WHITE PAPER:
Information and Communication Technologies for Development:
Gender Equality and Women’s Empowerment

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I. Introduction and Background
At present, the status of women is unequal to that of men worldwide. Poverty is asymmetrically borne by women; an estimated 70 percent of those living on less than $2 a day are women.\textsuperscript{1} Women’s political participation and representation in decision-making structures are not on par with men’s, with only 18.9 percent of parliamentary seats worldwide held by women.\textsuperscript{2} Women do not have equal employment and wage opportunities; although women work 66 percent of the world’s working hours they only receive 10 percent of the world’s income\textsuperscript{3} and are often relegated to low wage, low skill, and informal work. Girls are less likely to receive primary education, and as a result 64 percent of the world’s illiterate adults are women.\textsuperscript{4} Women continue to be victimized by violence and institutionalized discrimination, are increasingly susceptible to HIV/AIDS, and unnecessarily risk their lives because of medically unsafe childbirths.

At the same time; women are the primary caregivers within their families and communities, and play a crucial role in the management of natural resources and agriculture. Unequal opportunities for women come at a cost for any society, as these barriers result in lower economic growth and national outputs.

Information and communication technologies (ICTs) have proven to be a critical tool in addressing development issues throughout the past decade.\textsuperscript{5} ICTs include a variety of media such as computers, satellite communication, radio, televisions, telecenters, internet, telephones and emerging combinations of these technologies. It is now widely accepted that these technologies can be transformative instruments for progressive economic and social development through the creation of new sectors of employment and augmenting livelihoods, upgrades in healthcare and other services, and improved channels for networking, participation, and advocacy within society.\textsuperscript{6}

ICTs are strong instruments with the potential to give women fresh opportunities for expanding their prospects and the possibility of economic, political and cultural changes; however, women are still faced with barriers that impede their participation and training in ICT-related sectors. Inequality between men and women persists across the globe and is significantly high in less developed countries. This aspect of human development must be taken into account by all analyses of development possibilities.\textsuperscript{7}

Although the costs of building new information infrastructures are very high, the costs of not building anything are much higher.\textsuperscript{8} ICTs provide a bridge of communication among countries, are a tool for creating a common language that fosters opportunities, connect people, and provide a platform for personal and regional development. For these reasons, now more than ever, having access to ICTs can signal the difference between transformative progress and deepening inequalities in the rapidly changing world of digital information.\textsuperscript{9}

The Millennium Development Goals (MDGs) of the United Nations recognize that gender equality is an essential component to any objective regarding the improvement of living conditions. MDG3 promotes equal educational access for boys and girls, greater representation of women in policy making bodies, and expanded economic opportunities. However, in most developing countries, gender inequality remains major obstacle to meeting the MDGs. Women’s lack of autonomy and low political participation are critical challenges that prevent the total fulfillment of objective 3, “to promote the equality and the empowerment of the woman.”\textsuperscript{10}

ICTs are an invaluable tool for those striving to meet the targets enshrined in MDG3. For this reason, ICTs have recently been added to the gender equality debate. Women are increasingly becoming the focus of worldwide ICT programs aimed to address inequalities between the world’s ‘information–rich’ and ‘information-poor.’ The social and economic potential of ICTs for development is high, but so too are the
risks of exclusion. Women in the developing world face a triple inequality in regards to ICTs: 1) barriers to information and communication technologies are increased when inequalities of gender, caste, nationality, and class are considered; 2) poor women in particular often lack the necessary access to infrastructure, skills, literacy, and knowledge of English to make the most of opportunities presented by ICTs; and 3) the digital divide can reinforce gendered inequalities by posing an adverse effect on the socioeconomic status of these women.\textsuperscript{11} As a result, ICT strategies should be designed for women and other marginalized groups, so as to not exacerbate existing inequalities between women and men or rural and urban populations.\textsuperscript{12}

By addressing this information gap, ICTs have the potential to positively impact women and girls. ICTs can be effective tools for promoting gender equity and empowering women through easing the burden of workloads, increasing knowledge of rights and possibilities, heightening self esteem, social status, freedom of expression and confidence, while providing channels for greater economic opportunities.\textsuperscript{13}

ICTs have the capacity to extend women’s participation in development, including planning and decision-making at the family, institutional, and societal levels.\textsuperscript{14} At the family level, traditional gender roles are changing when there is equal and universal acquisition of education between males and females, which results in flatter hierarchies of information, knowledge, income and financial independence across genders\textsuperscript{15}. At the institutional level, here is a positive correlation between the level of human development and the prevalence of ICT access and use: countries with high scores on the Human Development Index (HDI) prove to have high ICT availability.\textsuperscript{16} At the societal level, increased skills and training in ICTs for women have the potential to support the economic, political, and social empowerment of women, and the promotion of gender equality.

This paper serves as a guideline for governments and development practitioners to work towards empowering women at the political, economic, and social level through the use of ICTs. Economic empowerment is achieved through increased access to resources, and this is significant for overcoming women’s subordinate position in accessing and controlling resources. Social empowerment refers to challenging social and cultural structures that impede women’s ability to make choices and access equal opportunities. Political empowerment is the ability and right of people to equally participate in decision making processes.\textsuperscript{17}

The Global Alliance for ICT and Development (UNDESA-GAID) has a strategic role in raising awareness amongst policy makers on issues surround ICT policy; and collaborating with governments to promote policies which support women’s participation and leadership in all areas of ICT development. The objective is to provide expertise and assistance to developing countries to ensure women’s participation in ICT globally, as a means for achieving the targets enshrined in MDG3. UN-GAID recognizes that no single actor is capable of achieving the MDGs in isolation; all sectors need to work together in order to create new platforms for policy dialogue on the use of ICT for enhancing the achievement of development goals.\textsuperscript{18} Thus, building partnerships with mainstream organizations and synergies with governments is crucial to achieve the MDGs.

\section*{II. Challenges of ICT in Gender Equality}

\subsection*{1. The Need for a Policy Framework on Gender Equality.}
Women still have restricted access to resources and are poorly represented in positions of power. Thus, there is a clear and present necessity for national policy frameworks that address gender inequality. Effective frameworks would include components designed to address barriers which limit women’s opportunity to participate equally in society, or uniformly benefit from their rights. The objective of this
kind of policy framework is to achieve equal opportunities for all women as active citizens, decision makers and beneficiaries in the political, economic, social and cultural spheres of life; thereby creating an enabling environment to facilitate full development of each individual’s potential. Such a policy framework on gender must promote a cooperative approach among sectors; with full participation of members of civil society, academia, NGOs, governments, the international community and labor organizations. Each stakeholder must understand and analyze each policy element in order to discover existing gendered opportunities and difficulties. Incorporating gender analyses with accompanying mechanisms into policy frameworks can help policymakers integrate a gender assessment into social research and planning. The knowledge gained can then be applied as the basis for gender policies.

1.1 Existing Gender Components in ICT Policy
ICT policies cannot work separately from gender policies; rather they need to be integrated into other sectoral policies such as telecommunications, media, trade, health, education, economic, trade and industry. Policy makers should consider how these could be used to formulate a progressive and gender-sensitive national ICT policy. This method of policy integration would ignite important synergies and promote efficiency at the institutional level. At present, there is no universal ICT policy framework due to the fact that every country has different political and socio-economic aspects. For this reason, ICT policies must be formed within each individual national context.

1.1.1 Philippines-GAD Plan
This example highlights the incongruous outcomes that result from a well-intentioned policy framework, significant budgeting problems and lack of coordination between government agencies and civil society actors. The Plan for Gender and Development (GAD) in the Philippines represents an ambitious framework and is a significant advancement towards gender equality, designed to facilitate gender mainstreaming in governance and to contribute gender equality. However, the plan did not allow enough time for adequate implementation of its targets. Several problems remain, such as economic limitations and connectivity problems. The absence of sex-disaggregated data also presents a problem for program evaluation; general access information indicates that women’s access to the Internet is marginal and concentrated in main urban centers. Even within this small demographic, use is skewed towards the educated and the middle and upper classes.

1.1.2 South Africa
South Africa entered the new millennium with the basis for gender awareness in the dissemination of ICTs in the country, largely through the advocacy of women’s organizations and other gender-sensitive groups. The foundation was laid in the country’s White Paper on communications, but its implementation has fallen short on gender impact.

1.1.3 Malaysia
Malaysia has a strong interest in addressing the impact of IT on labor, specifically the emergence of teleworking. There some Information about many of the ICT projects of the government of Malaysia in web sites. One notable best practice is “E-homemakers” a collaboration with Malaysia’s Ministry of Women and Family Development to develop a gender-sensitive teleworking policy in Malaysia.

1.2 Early Stages of Gender Considerations in ICT Policies
Some countries have been successful in taking initial steps to address gender equality. These include new national initiatives and issue specific projects. However, it is not yet clear how these proposals and advances will materialize into a gender approach.

1.2.1 Dominican Republic
The Dominican Republic Communications Regulation Authority (Indotel) guaranteed “the inclusion of a gender perspective” in all projects and initiatives relating to information and communication technologies (ICTs) carried out in the country, as part of the E-Dominican. It is too early to gage the success of the National Strategy for the Information Society, as it is a new plan that needs time to be evaluated.

1.2.2 Uruguay
The First National Plan for Equality of Opportunities and Rights (2007-2011), includes the strategic aim of an “increase in women’s access to information and communication technologies (ICTs), eliminating the current gender gap.” So far, this plan has not progressed from the pilot project stage and its advances have been marginal.

1.2.3 Brazil
There has been an increase in the number of services available online, particularly through the website of the Special Secretariat for Women’s Policies which has created a specialized assistance network. There is also a free, nationwide telephone line that women and girls can call to report violence or seek help.

1.2.4 Mexico
There is a free, nationwide telephone line that women and girls can call to report violence or seek help. However, the Special Committee for the Promotion of Digital Access, created in 2006 in the Chamber of Deputies, has been working on the formulation of a draft bill to promote the use of new technologies. The adoption of the resulting bill is currently stalled in the Mexican Senate with minor advances.

1.2.5 Mozambique
When Mozambique’s ICT policy was approved in 2000, there was much hope that this would become a best practice on gender issues because the policy contained an entire chapter on gender and youth, covering a wide variety of policy areas from decision making to training, e-commerce, applications and content development. However, the strategy for implementation of the policy adopted in July 2002 has proved disappointing on the incorporation of gender issues. In addition, no women’s organizations were mentioned as participants in the national Consultative Forum.

1.3 Lack of Gender Components in ICT Policies
Generally, ICT policies have fallen short of facilitating gender transformation. Most policies have been created to develop human resources (e-commerce and e-governance) and the growth of the IT industry.

1.3.1 India
India has placed great emphasis on the software development industry. However, gender considerations do not figure in any of the schemes or programs being developed under the banner of “IT for the Masses”.

1.3.2 Senegal
Telecom policy formulation has focused almost exclusively on performance of the operator and sector structure; women’s NGOs and other stakeholders concerned about gender issues are active in Senegal but have not been able to influence the development of national ICT policy.

1.3.3 Colombia
The National ICT Plan (2006-2010) has adopted several programs: “the connectivity agenda”, “the online government” and “the computers for education.” None of these programs have incorporated an explicit gender approach, despite the fact that all of them refer to inclusion, equity and equality.
1.3.4 Lessons Learned: It is imperative to educate policy-makers and other international organizations in Africa on gender issues, and to work with local women in gathering their input on the technical issues that they face in order to properly inform policy due to the fact that the major problem in this region is the implementation process. Research on several Asian countries revealed existing national IT policy frameworks and strategic plans, but they are generally silent on gender or women-focused concerns. In Latin America lack of infrastructure and insufficient budgetary resources for investment are the major constraints. However, because of the work of many different organizations and the women’s movement, there have been tangible advances and achievements made, which should be highlighted to continue moving towards the empowerment of women. Many developing countries still need time to evaluate their programs and make concerted efforts to develop best practices on gender ICT policies.

