation in the digital economy, and found that in the EU, only 17% of ICT specialists and 34% of STEM graduates are women, and women who do work in the information and communications sector earn on average 19% less than their male peers (European Commission 2019).

Technology is still largely associated with “male traits” and masculinity, and the belief that being female is somehow incompatible with technical skills, knowhow and pursuits, persists across the world - not just in the global south. These beliefs and stereotypes not only make it harder for girls and women to enter the tech field, but also negatively impact their own perception of their skills and abilities to pursue a career in STEM and participate both as creators and users of technology. (UN Women 2020.) Gender-based stereotypes about skills, such as boys being more skilled in math and science, influence education and career choices of girls, but also impact the retention of women in the tech field, as they must continuously fight to overcome deeply rooted stereotypes and biases (McKinnon and O’Connell 2020).

Access to information and ability to participate

“We’ve heard a lot about the Internet of Things - I think we need an Internet of Women.”

Christine Lagarde, Managing Director, IMF

In a world that is increasingly digital, access to services and information is crucial for the ability to participate in society. For example, many financial services are



increasingly digital, and financial technology, or so-called “fintech” solutions offer new opportunities and services for those people who’ve traditionally been considered “unbankable”. Women are 8% less likely than men to have access to a formal bank account, and in the developing world the gender differences are even starker (OECD 2018). Fintech and mobile banking services and platforms offer an opportunity for leapfrogging over traditional banking and bridging the gap - but without digital skills and literacy, women will continue to be excluded from being able to take full advantage of such service.

Similarly, especially during the COVID-19 pandemic, opportunities for political participation, activism, decision making, and influencing have largely moved online. Women’s and girls’ ability to ensure that their voices are heard in all forums and spaces depends on their ability to be present in online spaces. This not only requires access to devices and an internet connection, but also the ability to take space online without the fear of online abuse or harassment. Everything from political campaigns to rallies to school lessons have moved online, and if women and girls cannot occupy those spaces safely and equally, they will be left even further behind.

Skills for the labor market and economic opportunities

While there are differing opinions on how automation and AI technologies will impact the future of work, it is clear that digital skills and literacy are increasingly

important for employability and economic opportunities in every field of work and for every aspect of life (UN Women 2020b). According to some estimates, 90% of future jobs will include digital components, and many of today’s jobs might not exist at all in 10, 15 or 20 years down the line. New jobs will also be created as part of the so-called fourth industrial revolution, most of them requiring technical and digital skills and literacy (Mlambo-Ngcuka 2018).

The COVID-19 pandemic has also underscored the importance of digital literacy and computer skills, and highlighted the stark differences between those who have access to technology in their daily lives and those who don’t. But the gap is not only in access, but also in skills and the ability to take advantage of the opportunities technology can provide to improve one’s quality of life. According to a recent report by ITU, the digital divide is increasingly reflecting existing skills and education divides amongst populations and the more marginalized groups - for example, women and girls - are falling behind even more. ITU continues to note that education, gender, digital skills and the digital divide are very closely interrelated, and therefore, need to be tackled together. (ITU 2020.) For women to both be able to take advantage of technology to improve their own lives, but to also have the skills and information they need to be competitive in the labor market and meet the needs of the changing economy, ensuring that girls and women have equal access to education, technology, computer labs, skills training, coding classes, and so forth, is absolutely essential.

MEANINGFUL CONNECTIVITY – MOVING BEYOND ACCESS

IN TERMS OF bridging the digital gender divide, the focus is often on expanding women's and girls' access to smartphone ownership and mobile data, because these are more readily available and easily accessible than, for example, laptops, computers or broadband connections. But even if women have more equal access to mobile data and smartphones, it does not automatically translate to better or sufficient connectivity that enables them to better take advantage of the benefits and promises of the Internet and technology. The World Wide Web foundation and the Alliance for Affordable Internet (A4AI) have done substantial research and produced several tools on how to define and measure "meaningful connectivity". Their definition of "meaningful connectivity" is the following:

*"We have meaningful connectivity when we can use the internet every day using an appropriate device with enough data and a fast connection."
(Alliance for Affordable Internet 2020)*

Recent research by The World Wide Web Foundation suggests that in many parts of the world, the gap in basic internet access is smaller than what globally cited figures suggest – but gender gaps reappear when they use a more robust definition of "meaningful connectivity". What this means is while women in many countries are nearing the same access to the internet as men, they are more likely to be experiencing a "second rate connection", which could include slower speeds, and less reliable connection than their male peers. (World Wide Web Foundation, 2020.) A sufficient connection that allows users to take advantage of technology and the

internet to improve their own lives requires more than just a device and any type of connection. According to the Web Foundation, meaningful connection requires four components:

1. Sufficient download speeds to take advantage of the full internet experience
2. an adequate device that allows them to both consume and produce content
3. enough data to use the internet-based applications they require
4. frequent connection

(World Wide Web Foundation 2019.)

Given that women are more likely than men to experience insufficient connectivity, it is important to keep in mind that having internet access is not a sufficient indicator of women and girls being able to properly benefit from the internet – just like having a phone does not automatically mean that women are actually able to and allowed to use the phone freely and without restrictions or monitoring. Programmes that use technology need to take into account not just the availability of data and/or internet connection, but also evaluate whether the connectivity is sufficient in terms of, for example, speed and reliability. Unreliable, weak and slow connections are often cited as challenges for projects that include using internet-based tools or platforms, especially in remote areas.

OVERVIEW OF GENDER AND TECHNOLOGY PROGRAMMES

TECHNOLOGY AND DIGITAL tools can play many different roles in gender programmes and initiatives. This following list is not an exhaustive overview of all the gender and technology initiatives and programmes implemented by NGOs and CSOs in Finland or globally but is meant to offer a snapshot of the different ways in which technology is harnessed to promote gender equality and women's and girls' rights. The initiatives and programmes are also not scored or ranked in any order of preference or impact. For the purposes of this report, the initiatives and projects have been divided into three different categories depending on what the role and purpose of technology is for the intervention.

Most initiatives are from NGOs or CSOs, but some examples also highlight projects created by independent innovators, for example through hackathons.

Category A includes programmes, projects and initiatives where technology plays a lead role in the implementation of the initiative - for example, programmes that include teaching tech skills to girls and women. In such initiatives, technology is the main tool through which an issue is addressed, with a goal of improving a challenge related to gender equality.

Category B includes projects where technology plays a supporting role in the programme. This can include, for example, using tools like Ombea to gather data and feedback during an initiative, including a mobile phone/smartphone service to distribute information as part of a larger initiative, etc.

Category C includes projects that use technology or digital tools to bring attention to an issue related to gender equality and girls' and women's rights, and/or highlight a specific challenge or problem.

CATEGORY A: Technology plays a lead role in the programme

Organization

Finn Church Aid (Kirkon ulkomaanapu), Finland

Project

Myanmar Artisan Toolkit

Country

Myanmar

Technology

Digital learning toolkit for artisans

Finn Church Aid has developed an entrepreneurial training kit together with local partners in Myanmar that provides local artisans with the tools and knowledge they need to overcome common challenges with starting, growing and maintaining a local business selling arts and crafts. Materials are available in digital format in both English and Myanmar and include both theoretical information as well as exercises. The training is available for anyone online, but it has also been implemented as part of the Women Empowerment Livelihood Programme in the Ann township in Rakhine state with 30 young girls participating from 30 different villages. The digital toolkit and training are particularly useful for girls and women, who often face more barriers for establishing and running a business and entering the market, and it has been used in conjunction with women's entrepreneurship and livelihood training in Myanmar.

