Module 5 Community ICT Centres for the Social and Economic Empowerment of Women

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Introduction

The first two sections of this module set the context and need for community ICT centers to better target women users. They make the case for proactive policies and provide a step-by-step guide to ensuring that community ICT centers are designed with women in mind. Sections 3 and 4 provide thematic notes and case examples of women's learning and information needs, from basic literacy to more sophisticated applications -- and how ICTs tools are being appropriated by this user group. The final two sections offer some guidelines to policy-makers and regulators from the local level to international policy frameworks.
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Meanwhile, several sub-sections with sections 2, 4 and 5 suggest further reference and resource materials that can be downloaded from this toolkit for further information.
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The annexes are divided into two parts, one outlines gender-sensitive data on ICT use and the second half is comprised of a select list of nine examples of software uses and community ICT centers across the globe.

1 Introduction to concepts and contexts

This toolkit begins with Section 1, which defines the community ICT center, introduces the concepts of gender and women's empowerment and provides a background report on global access to ICTs and the gender digital divide.

1.1 What is a community ICT center?

Information and communication technologies (ICTs) include a whole range of technologies used for communication and for processing information. Today's community ICT centers have developed as physical spaces that provide shared public access to ICTs, primarily through computers, satellite radios, telephones (fixed and mobile) and fax machines.

Over the last two decades, these centers have gained prominence as physical hubs for bringing the benefits of ICTs to communities where the technological infrastructure is inadequate and/or the costs of individual technology access are relatively high. They provide opportunities for access to information by overcoming the barriers of distance and location. Through facilitating this access, the centers have the potential to foster social cohesion and interaction.

These centers may be purpose-built around the provision of digitized and wireless services, or alternately, digitization and connectivity might be integrated into an existing information or learning center. Ideally, community ICT centers do not function as isolated information stations. Rather, as the name suggests, they form part of existing facilities and institutions, such as health centers, schools, libraries and other hubs, that provide a mix of services for the community. There are many different models of these kinds of physical hubs, and this module attempts to illustrate a range – particularly those that deliberately engage with women users.

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1.1.1 The underlying purpose of a community ICT center

Although community ICT centers differ from place to place, their common purpose is to support community development while bridging the digital divide through the use of communications and computing technologies. They can play an important "community strengthening" role, while providing a 'last-mile' connectivity service to users. New ICTs are particularly helpful in addressing aggregated demands at the community level. They are versatile enough to meet not only the diverse needs of various social groups but also the range of demands of every individual in a community. Successful pilots have demonstrated that a diversity of models can be adopted to viably address the information and communication needs of an entire community. As technologies evolve, the community ICT centers will need to change accordingly to remain relevant and sustainable.

Communication technologies and associated community ICT centers can become more than access points for information, training and business. The physical space itself can be an entry point into a much broader communications and learning space. As technologies continue to evolve, so must our vision for community ICT centers. The outcomes are about more than just telecommunications – they are about building community and providing equal access for all.
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1.1.2 What's in a name?

Community ICT centers are referred to in a range of ways: telecenters or telecottages, public Internet access centers, village knowledge centers, infocenters, community technology centers, community multimedia centers, multipurpose community telecenters, common/citizen service centers and school-based telecenters.

Public perception of what a community ICT center should include may depend on how it is named. Centers that are essentially public access points may not be regarded as appropriate places for women and girls in some countries or cultures, and so how they are described is quite important. For instance, using a term like *café* might discourage women in Cameroon from using the local *cyber-café* because women do not generally frequent cafes. Calling it a *boutique* is more likely to attract women, so *cyber-*

boutique is a term used in Douala by centers looking to attract clientele from both sexes. Similarly, using the term *information center* might have a more welcoming and inclusive public optic.

Fact of interest: Telecenter terminology in India

?In India, the concept of a telecenter as a public access model for rendering various services has become a movement. Telecenters are providing a range of services and addressing many needs through education, farmer information or government-to-citizen services. They are referred to as telecottages, telecenters, information kiosks, *e-Sewa kendras* (electronic service centers), *e-Chaupals* (electronic gathering places), *e-Haats* (e-markets), village knowledge centers (VKCs), village resource centers (VRCs), *Mahiti Manthana*, community information centers (CICs), common service centers (CSCs), community multi-media centers (CMCs), etc. The wide-ranging terminology may seem confusing, but it reflects the plurality and diversity of the telecenter movement.

As telecommunication infrastructure has grown globally, so have community ICT centers. One organisation that works to support and improve telecenters globally is Telecenter.org. It has created and supported hundreds of networks and organizations that represent some 80,000 telecenters and close to 40 million telecenter users across the globe.[1]

User analysis research consistently shows that, in most countries, Internet use is highest for those less than 24 years old and usage decreases with age. However, this trend is expected to become less salient over time and eventually disappear as younger generations grow up with the Internet and maintain usage into adulthood.[2]

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[1]Telecentre.org was founded in 2005 by Canada's International Development Research Centre, Microsoft and the Swiss Agency for Development and Cooperation (http://www.telecentre.org/notes)

[2]International Telecommunication Union. (2010). Measuring the Information Society. (http://www.itu.int/ITU-D/ict/publications/idi/2010/Material/MIS_2010_without%20annex%204-e.pdf)

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1.2 Gender-related concepts and definitions

The term *gender* refers to the roles, responsibilities, relationships and identities defined for, or ascribed to, men and women within a given culture, society or context. *Gender equality* refers to equality of rights, voice, responsibilities and opportunities for men and women in society. *Gender equity* refers to fairness between men and women in access to society's resources, rewards and opportunities. *Gender gaps* refer to societal differences between men and women that are considered undesirable.

A comprehensive source of basic terms and definitions relating to gender and ICTs is offered in the *Gender Evaluation Methodology for Internet and ICTs*.? This is an important resource for all readers:

http://www.apcwomen.org/gemkit/en/understanding_gem/genderanalysis.htm#jump11

Examining gender roles may lead to a greater understanding of the differences between women and men in terms of ICT use and its impact. A few examples of the questions raised along gender lines are provided here:

- In a given community, who makes household decisions? Where do they get their information from? *(See text box below*)
- In a given community, do women and men, girls and boys participate equally in the use of Internet facilities at a library or telecenter?
- At public ICT centers, are men visiting pornographic and violent sites and making women uncomfortable within that environment?
- In a development organization, is there a gender difference among those who use/appropriate email and those who do not? Is a general public email account assigned to a lower category staff members, who are usually women, compared with private email accounts of top management, who are usually men??

Fact of Interest: The information gap may contribute to male-dominated household decision-making.

In surveys in Ghana and Kenya, researchers found that women were less likely than men to say that they had sole decision-making power over household issues including:

- Saving or borrowing money

- Getting vaccinations
- Household spending
- Money transfers to/from relatives or others
- Going to a hospital or visiting a doctor
- Using birth control (in Ghana only… in Kenya, women were slightly more likely to report having the final say)
- Personal or family healthcare

Where women were accessing information, this was mainly from newspapers, radio and word of mouth. The survey did not capture data on ICT usage.

Souce: www.audiencescapes.org

The *Gender Evaluation Methodology* in Section 5 provides more details on measuring and addressing these kinds of differences.

1.3 Why is it important to reach women and girls?

The simple answer to this question is that women and girls need to be deliberately selected as an audience because they still make up the larger proportion of those left behind – whether in literacy education, access to information, health or financial services, or general socio-economic empowerment. Women and girls still make up the bulk of the illiterate population across the world, and are more likely to suffer deep marginalization in conservative societies that limit their mobility and voice.

In addition to the digital divide between developed and developing regions, an ongoing gender divide persists, where women and girls have less access to ICTs than do men and boys. There are many reasons for this, ranging from outright gender discrimination to limitations in physical location or the reality that often women have less free time or disposable income. Women and girls from marginalized communities tend to be especially less engaged. Biases still exist within many social and cultural norms globally. Technology is sometimes considered to be interesting only to boys and men. Or, women are inaccurately thought to be uninterested or unable to learn how to use computer technologies. More often, low levels of literacy and overall education is a key barrier, while lack of

freedom and control can also constrain access. Annex I presents a range of data that show differences in accessing the Internet between men and women on a country-level and on a global level.?

If women remain excluded from ICT knowledge and services, they will become increasingly marginalized, the gender gap will grow, and many of the secondary benefits to be gained from women's empowerment and gender equality will fail to materialize. Community ICT centers can counter this prevailing negative trend. If planned and executed properly, community ICT centers can be an effective vehicle to help women acquire literacy skills, numeracy skills, and resources to help them to start and build their own businesses, secure their livelihoods and become socially and politically active.

Promoting gender equality through increasing access to ICTs can strengthen women's and girls' access to, and generation of, information, despite the mobility and cultural restrictions they face. They can broaden their skills and, subsequently, their economic activities. Such skills allow women to explore and pursue new business opportunities, to establish enterprises of their own, to enter new markets that require capital investments and to access a range of resources, including micro-financing. Sections 3.2, 3.4 and Chapter 4 draw these links further.
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Fact of interest: ICTs and adolescent girls' assets

PLAN Canada[3] cites seven reasons why access to technology can counter gender inequality and build girls' assets:

1. To keep in touch with others, reducing girls' isolation in countries where this is an issue;
2. To increase education and ability to acquire new skills;
3. To allow girls to take an active role in their communities and countries;
4. To increase their skills to find employment;
5. To build specific skills and knowledge on subjects they might otherwise not know about, such as HIV/AIDs;
6. To build self-esteem (by learning how to use technology); and
7. To increase safety.

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[3]Plan International (2010) Because I am a Girl

1.4 A note on women's empowerment

Women's empowerment is focused on increasing their ability to take control over the decisions that affect their lives. This includes access to, and control over, information, resources, decision-making and the distribution of benefits. For women who can access and use ICTs, this can mean access to information on education, health, public and private rights, as well as income-generation and market information. The United Nations Department for the Advancement of Women (UNDAW), meeting in November 2002,[4] expressed this as, "…when there is an enabling environment, ICT[s] can provide diverse avenues for women's social, political and economic empowerment."

Despite some greater appreciation of the multi-causal nature of social change, an assumption that underlies much policy thinking is that economic growth is the principal motor of change in gender relations. This is only partly true. While the social transformations that have affected women's lives can be associated with economic development, they are not simply a by-product of economic growth. Some countries with similar per-capita incomes—such as Sweden and the Gulf States of Qatar, Saudi Arabia and Kuwait—show marked disparities in women's rights and status. Female employment rates are also subject to considerable variations that do not always correlate with gross domestic product, with the lowest rates being recorded in the Middle East and North Africa.

Among the many factors that initiate or accelerate change in women's social and economic status is purposive action -- working through state reforms and social movements. This is evident if we consider the last decades of the twentieth century, which were particularly significant for the gains that were made in international policy relating to women. The momentum of second-wave feminism, and the efforts of international humanitarian and development institutions, combined to bring about significant changes in women's rights. By the early 1990s, most states had signed up to the Platform for Action and the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), and their commitments made to support women's equality.[5]
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[4]Information and communication technologies and their impact on and use as an instrument for the advancement and empowerment of women. Expert Group Meeting Republic of Korea, 11 - 14 November 2002

[5]Beijing Plus 10: An ambivalent record on gender justice by Maxine Molyneux and Shahra Razavi

1.5 A note on technological changes

From the emergence of the personal computer almost 30 years ago to the explosion of the Internet in the last decade, each new wave of information technology has changed how individuals, communities and organizations can communicate, connect and coordinate with each other.

The next trends in technological change will continue to make computing more affordable, more portable, more powerful and easier to use. Barriers like cost, physical access, and knowledge of specialized technical skills will continue to be lowered, making these technologies more accessible to more people. Arguably, these factors will favour increased access for women users.

At a conference on ICT best practices in Africa in April 2008, the CEO of Microsoft summarized these technological trends as:

- More processing power in smaller devices;
- Storage expanding dramatically in PCs, devices and in datacenters around the world;
- Wireless broadband networks becoming more common, enabling people to tap into processing power and storage from almost anywhere;
- Natural user interfaces that take advantage of voice, handwriting, and gestures becoming more commonplace and user-friendly; and
- Screens and projection devices becoming lighter, better and more affordable.

All these technological developments could have positive implications for the community ICT center. In the meantime, the increased uses of wireless and mobile technologies are having the large impacts globally. Mobile technology is increasing access, due to the relatively low entry costs associated with owning and using a cell phone and also due to higher levels of investments in cell phone infrastructure in emerging economies. Mobile use will continue to escalate as its capacity converges with the computer.

Cities and regions everywhere are turning to wireless technologies. Kigali, Rwanda, for instance, is set to become the first “hotspot” capital in Africa this year.[6] Wireless technologies now allow for community ICT centers to be portable and to reach more users, as is the case with e-Trikes in the Philippines.[7] Wireless technology also has the potential to reduce costs, in some cases, through the sharing of

Internet connections. The multiple uses of wireless applications cannot be overstated, and the case studies in the following chapters will further illustrate this point.

Fact of interest: wireless for livelihoods and micro-businesses – UNCTAD report

The UNCTAD Information Economy Report 2007-2008 found that both mobile telephones and telecenters support livelihoods in developing countries. The study illustrates ICT contributions to poverty reduction by focusing on two examples: (1) the use of mobile telephones for conducting micro-business in Africa; and (2) the creation of telecenters for the benefit of poor communities.

In Africa, there were 50 million new mobile subscribers in 2006, and in 2007 the total number of mobile subscriptions reached an estimated 200 million. These mobile phones have become an essential entry point into the information society. Mobile telephony is a critical tool for sharing information and intelligence, and it empowers households and communities to stay connected.

To understand how telecenters support livelihoods among the poor, UNCTAD surveyed a number of telecenter networks in Bangladesh and India. The survey assessed which services telecenters are providing, who benefits from those services, and what are the key environmental and institutional factors that enable telecenters to help the poor raise living standards. The results show that most telecenters are concentrating on providing access to ICTs and on developing basic ICT skills. In line with the type of services offered, telecenters are primarily used for information and education purposes.[8] The report addresses gender differences in access to telecenters, with case studies notably from countries like Chile. The report also addresses the difficulty of recording and accessing gender-based user data.