1.4 Insufficient Data Collection Undermines Policy Formation: The importance of disaggregating ICT statistics by sex

Sex disaggregated data is crucial for the identification and evaluation of gender issues. Without data, it is difficult to expose gender issues surrounding ICT policies and for policymakers to implement transformative policies. It is therefore necessary to analyze gender as key variable in determining universal service obligations, achieving universal access, and enabling the universal right to communicate.

The most succinct description of this problem comes from a World Bank report, which noted that “without data, there is no visibility; without visibility, there is no priority.” In the same document, the World Bank went on to note that “from both observation and anecdotal evidence, we ‘know’ that there is a gender gap in the digital divide is several developed and many more developing countries.” In contrast to this assertion, the International Telecommunications Union (ITU), has declared that the infrastructural gaps contributing to digital divide, have been closed.

Although there are strongly divergent viewpoints on whether universal access is still a problem, wherever data have been collected, evidence shows that the initial and main users of internet services are male. Although the numbers vary, women in developing countries never make up more than 40 percent of internet users. There is a significant gap in the data collection, however: sex-disaggregated ICT data remains one of the primary hurdles to engendering ICT policy. Data on the impact of ICTs are rare outside of OECD countries, and the only sex-disaggregated telecommunications data some countries collect relates to mobile telephone ownership. Perhaps most telling about the relationship between gender and ICT development is what information is not there. A review of the literature on ICTs and rural development by the Overseas Development Institute mentions the word “gender” once. Instead, women and ICTs are discussed in the context of specific development projects; while this provides valuable insight to the different ways women can benefit from ICTs, it shows that within the literature on the topic, gender is treated as a non-issue.

1.4.1 Africa and Missing Data:

In Africa there is a significant problem locating sex-disaggregated data on multiple issues, such as technology access, infrastructure development, and other basic problems related to ICT usage. Most data is provided primarily through nongovernmental and civil society organizations.

What these organizations have discovered is that women generally have very limited participation across all levels of the ICT sector. Barriers including limited access, requisite literacy skills for technology use,
and education all contribute to challenges facing women’s inclusion across all income levels.\textsuperscript{43} Even at higher income levels, the number of women pursuing tertiary education in the areas of science and technology, and holding high-level positions in the ICT field, is declining from already low numbers. While government policies reflect attempts to mainstream gender into the economy and public life, the reality has not provided for significant increases in women’s and girls’ participation in this sector.\textsuperscript{44}

1.4.2 The Korean Strategy
The most progressive country on the collection of gender and ICT statistics is the Republic of Korea, with a well-developed gender strategy in the national ICT plan. The task of implementing gender policies of the Government of the Republic of Korea rests on the Ministry on Gender Equality (MoGE). The MoGE has launched its own projects aimed at advancing gender equality through ICT. The Korean Network Information Center has published 20 categories of data collected and disaggregated by sex, case and age.\textsuperscript{45} These projects include the creation of a portal site for Korean women called Women-Net, and the building of the Cyber IT Education Centre.

1.5 Infrastructural Inequalities Faced By Women: The Crossroads of Policy and ICT Access
Infrastructure represents one of the least gender-inclusive areas of ICT policy and development. It illustrates the problems of access and the gendered digital divide with stark clarity. Data from the ITU, for example, show that telephone penetration in Africa is at a low 7.36 people per 100, compared to 113.4 per 100 people in the United States and 92.1 per 100 people in Europe. Since telephone infrastructure has historically been linked to internet infrastructure, such numbers can only mean extremely limited overall ICT access in developing counties.\textsuperscript{46}

Similarly, personal computer use illustrates the infrastructure divide: Asia has only 4.5 personal computers per 100 people, while there are 28.95 per 100 people in the Americas. Combined with the differential in access for men and women, this shows a remarkable lack of ICT infrastructure available to women. Finally, in developing countries, ICT infrastructure tends to be concentrated in urban areas, while most women in developing countries live in rural areas.\textsuperscript{47} Computer access implies internet access. Given the data collected on women’s lower internet usage than men’s in developing countries, it can be assumed that the rate of women accessing ICTs in developing countries is even lower than these country-wide data already show.

Several avenues have been explored to promote infrastructure development. Among the highest-profile is the promotion of Universal Access and Service Funds (UASFs) by the ITU.\textsuperscript{48} UASFs are dedicated funds set up by national governments to help subsidize infrastructure investment by the commercial and development sectors. All UASFs use a performance-based subsidy to support services in areas where traditional investment wisdom would argue not to invest; a key requirement for USAF funding is that the service provision be self-sustaining and commercially viable.

1.5.1 Uganda’s Rural Communications Development Fund\textsuperscript{49}
The Rural Communications Development Fund (RCDF), Uganda’s version of the UASF, was established under the Rural Communications Development Policy in 2001 and was officially inaugurated by the Uganda Communications Commission (UCC) in 2003. The original policy for the RCDF did not include a gender component. It did not discriminate against organizations who promoted women’s issues from accessing funds, but none of the organizations that did access funds could be classified as women’s organizations. The original funding strategy (2003-2009) did not reach most of the rural population partly because it gave bigger subsidies to commercially viable projects. However, successful lobbying by the Uganda Women Caucus in the national parliament and several women’s rights NGOs influenced changes to the Fund. The UCC’s Rural Communications Development Policy for 2009-2013 will explicitly target
communities where gender is an inclusion or access issue. This implies not only a re-evaluation of the RCDF’s weaknesses and willingness to fix them, but also recognition of the importance of including a gender-sensitive approach to ICT infrastructure development.

1.5.2 Lessons Learned: The funding mechanism behind UASFs has become the “preferred method” to distribute one-time subsidies for telecommunications roll-out targets in remote areas. However, the internet is built on the “corporate control of information content and infrastructure,” and this implies a primary concern with infrastructure as a means of financial profit and not of strong public policy. Infrastructure and gender inequality are not linked in the overwhelming majority of ICT policies; even countries which the ITU cites as being progressive in terms of types of ICTs supported and ICT penetration do not have a gender component in their UASF policies. Of these, Uganda stands out as a successful example for integrating gender because of a future commitment to include gender concerns in the renewal of their UASF.

2. Women, ICT, and the Urban/Rural Divide
Infrastructure development is not treated as a gender issue. The majority of ICT infrastructure is in urban areas, while the majority of women live in rural areas: “simply by being the majority of the population in rural areas, women have a smaller chance than men to access new technologies.” This raises a second, related problem for women in developing countries to bridge the digital divide: they must also bridge an urban/rural divide. This divide can be seen in stark terms in India. More than 70 percent of the population lives in rural areas, but 77 percent of internet users are in the Indian capital cities, with two cities – Delhi and Mumbai – accounting for one-third of users. Given what is known about women’s internet use in developing areas, and factoring in fewer women in urban areas, this paints an unfavorable picture of women’s ICT access.

2.1 Ghana’s Radio Ada
Radio Ada addresses two concerns rural women face in its operational structure: it broadcasts in its target-community language of Dangme, which ensures more rural women in Dangme-speaking districts will be reached; and it is staffed primarily by volunteers, which provides a sense of participatory ownership.

The station runs “narrowcast” programs each week – programs designed specifically for target occupation groups. One such programs is for women fishmongers; every week a program is produced detailing the work of women fishmongers in different communities, interviewing women who work as fishmongers, and the information is ultimately edited into a 30 minute program. After successful lobbying by the women, their program was moved to the timeslot directly after the fishermen’s program to ensure that men heard what women had to say about the state of fishing in their communities.

2.1.1 Lessons Learned: Rural women might be the most disadvantaged group of women, as they come up short in measurements against younger, more literate, and wealthier urban women. Likewise, rural, resource-poor women may not be well-served by public policies that merely call for public access, as societal factors can prevent them from equally accessing community resources. Issues like economic dependency, illiteracy, and ICT-related education inequality further compound rural women’s equal utilization of ICTs. Successes in bridging the gendered urban/rural divide come in the form of rural women being given a voice in their communities and power over ICT access.

3. Education and ICTs
3.1 Gender Inequality in Access to Education
Empirical data reveal that there is a statistically significant negative association between gender inequality in education and economic development. \(^6^0\) Similarly, the *Arab Human Development Report* asserts that the low empowerment of women in the region has seriously damaged levels of human development in the region. \(^6^1\) Education tends to reduce gender inequality as it simultaneously broadens one’s views, diminishes ethnocentricity, and increases one’s acceptance of new customs and norms. Conversely, unequal access to schooling for women and girls perpetuates gender disparities.

Some regions of the world have been successful in narrowing gaps in enrollment between boys and girls. In East Asia, gender parity has been reached in primary education, and progress has been made in North Africa and South Asia. \(^6^2\) However with the exception of a small number of countries, girls and women have less access to education at all levels, and they have lower levels of literacy in low-income countries. Illiteracy has been pinpointed as the most significant barrier to women’s ICT use; women comprise two-thirds of the world’s illiterate. This distinction is mostly in African states and some Asian countries, where an estimated 70 percent of adult women are illiterate.

### 3.2 Lack of Education Impacts Women’s ICT Use

This lack of equal access to education has reduced women’s abilities to take full advantage of the opportunities offered by ICTs. Women in the developing world are less likely to have the requisite level and knowledge required for ICT use, because of limited numeracy, illiteracy, lack of computer skills, lower educational access, and language barriers. \(^6^3\) These obstacles affect a greater number of women than men.

Women in poor countries are also less likely to know the international languages of English, Chinese, Japanese, and German, which dominate the majority of web-based content. \(^6^4\) English is required to access half of the information found in search engines, catalogues, and other sources on the internet. \(^6^5\)

This contributes to these women’s underrepresentation in Open and Distance Learning (ODL) programs, which include both formal and non formal training. In Africa, women’s enrollment in these courses range from a low of 17 percent in Zimbabwe to a high of 36 percent in Uganda. It is therefore important to develop ODL courses which use local languages and dialects, correlate to job opportunities in the local labor markets, and perhaps lower the costs for women to enroll in these courses. \(^6^6\)

ICTs that do not require literacy are being developed, and certain forms of video and audio technology have shown increases in women’s empowerment while bypassing needs for literacy. However, these impacts and basic technologies have been limited to a small number of pilot programs. \(^6^7\) Future empowerment of women who have been denied equal access to education requires the scaling up of these programs to a wider scope. Nevertheless, technologies that “get around” illiteracy are no replacement for increasing women’s literacy.

#### 3.2.1 Lessons Learned:

Studies have shown that the female school enrollment is particularly responsive to the costs associated with formal education. If public education spending is used to increase the capacity of schools, provide adequate transportation, subsidize school fees and text books; then female school enrollment will increase to that of males. \(^6^8\) Other alternative strategies which have proven effective in encouraging the continued participation of girls and women in education in general include providing scholarships, culturally appropriate facilities (such as segregated male and female bathrooms), female teachers, alternative schools with flexible schedules, and vocational training. \(^6^9\)

### 3.3 Unequal Representation of Women and Girls Studying Science and Technology

Within school systems of the developed and developing world, women and girls participate less in science and technology education. This is due to a gender bias in attitudes that women are intellectually
unsuited for studying or using information technology. This problem most pervasive in Africa, where many (predominantly male) math and science teachers maintain outdated views that girls are unable to think or work scientifically, rendering the subject too mechanical and technical for them. This effectively discourages female students.⁷⁰ There are other more subtle ways in which girls are restrained from using technology in this region, even when it is present.

