WOMEN'S DIGITAL INCLUSION

BACKGROUND PAPER FOR THE G20

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ABSTRACT

The internet has great potential to promote women's digital inclusion and gender equality, one of the pillars of sustainable development. But it can also pose new challenges to women's rights and personal security, both online and offline.

This briefing, jointly published by the Internet Society and the Association for Progressive Communications (APC), outlines ways in which policy makers can facilitate the internet's positive potential through an enabling framework for women's digital inclusion:

- It urges effective, tangible and measurable action to overcome the digital gender gap in internet access, to ensure that women benefit from the developmental potential of digital inclusion.

- It encourages a holistic and contextualised approach to overcoming barriers to women's access to and use of the internet.

- In doing so, it builds on recommendations contained in the G20 Digital Economy Ministerial Declaration, agreed at Salta, Argentina, in August 2018. It also draws on a number of recommendations made by working groups of the G20, including the Women20 (W20) dialogue held in Paris, France, in May 2018.

Together, these represent key considerations for unlocking access to the internet in support of women's digital inclusion and have resonance for all initiatives concerned with women's interests online. Although not the only framework that is available, the G20 recommendations provide a useful basis for considering future action which already has international resonance and support.

INTRODUCTION

The ability to access and use the internet effectively is central to women's digital inclusion. Research has shown that when women gain meaningful internet access and participate in evolving knowledge societies, it is not only women that benefit. Their families, villages, communities and countries also gain from their empowerment.[1] Promoting internet access for women is therefore much more than an issue of gender[2] equality; it is an essential part of the economic, social and political development of the countries in which women live.[3]

The importance of women's digital inclusion was emphasised by the G20 Digital Economy Ministerial Declaration which, in August 2018, recognised that "the integration of women in the digital economy supports stronger economic growth, inclusiveness and enhances well-being."[4] The Declaration builds on the Women20 (W20) dialogue with governments in 2017, which urged governments, businesses and other stakeholders to pay special attention to narrowing and removing the digital gender gap which currently exists in access, use and impact of information and communication technologies (ICTs).[5]

The importance of women's digital inclusion is also recognised by the United Nations. Goal 5 of its 2030 Agenda for Sustainable Development,[6] adopted in 2015, sets goals for gender equality and the empowerment of women and girls, including a target to enhance the use of enabling technology, in particular ICTs like the internet. A target for universal and affordable access to ICTs in least developed countries (LDCs) by 2020 is contained in goal 9c of the Agenda, while ICTs are identified in goal 17 as critical for enabling implementation for the Agenda as a whole.

As things stand today, however, many women are being left behind in digital development. Women are 12% less likely to use the internet globally than men, while in low- and middle-income countries, the gap between women's use and that of men is 26%.[7] This gender digital gap is least pronounced in developed countries, and most pronounced in LDCs, where women are 33% less likely than men to use the internet.[8] Even when women do have access to the internet, that access may not be available at a quality, speed or cost that enables them to use it optimally.[9] What's more, access to the internet is only fully meaningful when women have the skills or capacities required to use it to improve their lives and those of their families and communities.[10] As economies are increasingly becoming more digital and interconnected, women's participation in global economies and fields like science, technology, engineering and mathematics (STEM) is crucial.[11]

The reasons why we are facing these gender digital gaps are varied and complex and discussed in more depth later in this paper. Women's digital disadvantage cannot be separated from structural inequalities such as those found in income, education and opportunity, as well as other inequalities based on location, race, sex, class, and related intersectional factors. Policies to achieve digital equality, therefore, cannot be concerned with digital policies alone. If they are to be effective, they must build on rights-based approaches that address women's right to participate and contribute to economic, social and cultural development in ways that enable the full realisation of women's human rights and freedoms.[12] Policies related to digital technologies must be integrated across broader initiatives concerned with gender equality across societies. And they must consider women's agency – including the choices women make in adopting or choosing not to adopt the internet, for instance.

Digital inequalities matter particularly because digital technologies, including the internet, are having increasingly profound impacts on other aspects of economy, society and culture. Action to enhance digital equality can therefore have important positive impacts on gender equality in general. Without such action, there is a risk that differences in internet

1   Chair, C. (2017). *Internet use barriers and user strategies: Perspectives from Kenya, Nigeria, South Africa and Rwanda*. Cape Town: Research ICT Africa. https://www.researchictafrica.net/docs/RIA%202016%20Comparative%20FGD%20study_Final_Web%20version.pdf; GSMA. (2015). *Bridging the gender gap: Mobile access and usage in low- and middle-income countries*. https://www.gsma.com/mobilefordevelopment/programme/connected-women/bridging-gender-gap-mobile-access-usage-low-middle-income-countries

2   The term "gender" in this paper refers to the social and cultural constructs that each society assigns to behaviours, characteristics and values attributed to men and women, reinforced by symbols, laws and regulations, institutions and perceptions.

3   World Economic Forum. (2017). *The Global Gender Gap Report 2017*. https://www.weforum.org/reports/the-global-gender-gap-report-2017; World Bank. (2016). *World Development Report 2016: Digital Dividends*. www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2016/01/13/090224b08405ea05/2_0/Rendered/PDF/World0developm0000digital0dividends.pdf

4   G20. (2018). *G20 Digital Economy Ministerial Declaration*. www.g20.utoronto.ca/2018/2018-08-24-digital.html

5   W20. (2017). *Women20 Germany 2017 Communiqué*. www.w20-germany.org/fileadmin/user_upload/documents/W20_Communique_Final.pdf

6   United Nations General Assembly. (2015). *Transforming our world: the 2030 Agenda for Sustainable Development* (A/Res/70/1). www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