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Fact of interest: cell phone surveys for monitoring and data collection

Basic cell phones outfitted with a customized application, the EpiSurveyor, were used in a two-week pilot study in Mpika, Zambia in June 2010, which involved local volunteers – all women. The phones were used to collect routine information on the wellbeing of school girls. The women recorded the answers with simple button clicks on the phones, which were immediately transmitted to Lusaka, the

capital. Learning to use the software quickly, the women completed each questionnaire in just 2-3 minutes. Then they uploaded the data by cell signal to a central database for analysis.

Source: http://news.camfed.org/us/2010/07/innovating-with-cell-phones-to-help-girls-stay-in-school/

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[6]Telecenter.org. (January 2010). Kigali to become a wireless city. (http://www.telecenter.org/profiles/blogs/kigali-to-become-a-wireless)

[7]The eTrike is a fully self contained mobile, wireless telecenter which travels into urban communities in Manila and provides yout with access to participate in new digital ICT technologies, basic comupter lessons and an introduction to the Internet. Mobile telecenters Philippines – e-Trike. (http://www.mobiletelecenters.com/)

[8]http://unctad.org/en/docs/sdteecb20071_en.pdf

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2 How can community ICT centers reach women?

This chapter looks at elements of best practice, focusing on four primary areas:

1. The overall policy environment,
2. Guiding principles for inclusiveness,
3. Women-specific design elements of a community ICT center, and
4. Governance and financial viability concerns of the center.

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2.1 The overall policy environment

The development of ICTs, and the benefits that may accrue to women from using them, are conditional upon the ability of countries and regions to support effective, pro-active and deliberate policies that push for the social inclusion of women in all spheres of economic and social activity and decision-making.

In the absence of deliberate policies, the diffusion and use of ICTs and their intended benefits can actually exacerbate existing income and economic divides, with the poorer sections of the population being further marginalized, exploited and impoverished, as a result.

The success of a community ICT center requires more than telecommunication infrastructure, it requires targeted support programmes by governments, the private sector and NGOs to train users, operators and service providers.[9] To fully realize their potential, community ICT centers need a policy environment that supports systems and appropriate policies for sustainability. For example, policies should ensure gender equity in the implementation process, promote pricing policies that favour community center services, and develop investment incentives for universal access. If policy-makers want to prioritize universal access, they need to focus on the demands of their rural and peri-urban populations.

The well-developed community center is also an invaluable tool for the role that governments play in today's economies. As citizens become more familiar with frequenting these centers and using Web-

based services and information, they will positively value any public services provided by government via ICTs.

Although international and national policies may exist for gender equality and universal access to ICTs, few of them specifically consider ICT and gender together in an integrated way. The absence of gender-oriented projects and programs in ICT increases the risk of a growing “gender digital divide.” Policy-makers, along with gender and ICT advocates, must be aware of the profound impact (positive or negative) of how gender is managed. A gender perspective on ICT matters is essential if the gender digital divide is to be bridged. Since ICT is becoming increasingly central to all economic, political and social life, it is also central to advancing gender equality.

A political commitment to policy and regulation has a critical role to play in determining whether or when ICTs become available to all parts of civil societies, especially poor, rural, dispersed or marginalized communities. A progressive framework of access to ICTs that addresses women's empowerment should regard access to ICTs as a ”capability right,” These sections of population can, through the appropriation of ICTs, gain legitimacy for their concerns, demand accountability from public institutions, and explore new platforms for building solidarity and for learning and knowledge sharing. Guidelines in Chapter 5 provide policy- and decision-makers with a further set of criteria to use in policy making.

A public goods approach is vital for women and women's groups to access ICTs, to leverage the propensities of the evolving information and communication ecology for furthering their struggles, whether they revolve around the right to information, the right to livelihoods, the need for educational content in local languages, current community radio initiatives or accessing local services. Public financing instruments and institutional arrangements that tackle these needs head on are critical to realizing the capability rights of women through ICT access.

Economic and social development depends on the capacity to generate, absorb and diffuse knowledge and technology. Knowledge and technology have the potential to provide benefits to large numbers of users, and the benefit received by any one user does not reduce the benefits received by others. Knowledge is often considered a public good, but it is more complex than it first appears. Several important qualifications must be considered. These qualifications are crucial to the design of appropriate policies to increase the rate of innovation and to guide its direction, at both the national and the international levels.[10]

Fact of interest: defining sustainability and public good

The fundamental issue in reaching poor women is not one of profitability, but rather the creation of a set of technology-mediated services and products that will enable women to engage in emerging opportunities. Focusing on financial viability, to the detriment of a committed focus on the transformatory and development capabilities of ICTs, could work against the objective of universal access.

Governments and NGOs alike need to view the economics of communication centers within frameworks of justice and equity. Public information delivery has to be guided by the cornerstone of accountability rather than of profit. Initial investments required to set up a telecenter will start paying off when information begins to have positive influences on the community – in terms of social and economic well-being, as well as transformation in social relations at community and household levels – as women and the poor start leveraging information and communication resources.

Researchers distinguish between economic sustainability (achieved when a given level of expenditure can be maintained over time), social sustainability (achieved when social exclusion is minimized and social equity maximized) and institutional sustainability (achieved when prevailing structures and processes have the capacity to perform their functions over the long term). Economic sustainability is a key indicator of the success of a project because it is seen to reflect a genuine demand for that service. At the same time, in many development projects, donors are funding information dissemination as a public good. “The nature of telecenter sustainability is complicated by the point that it may initially be a public good, especially in disadvantaged areas, yet must be ultimately self-supporting.”[11]

A great deal of research has been published on economic sustainability, in particular with regard to access initiatives such as telecenters or information kiosks, which have high set-up and maintenance costs and customers with little spare cash. The complicated objectives of providing information services as a public goodk,and making them self-supporting, have proved extremely difficult to reconcile. Few initiatives have succeeded in covering their costs, even if they have developed viable charging mechanisms.

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Functional coordination between various government ministries and local officials is central to developing a supportive policy environment. The establishment of an ICT policy task force may also help to bring together stakeholders from all of the relevant ministries, such as education, telecommunications, gender and youth affairs, industry and commerce, etc.
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[9]"(…) most universal access programmes that focus on providing Internet access in rural areas concentrate exclusively on the roll-out of infrastructure. Studies show, however, that the most successful community Internet center programmes are those that are linked from their inception to a wide variety of capacity-building and support programmes that are implemented jointly between government entities, local communities, businesses and NGOs. Successful universal access programmes depend not only on the availability and affordability of infrastructure, but also on the availability and quality of suitable content and applications, as well as the level of training of its users, operators, and service providers", ITU Trends in Telecommunication Reform 2007 The road to next-generation networks (NGN), Geneva, International Telecommunication Union, 2007.

[10]See UNIDO's 2008 report "Public Goods for Economic Development" http://www.unido.org/fileadmin/user_media/Publications/documents/Public%20goods%20for%20economic%20development_sale.pdf

[11]See Connecting the first mile: a framework for best practice in ICT projects for knowledge sharing in development for further discussion Surmaya Talyarkhan Best practice framework http://practicalaction.org/docs/icts/ict_best_practice_framework.pdf.

2.2 Guiding principles for gender inclusive design

Two fundamental principles should guide the development of any community ICT center, in order to integrate the needs of women and girls: participatory community involvement and partnership development.

Principle I: Participatory community involvement

From the outset, actively engaging women and girls throughout the process of designing and establishing a community ICT center will ensure that its services, location and management reflect and respond to the needs of this constituency of users. Participatory involvement must provide a realistic

and deliberate opportunity for women and girls to have their ideas considered equally for the design, implementation and operation of the center – and so promote a sense of ”ownership” or ”belonging.” Participatory methods may include individual or group interviews, focus groups, needs surveys, community outreach events, or broadcast communications (radio, posters, etc.). Ongoing dialogue with the community is essential to tailor the community ICT center to the needs of the community it serves.

Key community stakeholders should also be engaged to maximize community involvement. This would include teachers, school principals, faith leaders, business leaders, local government representatives and other local champions. The higher the level of engagement, the stronger the community ownership of the center will be. Additional stakeholders may include NGOs, farmers' groups and industry.
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Fact of Interest: a simple rural appraisal tool from India

In India, Change Initiatives put a Web-based information system to strategic use for the benefit of poor women of Baduria, a rural region in North-24 Parganas district in the Indian state of West Bengal. In 2002, concerned over the lack of penetration of ICTs among the rural poor, Change Initiatives found that absence of information and an information-sharing mechanism among poor women had thwarted their ability to fulfill basic needs, restricted their awareness and blocked their desire to break barriers that limit their participation in society.

The findings were the result of a survey among women's NGOs and self help groups (SHGs) in rural regions of North-24 Parganas. For this project, dubbed “Nabanna,” Change Initiatives developed a novel participatory rural appraisal tool that allowed it to ask the candidates to maintain diaries on their lives. The diaries were an effective tool for needs assessment, in addition to being a vehicle for self-expression.

Staff, trainers and administers should come from the community. Being led by those who understand the community and the context (e.g. the community's history, present needs, main activities, cultural context, etc.) will only improve impact and inclusion. In Cambodia, for instance, at the start of the iREACH project it was very difficult to attract women, let alone to encourage them to run in interim management committee elections. However, after having been involved with iREACH for some time,

women became more comfortable with entering the committee elections, with a resulting strong competition for the female quota of seats.[12]

Principle II: Partnership development and building community linkages

The ”public face” of the community ICT center should be friendly to girls and women. The community ICT center should develop and maintain working relations with those agencies that work with and for women, and should provide a service to these agencies. The center’s administrators should be acquainted with how other institutions (e.g., schools, hospitals, health clinics) and organizations serving the community operate, so as to see how the ICT center can work in concert with these.

Building strong community linkages will increase the inclusiveness and outreach of the center. For example, if training is provided on basic computer skills and how to find a job, the center could then link with local employment organizations (both governmental and non-governmental) or the Chamber of Commerce.

[12]Gender, Empowerment through ICTs, iREACH, Cambodia

2.3 Women-specific design elements of the community center

A basic design framework that addresses women’s socio-cultural contexts and information needs might include the following:

2.3.1 Data and record keeping should be gender-disaggregated

Community ICT centers should maintain a high-standard, itemized record of usage of services by type, and by type of user, including age and gender. This data is critical for identifying gaps in usage, for improving service and outreach to unmet constituencies, and to budget forecasts and planning. The UNDP and UNIFEM have produced a useful online guide: A User’s Guide to Measuring Gender-Sensitive Basic Service Delivery, which can be applied to ICT services delivery.

Despite a broad recognition of a gender digital divide, there is still a significant lack of data or gender--disaggregated statistics on ICTs. This makes providing factual evidence difficult. In 2005, the United Nations Division for the Advancement of Women recommended compiling gender-disaggregated data on the use of ICTs and women's participation in policy-making, as well as developing targets, indicators and benchmarks to track real progress in access and benefits.[13] Monitoring and evaluation procedures and processes that take gender differentials into account will provide baseline data and comparators on women's ICT use.

Fact of interest: Gender Evaluation Methodology (GEM) for telecenters

The Association for Progressive Communications (APC) is an international network and non-profit organization that promotes access to the Internet. It has created the Gender Evaluation Methodology (GEM),[14] a free online tool designed to assess whether and how ICTs are contributing to gender equality. It is a useful wayto integrate gender analysis into evaluations of initiatives that use ICTs for social change. GEM helps determine whether ICTs are really improving women's lives and gender relations, while also ensuring that gender concerns are integrated into project planning process. GEM uses gender analysis to promote positive change at the individual, community and institutional level. Gender evaluation for Telecenters reflects the collective lessons of GEM as it was applied to the running of telecenters in Colombia, Mali, Peru, the Philippines and Uganda. The guide looks at what is possible in the face of stretched resources and presents workable solutions for some common telecenter challenges.

As a note of caution however, ICT access statistics on their own are not a true indicator of women's empowerment. For example, women's comparatively higher education, small business leadership and access to ICTs in the Philippines and in Thailand do not automatically translate into women's equal representation in leadership or government positions. Similarly the mere fact that more women might be employed in the manufacturing sector of ICTs does not mean that these women are benefitting from literacy or learning programs or gaining leadership, communication or negotiation skills.

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[13]United Nations. (2005). *Women 2000 and beyond: Gender equality and empowerment of women through ICT*. (http://www.un.org/womenwatch/daw/public/w2000-09.05-ict-e.pdf)

[14]Association for Progressive Communications Women's Networking Support Programme. *Gender Evaluation Methodology*. (http://www.apcwomen.org/gemkit/en/understanding_gem/index.htm)
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2.3.2 The 'Community responsiveness' of the center must identify and cater to girls and women's activities, interests and information needs

The center's services and programmes need to be directly responsive to societal development priorities and needs. These may include offering literacy and related learning programs, expanding digital capabilities (including communication and accessing information), improving equal rights for minorities and the disadvantaged, or providing distance working, lifelong learning and citizenship and administrative services in the community. In some contexts, ICT training programs may need to consider providing all-female sessions. This can be further enhanced by engaging women as teachers, mentors and role models. Women sometimes lack confidence or voice in mixed-gender training sessions.

More often than not, women coming together for training will begin to articulate what their information needs and interests are, and some simple websites can be designed to provide timely and dynamic information of immediate relevance to the group. In this way, women can be organically involved in developing their own Beb-based content.

Content example: SEWA's integration of ICTs in informal sector activities

India's Self-Employed Women's Association (SEWA) has been organizing women in the informal sector since 1972, and has a membership of over 215,000. One of the first organizations in India to realize the potential of harnessing ICTs for the productive growth of the informal sector, it organized computer awareness programs and offered basic computer skills to its team leaders and association members.

SEWA is implementing a well-considered strategic plan for integrating ICTs into its main activities. The organization uses software applications developed for its embroidery, watershed development, salt production, and savings and credit projects. The software can generate customized reports on

artisan membership, and it can grade products, record market activities, and keep accurate, up-to-date information for efficient production planning.

SEWA has also used video as a tool for women's empowerment. VIDEO SEWA has produced video footage on many issues affecting the livelihoods of poor women, using the medium to share information and raise awareness among members. Video is a tool for training and teaching new skills, as well as to reach policy makers, making the medium an integral part of SEWA's activities. SEWA's satellite technology program has enabled the organization to work in more than 10 districts of Gujarat, where it provides interactive training that links women to experts and policy makers.