3.3.1 Subtle Socio-Cultural Barriers in African Schools
Under a WorldLinks program in Uganda, girls did not get access to the limited number of computers installed in school because of the socio-cultural norm that “girls do not run.” The boys – who do run - got to the computers first as a result, and then refused to give them up to girls.⁷¹ These effects resonate into the tertiary level; young girls comprise a mere 2.1 and 1.6 percent of students in engineering in Ghana and in Kenya respectively.⁷²

3.3.2 Lessons Learned: There is a considerable amount of research on effective strategies for escalating the participation and success rate of girls and women in scientific and technical education. Within the classroom and curricula, these include since efforts by teachers to treat girls and boys as equals in the classroom; presenting gender-neutral, or gender-inclusive images of scientists and the practice of science; introducing female role models and mentors, and emphasizing hands-on activities and their applications to everyday life, society, and the environment.⁷³

3.4 Employment Constraints for Women
Such attitudes have spillover effects into the ICT workforce, where few women have the essential skills to enter technology related fields in the labor market. For this reason, women are starkly under-represented in ICT occupations, and their involvement has been waning in many countries. Where women are employed in science and technology fields, their representation is limited to few low-level occupations. For example, in Asia where many women in participate in telework or remote processing, their employment is concentrated within the administrative or clerical level; such as data input and processing. Mired in the low or unskilled end of employment, women are overlooked in skills development and on-the-job training which new jobs require. Therefore they enter and remain stuck in low-level, low-paid, and unstable jobs.

3.4.1 Socio-Cultural Bias Against Women’s Use of ICTS in Peru
Attitudes that information technology is not for women are not limited to school settings. During an IT development project for farmers in Cajamarca, Peru, men mocked the women who were undertaking training with them, saying that computers were for men and not women.⁷⁴

3.4.2 Women’s Unequal Access to Skills Development in Sub-Saharan Africa
The World Bank estimates that 42 percent of sub-Saharan African women engage in the labor force, but only a small portion of these workers equal access to skills development. Young women total a mere 15–35 percent of students in formal training programs.⁷⁵ In light of the swiftly changing set of skills required to partake in the ICT sector, lower levels of access to training present a serious hurdle to women’s advancement in the field.

3.4.3 Lessons Learned
Technical and vocational training can address the inequalities women face with respect to skills training and employment by providing ICT skills training to women for ICT-related employment. In situations where there is a pervasive bias against women using ICT’s, trainings should be women-led or women-only. Providing ICT training for women in small-enterprise development and management, food-
processing, agriculture, health and other income generating activities also helps. Most likely these skill-building opportunities would need to be activated at the NGO level.

4. Socio-Cultural Factors and ICT
There are several socio-cultural impediments at the micro-level which should be considered when working toward inclusive ICT access and use. The major connectivity obstacles for women relate to place of access (particularly safety and security of location) and time constraints.

4.1 Women’s Time Famine
Frequently, socio-cultural norms dictate women’s unequal share of domestic labor, thereby constraining their mobility and time. Women remain the primary caregivers, health and education providers, and suppliers and users of energy in marginalized communities, but typically do not participate in the decision-making process that determines allocation of resources, including any ICTs in the community. The usefulness of ICTs in development work is dependent on overcoming the same barriers that affect socioeconomic underdevelopment.

Most communication facilities located in rural areas are of shared public access, preventing women’s access due to their limited time for leisure. Furthermore, women may not be comfortable frequenting these places, and are more likely to have difficulty accessing transport and less ability in leaving home. One possible solution to this problem would be for facilities to provide “women only” hours during the day, and a greater availability of women support staff and trainers. This approach has been successful in Mexico, where an evaluation found that ICT access-points located in libraries staffed by women had a direct effect in encouraging young girls to learn and use the technology. Facilities such as these could also incorporate special workshops for girls and women, in order to increase their computer-literacy.

4.1.1 Women’s Voluntary Limited Use in India
Even when internet access is available in less urban areas, women still face barriers to access. Cultural barriers are a significant impediment; as illustrated in example from India. Commercial public internet access points in small towns and rural areas frequently act as entertainment establishments. The managers are typically young men using the internet to look at pornographic content, and the clients tend to be the managers’ friends who are engaging in similar activities. This creates an environment in which to access the internet that many girls and women do not feel comfortable.

4.1.2 Lessons Learned: Communication centers should provide hostel facilities for females from distant rural regions, so that they do not have to travel home after dark. Group transportation should be provided for women and girls, as this enhances their mobility. Also, women-led communication centers, and “woman only” hours may be necessary to increase women’s use of such facilities.

4.2 Women’s Lack of Personal Resources
Poverty and lack of economic power is more heavily concentrated among women than men, especially in Africa and Asia. Women are less likely to have disposable income to spend on items such as televisions, radios, mobile phones, or on internet cafes. When disposable income is available, women are often hesitant to spend this money on the use of technology rather than on daily needs of their families such as food, education, or clothing. In Oman, 28% of students surveyed reported that lack of financial means is a barrier to women’s enrollment in ICT specializations at universities and colleges. This unequal share of household resources prevents women from exploiting ICT opportunities.
4.2.1 Lesson Learned: A report from Malawi recommends that during an initial period of 3 – 5 years, women and girls should have access to the use of ICTs for free. Once their access and use in improved, free use can be removed. 85

4.3 Intra-Household Inequalities
Many of these power struggles start at the household level, where women and girls have lower bargaining power to their male counterparts. For this reason, when technology is available within the household, women are less able to access it when they want to.

4.3.1 Women's Mobile Phone Use in West Africa
Men in West Africa tended to feel threatened when women used cell phones and accessed the Internet, seeing it as destabilizing to relationships and viewing such unsupervised activity by women as inappropriate. 86 Many cases were reported of men monitoring the cell phone and Internet use of their partners. According to one woman from Cameroon: “My husband won’t let me have a cell phone; I have asked him several times to get me one. He answers that if I want a divorce, I just have to say so.” 87

III. Opportunities to Influence Gender Empowerment via ICTs
1. Political Empowerment via Increased Political Participation
After decades of silence, women have become new actors in the political arena. New models of governance; such as e-governance and e-democracy initiatives, have opened up avenues for women’s direct participation. ICTs are replacing traditional forms of governance and their accompanying deficiencies with modern, inclusive, transparent and responsive service delivery systems. The revolution of ICTs and the implementation of quotas have been important mechanisms in enhancing women’s political participation. As a result, many countries have developed laws against domestic violence and new institutional mechanisms to promote women’s rights. Ensuring that women can participate in decision-making in all political arenas on equal footing with men has become a crucial goal for many governments.

1.1 The Role of ICTs in Increasing Women’s Political Participation
In developing countries, ICTs can provide a channel for women’s active political participation. Where women are isolated, unheard, and powerless in male-dominated sociopolitical environments; ICTs can enable women to voice their concerns and exert pressure on policymakers. Access to technology creates new possibilities for women, such as shaping public policy and informing the community about realities on the ground; while allowing policy makers to earn the confidence of constituents. Women are also emerging as suppliers of authentic news articles and earning money while rendering these services. Thus, ICTs provide a legitimate means for women to speak their minds, and share their perspectives with political representatives. 88

1.2 Channels of Participation
There are three main ways in which ICTs can empower constituents and facilitate citizen engagement. 89 However, women are not fully using these tools to increase their political participation.

1) Legislation: ICTs allow for easy access to information and knowledge by providing resources through databases, intranets, digital libraries, and legislative documents (such as bills and proceedings) which empower constituents to make informed decisions. These mechanisms have the potential to transform the needs and preferences of citizens into policy, thus enhancing the dynamism and quality of the legislative process.

2) Representation: ICTs can act as a channel to actively enlighten the public about the role politicians and information about their platforms and political history through blogs, websites
and web casting. This information could include budgets, schedules and social services. Thus, members of the parliaments can efficiently interact with citizens continually, in result widening their understanding of the public’s changing needs and concerns.

3) **Citizen Engagement:** Citizens can play an important role because they can voice their concerns and complaints, saving time and paper.

1.2.1 **Nairobi, Kenya: Women’s Information and Communication Technology Project - Women’s Empowerment in Urban Kenya, A World Bank Project**

Kenya provides a clear insight to the benefits of ICT on women’s political participation. The objective of this project was to develop a methodology for enabling the poorest members of the community to participate in decision-making at the regional, national and local levels through the use of the ICTs. This was achieved by developing and utilizing an interactive video as a tool for women’s empowerment. After careful scrutiny and planning, two women’s groups were chosen to work with the local citizens. The two women's groups made two videos of 15 minutes each that captured the problems and aspirations of women in these settlements. Titled "Telling Our Story," these videos depicted their everyday struggles and challenges. The videos also captured stories of empowerment, such as women's income-generating activities and community service initiatives - including a saving scheme in one of the settlements to acquire land for permanent housing. The videos were shown at an assembly of policymakers, planners, representatives from NGOs, the private sector, and local functionaries. This experience raised consciousness among policy makers about Kenyan women’s concerns and their significant role in community development; and empowered the participants in return.

1.2.2 **The Organization of Indigenous People in Bolivia (CIDOB)**

The Organization of Indigenous People in Bolivia (CIDOB) uses ICTs to gather information on land use and land rights to support their lobbying activities. One notable initiative facilitated the development of technological competencies for a core group of 100 indigenous women. The project enhanced participants’ skills, enabling them to continuously access information about, and participate in, the ongoing discussion about indigenous and political rights within Bolivia. With their newly acquired Internet skills, the women can use email or Skype to talk to each other, stay informed, and debate indigenous rights. Future aspirations are for the women to use their increased knowledge and networking opportunities to run for leadership positions at both regional and national levels. Program evaluations indicated that 90 percent of program participants were highly satisfied, and 70 percent of participants indicated high levels of awareness and empowerment. Indigenous people continue to be very eager for training in ICT as an instrument for political lobbying for land and other indigenous rights.

1.3 **E-Governance: A New Model**

E-governance is a complex concept, the World Bank defines E-Governance as “government owned or operated systems of information and communication technologies that transform relations with citizens, the private sector and/or other government agencies so as to promote citizens’ empowerment, improve service delivery, strengthen accountability, increase transparency, or improve government efficiency”, it is a network that includes four main groups: citizens, businesses, governments (other governments and public agencies) and employees in which citizens can access a variety of information and services; for instance, legal information about documents; certificates and land deeds, and health campaigns. There are several opportunities that e-government offers, such as cost reduction and efficiency profits, improving the quality of service delivery to businesses and customers, intensifying the capacity of government to provide transparency and anticorruption measures, improving the quality of decision making, and promoting use of ICT in other sectors of the society. However, at the global and national levels, this model has not been full explored by women and it remains an area dominated by male experts.
1.3.1 Rural E-Governance in India: For whom?

This case study clearly demonstrates how women need to diminish obstacles that impede women’s full political inclusion. In India’s rural e-governance initiative, 33 percent of local representative seats are reserved for women; however, electoral seat does not necessarily guarantee that women’s voices are heard within the government. For instance, rural village heads of Chhattisgarh State (known as “sarpanchas”) can now participate in the public process through the use of a “simputer” – a low-cost computer that does not require computer literacy. The study shows that lack of education, the burden of reproductive and productive roles, lack of financial independence, and deeply rooted cultural and religious taboos make it difficult for women to be heard in traditionally male-dominated spaces such politics. These strong socio-cultural barriers negate the presence of women representatives in rural governance. Just one in ten women sarpanchas attended the Simputer program, training independently; the other 90 percent were accompanied by either a male relative or a sachiv (secretary of the village government). This is because it is not accepted for women to travel alone in rural India. Further complicating matters was the fact that the trainers were male, and the women interviewed reported that they did not feel at ease approaching the trainers with questions. This was not the case for male sarpanchas, because many men had already been exposed to new technologies such as mobile phones or computers. With low levels of English and Hindi literacy, many women simply did not understand the content and could not perform sarpancha tasks in these languages. Thus, the unequal participation of women sarpanchas in rural e-governance is the result of prevailing socio-cultural discriminations against women.