7   ITU. (2017). *ICT Facts & Figures*. https://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx
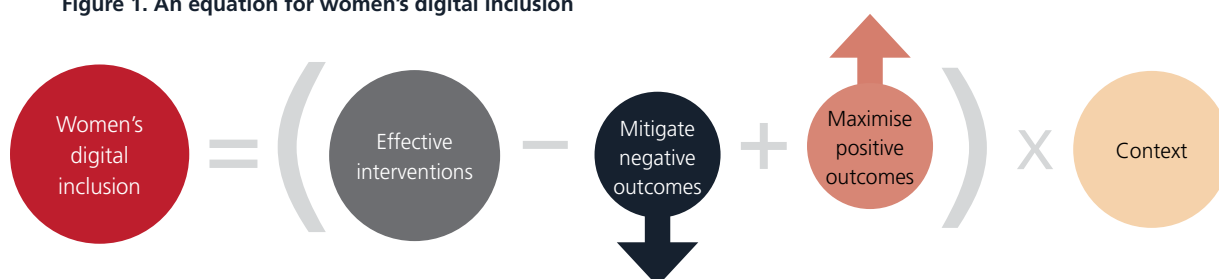
8   Ibid.

9   Chair, C., & Deen-Swarray, M. (2016). South Africa: Determining user capabilities to ensure the achievement of ESCRs through internet use. In A. Finlay (Ed.), *Global Information Society Watch 2016: Economic, social and cultural rights and the internet*. Johannesburg: APC & IDRC. https://www.giswatch.org/sites/default/files/gw2016-southafrica.pdf

10 Gurumurthy, A., & Chami, N. (2017). *A feminist action framework on development and digital technologies*. Johannesburg: APC. https://www.apc.org/en/pubs/feminist-action-framework-development-and-digital-technologies

11 World Economic Forum. (2017). Op. cit.

12 Ibid.

Figure 1. An equation for women's digital inclusion

$$\text{Women's digital inclusion} = (\text{Effective interventions} - \text{Mitigate negative outcomes} + \text{Maximise positive outcomes}) \times \text{Context}$$

access and use will increase, rather than reduce, the gap in information and power between women and men, and limit the developmental and economic gains that could be made by women's countries and societies if women[13] were involved more fully in their digital development.

WHAT IS TO BE DONE?

This briefing builds on work by the G20 to understand and address issues surrounding gender digital divides. The G20's work must bring together evidence and experience concerned with both gender equality and digital development. At the same time, actions to implement G20 recommendations must be flexible enough to meet the different circumstances of different countries, including differences in women's experience and levels of empowerment as well as differences in the digital environment.

To achieve this, we believe policies and interventions need to focus on three aspects of gender inequality and digital inclusion:

• Policies, programmes and initiatives are required that directly **address the barriers** that inhibit women's ability to access and use the internet. These barriers are summarised in the next section.

• Policies, programmes and initiatives are needed to **mitigate the potential negative consequences** for women (and for development in general) that arise from women's unequal access to and capacity to exploit the internet.

• Policies, programmes and initiatives are required that **maximise the potential positive outcomes** of internet access and use for women and women's empowerment, including policies and interventions that use the internet to address the structural inequalities that underpin women's disempowerment overall.

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13 While this paper focuses on women, it recognises that the category of "women" is not homogenous and that many identities which impact on the gender digital divide are not addressed by this term.

One way of looking at this can be found in Figure 1.

All stakeholders should be involved in the development and implementation of these responses, particularly governments and businesses. Two things, however, should be considered crucial:
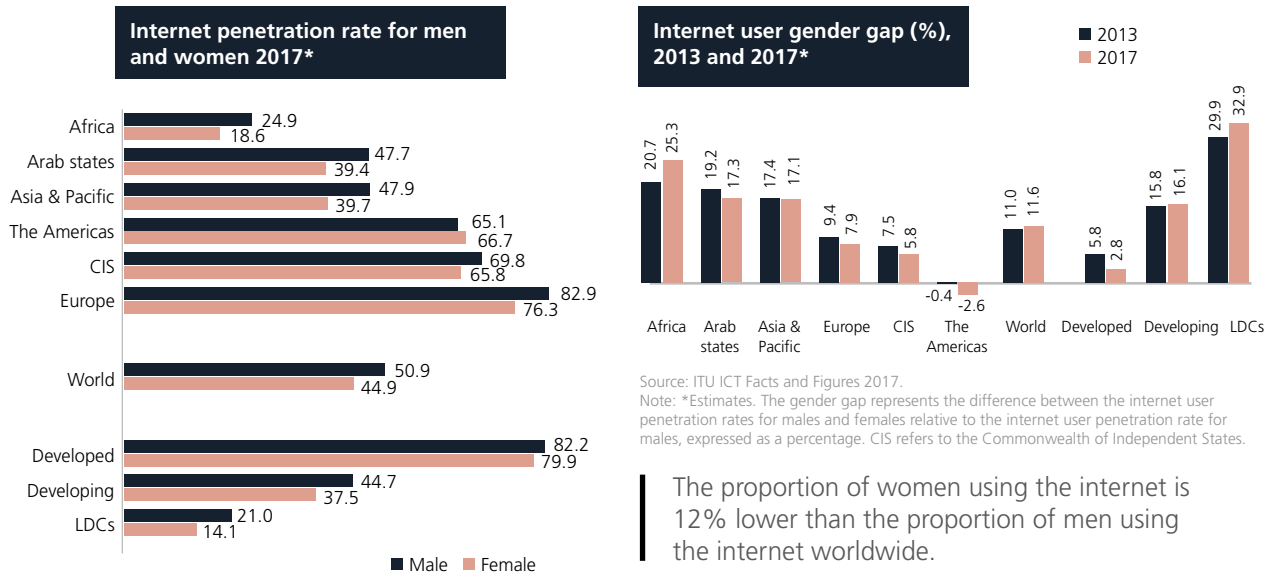
• Women, from all groups within society, should be much more involved in the design and development of technologies and policies that affect their lives. Digital policies have too often been designed and implemented with little female participation and with too little attention paid to the needs of users, particularly those who have less experience of online activity. Women should be at the forefront of digital development, not merely an afterthought.

