

***Why the World Isn't Flat Enough:  
bringing more women contributors and  
beneficiaries into information technology***

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I have been learning about you this morning.

Let me tell you a little about me.

I've been working on understanding and improving the situation of women in developing countries for about 35 years now.

I started with teaching and writing, especially a book on Women in Economic and Social Change in Africa in 1976. Then I went to Africa for 25 years where I worked with the United Nations, first in their women and development program and then in charge of their program to promote information technology in 53 countries of Africa, but with my own special interest to ensure that women were part of it.

I retired from the UN 5 years ago, for a reason related to unequal diffusion of technology (not IT, but technology, nonetheless). My husband developed kidney failure in Ethiopia, a country of 70 million people that did not have a single dialysis machine. For this reason, we returned to the US. Since then I have been writing and researching and continuing to work to ensure that women in developing countries have a fair chance to access the benefits of IT.

## **Global issues in women and information technology: diversity and innovation**

- How to make it possible for more women, especially in developing countries, to be technological innovators
- How to ensure that emerging technologies work for women as well as men

## Why do women need, use IT?

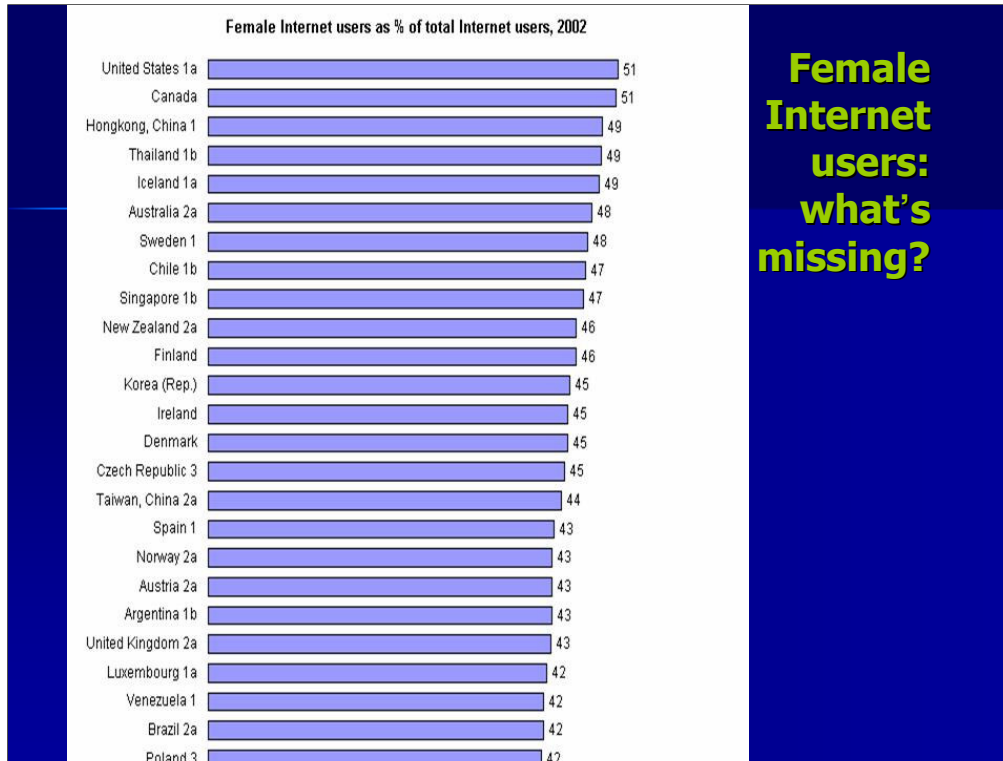
- For the same reasons as men . . .
- To get more information to carry out their productive, reproductive and community roles
- As tools to conduct their business and to work in the IT industry

Some say that women in developing countries don't need IT, that they have more basic needs that they need to meet first. I argue, though, that IT is a tool that helps meet basic needs. Women, the same as men, need IT to get more information to carry out their productive, reproductive and community roles. And they need to use IT tools to conduct their business and to work in the IT industry.