Learn more:

<https://www.kirkonulkomaanapu.fi/ajankohtaista/artikkelit/animaatiovideot-levittavat-yrittajysoppeja-myanmarin-syrjaseudulle/>

<https://www.myanmarartisan toolkit.org/toolkit>

Organization

UNICEF and Nokia

Project

Expanding access to the Internet and digital learning materials

Country

Kenya

Technology

Expanding Wi-Fi, digital learning materials

UNICEF Finland, UNICEF Kenya and Nokia have implemented a programme in Kenya that aims to increase access to the Internet and digital learning materials in disadvantaged schools to boost learning outcomes. The programme has been implemented jointly with the Kenyan government. The programme has had a specific focus on girls and children with disabilities. As part of the initiative, teachers have received digital skills training to ensure they can use the new tools properly and take full advantage of the Internet and digital learning materials.

Learn more: [First 10 schools connected in Kenya as part of Nokia and UNICEF shared value project](#)

Organization

UNICEF and Rovio

Project

Providing girls with digital literacy and tech and life skills

Country

Senegal

Technology

Coding skills and digital content creation

Rovio is partnering with UNICEF to implement a programme in Senegal that aims to give a second chance to the most vulnerable adolescent girls in and out of school through teaching them basics of digital skills including coding and digital content creation, while learning about innovation, social entrepreneurship and life skills. The project has also involved Rovio employees providing educational videos to support the programme goals.

Learn more:

<https://www.unicef.fi/yritykset/kumppanimme/rovio/>

<https://www.youtube.com/watch?v=phV9qPs7cWs>

Organization

UNICEF

Project

Shnet-mobile application for sexual and reproductive health information

Country

Kosovo

Technology

Smartphone app

“Shnet” means “health” in Albanian, and the Shent-mobile application provides sexual and reproductive health information and the “the-birds-and-the-bees” talk for young people in Kosovo. It is also the first app of its kind in the Albanian language. Shnet was developed by a young Kosovian woman who participated in a social innovation initiative called UPSHIFT, a programme implemented in over 25 countries to build transferable skills and empower young people to identify and create entrepreneurial solutions to address challenges in their communities.

Learn more:

<https://blogs.unicef.org/blog/birds-bees-now-shnet/>More about UNICEF’s Upshift initiative: <https://www.unicef.org/innovation/upshift>**Organization**

HarassMap, Egypt

Project

HarassMap

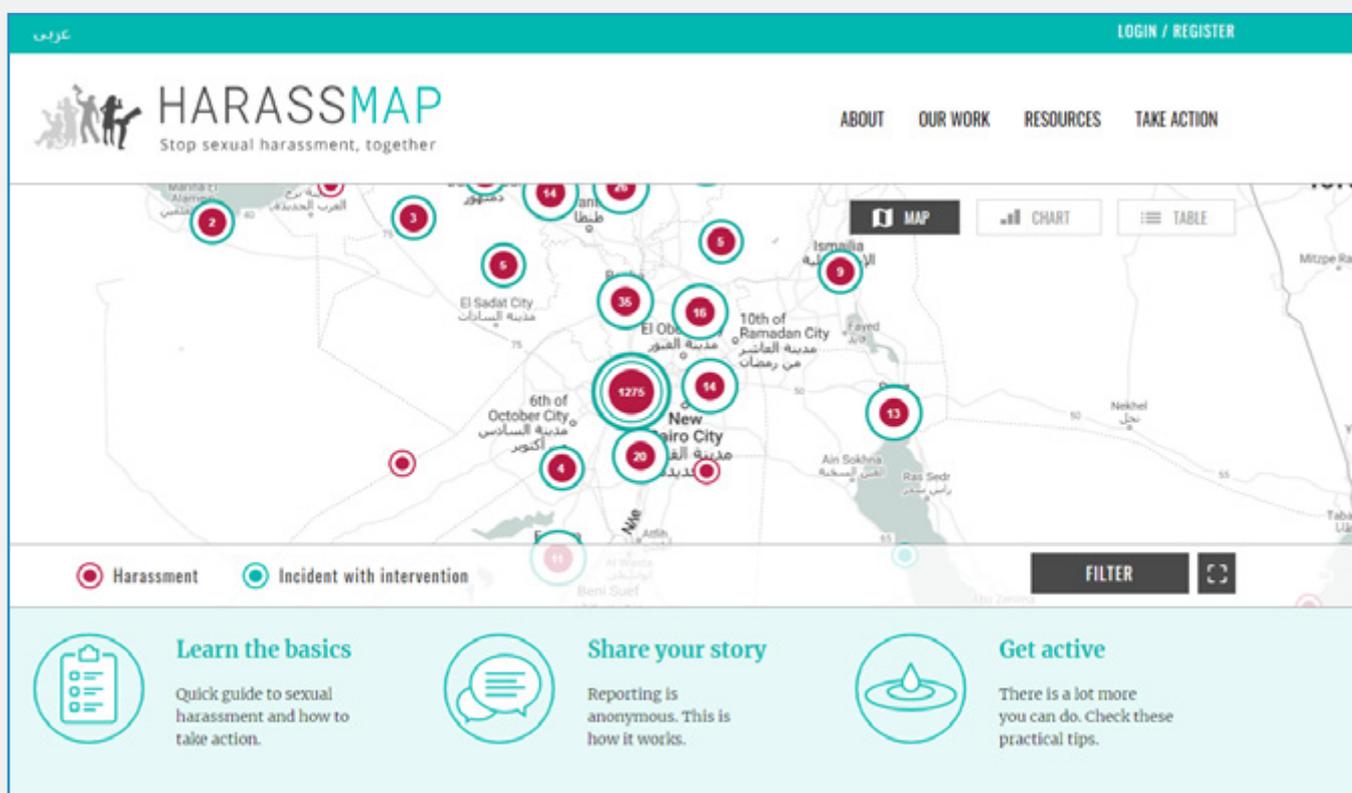
Country of implementation

Egypt

Technology

Crowdsourced reporting and mapping tool for sexual harassment

HarassMap is a volunteer-based initiative that started in 2010, when local activists first developed it to spark conversation about the issue of sexual harassment and catcalling to break the taboo around this issue. The online platform, which allows women to anonymously report instances of harassment they encounter and pinpoint the location of the incident on a map, gathered 200 reports during its first year - and doubled the number of reports during its second year. (Singh 2018.)

Learn more: <https://harassmap.org/en/>

Organization

Feminist Approach to Technology, India

Project

The Jugaad (Innovation) Lab for Girls

Country

India

Technology

STEM lab

The Jugaad Lab is a STEM lab for girls that allows them to explore the world of electronics and everyday science by working with tools, assembling circuits and doing science experiments. Girls are encouraged to try and fail, to make and break stuff to understand how things work, and to “make mistakes fearlessly”. Currently, 44 girls between ages of 10 to 15 in the New Delhi area have been enrolled and the project has shown signs of changing existing stereotypes among community members and parents regarding girls and technology.