• National contexts vary greatly in both gender equality and digital development. Appropriate policies and interventions will also differ between national contexts. While there are many common issues, there is no one-size-fits-all solution to the gender digital divide. If they wish to overcome digital disadvantage and promote digital development, governments, business and other stakeholders need to pay attention to these different contexts in developing those policies, programmes and business plans.

BARRIERS TO WOMEN'S DIGITAL INCLUSION

Effective policies, programmes and initiatives concerned with women's digital inclusion need to be based on an understanding of two things:

• The extent of the gender digital divide in different countries.

• The barriers and challenges that women face in access and use, again in different countries:

    o Those that reduce meaningful internet access.

Figure 2. Gender gaps in internet access

Internet penetration rate for men and women 2017*

	Male	Female
Africa	24.9	18.6
Arab states	47.7	39.4
Asia & Pacific	47.9	39.7
The Americas	65.1	66.7
CIS	69.8	65.8
Europe	82.9	76.3
World	50.9	44.9
Developed	82.2	79.9
Developing	44.7	37.5
LDCs	21.0	14.1

Internet user gender gap (%), 2013 and 2017*

	2013	2017
Africa	20.7	25.3
Arab states	19.2	17.3
Asia & Pacific	17.4	17.1
Europe	9.4	7.9
CIS	7.5	5.8
The Americas	-0.4	-2.6
World	11.0	11.6
Developed	5.8	2.8
Developing	15.8	16.1
LDCs	29.9	32.9

Source: ITU ICT Facts and Figures 2017.
Note: *Estimates. The gender gap represents the difference between the internet user penetration rates for males and females relative to the internet user penetration rate for males, expressed as a percentage. CIS refers to the Commonwealth of Independent States.

> The proportion of women using the internet is 12% lower than the proportion of men using the internet worldwide.

o   Those that make it harder for women to take advantage of opportunities arising from the internet.

o   Those that prevent women from participating fully in the design, development, production and governance of digital technologies.[14]

Data is limited here, and measurement is difficult. This is especially true in low- and middle-income countries and in different national contexts (for example, urban or rural contexts). An important recommendation for governments and businesses is, therefore, that they should work together to improve the quality and timeliness of data concerned with women's access to and use of the internet.

As noted earlier, data gathered by the International Telecommunication Union (ITU) (illustrated in Figure 2), the GSMA[15] and others indicates that the gender digital divide is more severe in lower-income than in higher-income countries. In Africa, the proportion of women using the internet is 25% lower than the proportion of men using the internet. In LDCs, only one out of seven women is using the internet compared with one out of five men.[16]

Overall estimates of the gender digital divide are insufficient, however, for policy and programme development. We need to reach deeper by asking women about their own experiences of the internet, including the barriers they face in accessing it, using it, and participating in the development of it.

Surveys of households and individuals in Africa, Asia and Latin America have recently been undertaken by three independent research institutions: Research ICT Africa, LIRNE*asia* and DIRSI. These have confirmed that women are less likely to have mobile phone or internet access in almost all of the 16 African and Asian countries that were surveyed,[17] and that the gender digital gap mirrors offline gender inequality. In India, for instance, 57% more men use the internet than women. In Rwanda, among seven African countries included in the survey, internet penetration rates are the lowest and gender disparity is the highest (see Figure 3).

Economic modelling by these research institutions has demonstrated that the principal drivers of gender inequality in most countries arise from structural inequalities between women and men, particularly inequalities in income and educational attainment.[18] The researchers argue that ensuring equitable access to education will

14   GSMA. (2018, 6 June). GSMA and W20 announce call to action to close digital gender gap ahead of G20 summit. https://www.gsma.com/newsroom/press-release/gsma-and-w20-announce-call-to-action-to-close-digital-gender-gap-ahead-of-g20-summit
15   Ibid.
16   ITU. (2017). Op. cit. These figures are calculated by subtracting the access rate for women from that for men, and then dividing this by the access rate for men.

17   AfterAccess. (2017). *The Inside Internet Story of Africa, Asia and Latin America*. https://afteraccess.net/wp-content/uploads/After-Access-Website-layout-r1.pdf
18   Souter, D., & Van der Spuy, A. (2018). *W20 Digital Inclusion background paper*. London: GSMA. https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2018/06/GSMA_narrative_VF.pdf

Figure 3. Internet use by gender in Africa
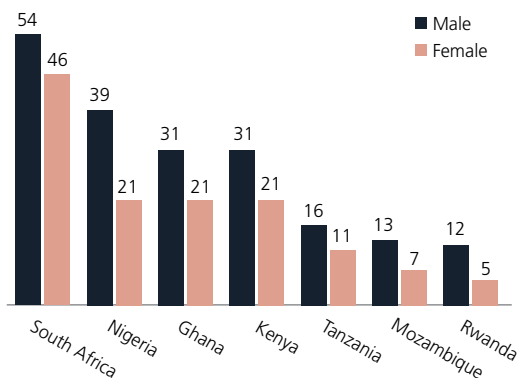
Source: Research ICT Africa 2017 After Access Survey

result in greater employment opportunities and allow women to independently select the ICT products and services they need and desire.[19]

The research also shows gender gaps in awareness of what the internet is. In Asia, for instance, research showed that only 25% of women in India were aware of what the internet is as opposed to 44% of men (see Figure 4).

Figure 4. Awareness of what the internet is in some Asian countries
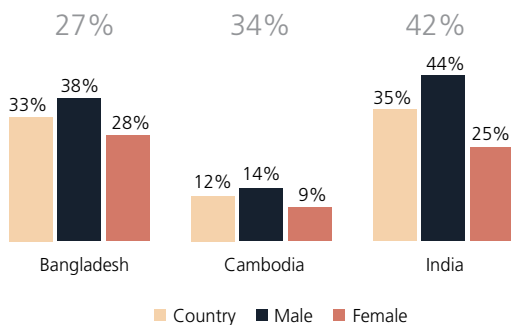
Source: 2017 After Access Survey

These findings illustrate that digital disadvantages that women experience in many societies reflect structural inequalities that women face in accessing resources, services, employment and empowerment opportunities of all kinds, from the ability to attend school, to expectations that emphasise household responsibilities and limit career progression, to inequalities in pay and work conditions. Typically, worldwide, women have lower literacy, spend fewer years in school and college, and have lower incomes and less financial autonomy than do men.