SEWA's Trade Facilitation Center has had some success in its e-Commerce endeavours, supported by its websites www.banascraft.org and www.kutchcraft.org. One innovative approach to reach producers and artisans who are under-served by connectivity involves putting women producers in touch with a cadre of computer operators, who perform a variety of supportive functions that enable on-line selling. ICTs can thus improve many organizational functions in a member-based organization like SEWA, including identity- and solidarity-building, linkages with, and access to, government offices, internal governance and capacity-building.

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2.3.3 Develop content and training materials with and for women

Women's information needs are closely related to their economic and social circumstances (e.g. whether they live in a rural or urban area, their literacy level, whether they are self-employed or work as an employee, etc). Consequently, for content to be relevant, women and girls' local needs must be assessed on the basis of their social, educational and economic context, as well as on the opportunities available to them for development and empowerment through ICTs. Access to available content will be predetermined by its relevance for women and girls' specific needs and whether it is in a

language used in the community. The Internet is growing as a provider of information on health issues, women's rights, and on economic and employment opportunities, such as the availability of training and financial services. But if women do not have basic Internet and computer skills, the Internet will remain out of their reach.

- As part of a programme to expand access to ICT, one can:
- Develop new online content with indigenous knowledge;
- Translate information into local languages and dialects;
- Use the Internet to disseminate information on local traditions and cultural expressions; and
- Provide information on local events and services.

New content can be produced to challenge local stereotypes pertaining to women and girls. For low-income or vulnerable women, the production of new content cannot be solely market-driven. It is a source of more autonomy, empowerment and self-determination for empowering women, and ought not to be available only to those who can afford it. Ongoing training should also be provided to enable women to develop Web content for themselves. Simple first steps can include using local languages and incorporating a strong visual component. Both have been found to improve engagement for women (and men) with limited literacy.

An example from the region of Uvira, Democratic Republic of Congo, shows how women farmers are using ICTs to learn about agriculture. A local organisation, IFDAP (Initiative des femmes pour le développement de l'autopromotion et la paix), formed a support group for women farmers. In early 2009, the group increased access to agricultural information by facilitating Internet access to rural women farmers. Through this, and IFDAP's recently launched information center, so far, up to 150 men and women have received needed information on agriculture.[15]

Fact of Interest: men and women may have different information interests

The APCNews of 2010[16] carries a series of case studies on ICT initiatives that have been evaluated using gender-evaluation methodology. The first case is the Bumawa telecenter, located in a small town on the Ugandan banks of Lake Victoria. The telecenter was seldom visited by women. A GEM[17] study uncovered that men and women were interested in different information – women in health, vocational training and food security – whereas men searched for information on politics, economics and business.

Women users were much less likely to read English than the men, and were frequently frustrated in their search for relevant content. Often, they would return home to unfinished household chores - never to return. In comparison, if men couldn't find the information they were looking for, they still lingered at the telecenter, playing games and familiarizing themselves with the facilities. Following the evaluation, the telecenter began to offer equal-opportunity training targeting women over 30 years of age and catering content specifically to their interests.
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Content drives traffic. A community center that delivers services and/or information pertinent to women's needs and interests will automatically attract women. By extension, a community center that offers a range of IT-based services and information to women will attract regular visits by women. These services can be both private ("individual in nature") or public ("collective in nature"), and the content can range from generic learning software, to specific training materials with qualifications (see Amref e-learning for nurses) and context-specific content developed by local women for their own use.

Fact of interest: Telecenters in the Philippines attract more women

In the Philippines, public telecenters tend to attract far more women than men. A study looked at two rural telecenters, using the Association of Progressive Communication's (APC's) gender-evaluation methodology. It found that because the telecenters did not allow games or pornography, men were less interested in occupying seats in those centers.
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These tools are profoundly pluralistic, democratic, and hyper-individualistic, yet globally collaborative and interdependent, and extremely powerful. As these community ICT centers link in with formal and informal school and vocational training networks and become part of the "learning fixture" available to all levels of learning, women should gain a higher potential for using the facilities and influencing the range of services and training offered.

Fact of interest: ICT training and holistic programming in India

The Seelampur Community ICT Center deploys innovative IT solutions for skill enhancement, and provides holistic programming for women and girls, including content related to education and skill building, health, legal rights, micro-enterprise and entrepreneurship, information sharing and networking and non-formal literacy. It uses interactive multimedia tools to support vocational and life-skills training to poor girls and women, including awareness-building on health issues and food preservation, as well as support to professional activities such as tailoring and quilt-making. Vocational training programs include fashion design, media development and basic computer literacy, beauty culture, and arts, crafts and painting. Further, the Gender Resource Center offers monthly health camps (with access to doctors, medicines and referrals), nutrition and AIDS awareness camps and legal awareness sessions twice a week.

An information center is also run where beneficiaries can ask about old-age pensions, loans and financial aid. The information help desk organizes weekly meetings about beneficial schemes, self-help groups, life skills and awareness programs, and it has Internet connectivity. The center also assists women with issues such as feticide, dowries, family violence and injustice. It partners with the Delhi government to ensure welfare schemes reach the most marginalized women of the community. See Datamation?Gender Resource Center Case Study for more information.?

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[15]Women in the Democratic Republic of Congo: Confidence and a competitve edge though ICTs January 7, 2010 http://genardis.apcwomen.org/en/node/135

[16]http://www.apc.org/

[17]http://www.apcwomen.org/gemkit/en/gem_tool/index.htm

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2.3.4 Make the community center physically accessible to women and girls

Location is an important consideration when designing a community ICT center that integrates varying gender needs, and the social context must be measured carefully. Certain cultural beliefs may limit or prevent access to centers and issues such as personal safety and privacy must also be considered.

A community ICT center can be a standalone physical space or it can be integrated into other spaces that women and girls might frequent, such as schools, temples, mosques, pagodas or churches, health clinics, post offices, market centers and other government or ministry offices. The location of a community ICT center could prevent women from attending if it is near bars and nightclubs, or other places not considered suitable or safe for women. Other public places should also be actively considered -- always bearing in mind their accessibility to women within the cultural parameters of the society in which the center is being set up. It often takes a small group of women to break through initial barriers and, over time, to encourage others to join in.

Fact of Interest: Rural locations in post offices, Malaysia

The **Rural Internet Centers** (RICs) in Malaysia were set up by the Ministry of Energy, Communications and Multimedia (now Ministry of Information, Communications and Culture) in post office buildings. The post office is an ideal location, as it provides outreach to remote places, it is secure and it is a place frequently visited by the community as a one-stop center to pay utility bills and make many other transactions. Each RIC consists of between five and eight computers with Internet connectivity. The usage of computers for Internet browsing is free for the members; a minimal fee is charged for non-members.

Operating hours - Gaining an understanding of the time schedules, and the cultural and social context of the community, will help to establish a schedule that is gender-sensitive. In some cases, opening the center during women-only hours can also be an incentive to women's participation. Operating hours need to consider when women and girls are more likely to access the center, and to make allowances for their time limitations. In many cultures, women have family and household obligations, leaving them with little spare time. The best course of action is to find out from a diverse sample of women when the

ideal hours of use might be for different groups. Many of the examples that successfully engage women users allocate specific times for women-only sessions, or link the training directly to schools and colleges so that women have access during dedicated classroom time.
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2.3.5 Privacy and security concerns

Women may require extra privacy to feel comfortable using ICTs; in a conservative society, this might mean a women-only space. Women and girls should be able to have their own email accounts and be able to freely access information without surveillance, while having access to secure online spaces free of harassment and exploitation.

Women need to be made aware of the ”etiquette” of using the Internet, as well as the potential risks from ”scammers,” software viruses and other related downsides of internet use. They will need basic protection from cyber-crime. As technology evolves, so does cyber-crime. Cyber-offences can take many different forms, such as stealing personal information, exploiting the sale of innocent victims (as in the sex trade), and attacks on personal safety. Women and girls must be educated to understand the risks involved and how to mitigate harm. For example, passwords for email access should not be stored on a public computer, and users need to log out of their email accounts before leaving the public computer. This kind of training should be part of any digital literacy course.

The ITU has a set of on-line Child Online Protection Guidelines[18] in six languages, identifying risks that children may face online and behaviours recommended for children to stay safe online. PLAN Canada[19] also sets out child protection online safety rules for adolescent girls:

Content example: PLAN Canada’s safety rules for adolescent girls

- No personal details like your address or school
- Don’t send pictures
- Don’t hand out your password
- Never arrange to meet anyone in person
- Never hang around in a chat room if someone says or writes something that makes you uncomfortable or worried
- Never respond to nasty, suggestive or rude emails

- Never believe junk or spam email
- Don’t open files from people you don’t know
- Always report when you see bad language or distasteful pictures
- Always be yourself
- What is posted online becomes public and cannot always be removed. Don’t post about friends, family and teachers
- ? If someone keeps trying to talk to you, press you for information or threaten you, tell someone you trust and get help.
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[18]http://www.itu.int/osg/csd/cybersecurity/gca/cop/guidelines/index.html

[19]From Plan Canada BIAG site

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2.4 Governance and financial viability concerns

This section explores ways to ensure that gender sensitivity is built into the management and support structures of the community ICT access center.

2.4.1 Gender-sensitive governance structures

The entire governance structure of community centers should reflect gender-sensitivity – including in the composition of their boards of directors and the selection of senior executives and project managers. Job descriptions or terms of reference need to specify the importance of understanding and articulating development issues and ICT impacts from a gender perspective. Gender advisors to both board and staff should become part of general governance policy. While ownership and governance structures of community ICT centers may be diverse and wide-ranging (from micro-enterprise, to community-based, not-for profit to government run) certain core principles apply to all ownership models. These include:

- The Board of Directors or Advisory Committee should agree on a quota of women members. By setting an example at this level of management, other gender balances might extend to the technical team, the trainers and female attendance generally.?
- "Community ownership" of the center should include representatives of women's interests. The decision-making structures of these centers need to ensure that women stakeholders are involved right from the initial conceptualization and design, all the way through planning and implementation processes. This will involve establishing a consultation process that engages all community stakeholders on a regular basis. Women's inputs and perspectives can help in deciding questions about location, safety issues, opening hours, content, programs and services. See Maarifa Centers Content Example in Section 4.1.
- Develop criteria for awarding licenses that meet gender specifics. This could include awarding licenses to those businesses that meet certain conditions; for example, the number of women technicians on staff, disaggregated data collection and record keeping, and the number of women in management positions.

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2.4.2 Financing the ICT Community Center – capital and start-up costs

An APC study, Unbounded Possibilities: Observations on sustaining rural information and communication technology (ICT) in Africa,[20] studied two different telecenters in Tanzania. One promoted the idea of enterprises "bubbling up," given the right environment, and the other was modeled more on the approach that economically poor communities require a "'big push" -- i.e., big projects and big changes. The report suggests that both approaches are valuable, although the "bubbling up" approach could lead to more sustainable ICT development.

The first case study looks at the Family Alliance for Development and Cooperation (FADECO), a small association based in a small town, close to the Burundi and Uganda borders, that works to provide information resources that help families improve their living standards. Via various small grants, the organization set up a small telecenter with a wireless network. The center came about mainly through trial-and-error experimentation by a self-taught technologist, and it receives no third-party funds. The

process of learning by doing, without active assistance, led to a deeper understanding about self-sufficiency.

The second case study looks at Sengerema, a donor-led rural telecenter in northeastern Tanzania that is housed in a purpose-built building boasting a conference room, a server room, an e-training lab, an Internet cafe, offices, and a learning room. While it is, according to the author, sustainable in general terms, it relies on continual third-party funding. The report concludes that, although both case models are valuable, the FADECO entrepreneurial approach has the potential to be vastly more scalable. But there has been little emphasis on the economic design of this type of telecenter. The development of institutions to support such enterprises could lead to much better, and more truly sustainable, rural ICT development.
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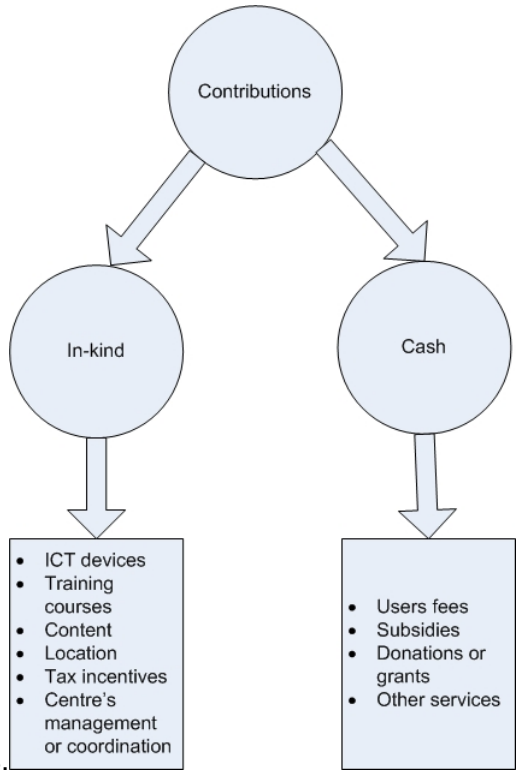
Unbounded Possibilities: Observations on Sustaining Information and Communication Technology (ICT) in Africa Ian Douglas Howard, October 2008, APC

2.4.3 Financing and revenue models to ensure affordable and accessible pricing

Several factors, such as low population density, low income and high operating costs, have been identified as challenges in sustaining community ICT programmes. The most commonly underestimated community ICT center costs are related to staff training, security (physical and data security), and the costs of updating and maintaining equipment. The forward-looking community ICT

center needs to consider how best to balance its capital costs and its revenue potential, while ensuring affordability for its users.



Financing a community ICT center can be achieved through in-kind contributions and/or funds and revenue. Revenue and financing may be a composite of the following:

- Subsidies - Governments may decide to subsidize (fully or partially) a community ICT center, particularly in poor areas with vulnerable population groups, who cannot afford to pay user fees. The government's initiative may be needed to launch the process, establish the legal and institutional framework, start up pilot projects, and develop national or regional support. As the idea proves itself, the government may be able to reduce its support role to a support function.
- Donations/grants - Public and private institutions, as well as national and international organizations, can provide donations or grants to ICT projects
- Pay-for-use services - The provision of other services or products in the community ICT center may also generate resources to pay their costs. In some cases, revenue comes mainly from the sale of computer and Internet time; in others, from telephony, photocopying, and entertainment. Other potentially important sources of revenue are providing domestic and international telephone service and retailing phone cards. Whether or not user fees should be collected will depend on several factors, and the question should be decided on a case-by-case basis. A minimal fee to attend a training course often motivates people to attend and

benefit from the course more than when it is free. However, in certain circumstances even a minimal fee can be unaffordable for poor women and girls, acting as a disincentive to attendance.