Learn more: <https://www.fat-net.org/main-programs/jugaad-innovation-lab-girls>

Organization

Plan International

Project

Maru Chatbot

Country

Global

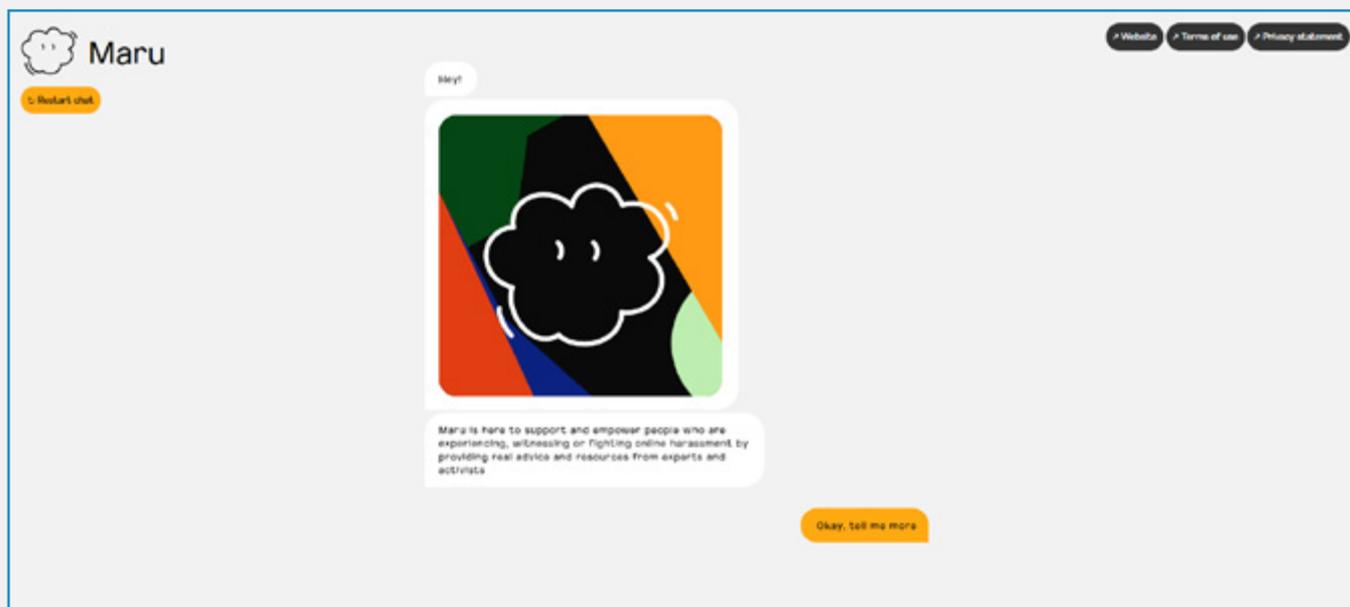
Technology

A feminist chatbot

Maru, which means ‘cloud base’ in Sesotho, a language spoken in South Africa, is a new anti-harassment chatbot developed by young people for young people. It was created in collaboration between Plan International and technology collective Feminist Internet.

Maru supports women and girls who face harassment, abuse and violence online by giving concrete suggestions and information from experts and activists about things like reporting mechanisms, links to resources and tips on how to keep yourself safe online. The chatbot was developed through multilingual workshops with young female activists around the world, bringing together girls and women from Benin, Ghana, South Africa, Cameroon, Nepal and Germany. (Plan International 2020b.) Maru was created using feminist design principles, which guide the design process to be inclusive, sensitive, reflect on biases that might exist among the creators, ensure Maru represents global perspectives, and consider barriers users may face in accessing and using Maru, among others (Feminist Internet and Plan International 2020).

Learn more: <https://maruchatbot.co/>



Organization

UN Women

Project

Buy from Women

Country

Multi-country

Technology

A digital e-commerce platform to provide women farmers with access to climate-smart agricultural information and services

[Buy from Women](https://www.buyfromwomen.org/) is an open-source supply chain system that connects women farmers to information, finance and markets. This project, launched by UN Women, simultaneously addresses the structured barriers faced by women farmers, and leverages ICTs to accelerate results. The digital platform is multi-language and multi-currency, mobile enabled, cloud-based and open source, combines low tech hardware with high end software, and provides real-time dashboards and reports. Users can access information related to farming and crop health; market prices for specific products; connect with local and global supply chains; and build a digital track record and credit profile to increase women's access to finance.

Learn more: <https://www.buyfromwomen.org/>

Organization

UN Women and World Food Programme

Project

Building Blocks

Country

Jordan

Technology

Blockchain

UN Women and the World Food Programme (WFP) are taking advantage of blockchain technology to assist Syrian refugee women participating in UN Women's cash for work programmes at the Za'atari and Azraq refugee camps in Jordan. A Syrian woman will scan her eye to request cash back at WFP-contracted supermarkets. This will link to her account on the blockchain, and the amount of the cash distribution is automatically sent to Building Blocks. The fact that UN Women and WFP validate each other's transactions through a common blockchain network, results in improved security and accountability. There are also opportunities for cost and risk reduction, as well as increased harmonization of aid efforts.

Learn more: [UN Women and World Food Program blockchain pilot](#)

Organization

Plan International

Project

Block by Block

Country

Vietnam

Technology

Minecraft

In 2017, Plan International and UN Habitat brought together Plan's "Safer Cities" project that aims to make cities and urban areas safer, more inclusive and more welcoming for everyone, especially girls and women - and UN Habitat's "Block by Block" project, a collaboration with the gaming company Mojang who is the creator of the hit game Minecraft. (Block by Block 2020.)

Plan International and Block by Block implemented the project with a group of young girls between ages of 13 and 16 in the Kim Chung commune in Hanoi, Vietnam. The participants identified ways to make their community safer, more inclusive and more welcoming particularly for girls and women, and after a basic training in how to use Minecraft, used the game to design and implement their ideas in a 3D game model of their own community, built inside the game. Once their models were finished, the participants presented their suggestions to a group of local level decision makers representing different branches of government. Their suggestions included adding more lights to dark or dimly lit areas where the girls felt unsafe walking, adding emergency phones in places that are known to be hotspots for harassment, and building a fence around a dangerous canal. At the end of the presentation, local level decision makers publicly committed to implementing some of the changes suggested by the participants in their Minecraft designs.

Learn more: <https://plan-international.org/blog/2017/04/building-safer-hanoi-girls-minecraft>

Organization

Plan International Timor Leste and Marie Stopes

Project

Reproduitiva

Country

Timor Leste

Technology

Smartphone app

A health app called “Reproduitiva” was launched in Timor Leste to breath taboos around sexual and reproductive health, share crucial information about these issues with particularly young people, and encourage young people to ask questions and seek reliable information about topics related to sexual and reproductive health and rights. Focus is on helping and supporting girls in avoiding unwanted early pregnancy and early marriage. Reproduitiva was created jointly by Plan International and Marie Stopes, an organization with expertise in sexual and reproductive health.

Learn more: <https://plan-international.org/case-studies/strong-girls-today-powerful-women-tomorrow>

