Women and Technology

Increasing Opportunity and Driving International Development

Testimony of Joyce Warner
Senior Vice President & Chief of Staff
International Research & Exchanges Board

House Committee
on Foreign Affairs

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Chairman Royce, Ranking Member Engel, and distinguished members of the Committee, on behalf of IREX, I am honored to have this opportunity to discuss the important relationship between women and information and communications technology (ICT).

Since 1968, the International Research & Exchanges Board, better known as IREX, has worked in over 125 countries to build just, prosperous, and inclusive societies. We do this by developing leaders, promoting quality education and access to information, and strengthening communities and institutions that promote positive change.

IREX has integrated ICT into its programs in areas as diverse as basic and higher education, youth leadership, peacebuilding, media, and open governance. Today our programs focus on holistic digital inclusion by expanding ICT access, building ICT skills, and broadening digital literacy.

Our work is supported both by the generosity of the American people through the US Department of State and the US Agency for International Development (USAID) as well as through private donors, including the Bill & Melinda Gates Foundation and the Carnegie Corporation of New York. The Gates Foundation specifically has provided significant support for our work in transforming libraries into modern community centers featuring public Internet access and ICT skills training.

Why Women and Girls' Access to Information and Communications Technology Is Important for Global Growth and Development

Every day, our world grows more reliant on technology and digital information to achieve our economic, civic, health, and education goals. Substantial data exists showing that technology adoption is fueling economic growth—contributing 21 percent of gross domestic product increase in developing countries in the last five years.[1] However, even as we see more people benefiting from technology and increases in access to information at the national level, we're also seeing stark divides emerge within countries and communities between the digital haves and have-nots.

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1. Matthieu Pélissié du Rausas et al., *Internet Matters: The Net's Sweeping Impact on Growth, Jobs, and Prosperity* (n.p.: McKinsey, 2011), http://tinyurl.com/prffbuu.

Technology itself is neutral. It does not inherently equalize or "level the playing field." In fact, technology can amplify existing inequalities in a community or country.

Within this context, there is an alarming gender digital divide. Women and girls are not benefiting equitably from the advantages that information and communications technologies bring to developing countries. There are a number of key gender deficits in how women benefit from technology:

- Currently, 200 million fewer women than men have access to the Internet, and the deficit is projected to double.[2]

- Women in Africa are 23 percent less likely to own a mobile device and 37 percent less likely in southern Asia.[3]

- Women who are part of other marginalized groups—the rural, elderly, disabled, and/or poor—have the least access and skills to use technology globally, more so than any other group.[4]

- In sub-Saharan Africa, women access the Internet at 40 percent the rate that men and boys access it.[5]

- Women are 1.6 times more likely than men to report lack of skills as a barrier to Internet use. Women who are not current Internet users identified the biggest barrier as "not knowing how."[6]

Nations cannot develop and grow unless they engage their full human-resource potential. Closing the digital divide is a key factor in their ultimate success.

How Investments in Technology Can Improve Economic and Civic Participation for Women and Girls

These challenges are daunting but not insurmountable. IREX, with the support of USAID, the State Department, and the Bill & Melinda Gates Foundation, has been working to reverse these trends. From our experience, we know that over the lifetime of a woman there are opportunities to introduce cost-effective interventions for greater ICT access that will maximize the benefits to women, their families, and communities.

IREX seeks to advance women and girls' ICT access and skills across their lifetime.

- *Introducing girls to ICT access and skills in adolescence is an important start to a lifetime of engaging with technology.* Since 2004, we have partnered with both public and private donors to develop after-school tech clubs in eight countries.[7] There young people can use their new technology skills to advance community service projects. The girls who participate in this program not only gain digital skills, but also reported strengthened competencies in decision-making skills, self-esteem, self-efficacy, and avoiding risky behaviors. The participants also credited the program with helping them to find a job and

2. Yana Watson Kakar et al., *Women and the Web: Bridging the Internet Gap and Creating New Global Opportunities in Low and Middle-Income Countries* (n.p.: Intel, 2012), http://tinyurl.com/ban7odr.