Fact of interest: a cost-sharing model in Uganda

In Uganda, a nation-wide, school-based telecenter (SBT) network, established by World Links through support from the Bill and Melinda Gates Foundation, involves 15 SBTs. Of these, 11 use Very Small Aperture Terminal (VSAT) satellite technology to link the Internet with at least eight computers on a Local Area Network (LAN). The cost is accordingly shared among the schools, through a payment of USD 200 per month. (World Links is contributing the other USD 200 per month, per site for a two-year period).[21] Lowering the student user cost is one of the principal objectives. The schools raise funds by charging students term tuition fees and other community user fees. On average, each student pays USD 18 per year. A typical secondary school has between 800 and 1,000 students a year.

In-kind contributions could include:

- ICT hardware, including technical maintenance and renewal;
- Training for managerial and technical staff. One of the core objectives in setting up an ICT community center is for it to be managed by local people. Therefore, contributions that seek to train the trainers and the center?s administrators are both useful and necessary.
- Content. Production of content is generally costly and may be time-consuming. However, replicating and delivering content can be done at a relatively low cost.[22]
- Location and infrastructure. It is important to choose a location and ICT infrastructure for the ICT community center that takes into account women's and girls' constraints. For example, a school can offer a computer lab or a room for installing the ICT devices to be used by the center.
- Tax incentives. Governments can provide tax incentives to enterprises or persons that create an ICT community center and provide ICT courses aimed at women's and girls' empowerment. Governments can also give tax exemptions on ICT equipment provided to schools.

Fact of interest: rural innovation fund in India

Telecenter.org and Microsoft India jointly launched the Mission 2007 Rural Innovation Fund, with an objective of empowering the local software industry by promoting individual or organizational endeavours toward developing low-cost, innovative applications, customized to the needs of local community leaders. A committee set up under the Grameen Gyan Abhiyan initiative of MSSRF,[23] which includes representatives from industry, academia and government, manages the fund.

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[21]http://www.wougnet.org/Events/IARW/SchoolBasedTelecenter_MMayanja.pdf

[22]See for example an online database managed by the Educational Software Selector (EPIE Institute). This searchable database includes reviews of 19,0000 instructional software packages which can be searched by computer type, subject, grade level, the teaching/learning approach used, key works and price, at http://www.epie.org/epie_tess.htm. Materials have also been developed by the Commonwealth of Learning – see http://www.col.org/resources/publications/Pages/listing.aspx?CID=9

[23]M S Swaminathan Research Foundation http://www.mssrf.org/

2.4.4 A note on gender-sensitive user fees

Calculating how much community members are able to spend on telecommunication services is very context-specific. Cost can be a major deterrent in access to ICTs. An overall policy framework that addresses the needs of those who would find the costs difficult to bear might include the following considerations:

- Recognize wage/income gaps in setting user fee rates, both in terms of gender as well as geographic area (rural, urban);
- Promote consumer/user-focused pricing policies for specific services and community oriented programs, such as:
    - Universal access/service obligations for carriers to provide affordable services,
    - Discounted tariff prices for telecenter-type service providers,

    - Regulatory frameworks that provide affordable prices for all users, including:
        - Price competition among ICT service providers,
        - Incentive programs to increase access (e.g., telecommunication development funds, which can be used to subsidize costs),
- Develop interim strategies to build membership fees or sliding-scale fee structures.

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2.5 Links to reference materials

Connecting the first mile: a framework for best practice in ICT projects for knowledge sharing in development

GEM: Gender Evaluation Methodology for Women and ICTs -A Learning Tool for Change and Empowerment

International Taskforce for Women and ICTs

Wikibook: Gender and ICT

AFRICAN WOMEN AND ICTs: Investigating Technology, Gender and Empowerment?

3 Meeting the learning needs of women: using ICTs in literacy and life-long learning

There are at least two main dimensions to ICTs and literacy. One dimension revolves around the teaching of such basic skills as reading, writing and counting to the “illiterate.” ICTs can be applied to produce interactive and audio-visual curriculum materials for use in classrooms and to assist in classroom teaching and distance learning.

The second dimension involves functional digital literacy as an ingredient of socio-economic development. Here, technology is put into the hands of learners to use and adapt, and to formulate applications that are meaningful in the context of their daily lives.

This chapter looks at both dimensions. Starting with digital literacy, the chapter showcases initiatives that bring technology training directly to women, and then discusses how this impacts on their socio-economic empowerment. It then looks at ICTs as tools for delivering basic literacy programmes. Both dimensions are equally important and often go hand-in-hand. This is, more often than not, the reality of capacity-building and training for women.

The recognition that ICTs can be used to supplement and complement the conventional education system needs to take hold in a more systemic and extensive way in order for these ICTs to become the tools of choice for learning and teaching. Rather than regarding ICTs as add-ons, policy formulation needs to integrate ICTs into a range of adult literacy programs. An adult literacy policy will need to address two fundamental aspects in order to fully engage women:

- A rights-based approach to literacy – This will have major positive implications for women, promoting women’s empowerment and capacity; and
- A poverty-focused approach to literacy – Since the problem of illiteracy is inextricably linked to that of poverty, it requires mainstreaming literacy across all sectors, ministries and agencies that address poverty issues.

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3.1 Basic ICT literacy for women: learning by doing

Learning the fundamentals of keyboard and browser use can open the door to an infinite range of learning experiences. Deliberate and dedicated programs that cater to first-time adult users, especially women, need to be designed, supported and delivered to enable this constituency of users to step over the digital threshold. Often, the simple functions of receiving and sending emails, using a search engine and reading web content are the starter blocks to training in ICT use. Demonstrating the usefulness of being ICT-literate in the context of their lives will create an incentive for women to participate actively and to use their newly acquired skills.

Content example: Computer Driving License in the Arab Region

The UNESCO Cairo office is the licensee for the International Computer Driving License (ICDL) in eight counties in the Arab region: Egypt, Lebanon, Libya, Jordan, Palestine, Sudan, Syria and Yemen. ICDL is an international version of the European Computer Driving License (ECDL) for use outside the EU countries. The programme covers the key concepts of computing, their practical applications, and their use in the workplace and society. It consists of seven modules, each of which must be passed before the ECDL/ICDL certificate is awarded. The modules are: Basic concepts of information technology; Using the computer and managing files; Word-processing; Spreadsheets; Databases; Presentations; and Information and Communication.

In preparing an ICT course, it is important to:

- Learn about women's specific needs within the community. If there are several women's groups with different needs, courses should reflect this. When planning training, engage with women in the community to get their views and conduct a needs survey;
- Include exercises so that each woman or girl can practice them in the telecenter or computer center, in their own time;
- Choose context-relevant examples and exercises that apply to the realities that the women are dealing with on a daily basis;
- Collaborate jointly with women's institutions and organizations and other mainstream training institutions.

In many cultures, education in science and technology is often perceived to be a male domain. Training in ICT skills is rarely gender-sensitive or tailored to women's needs, and may be delivered by a male trainer who has embedded perceptions about women's capabilities that are inconsistent with a research-based understanding of women's competencies and contributions in these fields.[24] Training and supporting a network of women trainers is one way to redress these preconceptions.

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Content example: Basic Internet Literacy Training, Bato, Philippines

The Basic Internet Literacy training, a course developed by the International Telecommunication Union (ITU) and the Asia-Pacific Women's Information Network Center (APWINC) for the "Development and Delivery of ICT Training Tools for the Promotion of Livelihood of Women in Rural Areas" project, is conducting its pilot in Bato's Leyte Community eCenter. Participating in this training are the community's womenfolk of all ages. The Basic Internet Literacy course will be followed by a customized training focusing on the participants' utilization of available information from the World Wide Web. The courses focus on the basic use of social networking applications by rural women of the community, in particular those used to support farming and small agricultural businesses. See http://www.connectaschool.org/itu-training/3/159/en/Training_Remote_Rural_Users_ICT_Economic_Activities_Education_Government_Services/Basic_ICT_Literacy for training materials.

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Information and communication technologies for women's socio-economic empowerment. World Bank Group Working Paper Series, June 2009

3.2 Links between digital literacy and women's socio-economic empowerment

In the hands of women, ICTs can be a source of greater autonomy and self-determination, which are often missing in women's lives. In other words, with access to information and communication channels, women may gain more say over the decisions that affect their lives. This represents a

significant form of empowerment. Being ICT-literate can generate a positive impact for women in many spheres, including:

- Education and life-long learning: ICTs serve as a teaching aid and a tool for developing skills. Women can access basic and advanced education courses and life-long learning, as well as different training courses via the Internet. Women can access books, articles and general information in e-libraries and on the Web, and are able to get in touch with others to perform joint projects regardless of physical location.
- Information services: Women can access information that is important to nearly every activity they do, ranging from health care to small business management. If they need information concerning how to price their products to get better prices orweather forecast data, for example, they can learn how to obtain it from reliable sources. This can contribute to women and their families having longer and healthier lives.
- Communication and networking: In many countries, women entrepreneurs are often social entrepreneurs first and foremost. Their business motives are driven less by profit than by a need or desire to earn income so they can provide for the health and welfare of their immediate families and communities. The majority of small-scale women entrepreneurs often bear several community responsibilities beyond the immediate household -- for instance, in the local orphanage, the local faith institution, environmental awareness groups, information and advocacy groups. These women need to build on existing modes of networking to extend their reach out to business intermediary agencies and wider markets, and to engage their competitors, in order to secure their business livelihoods. This means that women need a range of support provision to connect the big picture with their business objectives, to draw on leadership resources for effective execution, and to connect strategic communication and networking with implementation. When women are ICT-literate, they can participate in online social networks, keep in touch with family members and friends, and organize and advocate for their rights through civil society movements.
- Indigenous knowledge, values and culture: Women can transmit their own cultural values and traditions through ICTs, and so preserve their cultural heritage. They can produce Web content in their mother tongue and put it online. Migrant women can stay in touch and establish links with their home communities. Women can also access museums, listen to concerts, and watch cultural programmes through ICTs. ICTs have also played an important role in preserving and identifying threatened or marginalized cultural artefacts and traditions. Visitors to

http://www.maori.culture.co.nz/ for instance, can read histories of the Maori people, view images of cultural artefacts and the unique tattoo patterns common among Maori men, obtain Maori recipes, and order cultural products from an online shop. Communities have a wealth of indigenous knowledge that remains "untapped" and unshared. This knowledge is passed on from generation to generation by word of mouth and is not documented. Involvement of communities from project inception and in content generation can lead to sharing of the indigenous knowledge and its fusion with scientific knowledge to tackle practical problems those communities. Community involvement in this regard has an added benefit; indigenous communities take responsibility and shared ownership of the content development process.[25]

- Access to job opportunities: ICTs open a wide range of opportunities for increasing women's income. Women with ICT skills will have more opportunities to find interesting and well-paid employment. Also, ICTs can be used to buy and sell products. Additionally, women can work from home using ICTs, which can reduce time constraints in women's daily agendas.
- Political participation: ICTs provide women with information on government activities, political parties and candidates for public office. When women can freely access information regarding their communities and government actions, they can more easily participate fully in the political process.
- Human rights: Women and men with basic ICT skills can more readily (and if they wish, anonymously) report on human rights violations. With the use of ICTs, the international community has become more aware of the abuse of women's basic human rights.

Content example: Using ICTs to empower fisherwomen in reef conservation and management, Southeastern India

To reduce pressure on coral reef resources and lessen the economic vulnerability of coastal communities, local fisherwomen Self Help Groups (SHGs) have been empowered through the provision of ICTs and adult education in five coastal villages in the Tuticorin district of the Gulf of Mannar (GoM) in south-eastern India. Improved literacy levels, environmental education, and computer training and equipment have enhanced villagers' ability to take up alternative livelihoods and improve their living conditions.

The project demonstrated SHGs' potential as a non-threatening mechanism for mobilizing resources and providing affordable finance and social benefits to poorer fisherwomen. The SHGs also promote self-reliance, awareness creation, capacity development, social solidarity and empowerment. Village

coordinators from five targeted villages were trained, and each village was provided with a computer, printer, mobile phone, and internet access. The SHG members in the targeted villages were also trained in other alternative livelihood activities such as vermi-composting and hygienic fish drying methods.

The creation of awareness about the environment, along with the adult education, computer training and other livelihood options, helped the fisherwomen to earn additional income for their families. It was also a key factor in reducing destructive fishing practices and enhancing living conditions in the coastal areas of GoM.

Source: http://www.nova.edu/ncri/11icrs/proceedings/files/m23-15.pdf?
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[25]Local Voices Enhance Knowledge Uptake: Sharing Local Content in Local Voices David Grimshaw and Lawrence Gudza 2010 The Electronic Journal on Information Systems in Developing Countries http://www.ejisdc.org/ojs2/index.php/ejisdc/article/viewFile/649/312
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3.3 Using ICTs to promote literacy training among women

Broad trends in the use of ICTs in literacy programs are emerging from recent research and country studies commissioned by UNESCO. These studies indicate that:

- Many countries do not use ICTs in literacy programs, nor have they formulated policies for the integration of ICTs into adult literacy programs;
- Many countries face challenges with regard to financial resources and a lack of technological infrastructure;
- Where ICTs are used, they are typically basic ones such as radio and television. When computers or the Internet are involved, they tend to be restricted to targeted users;

- There is a relatively greater use of ICTs in school education. The use of ICTs in community learning centers is still limited;
- Most ICT projects for adult literacy are pilot projects that are often funded by international agencies and have not addressed methods to promote sustainability;
- Little attention has been paid to gender issues. There is no effort to address issues of access, content and the impact of technology on women.[26]

Fact of interest: Who are the illiterate?