A FRAMEWORK FOR ASSESSING GENDER DIGITAL INEQUALITY

In its Digital Economy Ministerial Declaration, the G20 describes the main obstacles to gender digital inclusion as access, affordability, lack of education, skills and technological literacy, and inherent gender biases and socio-cultural norms.[20]

This section of our briefing proposes a framework for understanding and addressing these and related barriers. This framework is outlined in Figure 5, and consists of three elements:

Figure 5. Barriers impacting women's digital inclusion
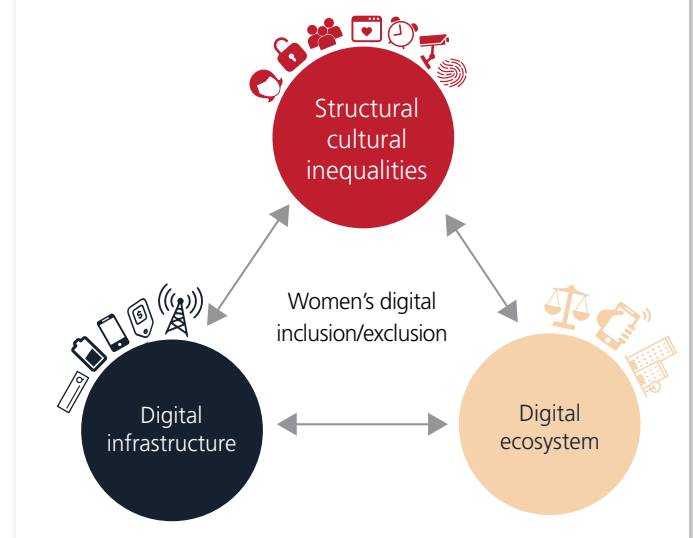
- At the top of the pyramid in Figure 5 lie the **structural and cultural inequalities** which affect all aspects of women's lives, including limited access to income and education as well as cultural constraints and stereotypes (what the G20 refers to as "inherent gender biases and socio-cultural norms").

- The **digital ecosystem**, to the bottom right of the pyramid, includes barriers relating to human capabilities, governance frameworks and institutional capacity (including the G20's "lack of skills and technological literacy", as well as some challenges related to "access").

- **Digital infrastructure** barriers, to the bottom left, are concerned with the availability and quality of

19   AfterAccess. (2017). Op. cit.

20   G20. (2018). Op. cit.

physical infrastructure and related resources (or what the G20 refers to as "access" and affordability barriers).

While these categories are closely related and often overlapping, each of the three categories is described separately below before turning to priorities for action.

Structural and cultural inequalities affect all aspects of women's lives. Analysis of the household surveys undertaken by Research ICT Africa, LIRNE*asia* and DIRSI shows that structural inequalities in income and access to education are major factors underlying the gender digital divide.[21] Men in many countries have higher average incomes and more financial independence than women, which means that they can more easily afford internet devices, access and usage. Women in many countries spend less time in school and have lower literacy levels than men, making it more difficult for them to take advantage of the resources that the internet provides.[22]

These structural inequalities are not concerned solely with the digital environment. The policies that are required to address them, likewise, cut across women's experience in society as a whole. The gender digital divide cannot be eliminated in isolation from the wider inequalities between women and men. These structural barriers require policies and interventions that seek to enhance gender equality and empowerment across the board, including access to education and employment.

Structural barriers faced by women are often underpinned by cultural constraints and stereotypes concerning women's roles within society, particularly within a family and in employment. Assumptions about these roles undercut girls' access to education in many countries, for instance. In some countries, they also have significant direct impact on women's ability to access and use the internet – for example, whether women are able to use the internet in public facilities, whether women can register their identities in order to obtain a SIM card, or whether women's internet use is monitored within their homes and families.

Formal and informal constraints on women's access and use are compounded by other factors identified in the recent household surveys, including:

• The lack of time that many women have at their disposal as a result of household responsibilities.

• The lack of content which is perceived to be of relevance to women.

• Anxieties concerning surveillance, safety and privacy, including online abuse and/or harassment.[23]

Cultural factors, and the extent to which they constrain women's agency, vary substantially between different societies, as do the challenges they pose to governments, businesses and other stakeholders concerned with gender equality and digital inclusion. While cultural factors impact both men and women, they tend to impact women more severely because many are compounded by practices and perceptions which lead to the digital exclusion of marginalised groups. As well as women, these include the poor or elderly, people in rural areas, people with disabilities, refugees, migrants, and certain ethnic groups.[24] Women who are also in these categories are likely to be especially disadvantaged.[25]

Digital infrastructure barriers concern the availability and quality of physical infrastructure and services required for effective internet access and use. These do not solely affect women, though women may be more affected by them, for example, because they are often less mobile than men as a result of domestic commitments or cultural constraints. Communities in rural, remote, island or mountainous areas, for instance, often have connectivity challenges because it is difficult or unprofitable for operators to reach them. The challenges arising from this for women include:

• The availability, affordability and quality of telecommunications infrastructure.

• The availability and affordability of internet-enabled devices for personal access.

• The availability and safety of public access facilities (e.g. at schools or libraries) in instances where women's personal ownership of devices is limited, as it is for the majority of poor women in many countries.[26]

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21 AfterAccess. (2017). Op. cit.
22 World Economic Forum. (2017). Op. cit.