## What do we know about women and information technology worldwide?

- Few statistics available globally to cover the situation of women and information technology





**Female  
Internet  
users:  
what's  
missing?**

- Data is available on only one African country – South Africa, which is not representative of the region.
- There is data on only five Latin American countries (Argentina, Brazil, Chile, Mexico and Venezuela).
- No Middle East countries, except Israel.
- Many Asian countries are included, but data is weighted towards wealthy countries. There is no data on India, a highly significant country.
- Available data reflects the global digital divide- the countries on which there is the most data tend to be the most connected.

## ORBICOM Digital Divide -Women in the Information Society

- Women's participation in information society lags behind that of men
- Even countries with high women's access have inequalities in use
- Gender divide more pronounced in developing countries
- The gender divide and the overall digital divide do NOT move in tandem.
- Disputes argument that you don't have to take care of gender; it will take care of itself.

**Higher infostates<sup>1</sup> don't necessarily have smaller gender gaps and vice versa.**

Even in countries with high women's access there are inequalities in use. For example, high infostate countries—France, Germany, Luxembourg, the Netherlands, Norway, and the UK—have rates of female Internet users equivalent to those of low infostate countries—such as Brazil, Mexico, Zimbabwe, and Tunisia. Italy's gender gap is similar to that of Kyrgyzstan, with 10% the Internet penetration.

The gender divide is generally more pronounced in developing countries; low penetration rate countries with high gender gaps include Guinea, Djibouti, Yemen, Nepal, and India.

Although the gender gap has vanished in a few countries with high Internet penetration (U.S., Canada), the gender divide and the overall digital divide do not move in tandem. Greece and Portugal are close to the bottom on female Internet users, but Mongolia and the Philippines are close to the top.

All of this goes to disputing the argument that you don't have to care of gender and that it will take care of itself. Specific efforts are needed to ensure that women enjoy the benefits of information technology.

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1. "Infostate" is a conceptual framework developed by the International Telecommunication Union to measure the degree of a country's "ICT-ization." It combines measurements of the country's capital and labor stocks in ICT with measurements of the country's consumption of ICT.

## Going beyond access

- "The digital divide is not simply an issue of access, but also of obstacles to Internet use."(Kennedy, Wellman, Clement, 2003).
- Even once access achieved, gendered social, cultural and financial factors impede women's use of new ICTs

## What are the obstacles?

- Absence of infrastructure where most women live
- Women have less time to visit public access facilities
- Gender bias towards women and IT-
  - Attitudes that IT is not for women

## Education and skills

- Women less likely than men to have requisite education and knowledge
  - Literacy
  - Language
  - Computer skills
  - Information literacy

Women represent  $\frac{2}{3}$  of world's illiterates.

## Educational barriers

- New technologies offer women opportunities to gain skills but women poorly placed to use them



New technologies offer women opportunities to gain skills, but they are poorly placed to use them. This due especially to disparities in educational rates and levels, as well as other socio-cultural factors.

## **Falling numbers of women in S&T, computer science (CS)**

- 0.3% of female entering freshmen in US in 2004 wanted to major in CS
- Women earn 30% of BS degrees in CS in US, figure falling annually
- Female representation in hard sciences (physics, engineering, CS) low around the world (NSF, 2003)

## Why aren't more girls Geeks?

- Fewer women than men in IT in all industrialized countries
- Girls do best in CS where governments insist on math and science for all

## **High % of women in CS in: Turkey, Korea, Sweden, Ireland**

- Low in: Belgium, Czech Republic, Germany, Slovak Republic

## Financial aspects of women's ICT use

- Less disposable income than men worldwide
- High costs of communication in developing countries
- Policies that prohibit or heavily tax low-cost technologies advantageous to women (e.g. community radio, VoIP)

## Content constraints on usage

- Language and literacy barriers
- Need for multilingual tools and databases, interfaces for non-Latin alphabets, graphic interfaces, automatic translation software
- Lack of multicultural content alienates many users, limits its usefulness

## More constraints

- Absence of women from IT policy
- Belief that IT (and all technology) is gender neutral
- Lack of knowledge of gender aspects of technical issues
- Gender advocates unaware of IT issues

IT specialists are often unaware of gender issues.