Many people are insufficiently literate; they lack the written skills for expression and comprehension that enable them to learn. Some people lack literacy skills because they had no means to attend school or because schooling was cut short or was of poor quality. These people are almost all poor, almost all live in low-income households in developing countries, and many belong to linguistic and cultural minority groups. In most countries, access to education continues to be a greater barrier for women than for men; an estimated two-thirds of the world's illiterate persons are women.[27]

Traditional literacy programmes face many challenges, including:

- High costs,
- Shortage of teachers,
- High drop-out rates due to lack of motivation,
- A lack of access to training materials, and
- Long periods of time required to achieve literacy goals.

Computer-assisted learning can offer the digital learner many advantages, including the use of computer games and interactive activities that make learning easy and attractive. Digital content developed in local languages can be downloaded and accessed by learners at a time that suits them best. Similarly, by presenting reading lessons and numeracy education in a game form, computer programs encourage learners to compete against themselves and engage in repetition and practice without losing interest. Such computer programs repeat words and correct errors for large numbers of students at the same time, thereby reducing pressure on overworked teachers.

There is a huge potential for ICT applications to promote literacy and numeracy around the world. In particular, ICTs can be enlisted to overcome the many obstacles outlined above by fitting into people's lives flexibly. The utilization of ICTs to promote literacy and numeracy can take the following forms:

Radio: It can help overcome geographical barriers by facilitating distance learning, bringing literacy education to people who live in remote areas. Although radio lacks the visual element, it is nonetheless entertaining, easily accessible and affordable. Radio transmission, used in combination with printed training materials, can make literacy lessons more true-to-life and interesting. Also, local radio stations usually have close ties with the community, so they are in touch with local preferences, languages and cultures, and can tailor training accordingly. One clear disadvantage of using radios (and indeed television) in literacy education is that programmes are usually broadcast at fixed schedules over which learners have no control. Consequently, learners are not able to learn at their own pace and convenience.

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Fact of Interest: Community radio – an empowering tool in the rural context, Mozambique[28]

Local community radio stations that broadcast from telecenters are certainly the most used ICTs for all the women interviewed in this study. Radio broadcasts are free to the listener, and access does not depend on having electricity or individual radio ownership. People listen together in public places and at home. Running costs are generally low, making the radio the most affordable ICT in rural areas, particularly where wind-up radios are available.

There are, however, people who cannot afford to own a radio. For example, a head of household in Manhiça said she never used any technologies, and she wouldn't like to have a radio or a telephone since they meant more costs. "Radio batteries are expensive," she said. She wanted only to have something to eat every day. When we interviewed her, she was at the telecenter to collect her lost identity card; someone had found it and taken it to the telecenter, and an announcement was made on the radio. The woman's neighbours heard it and told her. Without the radio to act as a trusted central point she would not have discovered where her card was.

About 95 per cent of the interviewees confirmed that they listened to radio, and many told us that they know the programme schedules. The most popular programmes are the public information announcements, especially death notices. In these women's socio-cultural context, participating in the mourning of community members and relatives is an essential part of the fabric of society, and the radio is the fastest and most economical way of reaching a large number of people. News programmes and special programmes for women were also popular. News programmes enabled the

women to acquire information that reduced their isolation, both within their communities and nationally and internationally. The women's programmes, meanwhile, covered a range of topics, such as the behaviour of adolescents within the family, safety precautions to be taken in the home, HIV/AIDS, cooking, children's health and social behaviours.

Television: This medium matches words with images and provides movement and animation in combination with audio, and consequently:

- Facilitates practicing reading comprehension;
- Is more entertaining and thereby motivates the target audience to watch and learn;
- Provides a means by which to stimulate discussion and critical thinking; and
- Facilitates dissemination of literacy materials with audio-visual features.

Audio Cassettes, CD ROMs, DVD, VCDs: These media have many of the same advantages as radio and television. However, one clear advantage is that literacy courses can be accessed at a time and frequency that can be controlled by learners. Moreover, these forms of ICTs can be utilized at home, which helps to overcome social, cultural, financial and logistical constraints that many learners may face in terms of attending literacy classes.

CD-ROMs, in particular, offer:

- A cost-effective medium through which literacy content can be disseminated easily and cheaply;
- An interesting and entertaining resource for reading and writing classes; and
- The concentration of high volumes of information in a light, small package, as opposed to cumbersome text books.

Digital Cameras: They can be used to create local content, and in particular, to use local images in literacy classes. Techniques could involve:

- Giving learners more control over the content by letting them collect photos and developing literacy lessons with these materials;
- Matching words (in the local language) with images they have collected using digital cameras; and

- Sequencing pictures in order to make learners create sentences and stories, thereby further developing their literacy skills.

Mobiles and SMS Technology (texting): Mobile phones, and in particular Short Message Service (SMS) technology, have become part of day-to-day life in developing and developed countries alike. Unfortunately, they also serve as an ongoing reminder to illiterate people of their illiteracy. This can, however, be a motivation for people to overcome that illiteracy. Moreover, for new learners, regularly using dial pads and sending text messages will serve to reinforce their newly acquired literacy and numeracy skills.

Computer Based Training: The Internet offers a wealth of digital content that is accessible to learners to use at their convenience. Moreover, the dynamic nature of the Internet empowers women because, unlike older technologies such as TV and radio, the Internet is interactive; it transforms users from passive viewers into active participants. With chat rooms, email facilities and social networking websites, the Internet encourages and reinforces reading and writing skills.

Through the Internet, women can transform their stay-at-home status into a learning activity, and can use the Internet as a tool to practice their newly found literacy skills, by:

- Utilizing it as a platform to develop additional business skills, become career literate, make business transactions, and earn money;
- Conducting day-to-day activities with the use of online applications (e.g. reaching government services, submitting job applications, paying bills etc); and by
- Benefiting from social networking sites.

Content Example: The Commonwealth of Learning Literacy Project (COLLIT)

The Commonwealth of Learning (COL) received support from the UK's Department of International Development (DFID) to undertake a pilot project in Zambia and India to explore ways by which literacy programmes might be enhanced through the use of appropriate technologies. The three-year pilot project, which began in July 1999, was implemented through the "technology-based community learning center" model. The concept of a community-based learning center includes deploying various types of ICT equipment that will be managed and accessed by members of the community. It also calls for learning to be facilitated and provides a place where locally relevant learning materials can be developed. All of this was a central ingredient in the COLLIT project.

The impact of the project was most visible on the people involved in operating the learning centers, most of whom had no prior exposure to computers and other ICTs. By the end of the project, the facilitators and staff at the learning centers, in both countries, emerged as well-respected ICT-trained literacy instructors with experience in using the equipment to develop locally relevant instructional materials. The COLLIT project also demonstrated that given the opportunity, learners are quite capable of using ICTs in ways that not only help them achieve educational goals, but that are also remarkably motivating and applicable to other facets of their lives.

Source: Commonwealth of Learning 2004: ICT and Literacy: Who Benefits??
http://www.col.org/resources/publications/consultancies/Pages/2004-09-ICT.aspx
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E-learning is one way the internet can be used to combat illiteracy. The International Commission on Workforce Development[29] (ICWD)? has recognized several benefits of e-learning, namely:

- It is non-competitive: E-learning methodologies address learners' needs, learning styles and capabilities on an individual basis. Learners can focus on their own progress and performance and are continuously rewarded by their learning achievements. E-learning relieves learners of peer stress typically associated with classroom attendance with other learners.
- Online training can be less intimidating than instructor-led courses: E-learning environments are perceived as risk-free, in the sense that mistakes by learners are confined to themselves and to the system they are using. Therefore, e-learning models save learners embarrassment that they otherwise could experience in group learning environments. Moreover, e-learning systems give students the opportunity to correct their mistakes and try to improve their performance, while learning at their own pace.
- Content is up-to-date: E-learning systems typically enjoy content management modules that make it possible to update the content and keep it up-to-date with new learning material and courses.
- Consistency: E-learning systems deliver courses in the same manner each time and for each participant. Thus, learners do not need to adapt to changing teaching models and approaches. Learners focus on the core content efficiently and with minimal distractions.

- Flexibility and ease of utilization: E-learning requires a computer and Internet access, but with those tools, coursework can be accessed anytime, anywhere and regardless of the availability of teachers.
- Open and Distance Learning and ICT: Some countries, most notably Australia, the US, and South Africa, along with international organizations such as UNESCO, have developed open learning packages with literacy material. Content can be downloaded and printed out for distribution and easy use in literacy classes. Such materials could be used to supplement other ICTs, such as radio or TV broadcasting, and used by nomadic and remote communities, where illiteracy rates tend to be high, especially among women.
- Videoconferencing and teleconferencing: By permitting communication across large distances, videoconferencing and teleconferencing can bring literacy classes to very remote areas. Consequently, women who may not be able to travel long distances for social or financial reasons can get access to literacy classes. In this sense, these technologies serve to overcome key obstacles related to cost and convenience that typically prevent the rapid progress of illiteracy eradication.

Audio books (i.e. books that are recorded and made available on audiocassettes and CDs) can be a valuable tool in promoting literacy. They can be used in association with written texts to improve the efficiency of student comprehension and reading ability. Talking Books are, as the name suggests, electronic texts converted into spoken words. They help literacy students by enabling them to hear the words as they read them, and by providing immediate guidance on the pronunciation of specific words. Audio books can also be equipped with a system for decoding and tracking words with troublesome pronunciations. This can enable teachers to identify the words that are challenging for a particular student. In these respects, audio books are more supportive as a learning tool than electronic books.

Electronic books (e-books) are electronic texts that are made available on the Internet and on CD-ROM. They are similar to text books in that they combine text with definitions, background information, and images. The advantages of e-books are:

- It is easy to manoeuvre among book sections and chapters, as well as to examine references by following links;
- E-books can be easily modified to match the capabilities of students, such as via manipulation of font size;

- They are generally enhanced with extra, embedded resources such as definitions and other details.

Content example: The Tata Computer-based Functional Literacy Programme, India

In this programme, computers deliver the lessons in multi-media form, supplemented with textbooks. Audio voice-overs explain how letters combine to give structure and meaning to various words, and they pronounce the words. The emphasis is on words rather than alphabets. Lessons are designed to be visually stimulating and entertaining, using elements such as puppets. The lessons, which are based on material developed by the National Literacy Mission, focus on different languages and dialects.

Through the project, a number of learning centers have been established. Each center has a computer and an instructor. Because the project relies on computer programs, it has less need for highly trained teachers, which is an advantage in areas that lack teachers. A typical class has 15 to 20 people and is held in the evening hours.

Source: http://www.tataliteracy.com
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Content example: ICT for Illiteracy Eradication (ICT4IE) Egypt[30]

According to official statistics provided by the Central Agency for Public Mobilisation and Statistics (CAPMAS), the number of illiterate persons in Egypt is 17 million, with women constituting about 70 per cent of that number. The prevalence of illiteracy among women, particularly in very conservative rural and remote areas, and the demonstrated discomfort among many older students in traditional illiteracy eradication classrooms, gave rise to the idea of mobilizing multimedia technology. An educational CD set consists of three CDs; two for illiteracy eradication and a CD that provides an orientation course for preparatory-level schooling. The set can be used in the privacy of the trainee's home, in a community development center, or at an NGO office.
(See: http://www.youtube.com/watch?v=avtrTyZ-_HE)?

The CD course is similar to the GALAE (General Authority for Learning and Adult Education) official course, which enables the students to enter the GALAE exams and become IE certified. The multimedia course duration is four months (compared with 10 months for the traditional course). One of the target groups comprises rural women and women in deprived areas. Due to social customs and

traditions, some women remain unreached, since they are not allowed to leave home to attend illiteracy classes.

To overcome this obstacle, innovative solutions that recognize local norms were developed. One tool, called a ”Tabluter,” was based on the traditional wooden table known as the tablya. It is a customized, ergonomic, embedded computer on a table. The embedded computer is a single Central Processing Unit that runs for four independent users. Each user is equipped with his/her own screen, keyboard, mouse and sound card. The Tabluter is situated in an individual home where IT classes and illiteracy eradication classes are being held, thus reaching those women who are not allowed to leave the homestead.

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[26] See UNESCO Bangkok. "ICT and Literacy." ICT in Education. 2007 for further information, country research studies were conducted in China, Bangladesh, India, Pakistan, Egypt, Mexico and Brazil. http://www.unescobkk.org/education/ict/online-resources/features/ict-and-literacy

[27]Source: http://unesdoc.unesco.org/images/0015/001529/152921e.pdf

[28]See: Women’s use of information and communication technologies in Mozambique: a tool for empowerment? By Gertrudes Macueve et al, in African Women and ICTs: investigating technology, gender and empowerment edited by Ineke Buskens and Anne Webb – available on http://www.idrc.ca/openebooks/399-7

[29]http://www.icwfd.org

[30]Lina Zalat: Effective Practices for Engendering the Digital Divide, Eqypt ICT4D Journal 2009 http://www.i4donline.net/articles/current-article.asp?Title=Effective-Practicesfor-Engendering-the-Digital-Divide,-Egypt&articleid=2322&typ=Features

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3.4 Language literacy and women's empowerment – drawing the links

Illiteracy inhibits human development, and its eradication is the cornerstone of any developmental process for women and men of all ages. The term illiteracy primarily means the inability of a person to read or write. Improving adult literacy levels by 50 per cent by 2015, especially among women, was set as one of the objectives of the UNESCO Education World Forum in Dakar in 2000.[31]

Women constitute an estimated two-thirds of the world's illiterate population. Illiteracy is a major obstacle to women's empowerment. The negative impact of illiteracy is manifested in the huge divide between literate and illiterate women in almost every aspect of life: personal and family, health status, social life, economic life and political life. Conversely, literacy programmes can have a very positive impact on the personal, family, community, social and political lives of poor women.

Literacy programmes that combine literacy with basic business skills can be an effective way to keep a programme relevant to women's day-to-day lives. Literacy is important for social development, both in terms of inputs and outputs. Literate adults are more capable of understanding and upholding human rights when they can better participate in democracy and political processes. At least one study links literacy with reduced family size. That is, by enabling women to use contraception more effectively, literacy empowers them to control their sexual lives.[32]

Language literacy makes a difference in a woman's life and, consequently, in the life of her family -- especially when it comes to health issues.[33] Women who can read are more motivated to participate in the election process, whether as an electoral candidate, a team member of a candidate, or as a voter. There are a number of practical examples of communities becoming more economically and socially engaged once they became literate:

- The Vagla Community in northern Ghana began to see an increase in involvement in the political affairs of the community.
- The Bimoba, also in Ghana, began to organize into cooperatives and to do long-term economic planning.
- The Pez of Colombia have organized their own education committee to do long-term educational planning.