Organization

Maternity Foundation, Denmark

Project

Safe Delivery App

Country

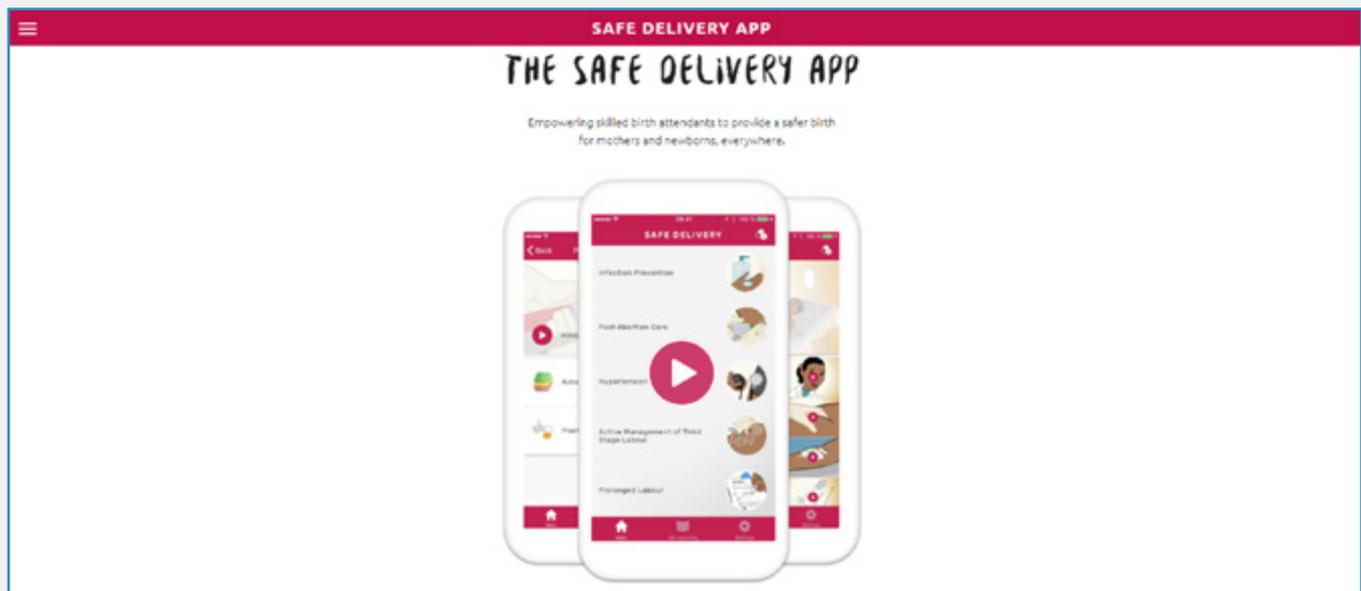
Global

Technology

Smartphone application

The Safe Delivery App is a smartphone application created and launched by Danish development organization, Maternity Foundation. It provides skilled birth attendants with direct and instant access to evidence-based and up-to-date clinical guidelines on Basic Emergency Obstetric and Neonatal Care. The app features easily understandable animated videos, action cards and drug lists, and can support healthcare workers even in very remote areas. It is currently being used across sub-Saharan Africa and South-East Asia.

Learn more: <https://www.maternity.dk/safe-delivery-app/>



CATEGORY B: Technology plays a supporting role in the project

Organization

International Solidarity Foundation (Solidaarisuus RY), Finland

Projects

Somaliland: Community-driven FGM abandonment and Women Empowerment (implemented by NAFIS and Candlelight), Preventing sexual and gender-based violence and supporting women's economic role (implemented by SOYDAVO)

Kenya: Preventing violence against women in Kisii county (implemented by CECOME) and Preventing FGM in Nyamira county (implemented by Manga Heart)

Country of implementation

Somaliland and Kenya

Technology

OMBEA audience response system and interactive voice response system, SMS, social media

International Solidarity Foundation is utilizing OMBEA audience response system and interactive voice response system (IVR), as well as social media tools and SMS, in several of their projects in Somaliland and Kenya as a way to gather and analyze data and feedback from participants and for reaching people more efficiently during COVID-19. OMBEA is used in connection with their FGM abandonment and women's empowerment programme and prevention of sexual and gender-based violence programme in Somaliland, and in conjunction with programmes that aim to prevent FGM and violence against women and girls in Kenya. In Kenya, the organization is also utilizing SMS, Facebook live videos and video illustrations for awareness-raising on gender-based violence, FGM and COVID-19.

Implementing organizations have found that social media channels are an effective way to reach communities, particularly during a pandemic when movement is restricted. However, there is a lack of feedback especially on the SMS platform, and having connection (data, cell phone service) has also been an issue in certain areas. Using OMBEA has significantly contributed to the quality and ownership of the data as well as efficiency of the data collection. The use of IVR has been introduced recently, so there are no results to report on the efficiency of that yet.

Organization

World Vision Finland and World Vision Global

Country of implementation

Kenya, Sri Lanka, Indonesia

Project

WASH/Clean Water through Solar Water Solutions

World Vision has a partnership with a Finnish company, Solar Water Solutions, to provide clean water purified from sea water and ground water through a solar-powered water cleaning solution. This project has been implemented in partnership with World Vision Finland and Solar Water Solutions in the Tseikuru village in Kenya, where it has reduced both the time used for fetching water as well as the cost of water notably. Additionally, World Vision has also forged a broader partnership with the same company in the Asia-Pacific Region.

World Vision uses technology to support many of the initiatives and projects they are implementing. For example, a project focusing on preventing and ending FGM/C includes a service where a girl/woman can send a text message when they feel they are at risk of FGM/C and receive support and information about what they can do to protect themselves.

Organization

Crisis Management Initiative (CMI), Finland

Country of implementation

Yemen

Project

Women's Involvement in the Yemen Peace Process

Since 2011, CMI has been implementing a programme on women's meaningful participation in the Yemen peace process, and in decision making processes more broadly. The project also aims to strengthen the internal structures of, and mechanisms for inclusion of women in, political parties through dialogue, as well as supporting the role of tribal women in local peacemaking. The initiative has been using technology to support its effectiveness and impact, as well as to organize, prioritize and analyze data and findings.

With the support of Inforglobe (now Inclus), a company providing software for participatory analysis and decision making, the project used digital tools to support a workstream aimed at advancing women's role in the peace process. This included a prioritization exercise, where stakeholders came up with 60 recommendations for how to best support inclusion and participation of women in the Yemen peace process. Then Inforglobe's prioritization tool was used to identify the top six recommendations, which were assessed against two criteria: importance and urgency. In between the different meetings held there were follow-ups, where a link to an assessment survey, and a survey on the National Dialogue outcomes, was shared after the meeting through an established WhatsApp group and by email, to feed into the design of the next steps in the process.

While the use of technology facilitated the project, some challenges were also identified. For example, unreliable and weak Internet connections and electricity outages posed challenges especially during remote workshops where technology was used, and some participants had hesitations to engage in the workshops virtually. With some participants, for example tribal leaders, meeting in any other way than face to face may just not be feasible, no matter what technological solutions are available. The organization also realized that more time should have been spent to familiarize the participants with the use and application of the digital tools when multicriteria analysis was conducted in dialogue meetings, and that in the future, it is advisable to assign more time for such preparatory work. On a very positive note, as a result of CMI's workshops where the digital tool was utilized, local decision makers and women's groups have also requested CMI to conduct similar exercises using the same tools within their groups. In some instances, the availability of digital tools for communication purposes has also facilitated women's ability to participate in these processes. In some more traditional tribal networks, women would need a male chaperone to participate in workshops and events physically, but when participating virtually, a chaperone is not required. Offering virtual communication and participation opportunities therefore provides women with more opportunities for participation. On the other hand, though, unreliable Internet connections also caused some participants to be left out, as they were not able to join in due to connectivity issues. CMI has, however, addressed this issue by providing access to the internet to key stakeholders, including women.

CATEGORY C: Technology is used to bring attention to an issue related to gender equality and girls' and women's rights, and/or highlight a specific challenge or problem

Organization

Plan International Finland and Samsung

Country

Global

Project

SheBoard

In 2017, Plan International Finland released an initiative titled "Sheboard" - the keyboard for boosting girls' confidence. Sheboard, developed in collaboration between Plan International Finland and Samsung, is an Android app that uses predictive text, and suggests certain kinds of words to autofill sentences that refer to girls and women. The app might, for example, suggest replacing the word "princess" with a word like "achiever", "strong", "capable"; or "pretty" with "smart" or "successful". While the app itself won't resolve the issue of gender stereotypes or harmful gender norms, the goal is for the app to work as a conversation starter, and to help people understand and realize how words and language can have a profound impact on how girls (and boys) view themselves, what kinds of traits and skills they perceive themselves to have, and what opportunities and possibilities they see for themselves in the society - for example in terms of what they want to study or in which industry they wish to work in. (Plan International 2017)

Learn more: <https://plan-international.org/smashing-gender-stereotypes-sheboard-app>

Organization

Emmanuel Kateregga, Rachel Achen, Nurah Nantume, Jingo Kisakye, Joshua Okello and Gitta Brian (young Ugandan innovators)

Country

Uganda

Project

SafePal app

The SafePal app enables its users to report instances of sexual violence anonymously, allows them to access information about available services for victims, and helps them in contacting a service provider. The app was created during a #Hack4Youth hackathon organized by UNFPA Uganda and Reach a Hand Uganda, in collaboration with Massachusetts Institute of Technology (MIT) and Sana Mobile. The app and web platform are available for anyone, but the service is particularly meant for young girls and women who face a notable risk of sexual harassment and abuse in Uganda, and due to stigma are often discouraged from reporting it.