1.3.2 Lessons Learned

More support of women parliamentarian through e-governance

Since e-governance is a new tool, more attention from policymakers needs to be paid to include policy and regulation that will enable women to maximize their possibilities of benefiting from ICT, and to ensure the accountability of the institutions that are responsible for this valuable resource. Most of the rural e-governance policies and programs in developing countries lack a gender perspective. Politico-religious issues and other socio-economic factors are still obstacles that impede women’s full participation and inclusion in the political arena. Thus, engendering e-governance includes awareness on the part of policymakers that men and women may have different needs and priorities.

2. SECURITY AND CONFLICT

2.1 Highlighting the importance of women’s political representation for conflict prevention and in post conflict situations

Restoring and strengthening local governance mechanisms after conflict is essential in economic recovery. However, the extreme social tension which follows military conflicts increases the difficulties of economic reconstruction. This, coupled with high levels of unemployment, heightens citizens’ vulnerability to criminal activities. Women survivors in post conflict situations are frequently subjected to various criminal acts such as rape, forced prostitution and sexual slavery.

Fostering local governance and supporting civil society organizations is obligatory in guaranteeing women’s rights. For this reason, new channels and tools, such as ICTs, can aid women’s active participation in politics; by creating important linkages with government, NGOs, and institutions at the local level. These linkages are also central to the formation of sustainable peace, employment and reintegration into society. Using different media technologies; such as tape recorders, video recording and photography, provide channels for focus group discussions and validation workshops on the Internet. These activities help women denounce human rights abuses and raise awareness amongst communities on the need for peaceful resolution and peace building. Women’s participation in civil society
organizations and governmental institutions is necessary for ensuring gender equality in the political arena.

2.1.1 Uganda’s “Peace Building Cyberdialogue”
This initiative is one such example of how ICTs can be used as a tool in increasing women’s participation in conflict resolution and peace building. In 2005, the UN Security Council addressed the disproportionate and unique impact of armed conflict on women, and recognized their contributions conflict resolution and peace building. The Peace Building Cyberdialogue connected women working on peace building and conflict resolution at the country and community levels in Uganda; with gender advocates, policy makers and diplomats meeting at the UN headquarters in New York and the Association for Women’s Rights in Development (AWID) Forum in Bangkok, Thailand. The discussions during the Peace Building Cyberdialogue were recorded and edited in English, Luganda and Swahili across Uganda and other parts of Africa. These radio productions highlighted women’s role in peace building and reconstruction. The Peace Building Cyberdialogue combined the power of ICT and the broad reach of radio to allow women peace activists to sit at the peace table with international policy makers and gender advocates. This was an effective exercise in making local voices heard in a global space and bringing back that global discussion to make sense at the local level. Moreover, the Peace Building Cyberdialogue is an example of innovative usage of ICTs that builds on current efforts in conflict resolution, conflict prevention, and peace building by enhancing channels and modalities of communication, information dissemination, knowledge sharing, and collective learning in virtual spaces.

2.1.2 The Need for Legal Frameworks in Conflict Resolution: Bosnia and Herzegovina
Although ICTs assist in the conflict resolution and peace building process, legal frameworks are also necessary to promote women’s inclusion in political institutions. One notable success store comes from Bosnia and Herzegovina. In 2003, the Parliament adopted the Gender Equality Law that addresses issues such as education, participation in decision-making, and violence. This project assisted the establishment of effective mechanisms to implement this legislation, including the foundation and capacity building of a state-level gender agency. It also initiated gender budget training across the country. Furthermore, the project helped 1) prepare guidelines for the implementation of the Gender Equality Law; 2) prepare a strategy and form working groups on the main thematic areas covered by the Law; 3) integrate the Law into legal processes and procedures to ensure actual enforcement; 4) conduct public advocacy to raise awareness on the Law; and 5) support civil society.

2.1.3 Lessons Learned: Implementation of legal frameworks, such as the above case in Bosnia and Herzegovina, allows women’s formal integration to the political system. When coupled with ICTs, such frameworks allow for a board base of women’s political participation and constituency building. These elements are essential for conflict prevention, societal stability, and effective reconstruction and peace-building in post conflict situations.

3. Economic Empowerment:
3.1 ICTs for Economic Growth
Recent data illustrate the important linkages between ICTs and economic growth. A World Bank study of 120 countries between 1980 and 2006 found that for every ten-percentage point increase in penetrations of broadband services, a country’s economic growth increases by 1.3 percentage points. In a typical developing country, an increase to ten mobile phones per 100 inhabitants boosts GDP growth by 6 percent, providing benefits at the macro-level. At the micro-level, as family income grows, so does their spending on ICT commodities, which has positive spillover effects on health, education, and housing.

3.2 Gender Segregation in the ICT Sector
ICTs are proving to be a means to successful business creation. The International Labor Organization (ILO) observed a greater density of employment opportunities in countries where ICT infiltration is pervasive. Unfortunately, the spread of these benefits are not being shared equally among men and women. Patterns of gender segregation across the workforce are being replicated in the information economy, where women are overrepresented in lower-skilled end user jobs and absent in high-value-added positions, such as managerial, administrative, maintenance and design related jobs. The United Nations Development Fund for Women (UNIFEM) observed that only 9 percent of mid- to upper-level IT related jobs in engineering, 28.5 percent of computer programmers, and 26.9 percent of system analyst positions worldwide are held by women. Very few women in North America, Europe and Asia are employed in software and hardware engineering. Even telecenters, which are being heralded as the best way to bring poor rural women into the information age, are increasingly being established and run by men without women’s input.

3.3 ICTs for Women’s Economic Empowerment
There are several kinds of initiatives and pilot projects that have increased the economic empowerment of poor rural women: increasing their work opportunities, making use of flexible-time activity, lowering location limitations, and facilitating skill maintenance and upgrading for women. These include global programs which seek to enhance the practical and technical skills of women; e-commerce activities which are particularly effective when coupled with micro-finance and enhance the value of women’s traditional handicrafts through improved design, packaging, marketing; dissemination of market prices through telephony, teleworking, business incubation programs designed to increase women’s venture creation, and job networking to heighten their employment and reemployment opportunities; telecenters managed by women’s organizations, which provide job opportunities, technical training, resume workshops, and managerial training; and not-for-profit Internet service providers.

3.3.1 Lesson Learned: It is important that women’s ICT livelihood initiatives create an environment where women are comfortable participating in community development activities and voicing their needs and priorities. Also, ICT-based tools should be developed to specifically address women’s needs – such as literacy programs, businesses planning courses, ICT training, access to market and trading information, and e-commerce services. Of greatest importance is women’s presence in these initiatives, providing women-led training and mentorship which in turn creates and encouraging atmosphere for women to explore and become familiar with new technologies.

3.4 Recommendations for Increased Effectiveness
There are a series of recommendations that have been made to improve the effectiveness for each kind of initiative.

3.4.1 For Telecenters:
Evidence from telecenter evaluations reveal that women’s use of ICTs is increased when women are managing or teaching in the centers. Special considerations should be made to promote women-owned and led communications businesses. Therefore, at the governmental level a certain number of telecommunications licenses should be allocated to women-owned businesses, and all carriers should be obligated to do a certain percentage of business with them.

The largest problem facing telecenters is their lack of short term sustainability. Sustainability is compromised by unrealistic timeframes, insufficient training, and lack of ownership of ICTD initiatives. Ongoing monitoring and feedback is therefore necessary to ensure that the technology being used is appropriate and being used by the local community. Also, timeframes need to be realistic, providing a proper incubation period of 6-8 years. Training of staff needs to be robust and ongoing throughout the
incubation phase to make sure that staff can use technologies and share them with members of the local community.¹⁰⁵

Not-for-profit internet providers have become a viable resource in women-run telecenters and may allow for a realistic trajectory for overcoming economic barriers which exclude women from using telecenter resources. Examples of not-for-profit internet providers include SANGoNET and Women’sNet.¹⁰⁶

Telecenters’ landline services have had the largest impact in empowering women led households in rural areas, allowing for budgeting arrangements with their husbands and children who have migrated to cities and send remittances home. Simple technologies, such as phones, should not be ignored in favor of higher-tech options.¹⁰⁷

Finally, security issues for telecenters have arisen. Lack of funding for secure buildings or security guards has resulted in managers having to sleep onsite.¹⁰⁸ It is therefore necessary to budget security services appropriately.

3.4.2 For Business Incubators:¹⁰⁹
Successful business incubator programs provide:

- A website which provides online consulting and training in venture creation, information on government policies and regulations for the private sector, links to accessing and information on microcredit services, project recommendations, and e-business links;
- Distribution of toolkits which cover enterprise creation, assistance in writing business plans, business and legal contracts, and sample agreements;
- Online seminars which provide marketing, policy, and legal consultation for businesses, as well as advice and services for enterprise development and management, finance, and integration of ICTs;
- Links to local services for businesses and necessary inputs, trade opportunities, funding and grants, and pages to display new businesses and form cooperation among them.;
- Employment opportunities within local businesses and new enterprises; and
- Offline training classes which can include gardening and floral arts, home care and services, networking opportunities, e-commerce, and international linkages.

Other recommendations for business incubators include:

- ICT use need not be limited to the hi-tech field; it can also be applied to basic industries, provide basic services, information collection, recording and editing.
- Training should be focused on practice, effectiveness and operation. These employment skills need to be linked to job placements, and to training in how to search for a job.¹¹⁰
- Training for venture creation should include increasing financial literacy and credit understanding, assistance in accessing and applying for loans and microcredit, and assistance in enterprise creation.
- Use of ICT among women entrepreneurs should be emphasized and new businesses should be brought online.

3.4.3 For E-commerce Activities:
E-commerce initiatives are linking women producers and traders directly to markets at national, regional, and even the global levels. These programs allow women producers to bypass middlemen and other exploitive market structures, learn different weaving techniques, and compare prices of inputs, providing
for greater profit margins. They also promote stability in rural communities, easing urban migration.\textsuperscript{111} However, these programs may require a certain level of proficiency in English or other regional Language. Therefore, craftswomen will need to be linked to NGOs who can assist with easing language barriers.

Entrepreneurs should be given complementary training on how to access daily pricing information and market trends. Entrepreneurs can then demand fairer prices for their goods from buyers, as well as balance production with supply and demand trends. Women who are presently engaging in the handicraft sector should be targeted, and only women who have the potential to benefit from loan access should be encouraged to use microcredit. At the governmental level, legislation for enabling e-commerce for women entrepreneurs should be passed.\textsuperscript{112}

The four essential elements of a successful E-commerce initiative are as follows:\textsuperscript{113}

1. **Organization and capacity building**: facilitating the formation of women-led village craft groups, assisting pooling of financial resources and access to microcredit, and integration into the larger regional marketplace; helping members access government services; and encouraging participation in appropriate government programs (such as trade and business ministries).

2. **Product development**: helping craftswomen to use new manufacturing techniques, designs, and raw materials.

3. **Training**: training and upgrading both business and technical skills to increase efficiency and market competitiveness.

4. **Marketing**: website development, including photographs of products and descriptive texts, purchasing options via internet or telephone, and handling of packaging and shipping. Marketing schemes should also include the provision of market information and complimentary training, linkages to national and international entrepreneurial organizations, and transportation services.