3. Shireen Santosham et al., *Bridging the Gender Gap: Mobile Access and Usage in Low- and Middle-Income Countries* (n.p.: GSMA, 2015), http://tinyurl.com/ntp2vnk.
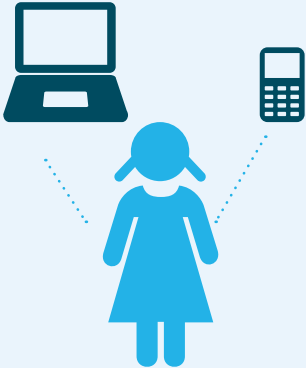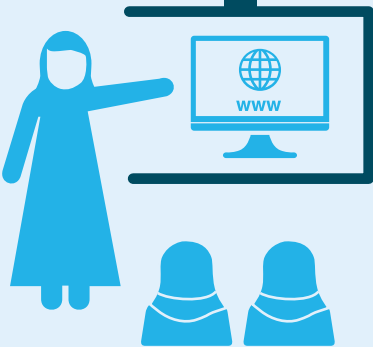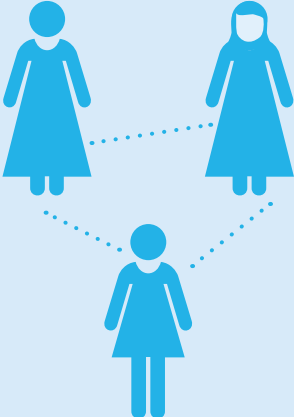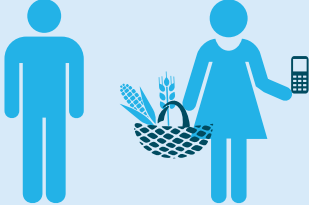
4. World Health Organization and the World Bank, *World Report on Disability* (Geneva: WHO, 2011), http://tinyurl.com/psmu8mz.

5. Kakar, *Women and the Web*.

6. Anne Jellema and Ingrid Brudvig, *Women's Rights Online: Translating Access into Empowerment* (n.p.: World Wide Web Foundation, 2015), http://tinyurl.com/nu8dtoa.

7. "Tech Age Girls (TAG)," IREX, http://tinyurl.com/okqgbow.

Technology in the Life of a Woman

OUR RECOMMENDATION	OUTCOME

Adolescence

Girls need digital literacy (basic understanding of computers, smartphones, etc.) to be a central component of their education, along with basic literacy and numeracy.

A+

Girls achieve more in school and become digital natives at the same rate as boys.

Young adulthood

Young women need infomediaries, someone who combines tech resources and coaching skills. Infomediaries can be librarians, teachers, or other mentors in the community.

Young women stay engaged with and deepen their confidence with ICT, increasing their self-esteem and employability.

Adulthood

Adult women need access to information, learning opportunities, and networks to overcome isolation and succeed economically.

Women increase their income in both the formal and informal economy, have more opportunities for civic participation, and have access to more information to address their challenges in life (child rearing, health, etc.). They also become role models for the next generation of female digital natives.

achieve leadership positions at work. For example, in Tunisia youth clubs have helped connect more than 2,500 young people, 60 percent of whom were women—many in underserved areas, and many who one year ago had never even held a mobile phone.[8]

- *Providing safe public Internet access and trusted infomediaries helps young girls and older women learn to use technology.* Since 2006, we have partnered with the Gates Foundation in 11 countries to turn public institutions, like libraries, into information and communications technology access hubs.[9] This initiative pairs ICT modernization with ICT skills training for librarians, 95 percent of whom are women. The libraries are a safe space for Internet access, and the librarians play a critical role as trusted infomediaries or public-access information intermediaries,[10] which is particularly important for first-time internet users.[11] In Ukraine, for example, female library patrons (in particular, girls under age 14 and women over age 45) were more likely than males to report improved computer skills thanks to the assistance of a librarian.[12] Libraries also host hackathons and career clubs that can be important feeder programs to channel young women into advanced ICT skills programs.

- *Supporting teachers with ICT skills reaches both adolescents and education professionals.* Since 2006, we have partnered with the State Department to expand the use of technology by master teachers from across the developing world.[13] These master teachers receive training that they apply in their classrooms. They also share their new knowledge with colleagues to help strengthen the entire school system. The overwhelming majority of teachers we have worked with have had no prior training on the use of instructional technology for the classroom. Teachers are a key influencer in their communities. By exposing, modeling, and supporting girls' effective and equal access and use of technology at an early age, teachers can have a tremendous influence on young lives. For example, in Bangladesh one of our master teachers returned home with a focus on training other teachers at five all-girls schools to expand their staff's ability to integrate ICT in their classrooms.

- *Empowering community leaders is crucial as these leaders play an important role in engaging and empowering adult women through technology.* Since 2010, we have partnered with the State Department to provide intensive leadership training to community leaders from across the world who are working in the areas of transparency and accountability, tolerance and conflict resolution, environmental issues, and women and gender issues.[14] As a result of this training, a Ugandan community leader is now connecting rural women to mobile technology solutions so they can get data on crop pricing, connect to markets, and get a fair price. Another participant from the Commission of Blind Women of Peru is providing independent living training to blind women to help them gain skills needed for entering the workforce. The training includes how to access and use computers and other technologies.