Learn more: <https://uganda.unfpa.org/en/news/ministry-gender-launches-mobile-app-strengthen-reporting-sexual-violence-and-dissemination>

Organization

Girl Rising India Foundation

Country

India/Global

Project

Girl Rising game

Girl Rising was originally an award-winning film that followed nine girls around the world on their journey to fight for their education. The film was turned into a digital game, built in partnership between the Girl Rising India Foundation and telecommunications company Vodafone. The game uses the stories of the film as its basis and leads players through a gamified journey of what it takes for a girl to attend school and get a proper education. The game leverages the popular Match 3 game format, and aims to create awareness about gender bias, offer concrete steps that everyone can take to promote girls' rights, and inspire people to act. It is available for the Android operating system.

Learn more: <https://www.girlrising.in/mass-media-and-public-awareness-campaigns/#grgamesection>

Organization

Lulu Labs, Denmark

Country

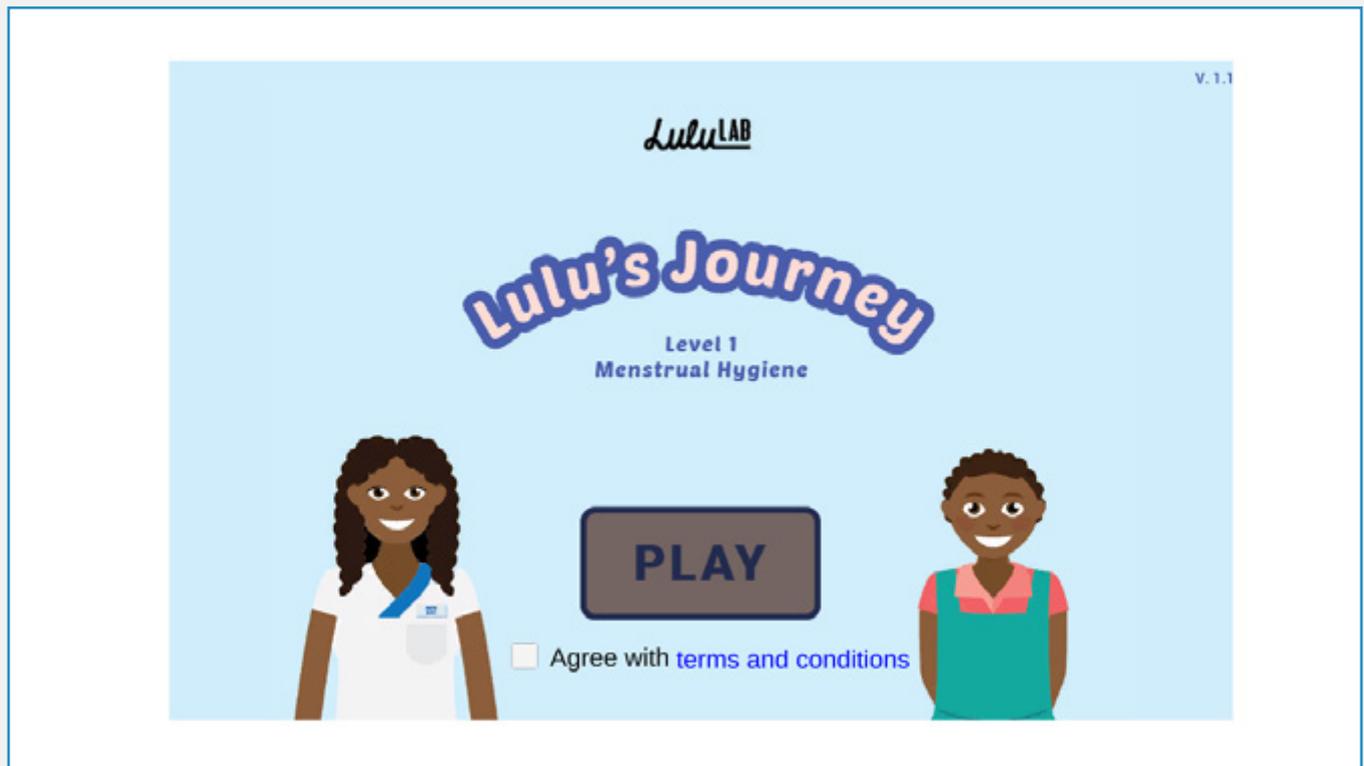
Global

Project

Lulu's Journey

Lulu Labs is a Danish game studio that creates games for humanitarian causes. Lulu's Journey is a digital game that teaches girls and women about menstrual hygiene. While the game's target audience are girls and women between the ages of 10 and 24, it can also be used to introduce boys and men to these topics. It also includes information about sexual and reproductive health, and it has a feature that works similarly to the viral game "Candy Crush", but instead of candy, the player is playing with menstrual cups and menstrual pads. The game's prototype was originally tested in Kenya, but it can be adapted and translated to any context. It is currently available for the Android operating system.

Learn more: <https://lululab.org/educationalgames/lulusjourney>



PROMOTING GENDER EQUALITY IN TECH THROUGH ADVOCACY AND RESEARCH

THE TECHNOLOGY SECTOR is still highly male dominant, and similar gender stereotypes and barriers preventing women's and girls' equal access and participation are present throughout the STEM fields. NGOs and CSOs also have an important role to play through their advocacy and communications work to break down these barriers and stereotypes and encourage and push these sectors and businesses to take more concrete and effective steps to fix the gender imbalance, address issues of harassment and bullying, and create a more welcoming environment for all genders.

This work is already being carried out by several NGOs and CSOs around the world. For example, Plan International has been working together with a group of girl activists to engage Instagram and other Facebook-owned platforms in so-called "Girls Get Equal Listening Sessions". During these sessions, policy and product teams from Instagram and other Facebook platforms will hear directly from girls about their experiences on these digital platforms, as well as their suggestions for improving the user experience particularly for girls and women from the perspective of safety and addressing gendered hate speech. Through the Girls Get Equal initiative, Plan International is also advocating directly with governments to implement specific laws aimed at tackling online hate speech and gendered bullying and violence. (Plan International 2020c.)

Similarly, UNICEF, together with the Ministry for Foreign Affairs of Finland, has developed a first version of policy guidance on AI for children. While the draft guidance note applies broadly to all children, it also addresses the importance of ensuring that most marginalized children, including girls, can equally benefit from AI systems and to ensure that girls are included in AI literacy programmes to address the gender imbalance in digital literacy programmes. The policy guidance also underscores the importance of ensuring that the data AI systems rely on is representative of all genders, ethnicities, cultural and other characteristics, and adopting

an inclusive approach to AI design. (UNICEF and Ministry for Foreign Affairs of Finland 2020.)

Advocacy and policy work is crucial for ensuring that girls and women are able to access and enjoy the benefits of technology equally with boys and men, and that issues such as gender stereotypes, bullying and harassment are tackled to break down barriers that currently limit girls' and women's participation as creators and users of technology. NGOs and CSOs have an important role to play in working together with governments and the private sector to bring in their own expertise and technical subject matter on issues like human rights, social justice and gender equality to inform decision making and policies. Likewise, NGOs and CSOs with well established presence and trusted reputation in various programme countries in the global south can also play a key role in changing hearts, minds and attitudes about women, girls and technology in those countries by ensuring that girls and women are visibly present and taking front stage in computer labs, hackathons, code camps and so forth.