23 Ibid.
24 Internet Governance Forum (2018). *Best Practice Forum on Gender and Access (2017): Unique challenges for unique women.* https://www.intgovforum.org/multilingual/filedepot_download/3406/1197
25 Cummings, C., & O'Neil, T. (2015). *Do digital information and communications technologies increase the voice and influence of women and girls? A rapid review of the evidence.* ODI. https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9622.pdf; Deen-Swarray, M., Gillwald, A., Morrell, A., & Khan, S. (2012). *Lifting the veil on ICT gender indicators in Africa.* https://www.researchictafrica.net/publications/Evidence_for_ICT_Policy_Action/Policy_Paper_13_-_Lifting_the_veil_on_gender_ICT_indicators_in_Africa.pdf
26 GSMA & LIRNE*asia*. (2015). *Mobile phones, internet, and gender in Myanmar.* London: GSMA. https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/02/GSMA_Myanmar_Gender_Web_Singles.pdf

- The availability, affordability and quality of electricity to power and charge devices.

- The availability of relevant applications and content.

The **digital ecosystem** includes barriers concerned with human capabilities, governance frameworks, and institutional capacity:

- Human infrastructure concerns the direct impact of those factors that enable women to use the internet to their advantage. This includes systemic factors such as women's levels of educational attainment, digital literacy and the skills required to use the internet effectively which result from structural inequalities within society, but they also include more specific requirements concerned with how women access online services – whether women have the requisite identity documents to be able to purchase a SIM card, for example. Some aspects of human infrastructure are closely associated with digital infrastructure challenges, including, for example, whether the applications and content available online are relevant to women, or whether devices, apps and interfaces have been designed with women as well as men in mind.

- Governance frameworks concern the ways in which government policies and business plans promote connectivity – or fail to do so. Business priorities are generally concerned with market share and profitability, which often prioritises higher-value services and users, and customers in urban areas. Governance strategies to address this – such as those concerned with licensing, interconnection and infrastructure sharing,[27] spectrum management, the extent of competition in the market, and tax and fiscal levies or incentives – significantly affect accessibility and affordability of access, one way or another.

- Even where governance frameworks do promote women's digital inclusion, such frameworks may be insufficient if a country lacks the institutional capacity to enforce or support digital ecosystems. Relevant institutional capacity is needed in financial systems, judiciaries, governments capable of promoting the use of their services online, and law enforcement agencies trained to deal with issues such as online abuse (including threats of sexual violence, intimidation, harassment and trolling), cybersecurity, and fraud.

Taken together, structural and cultural inequalities, digital infrastructure, and digital ecosystems have a determining effect on women's ability to access and use the internet. Measures to address the barriers that women face in achieving digital equality need to address these challenges across the board, and must be integrated with policies and initiatives concerned with gender inequality as a whole.

This is important, as most countries are increasingly relying on digital infrastructure for economic and social development. Unless these barriers are addressed and women are fully included, those countries are likely to be disadvantaged. The digital gender gaps in access to and use of digital technologies, and in participation in the design, development, production and governance of digital technologies, will not close on their own. Cooperation between stakeholders is needed to promote women's digital inclusion.

Priorities for this are set out below.

PRIORITIES FOR ACTION

A growing number of reports and initiatives in recent years have focused on women's access challenges. These include work by intergovernmental organisations, such as the ITU, the Internet Governance Forum (IGF) Best Practice Forum on Gender, the UN Broadband Commission for Sustainable Development, the Office of the United Nations High Commissioner for Human Rights, the United Nations Conference on Trade and Development (UNCTAD), UNESCO, UN Women, the World Bank and the World Economic Forum; civil society organisations, such as the Alliance for Affordable Internet (A4AI), Access Now, APC, the Collaboration on International ICT Policy for East and Southern Africa (CIPESA) and Paradigm Initiative; research institutions, including the Centre for Internet and Society, DIRSI, LIRNE*asia* and Research ICT Africa; and private sector businesses and associations like Facebook, Google and GSMA.[28]

A number of initiatives at grassroots level have also addressed diverse barriers with different levels of success. The UN's IGF Best Practice Forum on Gender[29] and the EQUALS partnership[30] have mapped some of these

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27 APC. (2015a). *Unlocking broadband for all: Broadband infrastructure sharing policies and strategies in emerging markets*. https://www.apc.org/en/system/files/Unlocking broadband for all Full report.pdf

28 Van der Spuy, A., & Aavriti, N. (2018). *Mapping research in gender and digital technology*. Johannesburg: APC & IDRC. https://www.apc.org/sites/default/files/IDRC_Mapping_0323_0.pdf

29 Internet Governance Forum. (2016). *Best Practice Forum on Gender and Access (2016): Overcoming barriers to enable women's meaningful Internet access*. https://www.intgovforum.org/multilingual/index.php?q=filedepot_download/3406/437

30 https://www.equals.org

initiatives aimed at overcoming specific barriers and digital gender gaps in general. Where barriers related to online abuse and violence are concerned, for instance, examples of efforts include work by the publishers of this paper:

- APC's Take Back the Tech! campaign highlights the challenge of technology-related violence against women through advocacy and research. It offers safety roadmaps and information and leads campaigns during, for instance, the 16 Days of Activism Against Gender-Based Violence (25 November to 10 December), annually.[31]

- The Internet Society's Barbados Chapter has developed Project C.A.R.E – Combating (online) Abuse through Research and Education – to encourage awareness about the effects of online abuse on women and girls and the need for stronger dialogue between law enforcement and victims of online abuse.[32]

In August 2018, the G20 committed to paying "special attention" to the digital gender divide, and expressed the intention to "reflect about impactful strategies and steps to bridge the digital gender divide." It made nine recommendations for countries and other stakeholders, namely:

- Increase awareness of the digital gender divide and address gender stereotypes that hinder the full participation of women in the digital economy.

- Encourage the gathering of sex-disaggregated data to enable evidence-based interventions.

- Promote digital skills for women to help ensure access and also to help them return to the labour market to avoid losing valuable talent and economic and social potential.

- Target women lagging in digital access and use.

- Support women's entrepreneurship in digital businesses.

- Encourage cooperation between the public and private sectors to strengthen girls' interest and women's participation in the STEM and high-technology sectors.