4. **Health**

4.1 **Access, Information, and Services**

Although women and men are both disadvantaged in terms of health and health care in developing countries, women face unique disadvantages. Pregnancy, for example – a condition with which only women face – poses great health risks: there are half a million maternal deaths every year, and 99 percent of those deaths occur in developing countries.\textsuperscript{114} Women are disadvantaged from birth through old age – female infants and children frequently do not receive proper nutrition, necessary to promote health in adulthood, and one of the major causes of death among women over 60 is chronic obstructive pulmonary disease, which has been linked to smoke exposure due to women’s household roles.\textsuperscript{115} Promoting healthcare is a significant way that ICTs can be used to help improve women’s lives.

4.1.1 **Digital Storytelling to Help Women Suffering from Obstetric Fistula**\textsuperscript{116}

The ACQUIRE Project partnered with the Center for Digital Storytelling and St. Joseph’s Hospital in Uganda to give women the opportunity to share their experiences with obstetric fistula, a usually preventable condition that causes a hole to form between a woman’s birth canal and one or more of her internal organs. The four-day workshop, held in August of 2007, allowed them to use cameras, illustrations, and narration to document their struggles with the condition, and empowered them to speak up in their communities for more support and services for fistula patients.

Because the condition is so intrinsically linked with childbirth, relationships; and, in the case of traumatic fistula, women being victimized by men, there is a social stigma attached to this condition across the
more rural areas of Uganda. Through the digital storytelling workshop, women gained a support system and a greater understanding of the medical aspects of fistula; as well as knowing how community members, the health sector, and policymakers all play a role in its prevention. The videos the women made are available through Engendering Health’s website. For more information and project links, please look under the Resources: Health section.

4.1.2 New Delhi ICT Center Starts Information Campaign on Anemia

India has the highest prevalence of anemia among women in the world, with the national government estimating that over 90 percent of Indian women are afflicted. The Seelampur ICT Centre, located in an institution that teaches Quran to men and boys in northeastern Delhi, is a joint initiative of the local community, the Datamation Foundation, and UNESCO. The Center provides computer and internet training to local women to help them enhance life and vocational skills.

The Center is a central place within the community, and it made a natural host to an interactive module on the symptoms, diagnosis, and treatment of anemia, developed by the Datamation Foundation and the Indian Medical Association. Working with a local medical association, fourteen women and four men have acquired skills training to test blood for anemia. As a result of the training, the Center now hosts monthly in-house sessions for women to come in and have their blood tested by the trained volunteers, who hand out iron tablets to help alleviate the symptoms of anemia. Over 500 women have been tested and treated through the Center’s efforts.

4.2 Using Mobile Phones to Provide Health Information and Services

The United Nations Foundation notes that there is a “rapidly evolving intersection of mobile phones and healthcare.” Also known as “mHealth,” the use of mobile phones to provide health-related services via mobile technology has grown rapidly in areas of the world where service provision of healthcare is otherwise quite sparse. More than 64 percent of all mobile phone users are now in the developing world, and the potential for mHealth initiatives are enormous. mHealth is an offshoot of eHealth – the use of ICTs for health services and information. With mHealth, initiatives, there is the ability to reach further than terrestrial ICTs, such as landline telephones. Even without specific projects targeting women’s health issues, the range of initiatives already in place show the potential this technology has for equalizing women’s access to healthcare services.

4.2.1 Women’s Mobile Health Unit Project

A joint effort between Egypt’s Ministry of Health and Population (MoHP) and Ministry of Communications and Information Technology (MCIT) which took place in 2007, the Women’s Mobile Health Unit Project is a national effort to provide better breast cancer screenings, as well as offer blood pressure and blood sugar readings, through the use of ICTs. Mobile units are equipped with advanced communications technology and can transmit all readings electronically to specialists at the project’s main center in Kasr al-Aini hospital at the University of Cairo. The mobile units use their communications networks to send mammography scans to Kasr al-Aini, where they will be read by specialists. Once the diagnosis is transmitted back to the mobile unit, local staff will pass on the information and discuss treatment if any is advised by the specialists. The ultimate goal of the project is to offer women in rural areas the same high-quality health diagnoses that they would get from a premiere hospital without the time and expense of traveling to it.

4.3 Lessons Learned: There are multiple ways ICTs can be used to positively impact women’s health. Projects from countries all over the world show that different ICTs – such cell phones, digital media, and communications infrastructure – can be effectively used to promote women’s health initiatives. There are still gaps, however. Many health initiatives using ICTs do not discuss women’s health issues, either as
a project target or a topic to be addressed. Health projects that use ICTs, even when they are ostensibly inclusive of the entire community, must include consideration for women’s unique health access and care concerns.

5. Violence Against Women
5.1 ICTs for Combating and Preventing Gender Based Violence
The United Nations places ICT access as the third most important global priority for women’s rights, behind poverty and violence against women.\textsuperscript{121} However, ICTs can be an important tool for combating both of these societal ills. ICTs have been utilized in a variety of ways to empower survivors of gender-based violence and similar human rights violations, with non-profit organizations and social media networks leading the way in terms of programs supported and uses of technology.

New technologies, particularly ICTs, have rapidly become a way for women’s rights groups to raise awareness about gender-based violence. Because of the reach of ICTs, these organizations can reach a wider audience than in previous generations. Examples of how ICTs have been used to combat violence against women can be seen below.

5.1.1 \textit{Take Back the Tech}\textsuperscript{122} 
Take Back the Tech campaign that calls on all ICT users to take strategic control of any ICT platform on hand to engage in activism against gender-based violence. It accompanies the Activism Against Gender Violence campaign that runs November 25 - December 10 every year. Take Back the Tech is global in scope and local in impact, aiming to highlight violence against women around the world by putting the power of recognition in individual’s hands.

The campaign is “grassroots 2.0” in a sense, with much of the activism done primarily by women and girls spreading the word on their blogs, Facebook profiles, MySpace pages, Twitter accounts, and other social media platforms. Among other campaign activities, Take Back the Tech coordinates daily actions with the 16-day Activism Against Gender Violence, hosts media posts from activists on its website, produces a web-based campaign kit, and advocates for the translation of website content into local languages. The website also provides information about a range of gender-based violence issues.

5.1.2 \textit{Weekly Radio Program Discussing Trafficking in Women and Sexual Exploitation}\textsuperscript{123} 
The Coalition Against Trafficking in Women (CATW) – Asia Pacific, a network of feminist nonprofits based in the Philippines, fights the sexual exploitation of women; the Asia Pacific arm of CATW focuses on women in that region and is made up organizations based in Asia-Pacific countries. As part of CATW-AP’s awareness-raising efforts, they host a weekly show that airs on traditional radio in the Philippines and that streams from their website. The radio show, “Aksyon Kababaihan” (Women’s Action), addresses topics related to trafficking in women and sexual exploitation. CATW-AP also hosts workshops for the media on issues of sexual exploitation.

5.1.3 \textit{South African Girls Campaign Against Cybercrime}\textsuperscript{124} 
Girl’sNet, an offshoot of South African NGO Women’sNet, launched a new campaign in 2009 titled “Keep Your Chats Exactly That!” and dedicated to encouraging the safe use of text messages and online activities. Research indicated that girls were most likely to use social networking tools, and were more likely than boys to suffer from “textual” harassment. The campaign engages with educators, service providers, and activists to make the online world a safer space for young girls.

5.2 SMS Messages to Combat Violence Against Women
A growing area of activism involves using short message service (SMS) in mobile phones to give women both a measure of freedom in restrictive communities and a way to escape oppression. The technology has been especially powerful in African countries, where the rates of mobile phone ownership have skyrocketed over the last few years. SMS messaging has been used in a variety of ways:

- MobileActive08, a three-day conference in Johannesburg, South Africa, hosted by MobileActive, a nonprofit dedicated to using mobile technology for social impact, included a session from WOUGNET and vendor Bulk SMS about using bulk text messages for women’s empowerment, particularly awareness raising.  
- The Eastern African Sub-regional Support Initiative for the Advancement of Women (EASSI) issued daily SMS messages to subscribers in order to raise awareness of the dangers girls faced from post-election violence in Kenya. The campaign ran for 18 days in 2008 and included daily updates on the peace process and affirmations about the value of girl-children.  
- The United Nations Secretary-General’s Campaign to End Violence Against Women recommends organizing SMS/text message campaigns as a means for civil society to create awareness about gender-based violence in their communities.

5.3 Lessons Learned: The use of ICTs to combat gender based violence has primarily been a form of grassroots activism. The intersection of violence against women and ICTs has yet to be fully integrated into NGO, government, and multilateral stakeholder operations. ICTs as a means of both perpetuating and stopping gender based violence are currently still the purview of once-a-year campaigns or special sessions at more generalized conferences; this relationship is not yet part of the mainstream gender & ICT dialogue. Understanding and utilizing the relationship between ICTs and violence against women is critical to promoting wide-reaching women’s empowerment through the use of ICTs.

IV The Role of Stakeholders in Addressing ICTs for Gender Equality:
Women participating in ICT programs need more education on the potential of ICTs, and their relevancy to their everyday lives. Training must include increasing awareness for the potential of individual empowerment through ICTs; through access to learning opportunities, new employment and business prospects, health information, political participation; and access to legal services. It is necessary to increase target groups’ contact with ICTs beyond providing access to computers and basic training in their use. Proactive measures to motivate women and educate them about the usefulness of ICTs for social development and personal advancement are essential. Unless women see practical and immediate benefits, they will remain passive observers of the technologies available to them.

Projects will better meet the needs of different target groups if these groups are involved in the project design phase. Otherwise, even the best-intentioned initiatives can be misconstrued as capitalist motives to search for new projects; this is particularly problematic when projects are tied to Western governments and foreign donors. Participatory methods, such as citizen engagement, greatly enhances project sensitivity to the social environment of the projects, increases ownership and commitment among stakeholders, provides for greater transparency, add local knowledge to project design which increases effectiveness, and increases level of social empowerment. Also, project design and trainings should focus on the benefits of the initiative, not the technology.

It is imperative that access is coupled with capacity building for local content. The production of local content is strategic in raising awareness among women about the benefits of ICTs. Media produced for general consumption, such as entertainment and news, needs to address contemporary gender portrayals and the inclusion of women’s viewpoints within relevant content. Increases in electronic
information in local languages, as well as content produced for and by women, heightens motivation to access and use ICTs.\textsuperscript{134}

1. National Governments

It is the responsibility of all governmental institutions to advocate for gender sensitive policies. In order to achieve gender equality, governments must have a rigorous gender mainstreaming strategy, which should be explicit and specific. Gender mainstreaming is defined as a strategy for making women's as well as men's concerns and experiences an integral dimension of the policies and programs in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated.\textsuperscript{127} Governments need to be dedicated to implementing gender mainstreaming as part of their tasks and responsibilities from early on in the design of policies.

The responsibility for planning and implementing effective strategies must be accompanied by key structures of the national machinery and with individual government departments at the national, provincial and local levels. It is important to build ownership and define who does what in the policy-making team or unit in order to facilitate successful mainstreaming polices. Where awareness levels are low it may be necessary initially to have one nominated person with specific knowledge and awareness of gender issues to be in charge of giving guidance on how to integrate the gender dimension. Thus, gender policies need to be an essential part of all legislative agendas in order to maximize the impact of MDG 3\textsuperscript{135} on women's empowerment and their full participation on the basis of equality in all spheres of society, including participation in decision-making process and access to basic resources.

National gender policies are necessary for the mobilization of development required to combat extreme poverty;\textsuperscript{136} and ICTs play an important role of development through education. Secondary and higher education, especially for girls, provides high returns for poverty reduction, economic growth and reproductive health. More education leads to marriage later in life, smaller families, slower population growth, increased productivity, and rising incomes.\textsuperscript{137} As a result, all citizens of the state can benefit from more competitive and efficient economies. Thus, governments need to promote human rights and to work towards a satisfying and sustainable life for all.