- In the Philippines, newly literate women utilized their literacy skills in opening bank accounts and managing their money more knowledgeably.
- In India, newly literate women qualify for desirable jobs.

Illiterate women are keen to become literate and acquire ICT skills. A study conducted with 40 women (IKRAA participants, see project IKRAA in case studies) with newly acquired literacy skills found that illiterate women were keen to acquire literacy skills for many reasons:

- For their own self esteem. Literacy meant that they would be become the equals of their husbands and even their children;
- In order to access the Internet. They felt left out of a whole new world that they knew existed but could not access;
- In order to be able to read and send text messages;
- To feel empowered by becoming literate. It meant that they could read signs and find their way, and they could sign their names on government or business documents and acquire jobs;
- To feel more in control of their future.

UNESCO recognizes that "an educated person is better equipped to handle all of life's challenges, from finding work to avoiding diseases."[34] When an illiterate woman becomes literate, the potential for positive individual and social transformation grows dynamically. Such women subsequently improve their job and employment opportunities and are empowered in their communities.

The negative impact of illiteracy on the families of illiterate women is also a key consideration. Families of illiterate women are caught up in a generational cycle of underdevelopment, in terms of lack of education, poor health and poverty.

Adult literacy programmes in a woman's "mother tongue" can begin to break that cycle. Moreover, once literate, women can move on to access other educational opportunities. This is especially true among the rural poor, who have some of the highest illiteracy rates.[35]

Newly literate mothers:

- Express motivation to learn more;
- Show a tendency to seek and take jobs that require literacy skills and that were not previously available to them, enabling them to better support their families;

- Convey the importance of literacy to their children, motivating them to seriously pursue their education;
- Become role models for other women to seek literacy lessons and skills.

Literacy has also proved to have positive implications for women's economic status. Being literate enables women:

- To make wiser economic decisions concerning their daily lives;
- To undertake simple business activities taken for granted by many literate? people; and
- To increase their self-esteem and confidence in their business transactions.

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[31]UNESCO - Education World Forum, Dakar April 26 -28, 2000

[32]http://www.sil.org/literacy/wom_lit.htm

[33]A report on Literacy & Women's Health by the NGO Proliteracy Worldwide http://www.proliteracy.org/NetCommunity/Document.Doc?id=36 concludes as a result of working with one million women on literacy eradication programs in USA, and 48 developing countries in Africa, Asia and Latin America, that high rates of literacy are typically found in regions that demonstrates high rates of infant mortality, low age expectancy and poor nutrition.

[34]Literacy Initiative for Empowerment (LIFE) 2006 – 2015, UNESCO 2007, p.3 http://unesdoc.unesco.org/images/0015/001529/152921e.pdf

[35]For more details, see the UNESCO 2005 advocacy brief for Mother Tongue-based Teaching and Education for Girls and Women: http://unesdoc.unesco.org/images/0014/001420/142079e.pdf . See also UNESCO Report 2007 on Mother Tongue-based literacy Programmes in Asia Region: http://unesdoc.unesco.org/images/0015/001517/151793e.pdf
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3.5 Numeracy and financial literacy

Numeracy tends to play second fiddle to literacy. The eradication of innumeracy among women is essential for many reasons, most important of which is the link between numeracy and broader

financial literacy. The latter is an important skill set for people to make sound decisions, both short- and long-term, regarding their economic security.

- Without numeracy skills, women cannot start their own businesses (even from home), because even basic business activities require numerical skills;
- Innumeracy rules women out of most well-paying employment opportunities;
- Women are unlikely to open a bank account, because any banking relationship that involves credit, savings and loans requires the ability to undertake simple calculations;
- Mothers will pass on their values to their children, including whether they believe literacy and numeracy are important. Studies show that financial literacy is often a learned behaviour, and there is a clear role for parents to play in making their children comfortable with these issues;
- Women are often the accountants of households, putting tme in charge of daily financial management, including paying for basic goods and services, such as groceries, electricity and water. Without numeracy skills, they cannot manage this role effectively;
- Women without numeracy skills are vulnerable to fraud and can be cheated more easily.

Mathematics is an integral component of any education curriculum. Numeracy is the precursor to mathematics, and acquiring it is essential to any illiteracy eradication effort. The next section examines a range of practical applications.

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Content example: UNESCO Literacy numeracy program

UNESCO has integrated its literacy and numeracy programmes for adult learning around the world. For example, in Cape Verde the project, “Training for the Design and Implementation of an Integrated Adult Distance Learning and Training System (ECCA System) for the Economic Development of Cape Verde and Related Curricular Design” (2006-2009) is jointly financed by the Government of Cape Verde, the Regional Government of the Canary Islands and the Spanish Agency for International Cooperation. It is a follow-up of the project “Adult Distance Learning (ECCA System) for the Economic Development of Cape Verde” (2002-2005). These projects were set up in support of the National Programme of Adult Education and Training, which combines distance education with adult basic education, secondary education, vocational education, and training, as well as community learning for development.[36] (hyperlink)

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36For more on the importance of numeracy, see: http://www.unesco.org/uil/literacyprogrammes/programmes.html
http://www.tda.gov.uk/teachers/professionalstandards/standards/knowledgeunderstanding/litnumict/core.aspx
http://www.planotes.org/documents/plan_03225.PDF

4 Beyond literacy: ICT applications that support women's entrepreneurial and professional activities

For the 60 % of women employed in agriculture in South Asia, access to quality education, skills training and entrepreneurship development tools not only represents a way out of poverty, but also provides them with opportunities of empowerment in the world of technology.[37] As a child, Shantabai dreamed of becoming a professional photographer. Born in a large family of marginal farmers, Shantabai had only an elementary education in her village school before she was married off at the age of 13. Besides working on her husband's family's small piece of land, she had to care for her children and her husband's elderly parents.

She enrolled in several training courses with Srujan, a partner organisation of the ILO's Workers Activities programme (ACTRAV). These training courses, of which several were digital, not only provided her with new skills but also motivated her to seek new opportunities to enhance her income. One such training course Shantabai participated in was on photography skills, and she decided to make it her profession.[38] Through the process, Shantabai became an inspiration for many women in her own village and in neighbouring communities.

ICTs have been shown to be deeply interconnected with improving social, economic and political engagement and development. ICTs can empower women and girls by increasing their direct access to information, education and services. Communication technologies also increase opportunities to connect and find a stronger voice – not only in the local community, but potentially to influence the world. ICTs help to ensure that the ideas and perspectives of both women and girls are heard and taken into account by decision-makers. This includes access at school, which is why a number of projects focus on girls' access to computers and the Internet, teaching girls the skills they need to use technology in the wider world. While a range of school networking projects promoting access to ICTs in schools have been rolled out in a number of African countries,not all have a gender perspective. Recognizing this fact, SchoolNet Uganda?has selected girls-only schools in which to install computer labs.[39]

Fact of interest - Gender and telecommunications in Bangladesh

An evaluation of the Grameenphone Village Phone programme in Bangladesh found that women operators of the village telephone were not only provided with a profitable business opportunity, they were also given more comfortable and equitable access to telephone service (Richardson, 2000, p. 31). Village Phone operators gained increased social status within their own villages as a result of three factors: (1) their increased income; (2) the fact that wealthier women came to use the telephones of women who were less wealthy; and (3) the fact that the woman's house now became the center of local activity in the village.

Ways in which ICTs can contribute to women's economic empowerment include:

- An increased ability for women to work from home;
- Improved employment opportunities for women in the IT sector;
- Increased ability of informal-sector women to find formal employment;
- Improved global market access for craftswomen through e-commerce;
- Transformation of traditional gender roles;
- Improved access of women, especially rural women, to distance learning and distance work programs;
- Improved ability for sharing of experiences among women's organizations concerned with the economic well-being of women in the informal sector; and
- Increased ability to avoid gender bias by having a gender-opaque medium.

Apart from digitized information and learning channels, one significant development for women's empowerment is in the small business development and market access sector. The Internet acts mainly as a mechanism that reduces the cost of acquiring information about products and prices. This section outlines the ways in which ICTs have been applied to women's empowerment objectives. It offers policy-makers examples of training content, ICTs in the marketplace and new opportunities for women working in the ICT sector and related fields (see box).

Fact of interest: the ICT sector defined

How is ICT-assisted instruction defined?[40]

ICT-assisted instruction refers to teaching methods or models of instruction delivery that employ ICT in supporting, enhancing and enabling course-content delivery. It includes any, all or combinations of the following: radio-, television-, computer- and Internet-assisted instruction.

What are ICT-related fields?

ICT-related fields include all programmes that include any of the following four fields of education and training:

Audiovisual techniques and media production is the study of techniques and the acquisition of skills to produce books, newspapers, radio or television programmes, films or videos, recorded music and graphic reproduction using ICTs. It includes programmes in methods of colour reproduction, photography and computer graphics, as well as the layout for pictures, words and decorations in the production of books, magazines, posters, advertisements, etc.

Computer science is the study of the design and development of computer systems and computing environments. It includes the study of the design, maintenance and integration of software applications.

Computer use is the study of using computers and computer software and applications for different purposes. These programmes are generally of short duration.

Electronics and automation (engineering and engineering trades) is the study of planning, designing, developing, maintaining and monitoring electronic equipment, machinery and systems. It includes designing computers and equipment for communication.

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[37]From Veil to Camera: Empowering women through skills training (ILO Online report, November 2008) http://www.ilo.org/global/About_the_ILO/Media_and_public_information/Feature_stories/lang--en/WCMS_100390/index.htm

[38]Skills and Entrepreneurship Bridging the Technology and GENDER DIVIDE March-2009 http://www.digitallearning.in/articles/article-details.asp?articleid=2340&typ=DEVELOPMENT

[39]Shafika Isaacs'IT's Hot for Girls! ICTs as an instrument in advancing girls' and women's capabilities in school education in Africa', United Nations Division for the Advancement of Women Expert Group Meeting on "Information and Communication Technologies and their impact on and use as an instrument forth advancement and empowerment of women" Seoul, Republic of Korea, November 2002

[40]World Telecommunication/ICT Development Report 2010 http://www.itu.int/ITU-D/ict/publications/wtdr_10/material/WTDR2010_Target7_e.pdf

4.1 Access to information and training – from rural to national

ICTs have multiple roles in training, capacity-building, learning by doing and community-building, all of which can be provided through community ICT centers. A variety of tools provide an effective and efficient means to deliver informal training courses, more sophisticated qualification-driven learning, learning by communicating with others, or from reaching out to see what others are doing. As management expert and author Peter Drucker wrote, learning is a life-long process of keeping abreast of change, and one of the most pressing tasks is to teach people how to learn.

One interesting example of formal e-training is the ongoing qualifications provided by the African Medical Research Foundation's (AMREF's) virtual nursing school, which serves thousands of nurses across Kenya. As of 2008, e-Learning became the preferred mode due to its interactivity, cost effectiveness, ease of revision and ability to achieve the goal in less time and at a lower cost than the residential programme. It also enabled continued service provision, instant application of learning and improved quality of care. The second example (Maarifa) exemplifies the multi-layered nature of using ICTs for learning.

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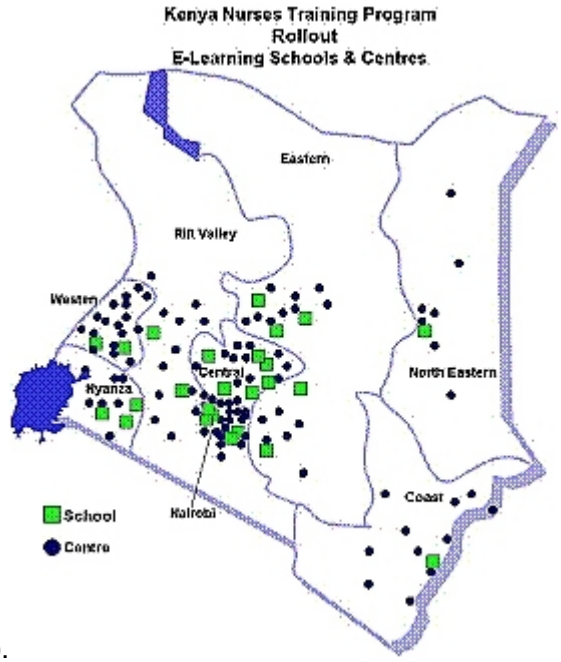
Content example: Health qualifications for nurses in Kenya (hyperlink)

In July 2008, the Kenyatta National Hospital and AMREF[41] signed a memorandum of understanding to support an effort to upgrade the certification of 500 Enrolled Nurses to Registered Community Health Nurses, through AMREF's **Virtual Nursing School** (AVNS). AMREF committed to training the nurses over the following five years, using computer-based training modules. The nurses would upgrade their skills while continuing to work, using a supervised e-course that blended theory with clinical experience at one of the more than 100 computer-equipped training centers in eight provinces. These centers covered several rural, remote and marginalized districts (e.g. Garissa and Dadaab refugee camps in the North Eastern Province of Kenya).



This is a public-private partnership with the Nursing Council of Kenya (NCK), AMREF, Accenture, the Kenya Medical Training Colleges, several private and faith-based nursing schools and the Ministry of Health, all collaborating in delivering a country-wide eLearning programme for nurses. The programme commenced in September 2005 with four schools and 145 students aiming to upgrade 22,000 Enrolled Community Health Nurses (KECHN) from "enrolled" to "registered" level within five years. Enrolled Nurses (ENs) comprise 70 per cent of the nursing workforce and 45 per cent of the health workforce in Kenya. They are the first point of contact for communities, but are inadequately skilled to manage new and re-emerging diseases like HIV/AIDS. This has necessitated continuing professional development to improve nursing care standards in line with health-related Millennium Development Goals (4, 5, and 6) and enable them to respond effectively to disease diversity and complexity.

Building on its success, in April 2010, AMREF, the University of California in Los Angeles (UCLA) and Johnson and Johnson (J&J) launched an e-learning programme to enhance the management capacities of HIV and AIDS organisations in Kenya. In partnership with Kenya's National AIDS Control Council (NACC), the programme will be used to build the capacities of 7,000 NACC managers in effective health leadership and management.