8. "Tech Age Teachers Tunisia," IREX, http://tinyurl.com/oaub8gm.

9. "Beyond Access," IREX, http://tinyurl.com/nlxk45g.

10. "The Global Impact Study | Infomediaries," University of Washington, http://tinyurl.com/oz95pcs.

11. A. Sey et al., *Connecting People for Development: Why Public Access ICTs Matter; Global Impact Study of Public Access to ICTs Final Research Report* (Seattle: Technology & Social Change Group, 2013), http://tinyurl.com/phgkqvz.

12. "Bibliomist—Global Libraries Ukraine," IREX, http://tinyurl.com/o85odey; IREX program data from the Global Libraries Ukraine Bibliomist program, 2014.

13. "Teaching Excellence and Achievement Program (TEA)," IREX, http://tinyurl.com/olpxzt4.

14. "Community Solutions," IREX, http://tinyurl.com/nf8e795.

- *Supporting adult mentors and role models for adolescent girls strengthens women's engagement and empowerment through technology across generations.* Since 2013, we have partnered with the State Department, USAID, the US higher-education community, and private-sector partners, such as Microsoft, in support of the Young African Leaders Initiative (YALI) – Mandela Washington Fellowship.[15] The fellowship provides intensive executive leadership training for the best and brightest young Africans ages 25–35 across the continent in business, government, and civil society. A number of these young leaders are working to bridge the gender and digital divide. One fellow from Ghana is running a social enterprise that is teaching girls to code, thereby building their economic independence and confidence.

- *Facilitating online civic participation is an essential part of women using technology in adulthood.* Since 2014, we have partnered with USAID to promote gender equality and awareness in Jordan.[16] In partnership with a local Jordanian research organization, we have just launched an online "gender clearinghouse" that allows Jordanian women to easily access information on their human rights.[17] This type of digital information platform for women is the first of its kind in Jordan.

What We Have Learned from Working with Women, Girls and Technology

Everything we need in order to achieve Internet gender parity around the globe exists today. (That certainly must be the most inspiring and optimistic thing you will hear today.) We do not need to invent any new technology to accomplish our goal. This realization shapes all of IREX's technology work.

- **Infomediaries are critical. They are already in place, and most of them are women.** Throughout the developing world trusted community-level leaders exist as information hubs. These infomediaries are the critical nodes to effect change for girls and women writ large. Infomediaries are found within familiar professions and roles, such as librarians, teachers, and community organizers. They represent trusted and relatable voices. They hold a tremendous amount of influence in their local information ecosystem. In most countries, the bulk of these positions are held by women. Infomediaries should be the focus of our work, our investment, and our policies. Even better, none of these infomediaries needs to become a tech expert. Their social capital and knowledge of local culture is far more valuable than knowing how to program a computer. They need only be armed with simple skills, technology access, and peer-to-peer connections to serve as mentors and role models that cascade the benefits of technology to women and girls across their community.

- **Build on existing infrastructure.** When it comes to infrastructure and institutions, we also have most of what we need. Existing public spaces such as schools, youth centers, and libraries can be infused with technology and trained staff to create safe space for women and girls to access information and increase their digital literacy. These are settings that have proven to be safer and more equitable for girls and women to access technology for the first time—and they are often overwhelmingly staffed by women. It can be tempting for governments to build information centers, telecenters, or other new incarnations with bold names that may attract more attention. However, modernizing existing institutions already in place and trusted in communities

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15. "Mandela Washington Fellowship for Young African Leaders," IREX, http://tinyurl.com/px8hauv.

16. "Takamol—Jordan Gender Program," IREX, http://tinyurl.com/pe4oubd.

17. "Haqqi Home Page," IRCKHF, http://tinyurl.com/qjfopa2.

is far more cost-effective. There are 320,000 libraries in the world and approximately 70 percent are in developing countries.[18] Modernizing existing infrastructure would yield far more connections for women and girls than would reinventing the wheel.

- **Include the voices of women in designing programs to improve ICT access and skills.** Just as Silicon Valley has successfully adapted to the voice of the technology user, we need to do the same as development practitioners. IREX takes care so that our investments, policies, and programs are always shaped from the earliest stage by the voices of the women and girls we hope to benefit. We start with the human-centered design principles that were used to develop the software and hardware found around the world and apply these principles to our development work.