- Address cyber-violence towards girls and women to facilitate their online participation.

- Use digital tools that provide new opportunities to connect women to address the digital divide while ensuring quality jobs and a safer environment (e.g. "policies to seize the potential 'leapfrog' opportunities offered by the Internet").
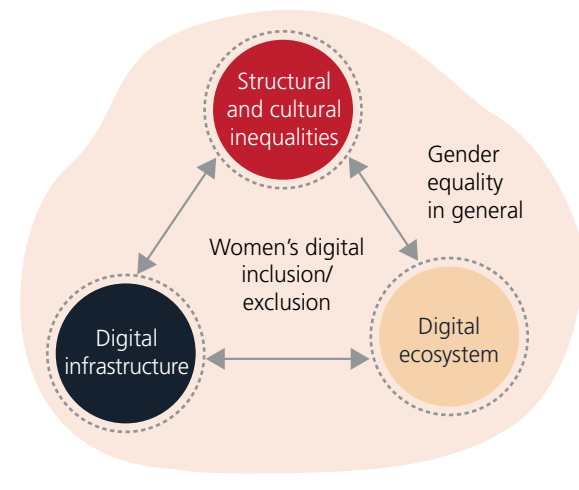
- Renew, coordinate and encourage participation in joint initiatives among G20 countries and international organisations to empower girls and women in the digital era.

In an annex to its Digital Economy Ministerial Declaration, the G20 notes that its analysis of existing initiatives and policies aimed at overcoming access discrepancies has shown that "gender-based digital exclusion is complex, requiring different interventions depending on the specific barriers to women's and girls' lack of access to, and use of, digital technology."[33] Considering this complexity, we encourage policy makers to adopt a holistic approach when developing policy responses drawn from the G20 recommendations. While there are a number of broad principles concerned with gender equality and digital development that have informed different international initiatives to overcome barriers to gender digital inclusion, context matters. Every national context is different in both gender equality and digital development. These contextual differences need to be understood and should be integral to the development of policies, programmes and other interventions.

Drawing on the G20's recommendations, we believe an approach is needed that takes into consideration structural and cultural inequalities, the state of digital infrastructure, and the digital ecosystem, and which relates these both to wider issues of gender equality and to the unique circumstances of individual countries. We believe that addressing individual barriers in isolation is unlikely to make a lasting difference.

This contextual approach, based on the model introduced in the previous section, is illustrated in Figure 6.

Figure 6. Addressing women's digital inclusion in a national context

31   https://www.takebackthetech.net
32   https://www.internetsociety.org/beyond-the-net/grants/2017/
     project-care

33   G20. (2018). Op. cit.

While this paper is concerned explicitly with recommendations arising from the G20's Declaration, it will be useful for policy makers to compare these with recommendations issued by other stakeholders who are concerned with other initiatives that address gender digital gaps. Although this is especially important as increased attention has been paid to women's access challenges at a policy level, there have been fewer examples of interventions that have led to clear and positive outcomes.[34]

In the remainder of this section, we use the model in Figure 6 to provide a structure to compare the G20's recommendations with some other relevant initiatives and considerations, concluded by an overview of two cross-cutting and intersectional recommendations which apply to each of the three elements of the model.

ADDRESSING STRUCTURAL AND CULTURAL INEQUALITIES

Examples of G20 recommendations that relate to structural and cultural inequalities include calls to:

- Increase awareness of the digital gender divide and address gender stereotypes that hinder the full participation of women in the digital economy.

- Promote digital skills for women to help ensure access and also to help them return to the labour market to avoid losing valuable talent and economic and social potential.

- Encourage cooperation between the public and private sectors to strengthen girls' interest and women's participation in the STEM and high-technology sectors.

- Address cyber-violence towards girls and women to facilitate their online participation.

G20 members and other stakeholders should ensure that policy making to address gender (digital) discrepancies includes both process (e.g. the involvement of women in the policy-making process, intersectionality between different themes, and coherent government efforts rather than single department responsibility) and content.

In terms of **process**, all stakeholders should pay attention to women as active users (i.e. they use ICTs themselves

to communicate information and ideas to others) rather than passive recipients of ICTs (i.e. others using ICTs to communicate information and ideas to them).[35] Women should not merely be consulted over strategies to address gender digital divides and promote digital inclusion. They should be fully involved in leadership roles in their development at both national and local levels. The World Bank and others have warned that addressing barriers to women's access in a vacuum, or circumventing them, may delay more fundamental change and damage gender equality in the long term.[36] So will excluding women from decisions that affect their connectivity.

In terms of **content**, it is important to promote adoption and stimulate demand by raising awareness of what the internet is and what opportunities it holds for women. In some regions in the global South, for instance, as mentioned above, household surveys indicate that women are less likely to be aware of what the internet is than men.[37] This has a significant impact on adoption rates. The creation of content relevant to women in diverse circumstances, and in local languages, should therefore be stimulated or incentivised.[38]

To curtail **harm** that can arise when women do have access, stakeholders should work together to prevent, mitigate and respond to threats that prevent women and girls from accessing and using the internet and broadband, both individually and through public access facilities such as schools and libraries.[39] They could also promote greater awareness and understanding of safety and security challenges.[40]

Several stakeholders have stressed the need for more data gathering and qualitative research to clarify the nature of the threats experienced by women in different contexts. APC has summarised specific themes in this respect, including the need to clarify definitions and understanding

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34 Van der Spuy, A., & Aavriti, N. (2018). Op. cit.