(see www.amref.org, http://multimedialearning.posterous.com/amref-african-medical-and-research-foundation and http://kenya.amref.org/what-we-do/upgrading-20000-nurses-in-kenya for more information)
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Content example: Farming and rural empowerment in East Africa

Initiated in 2007, the Maarifa Centers[42] (Maarifa is the Swahili word for knowledge) are a project by Arid Lands Information Network (ALIN), an organization that aims to facilitate the exchange of ideas, experiences, and knowledge among communities to enhance learning for improved socio-economic empowerment through multi-media tools. The project involves the establishment of community knowledge centers (CKC) in the rural areas of Kenya, Tanzania, and Uganda that, in partnership with other agencies, seek to bring ICTs to rural communities to enable their documentation and sharing of local knowledge - in particular, knowledge relating to farming and natural resource management.

There are 10 Maarifa Centers, eight in Kenya, one in Tanzania, and one in Uganda. The centers have been established to increase access to information on the part of rural communities, enabling them to turn their experiences into knowledge and lessons learned. Each center is equipped with basic ICT tools (computers and Internet access) to enable information generation, access, and dissemination. The centers have a resource area containing materials such as newspapers, journals, books, research reports, electronically stored information (CD-ROMs), audiovisual materials (DVDs), compendiums, and all types of web-based resources. At the Maarifa Centers, community members can access and share information on how to improve their livelihoods through new technologies for farming, livestock keeping, coping with environment and climate change, and current marketing information. The centers also offer information related to health, gender, and HIV and AIDS.

The centers offer basic ICT training to community members, many of them young people who have graduated from secondary schools, as well as primary school pupils, many of whom have formed information clubs. The centers also act as information access points for community development workers who provide agricultural and related extension services in the region. They use the centers to acquire free (online) development information and to send weekly reports to their ministries or organizations, but also benefit from basic office services such as typing, photocopying, and free Internet access.

A typical Maarifa Center is managed by a selected advisory committee of about 5-8 members drawn from local community stakeholders. According to ALIN, the selection process ensures that the membership is gender-balanced, represents interests of special groups, and has diverse background. ALIN's volunteer programme supports the running of the centers. The volunteers work at the center for one year and are supervised by local host partner organizations. They are generally young graduates in mass communication, agriculture, environmental studies, or community development. The volunteers manage the center's activities, coordinating the collection of development-oriented local knowledge and experiences and training local communities on the use of ICT tools. The Maarifa Centers also support the active involvement of women. In order to enhance the capacity of women to play an active role in development initiatives and to reverse the trend of their insufficient inclusion, especially in the dry land areas, ALIN promotes the integration of women in development and information support.

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[41]African Medical Research Foundation see http://www.amref.org/info-center/amref-courses--training-programmes/elearning-programme-/

[42]http://www.alin.net/?maarifa_centers

4.2 ICTs and e-financing – new possibilities and dimensions

The financial intermediary sector that services small businesses is extending its reach to poorer sections of the economic community and to those clients who might not otherwise have access to financial services. ICTs are already being applied to serve small businesses in many ways, such as:

- Adapting and simplifying book-keeping, accounting and loan-tracking software;
- Computerizing financial reporting and performance measures, making them cost-effective, secure and accessible to both borrowers and lenders;
- Providing individual borrowers with secure, user-friendly account access through location points in local banks, post offices, and other community centers;
- Building up savings and credit schemes through mobile banking, smart cards, handhelds, and modified ATMs, in order to bypass the traditional methods of providing bank services. As banking services become a built-in function of mobile wireless telephony, these aspects of recording and completing transactions will expand.

Content example: SWAT Youth Front, Pakistan (hyperlink)

Established in 1997, Swat Youth Front (SYF)[43] is a youth-oriented, not-for-profit and non-governmental organisation (NGO) using communication, advocacy, training, and service delivery to foster poverty reduction, gender equity, literacy, youth employment, women's empowerment, and disaster management in the Malakand range, North Western Frontier Province (NWFP), Pakistan. SYF works in partnership with community-based, public, and civil society organisations in an effort to:

- Promote socioeconomic empowerment among the marginalized,
- Promote gender awareness and sensitivity,
- Narrow gender gaps in education and economic participation, and
- Promote volunteerism and facilitate employment among youth.

Interpersonal approaches are central to SYF's efforts to develop the skills of, and provide opportunities for, children, youth, and women, in particular. For example, in partnership with the Pakistan Literacy Commission, SYF trained 63 women in teaching methodologies and then implemented 63 non-formal schools in various parts of District Swat.

SYF also focuses on adult literacy; its Functional Literacy Programme was launched in March 1999 and is designed for working adolescent and adult women in various sectors of the Mingora region. In addition, in February 2000, SYF's Women's Skill Development Project (WSDP) was launched with the purpose of enhancing women's skills and creating income opportunities at the local level. Vocational classes have been held and women's saving committees formed. In an effort to protect the environment by encouraging use and reuse of household waste material, SYF has conducted various trainings for women to learn how to produce finished products while gaining an income.

To foster women's financial empowerment, SYF has also organized exposure/study tours for students and female entrepreneurs to historical places and the country's industrial cluster. The main purpose of these activities is to identify new channels and markets for Swati products. SYF has gone beyond such local initiatives by facilitating the participation of several female entrepreneurs in national and international exhibitions in order to get exposure and gain knowledge about how to market their products. The organisation has also developed linkages between these entrepreneurs and raw material suppliers. SYF has developed various advocacy campaigns, such as in the areas of women's and children's rights and socioeconomic issues.

?Where women workers are unable to visit their bank after work to deposit their pay, mobile banking allows women either to make loan payments or add to their savings. Likewise, women may not have access to information about government benefits to which they are entitled. Where governments make such information available on the Internet, the same ICT devices that enable women to manage their credit and savings can also be used to access their benefits.

Content example: Micro-finance loan software

The **Loan Performer software** grew from humble beginnings in Uganda and is now employed in micro-finance institutions in 50 countries. Various software packages are contributing to the increase in efficiency of many Micro-Finance Institutions (MFIs). HISAAB, for example, is group-level microfinance software designed for illiterate and uneducated users. Currently the software is used by:

- Sero Business Women, Tanzania
- Mara Women Empowerment Assistance, Tanzania
- Women's Finance House, Botswana

- National Association of Business Women, Malawi
- Tanzania Women Entrepreneurship (WEDTF), Tanzania
- Pamoja Women, Kenya

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[43]http://www.comminit.com/en/node/133630/307

4.3 E-commerce, markets and small enterprise development

ICTs are being adapted and used to build women's economic capacities. Women are being trained to use the Internet to buy and sell local products, to access current information on raw material prices, to use microfinance services, and to use software for financial and business management.

Trade and development in the context of globalization is as much female-led as it is export-led. Increasingly, policy-makers and business leaders alike are acknowledging the profit value of women's involvement in small business. Business leaders cannot afford to ignore this critical section of the productive labour force. Many large corporations are increasingly producing, sourcing or distributing from developing nations, and this often involves working with local partners and small and medium enterprises (SMEs) as part of their value chains.[44]

One example of an international network that both advocates and supports credit programmes for women is **Women's World Banking** (WWB). WWB is a global, not-for-profit institution dedicated to securing poor women's access to finance, information and markets. The network incorporates retail institutions that provide over USD 5 billion in financial services to more than 10 million low-income women entrepreneurs—in Africa, Asia, Latin America, Europe and North America. Members of the network include micro-finance institutions, banks and associations that serve as models for others by:

- Embodying shared principles;
- Providing financial services that meet performance standards;
- Sharing best practices and experiences; and

- Using results on the ground to influence policy changes in their countries and around the world.

Women-led organizations and affiliates operate at the core of the network. Members of the network push each other, using mutual accountability to achieve results.

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Content example: Tortas Peru – women cake sellers

Initiated in 1996, Tortas Peru is a woman-owned enterprise that uses ICTs to reach and serve a wider market, employing the Internet to take orders for their cakes. Tortas Peru markets heavily to the more than 2 million Peruvians who live outside the country, relying on its website to reach them. Clients in San Francisco or New Zealand can send a home-made cake to friends or family in several major cities. The tortas (cakes) are prepared and delivered by one of the housewives in the network. Customers can order a cake from a catalogue and pay using a credit card, check, money order or electronic payment. To maintain low prices, the company is based mainly on the Internet, making it necessary for the housewife-members to be familiar with computers and Internet.

Content example: Shea Butter Sales in Burkina Faso

When the women of the Songtaaba Association, an organization that markets shea butter skin care products in Burkino Faso, started using ICTs, their profits more than doubled. The use of cell phones and computers helped them to run their businesses more efficiently. The Association currently provides jobs to more than 3,000 women in 11 villages. To provide the women with regular access to ICTs and improve marketing and sales of their products, the association set up telecenters in two villages. These facilities are entirely managed by the rural women, who are trained by Songtaaba. The organization also set up a website, which the women manage. This has been particularly successful in boosting the visibility of the producers. Since the site went online two years ago, orders have gone up by almost 70 per cent. (also see similar story in Mali)

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[44]**The World Business Council on Sustainable Development** www.wbcsd.org offers several examples of large corporations partnering with small enterprises – including Pentland and Nike in Vietnam, SC Johnson and pyrethrum growing in Kenya, and Delta Corporation (food & leisure) outsourcing to SMEs in Zimbabwe.

4.4 Empowerment through networking

ICTs have also become effective tools for networking among women and women's groups, allowing them to pool resources, information and numbers together to form cooperatives -- or simply to voice their desire for change. The importance of networking cannot be underestimated, as women often look to the broader women's movement beyond their national boundaries for solidarity and policy shifts.

Content example: ALEAP networks bring women together for change

In Andhra Pradesh, India, small factories employ nearly a third of the people (22 million) of that state. Over a million women ran their own factories throughout the city, and while each was doing fairly well, they felt that by banding together, the daily challenges of business would be easier to manage. Many of them were in the same industry – food processing, including tomato, spices, fruits, wheat, and cocoa powder.

In 1993, the women formed the Association of Lady Entrepreneurs of Andra Pradesh (ALEAP)? to cater to the needs of women small-business entrepreneurs. They pooled their resources and approached the state government for 30 acres of land. They were helped by the fact that the government did have a policy to develop small industries, with women-owned enterprises singled out for special attention. ALEAP was able to obtain a government grant of USD 55,000 that was used to build common infrastructure such as roads, water, drainage and a power substation. The group has been able to create an innovative business-operating environment for themselves. Now, ALEAP is a one-stop center for women's entrepreneurship,providing motivation, counseling, information on projects, advice on statutory and regulatory requirements, training, management of finance and market tie-ups, and infrastructure and project implementation.

In 2005, ALEAP announced the launch of its new initiative, "EU-India Network of Women Entrepreneurs," a project funded by the European Commission under the EU-India Small Projects

Facility and the Federal Ministry for Economic Cooperation and Development. Other partners include InWEnt-Internationale Weiterbildung und Entwicklung gGmbH and Capacity Building International, in Cologne, Germany. The project will provide training to entrepreneurs in the food-processing and garments sectors, enabling the production of globally competitive products in an environmentally sustainable manner. The project facilitates networking with organizations in the European Union, in order to enable producers to access global markets.

The project deals with two important sectors: food processing and garments. With the abolition of quotas in the garments sector from 1 January 2005, additional effort wasirequired to maintain existing market shares and access newer ones. In the food-processing sector, increasing India's small share in the global market has the potential for increasing rural employment and providing a fillip to economic growth.
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4.5 Links to reference materials

A Manual in two parts for practitioners - Gender-oriented Entrepreneurship Promotion (Swiss Agency for Development and Cooperation)

ILO's Women's Entrepreneurship Development and (WED) Capacity Building Guide

IFC's Women in Business Program and WIN case examples (International Finance Corporation and Women In Business)

DFID/IDPM's Women's ICT Based Enterprise for Development practical guidance handbooks (Department for International Development and University of Manchester's Institute of Development Policy and Management)

World Bank ICTs for Women's Socio-economic empowerment

http://www.womenictenterprise.org/manworkshop.htm for a number of case studies presented at a 2006 workshop on Women's ICT-based enterprise for development

Journal of Community Informatics http://ci-journal.net on Gender in Community Informatics (July 2010)

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5 Guidelines for Ministries, Regulators and Private Sector

This section provides a series of checklists that are aimed at ensuring that both men and women have equitable chances to use and benefit from ICTs and to participate in community ICT centers. The section offers a summary list that project planners can use to consider opportunities that may have been overlooked. The first part of this checklist contains questions related to the inclusion of gender issues in the project cycle of setting up a community ICT center. The second part outlines indicative gender issues found in ICT projects and components. The third part provides links to a selection of on-line tools and guidelines.

5.1 Gender analysis and assessment in the Center's development

Needs identification and design

- What are the special needs of men and women for ICTs related to the project? Have both men's and women's needs been considered in defining project objectives? Have both men and women participated in setting these objectives and expectations?
- What is the gendered division of labour in the target population of the project? Are there ways in which the ICTs employed in the project would increase men's and women's productivity and learning, or their access to, and control of, resources?
- What are the constraints that might block men or women from equitable participation in the center? Are there barriers and constraints that might affect men's or women's access to opportunities, resources, and decision-making?
- Has the impact of the project on gender divisions in the target population been considered? Are there any ways in which it might adversely affect women's situations? If any negative impacts are foreseen, can the project be adjusted to overcome them?

Project preparation

- Have women representatives, gender-aware organizations and community members been consulted in the project planning process?

- Are the project design team and implementation staff, especially those concerned with ICT delivery, gender aware? If not, might they benefit from gender-awareness training?
- Have efforts been made to recruit gender-balanced staff and consultants?
- Is there a gender expert on the project team?

Project implementation

- Does the project include measures to equalize opportunities and access for both men and women?
- If it is likely that women would be under-represented in project activities, are there specific actions that target women?
- Are the institutions that will deliver services under the project gender-aware?
- Do men and women have equitable access to project ICT resources, including credit, training and facilities?
- Can partnerships be built to enhance outreach and improve access to ensure gender equality?
- Are regular consultations held with all key stakeholders?

Project monitoring and evaluation

- What measures are in place to capture user feedback from men and women?
- Will project-monitoring data be disaggregated by gender?
- Have indicators been identified that can be measured with gender-disaggregated data?
- Is gender analysis included in the terms of reference of the evaluation team?
- Is the evaluation team gender-balanced?
- Will gender-disaggregated data and indicators be collected and analyzed?