## Technologies women can use

- Mix of technologies
- Radio remains critically important



## Content made for women

- Village Knowledge Centres: Pondicherry, India
- Women's Information Resource Electronic Service
- Feminist International Radio (FIRE)- Costa Ricas
- Nutzij – Mayan women in Guatamala
- Khwezi FM in KwaZulu Natal
- CD Rom "Rural Women Earning Money-Uganda

Examples of content that has been created specifically for women.

▫ Village Knowledge Centres in Pondicherry, India. Run by the Swaminathan Foundation, the VNCs are information shops operated by women volunteers to give information on markets, healthcare and agriculture-related information and to teach computer skills (Balaji et al., 2004).

▫ Women's Information Resource Electronic Service (WIRES) targets women entrepreneurs in small-scale business in Uganda addressing the need for entrepreneurial information repackaged in simple, ready-to-use formats, preferably in local languages. Through WIRES women can access ICT for information on markets, prices, credit and trade services ([www.ceewauwires.org](http://www.ceewauwires.org))

**Feminist International Radio Endeavor (FIRE)** (<http://www.fire.or.cr/> and <http://www.radiofeminista.net/indexeng.htm>) based in Costa Rica, is women's Internet radio that supports community media with content on women's rights.

▫ Through video production and using the Internet, the Nutzij (my word, in Maya) project run by a collective of young Mayan women in Guatemala helps women develop skills to preserve their community's cultural heritage on video and market the content to the world via the Internet (Making Waves, 1998).

▫ The Khwezi FM in KwaZulu-Natal community radio station promotes community radio content in Africa directed particularly at women who are 60% of the staff and most of the listeners. Among its programs is 'Mothers Desk' that deals with issues on children's health, HIV/AIDS, and outreach programs (Promoting community radio content in Africa, 2005).

▫ The CD-ROM 'Rural Women earning money' produced by the International Women's Tribune Center in English and Luanda for illiterate or newly literate women farmers in Nagasaki region of rural Uganda uses local language and incorporates a strong visual component to be able to reach women with limited literacy (IWTC, 2001).



Here you see Anastasia, aged 77, an illiterate woman from Uganda who got ‘hooked’ on information technology through a CD on women earning money, using voice and graphic interfaces in Luganda, her local language. She used the information on the CD to raise her income from raising chickens and now travels through her district to promote awareness among women, especially those without formal education, on how new information technologies can improve their well-being.

## **Women's economic empowerment through IT**

- ICT-enabled businesses
  - From Grameen Phone to outsourcing
  - Using ICTs to strengthen existing businesses
  - Work in IT industry- beyond nimble fingers and higher tolerance for complaints
  - Flexibility and location advantages

## Some innovative initiatives

- Cisco Networking Academies Gender Initiative



I worked to set up the first all women's academy in Addis Ababa, for all Africa, that in addition to the networking curriculum included gender issues, development issues and management training. Now there are gender programs in nearly 150 Cisco Networking Academies abroad.

## Prerequisites for women's IT innovation

- Education for women at all levels
- Education for girls and women in S&T
- Teach CS in a ways that makes/lets women enroll
- Diffusion of technologies to reach women
- Rising water doesn't lift all boats: special efforts for women needed

## Gender Digital Divide affects those who stand to benefit most

- Need to avoid further marginalization



The Gender Digital Divide affects those who stand to benefit the most. They need information, they need an end to isolation and poverty. IT can do a lot in this regard. Most women in developing countries are in the deepest part of the digital divide- further removed from the information age than the men whose poverty they share. If access to and use of these technologies is directly linked to social and economic development, then it is imperative to ensure that women in developing countries understand the significance of these technologies and use them. If not, they will become further marginalized from the mainstream of their countries and the world.