35 Cummings, C., & O'Neil, T. (2015). Op. cit.
36 Ya'u, Y. Z., & Aliyu, M. A. (2017). *Internet for Men? Overcoming Gender-based Digital Exclusion in Northern Nigeria: A Strategy Document*. Kano State: Centre for Information Technology and Development. www.citad.org/download/internet-for-men-the-digital-marginalisation-of-women-in-northern-nigeria/?wpdmdl=2516; World Bank. (2016). Op. cit.
37 AfterAccess. (2017). Op. cit.
38 See, for example, APC. (2015b). *How technology issues impact women's rights: 10 points on Section J*. https://www.genderit.org/sites/default/upload/sectionj_10points_apc.pdf; Cummings, C., & O'Neil, T. (2015). Op. cit.
39 Internet Governance Forum. (2016). Op. cit.; ITU. (2013). *Universal service funds and digital inclusion for all*. https://www.itu.int/en/ITU-D/Digital-Inclusion/Documents/USF_final-en.pdf
40 GSMA. (2015). Op. cit.; Cummings, C., & O'Neil, T. (2015). Op. cit.; UN Broadband Commission for Sustainable Development. (2013). *Doubling Digital Opportunities: Enhancing the Inclusion of Women & Girls in the Information Society*. Geneva: ITU. https://www.broadbandcommission.org/documents/working-groups/bb-doubling-digital-2013.pdf

of online violence and to explore how to enable women, including women with limited digital literacy skills, to use security measures more effectively in order to protect themselves.[41]

The importance of data is discussed in more depth at the end of this section.

RECOMMENDATIONS FOR THE DIGITAL ECOSYSTEM
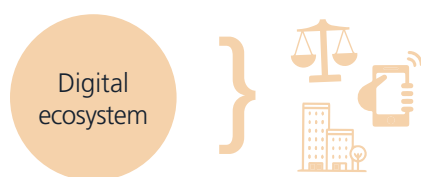
Digital ecosystem

Examples of G20 recommendations relating to the digital ecosystem include calls to:

• Promote digital skills for women to help ensure access and also to help them return to the labour market to avoid losing valuable talent and economic and social potential.

• Target women lagging in digital access and use.

• Support women's entrepreneurship in digital businesses.

• Encourage cooperation between the public and private sectors to strengthen girls' interest and women's participation in the STEM and high-technology sectors.

• Address cyber-violence towards girls and women to facilitate their online participation.

The lack of women's involvement in the design, development, production and governance of digital technologies is notable in almost all areas of the internet and digital development.[42] We believe that greater involvement of women and girls in schools and businesses, particularly in STEM subjects, and in policy making that will affect the future use, governance and development of technology, would have a significant impact on efforts to achieve greater digital equality.[43] Greater attention needs to be paid to the needs of women throughout society, including those who currently do not access or use the internet.

The impact of promoting digital skills will take time to feed through education systems. It is even more important, therefore, in the short term, that stakeholders address the **institutional and structural contexts** that discourage girls and women from participating in these subjects and careers.[44]

For example, the World Economic Forum has found that female leadership remains below 50% in all industries, but that gaps are the greatest in STEM fields.[45] These occupational gender imbalances reflect not only the varied barriers discussed above, but also women's career trajectories and hiring imbalances. In EU countries, for instance, workplace culture has been found to be a significant reason for only approximately 20% of women over 30 who hold ICT-related degrees staying in the technology industry.[46]

Other organisations have also focused on building digital capacities and skills to support the **development of content, applications and services** that meet women's needs, and to promote women in the technology sector, including positions with decision-making power.[47] Stakeholders could usefully consider the importance of relevant role models[48] and establishing targets and incentives for the recruitment, retention and graduation of women in STEM sectors.[49] There is also a need to promote better workplace practices that increase female hires and retain female talent.[50]

In addition to what was noted above where online harm is concerned, **institutional capacity** is particularly important in ensuring women's safety and security online and thus facilitating their safe online participation. Not only do definitions of crimes in countries have to encompass online harassment and abuse, but law enforcement agencies and judiciaries need to be better equipped to deal with such incidents swiftly and effectively in cooperation with relevant private sector stakeholders.[51]

41 Van der Spuy, A., & Aavriti, N. (2018). Op. cit.
42 Doria, A. (2015). *Women's rights, gender and Internet governance*. Johannesburg: APC. https://www.genderit.org/sites/default/upload/issue_womenrights_digital.pdf
43 C20. (2018). *Mainstreaming gender agenda in G20*. www.civil-20.org/c20/wp-content/uploads/2018/05/Mainstreaming-gender-agenda-in-G20-.pdf; C20 et al. (2018). *Joint Statement by the C20, L20, S20, T20, W20 and Y20 on Addressing Gender Labour Gaps*. www.civil-20.org/joint-statement-by-the-c20-l20-s20-w20-and-y20-on-addressing-gender-labour-gaps

44 World Bank. (2016). Op. cit.
45 World Economic Forum. (2017). Op. cit.
46 Ibid.
47 ITU & UN Women. (2016). *Action Plan to Close the Digital Gender Gap*. https://www.itu.int/en/action/gender-equality/Documents/ActionPlan.pdf.
48 IREX & Beyond Access. (2016). *Why young women need digital skills now to participate in Myanmar's new information society*. www.myanmarbookfoundation.org/wp-content/uploads/2016/04/IREX-Myanmar-Gender-Study.pdf; World Bank. (2016). Op. cit.; Microsoft, UNESCO, UN Women & ITU (2014). *Girls in STEM and ICT Careers: The Path toward Gender Equality*. www2.tku.edu.tw/~tfstnet/upload/file/20130704153742d38d9.pdf; UNESCO. (2015). *Mobile Phones & Literacy: Empowerment in Women's Hands*. unesdoc.unesco.org/images/0023/002343/234325E.pdf; UNESCO & Intel. (2014). *Towards Gender Equality in Education Policies and ICTs: An Action Brief and Toolbox*. www.intel.nl/content/dam/www/public/us/en/documents/corporate-information/gender-equality-education-ict-unesco-girl-rising.pdf
49 World Bank. (2016). Op. cit.
50 World Economic Forum. (2017). Op. cit.
51 Van der Spuy, A., & Aavriti, N. (2018). Op. cit.

RECOMMENDATIONS FOR DIGITAL INFRASTRUCTURE

Examples of G20 recommendations relevant to digital infrastructure include calls to:

• Target women lagging in digital access and use.