- **Tap into existing funding.** We also don't need to solely invent new funding streams or allocations. However, work is needed to unlock some untapped resources. Chief among these are Universal Service Funds (USF). These are the tax structures put in place for mobile network operators to expand ICT access for everyone—not just for urban markets that are the most profitable. USAID has done a tremendous amount of admirable work in helping countries around the world establish USF funds. However, in 2013 GSMA (Groupe Speciale Mobile Association) found that 64 USFs contain more than USD 11 billion that is waiting to be disbursed.[19] These funds, when combined with government budgets around the developing world and the private sector, can solve this issue. The US can tie aid to specific commitments in budgets that support women and girls and bridge the digital divide. The US Government can tie loan guarantees to developing countries on the condition of gender equity of technology access. The Overseas Private Investment Corporation can make bridging the gender digital divide a key priority in assisting US companies to invest overseas in opportunities that include women. It is not surprising that so many women in the world remain unconnected when these financial balancing mechanisms are not being utilized. We can work with GSMA, governments, and OPIC to use these funds to equalize the playing field for women and girls.

How Policymakers and Development Professionals Can Promote Women and Girls' Access to Technology

Over the past decade, it has been tempting to believe that the growth of mobile subscriptions will ease digital inequalities on its own. But we've seen that governments, international agencies, nonprofits, and private enterprises will need to work together to maximize these investments.

- **Embrace, empower, and amplify the women-in-tech role models.** This maximizes return on investment. Supporting vibrant female role models inspires adolescent girls and their mentors. It also strengthens the network of young IT professionals through peer-to-peer learning and counteracts stereotypes that create educational and occupational obstacles.

- **Prioritize investments in community institutions** like libraries and schools that are trusted, open, and truly beneficial to everyone. We know that girls and women often choose public libraries because they are perceived as safe, reliable, and affordable, and because libraries often have trained female

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18. "About Beyond Access," Beyond Access, http://tinyurl.com/pyz373x.

19. *Universal Service Fund Study, Conducted on Behalf of the GSM Association* (n.p.: Ladcomm, 2013), http://tinyurl.com/lgb6lrk.

infomediary staff.[20] Working with community-hub institutions like libraries and schools ensures that everyone can benefit.

- **Couple access with ability.** Just putting one laptop per child in schools or setting up a cell phone tower in a village does very little except introduce new and expensive line items into already strained budgets. We must ensure that the skills to navigate and contribute to the global information society are delivered equitably in concert with connectivity.

- **Expand the notion of literacy to include digital literacy.** Everyone in the world is born a digital novice. Thus, digital literacy should be on par with literacy and numeracy within education systems and curricula. ICT should be included in formal education—not as an elective or side project within education systems—and introduced at the earliest possible age. If left as a side subject, computers and technology resources will continue to be enjoyed only by those who fight for time on the keyboard and mouse. Fifty years ago, social norms dictated that certain topics in books were not suitable for women. Today, this sounds absurd—but often we find that this is how technology education is delivered in practice in many education systems.

- **Encourage US government agencies to adopt a gender digital divide strategy.** Help agencies across the US government align their efforts to support women and girls' access to information and technology. USAID's "Digital Inclusion" fact sheet is a good starting point.[21] US bilateral agreements, transnational pacts, trade policies and other international instruments can model and encourage integration of technology access for women and girls into wide-ranging programs and policies that affect global economic growth.

- **Leverage existing frameworks to build support across countries.** The recently adopted United Nations Sustainable Development Goals provide a unifying framework for countries, host governments, nongovernmental organizations and the private sector. In particular, goal 5 calls for countries to "enhance the use of enabling technology—in particular, information and communications technology—to promote the empowerment of women."[22] ICTs also cut across a number of Sustainable Development Goals. The framework identifies technology as a tool that can drive progress across all three pillars of sustainable development, which include economic growth, social inclusion, and environmental sustainability.[23] Many countries have national "digital 2020" or "information society" strategies that could be strengthened to address the gender digital divide.

20. Technology & Social Change Group, "Global Impact Study" (n.p.: TASCHA, n.d.); A. Terry and R. Gomez, "Gender and Public Access Computing: An International Perspective," *Proceedings of HICSS* 44 (2011).

21. US Global Development Lab, "Digital Inclusion" (n.p.: USAID, n.d.), http://tinyurl.com/qxta8tj.

22. "Sustainable Development Goals," United Nations Sustainable Development Knowledge Platform, http://tinyurl.com/ph4ntgn.

23. Joel Turner and Amber Ehrke, "Connecting the Next 4 Billion: How Access to Information Underpins Every SDG," DevEx, http://tinyurl.com/o43vzav.