Bringing attention to the digital gender divide and related challenges, such as gendered online harassment and bullying, is also something NGOs and CSOs can play an active role in - and many already do. A few years back, Amnesty International made headlines by revealing the widespread, normalized and largely accepted gendered hate speech, harassment and violence towards women and girls using the platform (Amnesty International 2018). Plan International's "Free to Be Online?" -report details the extremely common and global phenomenon of girls' and women's experiences of online harassment (Plan International 2020a). UN Women has recently published a brief on "Online and ICT-facilitated violence against women and girls during COVID-19" (UN Women 2020a), World Wide Web Foundation's "Women's Rights Online" study provides a global snapshot of the global digital gender divide (World Wide Web Foundation 2020a) and entities like GSMA and ITU release data and reports on gender dimensions of their work on regular basis.

The particular added value of NGOs and CSOs working in the field of international development lies in their nuanced and contextualized understanding of local conditions, traditions and socio-cultural factors that can often play a notable role in limiting girls' and women's ability to take advantage of technology. Organizations who are implementing programme work in countries in the global south can also help to ensure that the voices of the people they are directly working with are brought in to influence policies and decision making related to technology and digital platforms, and that the needs of those people are taken into account when new technology and digital tools are created. Ideally, all those people - including girls, women, people with disabilities, minorities and other marginalized groups - would also be present and represented not just users and consumers of technology, but as creators of technology as well.

OVERVIEW OF PROGRAMMES IMPLEMENTED BY FINNISH OR FINLAND-BASED ORGANIZATIONS

SOME ORGANIZATIONS INDICATED that they were not currently implementing programmes where technology is being used directly for the purpose of promoting gender equality. In some cases, the reason for this is more in the definition of “gender programming”. Organizations do not necessarily implement programmes or initiatives that have a specific focus on gender equality or women and girls, but instead have gender equality as a cross-cutting or mainstreamed theme and priority that runs through all the organization’s activities. In those cases, it would be interesting to review and analyze programmes that do have a technology component but did not indicate a specific gender-focus, and see whether the differential impact of technology on gender equality has been taken into account, and if there are indicators, mechanisms or tools built into the intervention that monitor whether the programme does end up having an impact on gender equality and women’s and girls’ rights and empowerment, even if this was not the programme’s primary goal. Given that most organizations working in the field of international development are quite keenly aware of gender dimensions of their work, it is likely that they have mechanisms in place to monitor the gendered impact of their interventions.

In most of the examples coming from Finnish organizations, technology plays a supporting role. This means that the programme is not technology-focused (e.g., a computer lab for girls), but uses technology in some supporting manner. These initiatives include, for example, programmes that use tools like OMBEA to gather data and feedback, or SMS as a means for passing along information. Technology is assisting the programme but is not the primary focus or tool for its implementation.

While this report does not present examples from all Finnish NGOs working in the field of international development, it is feasible to draw some conclusions on trends, characteristics or commonalities between the initiatives. It is important to also note the different size, reach and resources of the organizations represented in this report. Multinational and large organizations are obviously very

differently positioned in their ability to pilot new technologies and scale up their use as compared to smaller grassroots organizations. That does not mean that small organizations cannot incorporate technology in their work and programming, but lower budgets can often restrict an organization’s ability to implement pilot programmes to try out a new technological approach or digital solution, and funder requirements about reporting, longer planning cycles and measurable results can also pose additional challenges for “failing forward” and agile programming.

Based on the review of the available information from Finnish NGOs and discussions with some of the NGO representatives, the following points can be drawn regarding their experiences with technology and gender programming:

1. Most organizations are not implementing specific “technology” initiatives, i.e., programmes where the focus is on technology. This may be because organizations do not feel like it is relevant for their work, because they lack the know-how or right partners to implement such programmes, or because they have not felt the need to add a particular technology-component to what they are doing.
2. Where technology is being used, it is generally used in a supportive role. This may include things like digital data collection, gathering feedback and surveys with digital tools, or using SMS to share information with beneficiaries. Such programmes rarely require a huge financial investment and require little training to implement from the technical perspective - but they can still bring substantial benefits to a project.
3. Organizations are interested and open to exploring further uses of technology for increasing the impact of their work, and see it as an integral part of international development work and crucial for promoting gender equality and breaking harmful gender norms and stereotypes.

It is also important to note that while some organizations stated that their initiatives and programmes do not have a specific gender-focus because gender equality is considered a cross-cutting and mainstreamed theme, several technology-supported or technology-centered programmes and initiatives may still have a differential impact on women's and girls' lives and wellbeing. For example, a solar-powered water pump system may not have a specific gender-focus. However, because women and girls bear the primary responsibility for fetching water and can oftentimes spend several hours each day walking to a well to carry clean water for their families, an initiative that brings clean water closer to them, reducing the time commitment and physical burden it takes to retrieve water, will impact women and girls even more than men and boys. Similarly, smartphone apps that provide information or services to people can also have a greater impact on women and girls due to the fact that in some locations, their ability to travel may be limited and restricted because of harmful gender norms that limit women's freedom to move.

Programmes that take advantage of blockchain technology or mobile cash transfers rarely have a gender equality or women's empowerment focus, but because women are less likely than men to have access to traditional banking services, being able to safely receive money, remittances or cash transfers can be even more impactful for women (Hammond and Young 2018). Bringing organizations together to discuss the differential

gendered impacts of technology programmes could also bring out invaluable insights about how technology and digital tools can increase a programme's impact on women's and girls' lives, as well as about the possible risks and challenges that may arise, for example regarding cyber security, privacy and online safety.

Identifying the right partners for technology initiatives can also be a time and resource consuming task, especially for smaller organizations, which was raised as a challenge during the research for this report. So-called shared value partnerships are often beneficial for technology initiatives, where an organization can leverage the skills, expertise and technical knowledge of the implementing partner, while all partners share a similar value base, priorities and commitment towards solving a problem or a challenge (Saldinger 2014). Shared value partnerships are more complex and more nuanced than partnerships based on a simple donor-grantee relationship, and often require more time and polishing before each partner's role, competencies, skills and goals are properly defined - but can be immensely impactful and efficient for international development programmes. Women and girls should also be considered as potential clients, consumers and customers, as well as future creators of new technological innovations. A more gender equal world is, therefore, also good for business - in addition to being the right thing to do from a moral standpoint, as well as an absolute necessity for sustainable development.

OVERVIEW OF PROGRAMMES IMPLEMENTED BY INTERNATIONAL ORGANIZATIONS

ON A GLOBAL scale, organizations are using technology in various ways as a tool to accelerate gender equality, promote women's and girls' rights and participation and fight harmful traditional gender stereotypes. There are different approaches to incorporating technological solutions to tackling gender equality challenges. In some instances, technology is the starting point - for example, when a hackathon is organized with a specific goal of using tech solutions for addressing problems. In these cases, the issue is often at least somewhat pre-defined. A hackathon might be organized to tackle issues related to sexual and reproductive health, or girls' access to education. Some programmes are implemented with technology as the central component, like in the case of computer skills lab or a gaming workshop for girls. And in some cases, the programme or intervention itself is not in any way technology-focused, but some form of technology is used to enhance or complement the programme. This might involve using digital data collection tools to gather invaluable insights about the programme or an audience response system to gather feedback from participants to inform the organization about its impact and the participants' experiences.

For many international organizations, smartphone apps are quite commonly used as a means for delivering information, reaching target audiences, and introducing people to topics such as menstrual hygiene or maternal, sexual and reproductive health. Smartphone applications seem to be popular for programmes that have a focus on health-related themes and can be useful in sharing information with hard-to-reach populations - if these populations have reliable access to data and smartphones. Gamification is also gaining more interest from NGOs, as several organizations have harnessed either existing games or created new games to address gender inequalities and stereotypes. Given the presence of several well-established gaming companies with a global reach in Finland, these types of collaborations could also benefit Finland-based NGOs and CSOs and offer them new and creative ways to tackle issues of gender equality and women's and girls' rights through games.