Alongside gender policies, there is also an indispensable need for the integration of ICT policies. Successful policies would address the opportunities that ICT formation encapsulates in respect to gender empowerment. ICT and gender policies would include policies address gender divides in education, health, telecommunications, infrastructure, and rural development policies. This ensures that ICTs can enable outcomes that are gender-equal. ICT interventions on governance need to be integrated with other gender policies or legislative reforms to ensure equitable access to ICT and the benefits they can offer: “The biggest fallacy that gender advocates can make is to assume that ICT policy is only about technology.”\textsuperscript{138}

1.2 Monitoring & Evaluation Mechanisms and Indicators

Governments need an effective monitoring mechanism with a gender perspective to ensure the success of gender interventions. Effective monitoring and evaluation of gender progress involves identifying the gender results wanted at the beginning of an intervention, developing gender-sensitive indicators, and collecting and strategically using sex-disaggregated qualitative and quantitative data.

<table>
<thead>
<tr>
<th>Definition of Quantitative and Qualitative Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative indicators:</td>
</tr>
<tr>
<td>The number of women users in a telecenter.</td>
</tr>
<tr>
<td>The number of women trained in computer skills.</td>
</tr>
</tbody>
</table>
The number of women who have access to the Internet compared to men.

**Qualitative indicators:** can be defined as people’s judgments and perceptions about a subject, such as the confidence those people gained in having computer skills for better employment opportunities or having access to the Internet to for better trading/marketing opportunities.

*Source: Guide to Gender-Sensitive Indicators. Produced by Canadian International Development Agency. p.9*

The interpretation of these indicators plays a significant role in identifying constraints to implementation and obstacles to success. ICT indicators should be linked with the goals and purposes of an organization, activity or a project. In order to monitor ICT indicators more easily, goals need to be separated into long and short-term priorities. Initially, defining indicators can be easy, but indicators may change during the process of implementation. It is important that indicators reflect the specific realities and experiences of any project or initiative.

### 1.3 Importance of Recognizing and Adopting International Norms.

In order to measure the success and impact of the policies on women in particular and on the whole society in general, it is necessary to monitor and evaluate each policy using national and international indicators and mechanisms. For instance, Gender Development Index (GDI) established by The United Nation Development Program, and Gender Evaluation Methodology (GEM), an on-line guide for conducting gender evaluations of initiatives that use ICTs for social change, and CEDAW’s priorities such as women’s participation in political decision-making, women’s access to professional opportunities, and women’s earning power and participation in the economy, are useful international indicators. The World Summit on the Information Society (WSIS) and the Information and Telecommunication Union (ITU) also provide vital information on gender aspects, including indicators that can be useful to evaluate ICT for development, such as best practices and lessons learned.

### 2. The International Community: Multilateral Institutions and Donors

Multilateral institutions and donors, including the UN system and specialized agencies; should help national governments with technical expertise for designing policy, financial support, and institutional capability building. It is very important to ensure that women’s organizations are deliberately represented and included in consultations on all issues related to ICTs, and that women are specifically consulted regarding their needs and contributions in the process of ICT expansion.

Multilateral institutions need to create coherence between macroeconomic policy and gender equality goals. These institutions should motivate governments to eliminate the gender-wage gap, promote living wage and decent work policies to recognize the contributions of formal and informal workers to productivity and the range of services required for a fully functioning society, including the care of all generations and their gendered implications.

As the divide between the information-rich and the information-poor is most prevalent between rural and urban areas, special priorities should be given for investments and programs geared towards rural populations.

### 3. Non-Governmental Organizations

NGOs are critical to development work. These organizations gather information, provide services, and advocate for reforms on behalf of clients who, for myriad reasons, do not have adequate voices within their own societies. As stakeholders in international development, particularly in the area of gender and ICT, NGOs are in a unique position to help facilitate significant advances. Nevertheless, there are still barriers NGOs need to address before they are able to fully tackle the problems they seek to redress.
This paper noted a problem with locating sex-disaggregated ICT data, particularly at the governmental level. NGOs have taken the critical step of filling in some of the gaps left by this lack of governmental data. This is, in fact, one of the most essential functions NGOs can perform – they are able to show that problems exist when and where little formal attention is being paid. Beyond pure numbers, this paper also utilized case study data gathered on many subjects. Information on a wide variety of topics features in this paper – ICT literacy rates, resource allocation in marginalized communities, and the urban/rural gendered digital divide in India, to name a few – was gathered from NGOs.

A critical roadblock to action is the notion that NGOs are the weakest of the three sectors most often involved in development work (the other two being governments and the market). NGOs are typically much less financially stable than these two forces are, and as such tend to have less political and financial influence, as well as lacking the inherent trust that comes from being a long-standing actor in the society. Recognition of NGOs’ relevant place on the decision-making stage is crucial to positively impacting gender equality.

NGOs are in a prime position to use ICTs to not only advance their own agendas, but also to correct problems that prevent them from doing so. Tools like the internet and mobile communications allow for easy information gathering and transfer between organizations working on similar issues or in the same region. NGOs should also find ways to liaise with governments in terms of sex-disaggregated data collected, especially in terms of ICT access and use. Government policies affecting women’s equal ICT opportunities will be much stronger if supported by quantitative evidence. In turn, NGOs will be better able to serve their communities if there is a constant, open flow of information between them and their host governments.

NGOs need to use ICTs to educate themselves on the broader context in which they are operating, since this will only give them more resources for promoting their causes. More importantly, NGOs have been accused of doing more harm than good when they do not fully understand the complexities of the societies in which they seek to redress problems. Using ICTs for self-education on problems is one important way for NGOs to close the knowledge and information gap.

4. The Private Sector
Private sector entities have a level of freedom that other members of the international development community aren’t allowed. They are not beholden to political allegiances, cultural ties, or economic philosophies. Private sector actors – businesses – need only be concerned, in theory and frequently in practice, with their own profit margin. A huge segment of the workforce in developing countries is in informal non-agricultural work – for example, 40 percent of the population in Mexico and 80 percent of the population in sub-Saharan Africa – indicating both a major gap in developing labor markets as well as the potential for businesses to capitalize on a large pool of human capital.

Even though there have been gains in areas such as microfinance and small and medium enterprises, the private sector nevertheless remains a key area of international development that must be carefully expanded in order to make the most of its potential to positively impact the lives of the people in whose countries the private sector operates.

Generally speaking, the private sector is capital-rich. Particularly when it comes to large multinational corporations (MNCs), there is an opportunity to use that power to invest in human development. The area of gender equality and ICTs has enormous growth potential, as IBM recently realized, and there is also the opportunity to expand both the labor and customer markets to include the half of the population that has traditionally had their needs and concerns sidelined. Private industry has the ability to set its
own operating policies – it can effectively invest in whichever segment of the labor force it wants. They have the ability to impact gender equality efforts by investing in the workforce.

In practice, however, is that the private sector has little reason to invest in gender equality in ICT. Private sector entities are required to make a profit for their owners or stockholders, follow the laws of the countries they operate in, and nothing more. Therefore, to encourage these development partners to act in the interests of gender equality and women’s empowerment; governments need to provide financial incentives for them to do so. For example, women suffer from ICT infrastructure inequalities more than men do, so a government might provide a tax credit for telecommunications companies that increase their number of female customers. Another example would be favored status for licensing or permits for businesses that make an effort to attract and train women for ICT-related activities. The persisting reality is that businesses require a financial incentive as motivation for change, and it is up to governments to provide that incentive to them. This will in turn benefit businesses, which stand to gain from the other 50 percent of the society as employees and customers. Thus it is in all parties’ best interest for the private sector to engage more fully with the social sector. This could be done through the proliferation of public-private partnerships, which are presently uncommon. Pursuing public-private partnerships can tap into a pool of resources and talent not in the public sphere, and build upon national frameworks.

5. Media
The power of media lies in its ability to raise awareness about the realities of inherent structural and institutional discrimination against women, thereby empowering women across the globe to take on these challenges. Communication technologies, such as radio, have the potential to be interactive, engaging, and compelling – promoting interpersonal dialogue and thus raising levels of conscientisation. Unfortunately, the gender divide continues to prevail worldwide throughout the global media. A 2001 report by the International Federation of Journalists found that only 38 percent of all journalists are women, with women accounting for only 0.6 percent of editors, heads of departments, media owners. As a result, women’s lives are still the untold story in today’s media.

Research in the Middle East and North African (MENA) region in particular, has documented the negative stereotyping of women in print and broadcast media. Women’s access to this sphere is particularly controversial in this region because of the male-dominated politico-religious centers of power in Muslim society are generally restrictive in their views of women’s visibility. In Algeria, the murdering of female journalists is seen as a form of jihad: “We shall fight with the sword those who fight us with the pen.” In Egypt, cultural and media industries play a strategic role in the region. However, a large-scale content analysis of images aired on television during Ramadan indicated that 500 different episodes portrayed violence against women, with 43 percent of women characters subjected to violence and 13 percent killed. This empirical evidence indicates the Arab media’s failure to raise awareness about women’s subjugation and advance the status of women.

Generally, the kind of women who make the news in Africa are considered to be among the influential and powerful people in the society, such as high level politicians, wives of important men, and beauty queens. When ordinary women are the subjects of news coverage, they are generally portrayed as victims rather than experts. Where women journalists are present, they are often relegated to soft coverage, such as fashion and entertainment, and are largely absent from discussions on politics, economics, and social issues. Efforts need to be made to restructure stories concerning violence against women so that ways to alleviate violence and report perpetrators take the central focus, rather than portraying women merely as victims.
The media needs to be more active in sensitizing the general public about the high cost of women’s exclusion from the public sphere and democratization. The recent emergence of satellite television is expected to destabilize traditional images of passive womanhood through the representation of powerful women and female journalists from neighboring regions and capital cities, while empowering female audiences to seek and receive alternative information and ideas. Internet in MENA is opening up a portal for female bloggers, which could be the start of a socially empowering trend for women activists in the region, if fully exploited. The internet is a tool for women to access information and knowledge beyond censorship controls; while increasing the volume of women’s voices and initiatives; it allows women journalists to forge professional alliances and widen the scope of their audience.

Most of all, women need to be integrated into policy-making in media houses. Without women’s presence throughout all levels of power within the media, internal policies of these organizations will remain unchanged.

**Recommendations**

**Incorporate Gender Frameworks in ICT Policies**
- The work of many different women’s organizations and advocacy groups has made substantial advances and achievements. Therefore, channels for local-to-local dialogue between these civil society organizations and national governments need to be established.
- Dialogue should be focused on highlighting best practices to formulate gender frameworks for integration into national ICT policy.

**National governments need to move from theory to practice to create gender and ICT policies.**
- Legislators need to address national ICT policies, initiatives, and laws so they align with the rowing gender divide, while also incorporating ICT policies, initiatives, and laws with gender mainstreaming goals.
- Although some governments have been able to move gender policies into their legislation, the problem of implementation and action still exists. In order to overcome this problem, governments should:
  - Invest in small pilot projects and the replication of successful programs, which rely on established finance mechanisms.
  - These programs need to be supported by national policy commitments, and to take into account a four step approach (see resources: Four Step Approach), which allow for gender inclusiveness within the policy-making process.
  - Gender-sensitive indicators need to be identified. For a more detailed explanation of Gender Policy Guidelines (see resources: Indicators).

**Integrate gender awareness within all aspects of public policy**
- Integrate gender awareness within all aspects of public administration to improve the quality of life of all citizens and promote the well-being and inclusion of all citizens in a meaningful and positive way.
- All institutions of the government need to participate in order to ensure that policies are effectively applied and achieve expected results.
Increase women’s educational opportunities and political participation through ICTs

- Multilateral organizations should take responsibility for creating new processes, mechanisms, and specific steps with governments to support more women’s political participation through ICTs.
- These practices require clear political allocation as well as human and financial resources that help governments understand more about gender in ICTs.
- Governmental bodies, particularly those responsible for education, should encourage and promote women’s access to training and careers in science, law, and technology, and implement gender-sensitive e-learning programs.