• Use digital tools that provide new opportunities to connect women to address the digital divide while ensuring quality jobs and a safer environment.

Policymakers could develop a range of approaches from the G20's recommendations around access on issues including affordability and cost, the availability of relevant infrastructure (including electricity), and the provision of public access facilities.

Depending on a particular context, examples might include more efficient spectrum allocation;[52] the promotion of infrastructure sharing;[53] enabling community networks;[54] promoting public facilities where private access is difficult or unfeasible;[55] designing incentives for servicing remote, unprofitable or inaccessible areas;[56] fostering more effective use of universal service and access funds;[57] and reducing unnecessarily burdensome or complicated taxes and tariffs on devices and communications services.[58]

OVERARCHING AND CROSS-CUTTING RECOMMENDATIONS

Two cross-cutting and intersectional issues are relevant to each of the domains discussed above – structural and cultural barriers, the digital ecosystem and digital infrastructure. These cross-cutting issues are the importance of data and the need for multistakeholder collaboration to achieve digital inclusion. Each of these is briefly discussed below before concluding this briefing.

The first two G20 recommendations relate to the need for stakeholders to support the gathering of sex-disaggregated data to enable evidence-based interventions and to increase awareness of the digital gender divide. As has been noted earlier in this paper, more **data** is sorely needed to enable sound empirical evidence concerning the contexts and issues that affect access and use for women. This is crucial to understanding structural and cultural inequalities as well as the state of the digital ecosystem and infrastructure. Not only is gathering more data important, but we believe that stakeholders should share data and research on access, within the constraints of data protection, in order to facilitate improvements that are of benefit to all.

Beside the underlying need for more data, there is also a need for better **collaboration** among stakeholders. The need for this is recognised by the G20 in recommendations aimed at, for instance, encouraging cooperation between the public and private sectors, and at renewing, coordinating and encouraging participation in joint initiatives.

Addressing the digital gender gap effectively requires action by many different stakeholders – including governments and intergovernmental agencies; businesses involved in the provision of devices, networks and services; technical experts in ICT, gender, development and statistical analysis; and the women and men who are directly concerned and the civil society organisations that support them. Cooperation between these stakeholders is crucial in enabling the development of policies and business models that effectively target women's needs.[59] We therefore encourage the G20 and other actors to acknowledge and embrace the importance of **multistakeholder** partnerships where initiatives aimed at promoting gender digital inclusion are concerned.

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52 APC. (2015b). Op. cit.

53 Alliance for Affordable Internet. (2017). *2017 Affordability Report.* https://a4ai.org/affordability-report/report/2017; APC. (2015b). Op. cit.; GSMA. (2015). Op. cit.

54 Navarro, L. (2018). *Network infrastructures: The commons model for local participation, governance and sustainability.* APC. https://www.apc.org/en/pubs/network-infrastructures-commons-model-local-participation-governance-and-sustainability; Internet Society. (2018). *Unleashing Community Networks: Innovative Licensing Approaches.* https://www.internetsociety.org/resources/2018/unleashing-community-networks-innovative-licensing-approaches; Rey-Moreno, C. (2017). *Supporting the Creation and Scalability of Affordable Access Solutions: Understanding Community Networks in Africa.* Internet Society. https://www.internetsociety.org/wp-content/uploads/2017/08/CommunityNetworkingAfrica_report_May2017_1.pdf

55 Alliance for Affordable Internet. (2017). Op. cit.; ITU. (2011). *Connect a School, Connect a Community (toolkit).* connectaschool.org

56 APC. (2015b). Op. cit.

57 ITU. (2013). Op. cit.

58 Alliance for Affordable Internet. (2017). Op. cit.; GSMA & LIRNE*asia.* (2015). Op. cit.; APC. (2015b). Op. cit.; GSMA. (2015). Op. cit.

59 Alliance for Affordable Internet. (2017). Op. cit.; GSMA. (2015). Op. cit.

SUMMARY

In August 2018, the G20 committed to paying "special attention" to the digital gender divide, and also expressed the intention to "reflect about impactful strategies and steps to bridge the digital gender divide." This is important both for women themselves, and because when women gain internet access, their communities also benefit.

As this paper shows, the digital gender gap is closely interwoven with other gender inequalities that impact women around the world. Digital inclusion should not be pursued separately from efforts to address these wider inequalities. Synergies between them are important in both maximising benefits and mitigating risks.

Working towards digital inclusion in a holistic manner, along these lines, requires collaborative action which targets the challenges and barriers that women face. APC and the Internet Society believe that all stakeholders need to work together in order to design and encourage approaches and, where appropriate, interventions that prioritise women's digital inclusion, in order to ensure that women can realise the full potential that the internet holds for empowerment and development regardless of gender. Only then will the internet become genuinely equitable and fulfil its potential for human development.

If this is not done, there is a risk that women's digital disadvantages will increase, rather than reduce, as time goes by, with adverse effects for women's empowerment and wider development. That would be a tragedy. The internet has great potential to advance women's equality and empowerment, but that will not be achieved without greater understanding, analysis and policy development which seeks to align digital development with gender equality.

APC and the Internet Society are committed to working with other stakeholders in order to achieve that goal.

FURTHER READING

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APC is an international network of civil society organisations founded in 1990 dedicated to empowering and supporting people working for peace, human rights, development and protection of the environment, through the strategic use of information and communication technologies (ICTs).

We work to build a world in which all people have easy, equal and affordable access to the creative potential of ICTs to improve their lives and create more democratic and egalitarian societies.

Founded by Internet pioneers, the Internet Society (ISOC) is a non-profit organization dedicated to ensuring the open development, evolution, and use of the Internet. Working through a global community of chapters and members, the Internet Society collaborates with a broad range of groups to promote the technologies that keep the Internet safe and secure, and advocates for policies that enable universal access. The Internet Society is also the organizational home of the Internet Engineering Task Force (IETF).