It can be challenging to assess the actual impact of most of these programmes through a desk review, or to find information about challenges or even "failures" with technology, particularly as it relates to gender programming. Organizations are often open to sharing this information, but it is still rarely available on their websites. Facilitating discussions and forums where organizations can openly share their experiences related to experimenting and piloting technology initiatives and talk about what worked and what did not and what kinds of challenges they faced particularly in regard to the relationship between technology and gender equality can offer invaluable insights for any organization or entity looking to harness technology for promoting gender equality in a more impactful and meaningful manner.

There were only a few examples of organizations implementing gender programming with so-called "frontier technologies", such as artificial intelligence, machine learning, drones or blockchain - and all those examples come from large multinational organizations. While there may not be many programmes with a focus on gender equality that use these kinds of technologies as part of programme implementation, it is useful to consider that simply ensuring that women are involved in the use of these technologies can be an efficient way for breaking gender stereotypes and promoting female role models. Employing a female drone pilot or female coders and programmers normalizes women's presence in tech and provides younger girls with much needed role models in these industries.

While there are several initiatives that use technology to promote gender equality and women's and girls' rights and empowerment, it can be challenging to find tangible information about the impact and results of a particular programme on women's and girls' day-to-day lives and lived experiences. Doing a more in-depth review of the impact and results of some technology and gender initiatives could offer very useful insights about how well these programmes impact women's and girls' lives and whether their impact on gender equality has actually been tracked and measured.

CONCLUSION

“Coding - everyone thinks it’s a superpower. And so when you feel like, ‘I’ve learned how to code,’ and you say to your mom or the girl sitting next to you, ‘I know how that app is built, I know the logic behind how that was created’ - that’s powerful.”

Reshma Saujani, Founder, Girls Who Code

ORGANIZATIONS IMPLEMENTING PROGRAMMES in the global south are interested and open to exploring different ways to harness technology and digital solutions to enhance the impact of their work on promoting gender equality and women’s and girls’ empowerment - and many are already doing it. The ability and resources available for organizations for experimenting with technology, however, varies greatly. Especially with newer technological solutions or more innovative and less commonly used approaches, tech projects often require the ability for agile and short-term testing and piloting, trial and error and pivoting to a whole new direction, before the most effective, locally relevant and sustainable approach can be identified. Because of limited resources, rigid funder requirements and multi-year programme cycles, this type of an approach can still be quite difficult to implement for many NGOs and CSOs.

Sharing experiences and lessons learned from technology programmes plays a key role in ensuring that good practices get passed along, and that other organizations can avoid replicating the same mistakes that others have already made. This applies to technology programmes in general but is perhaps even more important with gender programmes that have to be particularly aware of local cultural contexts, stereotypes and barriers that prevent women and girls from participating in society equally with men and boys. Small grassroots organizations may also not have the resources to employ a specific person, not to mention a team, to oversee an area of work often titled something along the lines of “technology and innovation” or “digital development”. This is another reason why knowledge management and sharing of information between organizations about their experiences with using technology to promote gender equality is particularly important, and the role and impact of a well selected partner can make or break an initiative.

In the examples presented in this report, organizations have not taken on the role of a tech developer,

except for smartphone applications - which is smart. In most cases, NGOs and CSOs should not start developing their own technologies and digital tools, but harness their understanding of local contexts, human rights principles, sustainable development and gender equality, and combine that with a partner that can provide the necessary technical and digital knowhow and skills. It also goes without saying that programmes should never be implemented “technology first”, but the technology should always be chosen and selected based on need and local applicability and context. Umbrella organizations like Fingo are in a great position to act as a connector between especially small organizations and the vast world of possibilities with off the shelf tools and technologies, toolkits that can be adapted to individual organization’s needs, case studies of successful and less successful technology projects, and facilitating discussions, roundtables and events where both NGOs as well as private sector companies and enterprises can showcase the work they are doing with gender and technology programming to inspire others to explore and experiment in this area as well.

For organizations in the beginning stages of experimenting with tech-related programmes, check lists can be invaluable to ensure that all crucial aspects and questions are considered in advance. Such lists do also exist already and do not necessarily need to be reinvented. Some examples of such check lists are provided here:

- ▶ [Principles of Digital Development](#)
- ▶ [The Gender and ICT Survey Toolkit](#)

Technology can promote gender equality or push women and girls into the margins of society and act as a barrier for their participation. The digital gender divide is not a new term - if anything, over the past few years it has become quite the buzz word. We knew women and girls did not have equal access to technology and the internet years before COVID-19 hit, and we knew technology was, in some instances, working against gender equality, not promoting it. But the pandemic has lifted this challenge to a whole new level as women and girls have been bearing the brunt of the crisis globally, acting both as the frontline workers against the virus and the people bearing the invisible burden of domestic work, parenting and caretaking inside their homes. Those women and girls who lacked access to digital spaces have been

marginalized even further in their societies, while women and girls who are accessing the internet are facing an increased risk of online abuse and harassment.

This is an excellent time to explore how technology and digital tools can be used in more efficient and creative ways to ensure that women and girls are not forgotten, and that the progress that has been achieved in gender equality over the past few decades is not undone. There is no question that technology plays a pivotal role in accelerating the global race towards a more gender equal world where women and girls can participate equally in all functions of a society, where women have access to income earning activities and economic independence, where women and girls can speak their minds and join local and global conversations without the fear of being harassed into silence, and where women are represented in equal numbers in the tech field and in the technological and digital solutions that are being created. The global UN Women campaign “Generation Equality”, where Finland holds a lead role in the Action Coalition that focuses on technology and innovation, offers an excellent vehicle for exploring new ways for civil society, the private sector, and the government to come together and innovate around gender and technology. Priority should be on ensuring that all the best practices, lessons learned, and innovations are shared so that they can be scaled

up and replicated where feasible, and that new partnerships and approaches are created to ensure that women and girls get to benefit from the best that tech has to offer.

Girls and women have the right to benefit from information and communication technologies and participate in creating new technology and digital solutions. But we need to dismantle barriers, break stereotypes and move obstacles that continue to prevent women and girls from being able to reap the benefits of technology. NGOs and CSOs, together with private sector companies and industries as well as state actors, all have a role to play. If we do not ensure that girls and women are able to access, use and create technology equally with boys and men, we will fail in our quest to empower women and girls and realize gender equality. Organizations working in the field of international development are in an excellent position to harness their nuanced understanding of local context and culture and existing barriers and combine that with the tech knowledge of a well chosen partner to ensure that technology and digital tools do not inadvertently push women and girls further into the margins, but instead act as an accelerator towards a more gender equal world. There is no app to fix gender inequality, but we do have many tools in our toolkit to make gender equality a reality - and technology is, without a doubt, one of them.