Promote and invest in the development of new technologies that can minimize the gendered gaps in access

- The use of white space or high-altitude blimps to broadcast wifi signals are ideas still in early stages of implementation, but they have the potential to revolutionize access to ICTs by rural or underserved areas.
- Combine new technologies with old
  - For example “wired” community radio stations operate as local broadcasting centers for internet content, which they download and rebroadcast to thousands of illiterate listeners.¹⁵⁵
- Such technologies require less infrastructure development and are thus less costly to invest in than the fiber-optic cables currently required for internet and television services.
- Women in developing countries are more likely to live in underserved rural areas, and new technologies that bridge the urban/rural divide will help give these women access to ICTs they might not have had otherwise.

Include a gender component to Universal Access and Service Funds and Rural Development Funds

- There are currently very strong frameworks and toolkits that nations can adapt to promote universal access and rural infrastructure development. These frameworks are often based on market-centric ideologies, and function on the assumption that monetary incentives for development are enough to secure that development.
- Universal access funds need to include a gender evaluation component to ensure that women’s unique concerns will be considered. This can be accomplished in a number of ways, from policy requiring its inclusion in the development process to financial incentives to telecommunications companies that explicitly address women’s access problems.

Invest in radio infrastructure¹⁵⁶

- Governments should invest in radio infrastructure, especially in rural and underserved areas.
  - Bureaucratic hurdles should be lowered, including the removal or lowering of license fees.
  - A minimum of 10-20 percent of FM band should be dedicated to community broadcasting (2-4 MHz out of the 20 MHz contained in the FM band that runs from 88 to 108 MHz.)
  - Freedom of information laws need to be enacted.
- Radio communications are utilized by women’s rights organizations in regions like sub-Saharan Africa, South America, and Southeast Asia.
- Regardless of what new technologies are developed in the coming years, radio should continue to be a means of communication and idea-sharing that gives women a voice.
- Programming and operations dedicated to women’s concerns has led to such divergent benefits as economic empowerment and raising awareness about human trafficking.
Monitor, evaluate, disseminate

- Mechanisms for monitoring and participatory learning evaluations should be developed before project implementation; surveys can assist in establishing a user base-line.
  - Plug into an on-line monitoring and evaluation group that is addressing challenges involved, for example www.ballanet.org/leap
- Documentation and sharing of project weaknesses and failures is just as important – and sometimes more interesting - as successful outcomes.
- Disseminate evaluation results widely, and share useful insights for future development and practice.
Figure 1: Internet Penetration for All Regions of the World

<table>
<thead>
<tr>
<th>World Regions</th>
<th>Population (2006 Est.)</th>
<th>Population (% of World)</th>
<th>Internet Usage Data</th>
<th>%Population (Penetration)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>915,210,928</td>
<td>14.1</td>
<td>23,649,00</td>
<td>2.6</td>
</tr>
<tr>
<td>Asia</td>
<td>3,667,774,066</td>
<td>56.4</td>
<td>380,400,713</td>
<td>10.4</td>
</tr>
<tr>
<td>Europe</td>
<td>807,289,020</td>
<td>12.4</td>
<td>294,101,844</td>
<td>36.4</td>
</tr>
<tr>
<td>Middle East</td>
<td>190,084,161</td>
<td>2.9</td>
<td>18,203,500</td>
<td>9.6</td>
</tr>
<tr>
<td>North America</td>
<td>331,473,276</td>
<td>5.1</td>
<td>227,470,713</td>
<td>68.6</td>
</tr>
<tr>
<td>Latin America/Caribbean</td>
<td>553,908,632</td>
<td>8.5</td>
<td>79,962,809</td>
<td>14.7</td>
</tr>
<tr>
<td>Oceania</td>
<td>33,956,977</td>
<td>0.5</td>
<td>17,872,707</td>
<td>52.6</td>
</tr>
<tr>
<td>World Total</td>
<td>6,499,697,060</td>
<td>100.00</td>
<td>1,043,104,886</td>
<td>16.0</td>
</tr>
</tbody>
</table>


Figure 2: Share of Women in the Non-Agricultural Wage Employment, 1990 and 2004 (Percentage)

Figure 3: GEI Regional Average by Component
Source: Social Watch Gender Equity Index
### Figure 4: Gender Indicators 1999-2007

*Source: Human Development Report 2009*

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Norway</td>
<td>102.7 d,e</td>
<td>46,576 d</td>
<td>0.906</td>
<td>31</td>
</tr>
<tr>
<td>2</td>
<td>Australia</td>
<td>115.7 d,e</td>
<td>28,759 d</td>
<td>0.87</td>
<td>37</td>
</tr>
<tr>
<td>3</td>
<td>Iceland</td>
<td>102.1 d,e</td>
<td>27,460 d</td>
<td>0.859</td>
<td>30</td>
</tr>
<tr>
<td>4</td>
<td>Canada</td>
<td>101 d,e,f</td>
<td>28,315 g,d</td>
<td>0.83</td>
<td>37</td>
</tr>
<tr>
<td>5</td>
<td>Ireland</td>
<td>99.1 e</td>
<td>31,978 g,d</td>
<td>0.722</td>
<td>31</td>
</tr>
<tr>
<td>6</td>
<td>Netherlands</td>
<td>97.1 e</td>
<td>31,048 g,d</td>
<td>0.882</td>
<td>28</td>
</tr>
<tr>
<td>7</td>
<td>Sweden</td>
<td>99 e</td>
<td>29,476 g,d</td>
<td>0.909</td>
<td>32</td>
</tr>
<tr>
<td>8</td>
<td>France</td>
<td>97.4 e</td>
<td>25,677 d</td>
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</tr>
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<td>9</td>
<td>Switzerland</td>
<td>81.4 e</td>
<td>31,442 g,d</td>
<td>0.822</td>
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</tr>
<tr>
<td>10</td>
<td>Japan</td>
<td>85.4 e</td>
<td>21,143 d</td>
<td>0.567</td>
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</tr>
<tr>
<td>11</td>
<td>Luxembourg</td>
<td>94.7 i</td>
<td>57,676 g,d</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>12</td>
<td>Finland</td>
<td>105.1 d,e</td>
<td>29,160 d</td>
<td>0.902</td>
<td>29</td>
</tr>
<tr>
<td>13</td>
<td>United States</td>
<td>96.9 e</td>
<td>34,996 g,d</td>
<td>0.767</td>
<td>43</td>
</tr>
<tr>
<td>14</td>
<td>Austria</td>
<td>92.1 e</td>
<td>21,380 d</td>
<td>0.744</td>
<td>27</td>
</tr>
<tr>
<td>15</td>
<td>Spain</td>
<td>99.9 e</td>
<td>21,817 g,d</td>
<td>0.835</td>
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<tr>
<td>16</td>
<td>Denmark</td>
<td>105.3 d,e</td>
<td>30,745 d</td>
<td>0.896</td>
<td>28</td>
</tr>
<tr>
<td>17</td>
<td>Belgium</td>
<td>95.9 e</td>
<td>27,333 d</td>
<td>0.874</td>
<td>32</td>
</tr>
<tr>
<td>18</td>
<td>Italy</td>
<td>94.7 e</td>
<td>20,152 g,d</td>
<td>0.741</td>
<td>34</td>
</tr>
<tr>
<td>19</td>
<td>Liechtenstein</td>
<td>79.6 e,j</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>20</td>
<td>New Zealand</td>
<td>113.4 d,e</td>
<td>22,456 d</td>
<td>0.841</td>
<td>40</td>
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<td>21</td>
<td>United Kingdom</td>
<td>92.8 e,f</td>
<td>28,421 d</td>
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<td>22</td>
<td>Germany</td>
<td>87.5</td>
<td>25,691 g,d</td>
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<tr>
<td>23</td>
<td>Singapore</td>
<td>..</td>
<td>34,554 g,d</td>
<td>0.786</td>
<td>31</td>
</tr>
<tr>
<td>24</td>
<td>Hong Kong, China S AR</td>
<td>73.4 e</td>
<td>35,827 d</td>
<td>..</td>
<td>30</td>
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<tr>
<td>25</td>
<td>Greece</td>
<td>103.2 d,e</td>
<td>19,218 g</td>
<td>0.677</td>
<td>28</td>
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<tr>
<td>26</td>
<td>Korea (Republic of)</td>
<td>90.6 d,e</td>
<td>16,931 g</td>
<td>0.554</td>
<td>9</td>
</tr>
<tr>
<td>27</td>
<td>Israel</td>
<td>92.1 e</td>
<td>20,599 g</td>
<td>0.705</td>
<td>30</td>
</tr>
<tr>
<td>28</td>
<td>Andorra</td>
<td>66.3 e,f</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>29</td>
<td>Slovenia</td>
<td>98.1 e</td>
<td>20,427 g</td>
<td>0.641</td>
<td>34</td>
</tr>
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**Low Human Development**

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<th>Notes</th>
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<td>Niger</td>
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Notes:

b. Because of the lack of gender-disaggregated income data, female and male earned income are crudely estimated on the basis of data on the ratio of the female nonagricultural wage to the male nonagricultural wage, the female and male shares of the economically active population, the total female and male population and GDP per capita in PPP US$ (see [http://hdr.undp.org/technicalnote1](http://hdr.undp.org/technicalnote1)). The wage ratios used in this calculation are based on data for the most recent year available between 1999 and 2007.
c. Data refer to the most recent year available between 1999 and 2007. Estimates for countries that have implemented the International Standard Classification of Occupations (ISCO-88) are not strictly comparable with those for countries using the previous classification (ISCO-68).
d. For the purpose of calculating the GDI, the female and male values appearing in this table were scaled downward to reflect the maximum values for adult literacy (99%), gross enrolment ratios (100%), and GDP per capita (40,000 (PPP US$)). For more details, see [http://hdr.undp.org/en/statistics/tn1](http://hdr.undp.org/en/statistics/tn1).
e. Data refer to an earlier year than that specified.
f. UNESCO Institute for Statistics estimate.
g. No wage data are available. For the purposes of calculating the estimated female and male earned income, a value of 0.75 was used for the ratio of the female nonagricultural wage to the male nonagricultural wage.

Sources:

- column 3: calculated based on data on the component indicators.
### Figure 5: Percentage of Seats Currently Filled in Parliament by Women in 44 Countries

**Source:** The data in the table has been compiled by the Inter-Parliamentary Union on the basis of information provided by National Parliaments by 28 February 2010, [www.ipu.org](http://www.ipu.org).

<table>
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<tr>
<th>Country</th>
<th>Percentage</th>
<th>Country</th>
<th>Percentage</th>
</tr>
</thead>
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<td>Rwanda</td>
<td>53.3%</td>
<td>Nicaragua</td>
<td>20.7%</td>
</tr>
<tr>
<td>Sweden</td>
<td>46.4%</td>
<td>Dominican</td>
<td>20.0%</td>
</tr>
<tr>
<td>South Africa</td>
<td>44.5%</td>
<td>United Kingdom</td>
<td>19.5%</td>
</tr>
<tr>
<td>Iceland</td>
<td>42.9%</td>
<td>Honduras</td>
<td>18.0%</td>
</tr>
<tr>
<td>Norway</td>
<td>39.6%</td>
<td>Venezuela</td>
<td>17.5%</td>
</tr>
<tr>
<td>Mozambique</td>
<td>39.6%</td>
<td>United States*</td>
<td>16.8%</td>
</tr>
<tr>
<td>Argentina</td>
<td>38.6%</td>
<td>Korea</td>
<td>15.6%</td>
</tr>
<tr>
<td>Belgium</td>
<td>38.0%</td>
<td>Uruguay</td>
<td>15.4%</td>
</tr>
<tr>
<td>Spain</td>
<td>36.6%</td>
<td>Chile</td>
<td>14.2%</td>
</tr>
<tr>
<td>India</td>
<td>33.0%</td>
<td>Sierra Leona</td>
<td>13.2%</td>
</tr>
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<td>Ecuador</td>
<td>32.3%</td>
<td>Guatemala</td>
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<td>Uganda</td>
<td>31.5%</td>
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<tr>
<td>Switzerland</td>
<td>29.0%</td>
<td>Kenya</td>
<td>9.8%</td>
</tr>
<tr>
<td>Mexico</td>
<td>27.6%</td>
<td>Turkey</td>
<td>9.1%</td>
</tr>
<tr>
<td>Peru</td>
<td>27.6%</td>
<td>Brazil</td>
<td>8.8%</td>
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<tr>
<td>Afghanistan</td>
<td>27.3%</td>
<td>Colombia</td>
<td>8.4%</td>
</tr>
<tr>
<td>Australia</td>
<td>27.3%</td>
<td>Ukraine</td>
<td>8.0%</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>22.5%</td>
<td>Kuwait</td>
<td>7.7%</td>
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<td>Canada</td>
<td>22.1%</td>
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<td>Ethiopia</td>
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<td>Philippines</td>
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<td>Saudi Arabia</td>
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*United States: The total refers to all voting members of the House.*
APPENDIX B: RESOURCES

1. Checklist for Addressing Gender-Related Barriers to ICT’s¹⁵⁸

This checklist is to assist in the design and implementation of projects using ICTs, to verify the project will be accessible to both women and men. By using these strategies to address these barriers, projects will carry greater potential to fully benefit from the talents and resources of women and men. This checklist should be modified to reflect local circumstances and relevant issues.

Ensure Content Relevancy:

☐ Value Women’s knowledge, wisdom and experience
☐ Use participatory methods to design and develop the content and learning systems to reflect the lives of women
☐ Build on traditional communications methods
☐ Ensure that the content is directly relevant to women’s livelihood
☐ Consider local language content
☐ Overcome literacy barriers through the appropriate design and use of ICTs
☐ Use gender-appropriate instructional design
☐ Use gender-appropriate learning strategies

Address Barriers to the Availability of ICTs

☐ Ensure adequate communications infrastructure
☐ Ensure adequate institutional structures
☐ Consider using existing structures
☐ Ensure access to the use of reliable electricity
☐ Ensure adequate access to and control of user equipment (e.g., telephone, radio, etc.)
☐ Ensure Access to the Internet
☐ Ensure Access to technical support
☐ Address potential mismatch between technology provider and end-user

Address Barriers to the Usage of ICTs:

Address High Costs

☐ Electricity/battery charges
☐ Telephone charges
☐ Internet access charges
☐ High cost of obsolescence
☐ Training costs
☐ Capital costs
☐ Course fees
☐ Additional Educational costs (e.g., books, uniforms, etc)
Address Skill Needs

- ICT awareness and knowledge
- Technology usage skills
- English Language skills
- New learning skills (e.g., self-directed learning, etc.)

Address Lack of Information

- Lack of awareness of ICTs potential
- Lack of knowledge about where to access equipment, training, and courses
- Lack of Advocacy

Address Socio-cultural Barriers

- Gender stereotyping
- Lack of mobility
- Restrictions on access to public places
- Need for proximity of ICTs
- Need for security
- Time famine
- Lack of confidence
- Lack of privacy
- Lack of role-models
- Absence of women teachers and trainers

Address Barriers to ICTs for Providers

- Ensure institutional preparedness
- Ensure use of appropriate technology
- Ensure knowledge about teaching and learning strategies
- Ensure teacher preparedness
- Address high cost of program development
- Address high cost of program delivery
- Address issue of sustainability
2. Four Step Approach for Implementing Gender and ICT Policies:

- **Realization:**
  The first step is getting organized, building awareness and ownership, and establishing a structural and cultural basis for equal opportunities, including formulation of objectives and targets, making a plan, drawing up a budget, and defining responsibilities and accountability of the different actors involved. In this part of the process it is necessary to include national and international norms.

- **Recognition**
  The second step is learning about gender differences. It is important to identify the differences between the situations of women and men in the specific fields being addressed. Learning about gender differences relies on the availability of sex disaggregated data and indicators, and analysis of this information to identify gender gaps and trends.

- **Identification**
  The third step is a gender impact assessment, to be done before policy implementation takes place. The goal of a gender impact assessment is to ensure that policies will contribute to the creation of equality and the elimination of inequalities. Defining indicators are pivotal for successful to monitoring and evaluation outcomes.

- **Strategies and Policies**
  The fourth step of gender mainstreaming is redesigning the policy. It is essential to identify ways in which it could be redesigned to promote gender equality. Policies need to be flexible to be tracked over time.

3. Gender Indicators

**Gender Development Index (GDI)**
The Gender-related Development Index (GDI) is an indication of the standard of living in a country, developed by the United Nations (UN). It is one of the five indicators used by the United Nations Development in its annual Human Development Report. It aims to show the inequalities between men and women in the following areas: long and healthy life, knowledge, and a decent standard of living.

**Gender Evaluation Methodology (GEM)**
GEM is an evaluation methodology that integrates a gender analysis into evaluations of initiatives that use information and communication technologies (ICTs) for social change. It provides a means for determining whether ICTs are worsening or really improving women’s lives and gender relations, as well as for promoting positive change at the individual, institutional, community and broader social levels. GEM is the only evaluation methodology that has been developed from the ground up, through collaboration with non-governmental organizations, and provides a systematic guide to integrating gender analysis and perspectives in ICT-type projects. In addition, it is also available in English, Spanish, French, Portuguese and Arabic.

**World Summit on the Information Society (WSIS)**
The World Summit on the Information Society (WSIS) and the International Telecommunication Union (ITU) recognized worldwide as the leading provider of timely and comprehensive ICT statistics and indicators. In January 2007 ITU released the 2007 ICT-Opportunity Index. It is an inclusive index, which relies on ten indicators that help measure ICT networks, education and skills, uptake and intensity of the use of ICT. It provides measurement across 183 economies. The 2007
ICT-OI is the result of the merger of the ITU’s Digital Access Index (DAI) and Orbicom’s Monitoring the Digital Divide/Info state conceptual framework. In addition, the stocktaking database is a useful tool for illustrating how ICTs can help achieve the MDGs, monitoring the implementation of the WSIS Plan of Action, and identifying areas where further action is needed.

4. Women’s Media & Radio Organizations

femLINKpacific : Media Initiatives for women – a women’s community media organization http://www.femlinkpacific.org.fj/

CEMINA (Communication, Education, and Information on Gender): A Brazilian organization with the mission of improving education on gender equality, health, and environment issues, and strengthening poor women’s rights and citizenship through the use of radio. http://www.cemina.org.br/english/

Uganda Network (WOUGHNET) : An NGO promoting and developing the use of information and communication technologies (ICTs) among women and women's organizations www.wougnet.org/

Women’s Media Center (WMC) : Performs training and assists in forming partnerships among women journalists and women’s groups. The Women's Media Center makes women visible and powerful in the media. http://www.womensmediacenter.com/

Federation of African Media Women: This program was initiated by UNESCO introduce and establish the concept of development through radio in the SADC region of Africa. http://www.comminit.com/en/node/114555/36

World Association of Community Radio Broadcasters (AMARC) : An international NGO that serves the community radio movement on five continents. www.amarc.org

Association for Progressive Communications Women’s Networking Support Program (APCWNSP) – an international network of NGOs supporting women’s networking for social change and women’s empowerment through the use of ICTs. http://www.apcwomen.org/en

5. Gender-Based Websites

Agenda de las Mujeres (Women’s Agenda - Argentina) and Mujeres Hoy (Woman Today - Chile) – Portals providing access to current affairs relating the women’s movement and gender equality issues. Also provides research, documents, and statistics relating to the advancement of women’s rights.

Arabwomenconnect.org – Contains statistics, reports, and studies on Arab women from women’s organizations across 8 different middle eastern countries. www.arabwomenconnect.org

6. ICTS for Education:

WorldLinks – an organization which promotes international tele-collaboration among secondary school teachers and students in developing countries.
**Association of African Women Scholars (AAWS):** AAWS is a worldwide organization dedicated to promoting and encouraging scholarship on African women in African Studies, forging intellectual links and networks with scholars, activists, students, and policy makers inside and outside Africa, and participating actively in continental and global debates on issues specifically relevant or related to African women. [http://africanwomenstudies.org/contents.html](http://africanwomenstudies.org/contents.html)

7. ICTs for Political Participation:

**Flame:** Flame is a network of African sisters online committed to strengthening the capacity of women through the use of ICTs to lobby, advocate and participate in the Beijing +5 process regionally and globally. [http://flamme.org/](http://flamme.org/)

8. Services:

**SangoNet:** A not-for-profit internet provider. [http://www.ngopulse.org/](http://www.ngopulse.org/)

**Women’s Net:** Sponsored by the non-governmental organization SangoNet and the government’s Commission on Gender Equality, this site focuses on internet resources for women's social action. [http://womensnet.org.za/](http://womensnet.org.za/)

**infoDev:** Managed by the world bank, this organization promotes understanding and effective uses of information and communication technologies (ICTs) as tools of poverty reduction and broad-based, sustainable development.

9. Advocacy:

**Take Back the Tech:** a not-for-profit campaign to use ICTs to end gender based violence. [http://www.takebackthetech.net](http://www.takebackthetech.net)
Endnotes:

18 The International Taskforce on Women and ICTs (www.umbc.edu/cwit/Declaration.html)
22 Chat Ramilo (2002), "National ICT Policies and Gender Equality Regional Perspective: Asia
23 Association for Progressive Communications Women’s Networking Support Program (APC-WNSP), op. cit., Report on the M4M Interviews and Focus Group Discussions, [www.apc.org/women/gem/gem_tool/phase2/m4m_visit_report.doc](http://www.apc.org/women/gem/gem_tool/phase2/m4m_visit_report.doc)
26 Cross-country Study on Violence against Women and Information Communication Technologies by By María Isabel Davidziuk and María Alejandra Davidziuk. From access to appropriation: Women and ICT policies in Latin American and the Caribbean by Gloria Bonder.
27 Source: Cross-country Study on Violence against Women and Information Communication Technologies by By María Isabel Davidziuk and María Alejandra Davidziuk. From access to appropriation: Women and ICT policies in Latin American and the Caribbean by Gloria Bonder.
29 Chat Ramilo (2002), "National ICT Policies and Gender Equality Regional Perspective: Asia
31 Cross-country Study on Violence against Women and Information Communication Technologies by By María Isabel Davidziuk and María Alejandra Davidziuk. From access to appropriation: Women and ICT policies in Latin American and the Caribbean by
Gloria Bonder.


The findings of the study has been published in “I on the Mouse: ICT for Women’s Advocacies and Networking in Asia and the Pacific”. The research was initiated by the Asian Women’s Resource Exchange was coordinated by Isis International Manila, UNESCAP and the Association for Progressive Communications.


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IBM-Czech Republic (IBM-CR), in conjunction with the Association for Progressive Communication’s Women’s Program, recently began a program to bring “Women into IT.” The goal of Women into IT is to attract more high school girls and women into the information technology field by offering awareness sessions and training in order to show women what career prospects the IT field has to offer. IBM-CR started the program when they realized that the percentage of female employees in-in-country was half that of IBM-global, and they wanted to take steps to rectify that imbalance. For more information:
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