References:

- Alliance for Affordable Internet. 2020. Meaningful Connectivity – unlocking the full power of internet access. <https://a4ai.org/meaningful-connectivity/>
- Amnesty International. 2018. Toxic Twitter - A Toxic Place for Women. <https://www.amnesty.org/en/latest/research/2018/03/online-violence-against-women-chapter-1/>
- Bill & Melinda Gates Foundation. 2020. Gender equality. No, there isn't an app for that. <https://ww2.gatesfoundation.org/ideas/articles/gender-equality-mobile-phones-women>
- Block by Block. 2020. <https://www.blockbyblock.org/about>
- Chennai, Chair. 2020. There's a pandemic of online violence against women and girls. <https://webfoundation.org/2020/07/theres-a-pandemic-of-online-violence-against-women-and-girls/>
- Chin, Caitlin and Robinson, Mishaela. 2020. How AI bots and voice assistants reinforce gender bias. <https://www.brookings.edu/research/how-ai-bots-and-voice-assistants-reinforce-gender-bias/>
- European Commission. 2019. Women in Digital. <https://ec.europa.eu/digital-single-market/en/women-ict>
- Feminist Internet and Plan International. 2020. Maru - lifting voices against online harassment. <https://about.maruchatbot.co/#feminist-principles>
- Global Partnership for Education. 2020. Breaking down barriers to girls' education. <https://www.globalpartnership.org/sites/default/files/document/file/2020-08-GPE-gender-factsheet.pdf>
- GSMA: Connected Women: The Mobile Gender Gap Report 2020. <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/05/GSMA-The-Mobile-Gender-Gap-Report-2020.pdf>
- Hammond, Alicia and Young, David. 2018. Can blockchain disrupt gender inequality? <https://blogs.worldbank.org/psd/can-blockchain-disrupt-gender-inequality>
- Hightet, Catherine; Salman, Arisha; and Singh, Nisha. 2020. The Digital Gender Divide Won't Close by Itself - Here's Why. <https://www.cgap.org/blog/digital-gender-divide-wont-close-itself-heres-why>
- ITU. 2019a. New ITU data reveal growing Internet uptake but a widening digital gender divide. <https://www.itu.int/en/mediacentre/Pages/2019-PR19.aspx>
- ITU. 2019b. Measuring Digital Development - Facts and Figures. <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2019.pdf>
- ITU. 2020. Digital Skills Insights 2020. <https://academy.itu.int/sites/default/files/media2/file/Digital%20Skills%20Insights%202020.pdf>
- Kumar, Shivina. 2018. New study: Almost 70% of professional event speakers are male. <https://blog.bizzabo.com/event-gender-diversity-study>
- Lindsey, Dominica and Wilson, Amber. 2019. "Affordability": How mobile operators can improve the affordability of their services for women to help close the mobile gender gap. <https://www.gsma.com/mobilefordevelopment/blog/how-mobile-operators-can-improve-the-affordability-of-their-services-for-women-to-help-close-the-mobile-gender-gap/>
- Lindström, Nora. 2020. Why do we need more biased technology? <https://plan-international.org/blog/2020/04/why-we-need-more-biased-technology>
- Madgavkar, A., White, O., Krishnan, M., Mahajan, D. and Azcue, X. 2020. COVID-19 and gender equality: Countering the regressive effects. <https://www.mckinsey.com/featured-insights/future-of-work/covid-19-and-gender-equality-countering-the-regressive-effects#>
- McKinnon, M., O'Connell, C. Perceptions of stereotypes applied to women who publicly communicate their STEM work. Humanit Soc Sci Commun 7, 160 (2020). <https://doi.org/10.1057/s41599-020-00654-0>
- Mlambo Ngcuka, Phumzile. 2018. Reshaping the future: Women, girls and tech for development. Published on ITU News. <https://news.itu.int/reshaping-future-women-girls-icts/>
- OECD. 2018. Bridging the Digital Gender Divide - Include, upskill, innovate.
- Palmiter Barojek, Joan. 2019. Voice recognition still has significant race and gender biases. Published on Harvard Business Review. <https://hbr.org/2019/05/voice-recognition-still-has-significant-race-and-gender-biases>

Plan International. 2017. Smashing gender stereotypes with 'Sheboard' app. <https://plan-international.org/smashing-gender-stereotypes-sheboard-app>

Plan International. 2018. An app to tackle teen pregnancy in Timor-Leste. <https://plan-international.org/case-studies/app-tackle-teen-pregnancy-timor-leste>

Plan International. 2020a. The State of the World's Girls Report: Free to be online. <https://plan-international.org/publications/freetobeonline>

Plan International. 2020b. New chatbot to tackle online harassment faced by girls. <https://plan-international.org/news/2020-11-25-new-chatbot-tackle-online-harassment-faced-girls>

Plan International. 2020c. Instagram teams up with girl activists to address online harassment. <https://plan-international.org/news/2020-10-10-instagram-teams-girl-activists-address-online-harassment>

Saldinger, Adva. 2014. 10 tips for successful shared value partnerships. <https://www.devex.com/news/10-tips-for-successful-shared-value-partnerships-83503>

Singh, Maavi. 2018. Apps let women say #Metoo about street harassment. <https://www.npr.org/sections/goatsandsoda/2018/01/11/577154367/apps-let-women-say-metoo-about-street-harassment>

Summers, K., Baird, T., Woodhouse, E., Christie, M., McCabe, T., Emily., Tetra, F. and Peter, N. 2020. Mobile phones and women's empowerment in Maasai communities: How men shape women's social relations and access to phones. Published in Journal of Rural Studies, 77 (2020), p. 126-137. <https://reader.elsevier.com/reader/sd/pii/S0743016719313087?token=AC9B109C9527AFDCED361F9B9091012EB9BAE08125D51B2A88829D31BAE2E7CA4834894347ECDD02AD7213EDB64CD1EB>

UNESCO. 2015. Women's and girls' education - facts and figures. <http://www.unesco.org/new/en/unesco/events/prizes-and-celebrations/celebrations/international-days/international-womens-day-2014/women-ed-facts-and-figure/>

UNESCO. 2019. I'd blush if I could: closing gender divides in digital skills through education. <https://unesdoc.unesco.org/ark:/48223/pf0000367416.page=1>

UN Human Rights Council. 2018. Report of the Special Rapporteur on violence against women, its causes and consequences on online violence against women and girls from a human rights perspective. A/HRC/38/47

UNICEF and ITU. 2020. Towards an equal future: Reimagining girls' education through STEM. https://2b37021f-0f4a-4640-8352-0a3c1b7c2aab.filesusr.com/ugd/04bfff_d6ffe9bee8b24d7a814805d0f8c99db8.pdf

UNICEF and the Ministry for Foreign Affairs of Finland. 2020. Policy guidance on AI for children. Draft 1.0. <https://www.unicef.org/globalinsight/media/1171/file/UNICEF-Global-Insight-policy-guidance-AI-children-draft-1.0-2020.pdf>

UN Women. 2020a. Online and ICT facilitated violence against women and girls during COVID-19. <https://www.unwomen.org/-/media/headquarters/attachments/sections/library/publications/2020/brief-online-and-ict-facilitated-violence-against-women-and-girls-during-covid-19-en.pdf?la=en&vs=2519>

UN Women. 2020b. The Digital Revolution: Implications for gender equality and women's rights 25 years after Beijing. <https://www.unwomen.org/-/media/headquarters/attachments/sections/library/publications/2020/the-digital-revolution-implications-for-gender-equality-and-womens-rights-25-years-after-beijing-en.pdf?la=en&vs=1837>

Winiecki, Emma. 2017. Building a safer Hanoi for Girls with Minecraft. <https://plan-international.org/blog/2017/04/building-safer-hanoi-girls-minecraft>

World Bank. 2020: Closing the Digital Gender Gap: Why Now Should Have Been Yesterday. <https://www.worldbank.org/en/news/feature/2020/06/09/closing-the-digital-gender-gap-why-now-should-have-been-yesterday>

World Wide Web Foundation. 2020a. Women's Rights Online - Closing the digital gender gap for a more equal world. <http://webfoundation.org/docs/2020/10/Womens-Rights-Online-Report-1.pdf>

World Wide Web Foundation. 2020b. There's a pandemic of online violence against women and girls. <https://webfoundation.org/2020/07/theres-a-pandemic-of-online-violence-against-women-and-girls/>

World Wide Web Foundation. 2019. Meaningful Connectivity - Raising the bar for internet access. <https://webfoundation.org/2019/09/meaningful-connectivity-raising-the-bar-for-internet-access-the-web-untangled/>

World Wide Web Foundation. 2016. Women's Rights Online - Report Cards. http://webfoundation.org/docs/2016/09/WRO-Gender-Report-Card_Overview.pdf