Measuring Outcomes

- Are any gender-positive outcomes anticipated? Among the possible gender-positive outcomes that might result from ICT projects are the following:
- Improving opportunities for men and women to access, use and benefit from ICTs
- Fostering shared control over decision-making and resources related to ICTs
- Improvement in women's income from the use of ICTs in the project
- More women using ICTs (more) as a result of the project
- Increased access to relevant information for women and men.

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5.2 Guidelines for regulators

Sector liberalization

- Is sector liberalization being promoted in order to bring in investment and reduce end-user prices, thus making telecommunications and ICT more accessible to men and women?
- Is consideration given to reducing high customs duties on mobile telephones and computer equipment that deterwomen users, who are likely to have less disposable income than men?
- Is the national regulator directing private sector players to deliver on social and gender policy objectives such as universal access?
- In return for granting licenses, is the regulator compelling service providers to provide service to underserved areas where women predominate?
- Is the regulator providing funds for research, development and testing of technology that will serve women?
- Are gender-equity concerns a part of community service obligations performed by cellular phone operators?

Regulatory frameworks

- Do regulators permit the resale of mobile phone services, which may be profitable businesses for women to establish?
- Has the regulatory framework addressed reducing licensing fees, spectrum prices, and interconnection charges that might make ICTs more accessible to women?

Licensing

- Has consideration been given to reducing fees for telecommunications, Internet service provider (ISP), and mobile service licenses to promote improved affordability by women and the poor?
- Has consideration been given to allocating special licenses for rural operators or community ICT center operators -- especially those run by and for women?

- Do license awards contain conditions that promote gender analysis and mainstreaming within the licensed company?

Universal access

- Do universal access policies stress public access points as an alternative to more capital-intensive choices (one line per home) and ensure that locations of public access points are gender-sensitive (e.g. not just in bars or auto shops but also in schools, clinics and markets)?
- Whenever access to ICT is considered, do women have access? If not, what actions can be taken so that they will have access?

Universal service obligations

- If regulators call for establishment of telecenters in under-served areas, as part of license-holder universal service obligations, have the different needs of men and women in the concerned communities been considered?
- Does proposed service delivery to under-served areas reflect geographical gender distribution in the population?
- Are disadvantaged and/or rural women, such as single mothers, widows, or disabled women, given any priority for service, subsidies or special pricing??

Factors leading to mobile phones being too expensive for women[45]

In addition to the high cost of purchasing handsets, poor users can waste precious money trying to get connected in areas where they face poor signal coverage. They risk being charged even when they do not succeed in getting connected. In addition, when top-up cards have a short lifespan, (for example, only 15 days) users often must spend additional money when that time period runs out. Likewise, when a woman has to spend her only remaining money to make a call to distant relatives to request a remittance -- but cannot get her message through because of poor coverage -- she may nevertheless be forced to pay for the call. The pricing regimes of some service providers do not take into account the fact that some calls do not get to their destinations.

[45]Rural women's use of cell phones to meet their communication needs: a study from northern Nigeria, Kazanka Comfort and John Dada in Buskins and Webb 2009 (ibid)

5.3 Checklist for content providers and trainers

Courses and training in ICT skills

- Are there women facilitators or trainers?
- Are training materials accessible to illiterate populations and local dialect speakers?
- Where illiterate populations seek to develop ICT skills, is their illiteracy also addressed, e.g. through online training?
- Is any additional support or provision for women necessary? e.g. child-care?
- Are training activities and access times and locations compatible with women's daily schedules and possible travel limitations?

ICT and education projects

- Have efforts been made to ensure equitable access to ICTs for women and girls in schools and other educational facilities?
- Are girls' and women's responsibilities for domestic chores taken into account in scheduling access and training?
- Are there cultural or social issues that call for single-sex instruction in ICTs?

Systems for learning and training

- Do women have equal access to technical training?
- Have efforts been made to ensure that women are among those trained when introducing computer hardware and information systems?
- Are necessary adjustments made to facilitate women's and girls' participation in view of multiple roles and cultural constraints?
- Are there mechanisms for women to enter these fields and training programs or to develop as role models for young girls?
- Are training opportunities available not only for technology professionals but for non-professionals to use ICTs?
- Have attempts been made to find and select women participants?

Distance learning projects

- Is data on students/users disaggregated by sex (to show possible gender differentials in users)?
- Are the information and learning needs of both men and women considered in designing programs?
- Is the content of programs relevant to both men and women?
- Are there constraints to women participating in the courses (e.g. are courses for civil servants delivered at times that are convenient to women workers)?
- Does the distance learning incorporate flexibility in scheduling and location to accommodate both men and women?
- Are there differences in subjects and technical skill levels by gender, requiring remediation or accommodation?
- Are there differences in foreign language abilities by gender among the targeted recipients? For example, if courses are in English, are women less likely to have a mastery of that language?
- Does the course content recognize gender issues in the substantive material for the course (e.g. in public administration)?

ICT content development projects

- Is the information/content distributed in ways that make it easily accessible to women and men at varying levels of literacy, education and economic status?
- Is information made readily available to all users, regardless of class, race or gender?
- Are opportunities provided for women to discuss the information received and ways to deal with the socioeconomic barriers they face?
- What measures have been taken to protect women's traditional knowledge, particularly about crops and plants, so that it can be preserved, used without exploitation, and patented, if appropriate?

Information systems development (including health, legal and financial)

- Do women have equitable access to the information in the system?
- Is the information relevant to their information needs?
- Is there equitable access for men and women to the training needed to use the system?
- Have attempts been made, where relevant, to incorporate women’s indigenous knowledge?

The *UNESCAP Guidebook*, based on the Malaysian experience, provides a set of success factors that can guide community ICT center development. It is described in the box below.

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Fact of Interest: Success factors for community e-centers (CeCs) in Malaysia

- Focus on people, organization, content, and processes rather than on the technologies;
- Research the actual needs and socio-economic goals of the community;
- Provide ICTs and services via the CeCs, which are relevant to community needs;
- Find local champions who can motivate and mobilize the community;
- Capitalize on local strengths and resources in the development (planning, implementation, operation, evaluation and monitoring) of the CeCs;
- Sound business plans and sustainability models ensure the CeCs' continuing existence and growth;
- Maintain ongoing monitoring and evaluation of the CeCs' performance;
- Foster and develop smart partnerships (government, industry, NGOs, and community) for strategizing and translating CeCs' goals into action; and
- Continue to train and educate the CeCs' personnel and community.

Source: *Guidebook on Developing Community E-Centers in Rural Areas: Based on the Malaysian experience*, UNESCAP, 2006

5.4 Links to reference materials, online toolkits and guides

Connecting the first mile: investigating best practice for ICTs and information sharing for development[46]

Guidebook on Developing Community eCenters in Rural Areas (Based on Malaysian experience, UNESCAP, NY 2006) http://www.ictregulationtoolkit.org/en/Publication.3372.html

Telecottage handbook: How to establish and run a successful telecenter (June 2006, UNDP Europe and the CIS) http://www.is-watch.net/node/758

Training telecenter managers, staff and users (2001, Commonwealth of Learning, Bill Murray and Cathy Murray Small World Connections, UK Simon Brooks Staffordshire County Council and Training Director, UK Telework, Telecottage and Telecenter Association (TCA)) http://www.col.org/SiteCollectionDocuments/chapter%2018.pdf

Sustainable Telecenters: Public policy for the Private Sector. (2003, World Bank) http://rru.worldbank.org/Documents/PublicPolicyJournal/251Welle-121302.pdf

ITU/InfoDev ICT Regulation Toolkit (2004) http://www.ictregulationtoolkit.org/en/index.html
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[46]*Surmaya Talyarkhan, David J. Grimshaw, Lucky Lowe (Intermediate Technology Development Group – ITDG)*

[47]A practical guide to establishing a telecottage, as well as a valuable source of experiences and lessons learned, this report was prepared by members of the telecottage movement. The Hungarian experience is used as a reference point throughout the report. This publication is intended for ICT professionals, community development practitioners and public administrators who wish to improve social services delivery at a local level, and who recognize that telecottages can be used in service of individual, local and community poverty reduction.
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6 International, regional and gender-specific policy frameworks

In calling for "participation and active involvement of girls and women in the decision-making process of building the Information Society" the World Summit for the Information Society (WSIS) recognized the importance of greater female inclusion. There is a strong link between women, ICTs and the Millennium Development Goals (MDGs). ICTs can, for example, facilitate achievement of MDG 3, to promote gender equality and empower women.

There are several examples of ICTs becoming important tools for women's empowerment, with women as the primary drivers in using ICTs for development purposes. Despite important gender issues that may arise for women as users and employees -- including the many women who work in call centers, and as entrepreneurs -- research on ICT gender issues continues to be minimal. This needs renewed attention. Working to increase women's access to ICTs is central to the achievement of a number of international treaties and targets. While this list is not exhaustive, it touches on some of the most important frameworks.
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6.1 International policy frameworks

This section describes the most salient international agreements and conventions that address gender-equity and bear on ICT regulations, policies and services.

The Convention on the Elimination of all forms of Discrimination against Women (CEDAW)

CEDAW defines discrimination against women as: "any distinction, exclusion or restriction made on the basis of sex which has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise by women...of human rights and fundamental freedoms in the political, economic, social, cultural, and civil or any other field." ICTs are an essential element in enabling women to access their human rights and entitlements in those spheres, and so ICTs are essential to the practical implementation of CEDAW.

http://www.un.org/womenwatch/daw/cedaw

The Millennium Development Goals

The Millennium Development Goals (MDGs) are an agreed set of key objectives to address the world's main development challenges; they were adopted by the United Nations General Assembly in 2000. There are eight MDGs, broken down into 21 quantifiable targets, which are measurable by 60 indicators. The UN recommends that all indicators should be disaggregated by gender. But in fact, ITU as well as the other UN agencies in charge of MDG indicators face great difficulty in collecting reliable gender-disaggregated data, especially in developing countries. Besides gender mainstreaming for all MDGs, the MDG 3 is specific to women's empowerment:

MDG 3: Promote gender equality and empower women

ICTs provide an excellent means of opening up opportunities in education, employment, and access to information, and they have the potential to neutralize much of the discrimination traditionally faced by women. The flexibility provided by the use of ICTs in education or work enables women to balance familial and social responsibilities, and it can help overcome issues of mobility. In essence, ICTs increase women's ability to act autonomously, and enable them to better access their rights. In particular, ICTs can help achieve MDG target 3a: "To eliminate gender disparity in primary and secondary education...and in all levels of education no later than 2015." They also can play a significant role in working toward the three indicators under MDG 3, namely:

3.1: Ratios of girls to boys in primary, secondary and tertiary education
3.2: Share of women in wage employment in the non-agricultural sector
3.3: Proportion of seats held by women in national parliament
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ICTs are directly relevant to these goals in both cause and effect. That is, increasing women's access to ICTs will help achieve these goals, and achieving the goals will also help increase women's access to ICTs. ITU is the line UN agency in charge of ICT related indicators.

MDG 8: Develop a Global Partnership for Development

ICTs are directly relevant to target 8f: "In cooperation with the private sector, make available the benefits of new technologies, especially information and communications." ICTs will help achieve three specific indicators under MDG 8, namely:
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- 8.14: Increasing the number of fixed telephone lines,
- 8.15: Increasing the number of mobile cellular subscribers, and
- 8.16: Increasing the number of Internet users.

The target date for achieving the MDGs is 2015. Improving women's access to ICTs cuts across seven MDGs targeted at specific objectives, and appears as a goal itself within the eighth goal.

http://www.un.org/millenniumgoals/

World Summit on the Information Society Targets

The World Summit on the Information Society (WSIS) is an initiative of the International Telecommunications Union (ITU). Its objective is to "build the framework of an all-inclusive and equitable Information Society," and to find ways to use ICT to advance development goals, such as those contained in the Millennium Declaration.

http://www.itu.int/wsis/index.html

Poverty Reduction Strategy Papers

Poverty Reduction Strategy Papers (PRSP) are blueprints for reducing poverty in developing countries, drawn up by the national governments in collaboration with civil society and with input from the World Bank and the International Monetary Fund. They place a great emphasis on social indicators and on building the capacity of state actors to regulate the economy. In the 29 PRSPs analyzed in 2003, 12 countries (Albania, Azerbaijan, Cambodia, Cameroon, Chad, Gambia, Ghana, Mali, Mozambique, Niger, Rwanda and Sri Lanka) define or categorize ICTs as a strategic component for poverty reduction, and discuss it as an independent item in their PRSPs.

http://www.imf.org/external/np/exr/facts/prsp.htm
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6.2 Regional policy frameworks

ICT infrastructure tends to be regional, due to boundaries in wireless and fiber optic technologies, which is why ICT policy frameworks often reflect the same regional borders.

Caribbean Community (CARICOM) Secretariat

The CARICOM ICT strategy is an instrument for strengthened connectivity and development to foster greater prosperity and social transformation between and among member states, as well as the rest of the world. In CARICOM, there is a continuing focus on mainstreaming ICT activities and development to effectively contribute to the achievement of the Millennium Development Goals, particularly those related to poverty reduction, education, and health, environment and gender equity.

http://www.caricom.org/jsp/projects/projects_ict.jsp?menu=projects

Association of South East Asian Nations

The Association of South East Asian Nations (ASEAN) is governed by the 2000 e-ASEAN Framework and by the annual meeting of the telecommunications ministers, known as TELMIN. ASEAN has made a number of declarations and plans of action with respect to ICTs. Related to telecenters for women is the Siem Reap Declaration on Enhancing Universal Access of ICT Services in ASEAN (2007), which commits to enhancing access to ICT services so that the rural communities and remote areas in the ASEAN region will have equal access and connectivity at affordable rates.

http://www.aseansec.org/6267.htm

New Partnership for African Development

The New Partnership for African Development (NEPAD) e-Africa Commission is the ICT arm of NEPAD. It works for long-term solutions for the development of the ICT sector in Africa. The NEPAD e-Africa Commission creates partnerships and collaborates with governments, companies and local people to realize positive change in the ICT sector. http://www.eafricacommission.org/

African Union

The African Regional Action Plan on the Knowledge Economy seeks to build a region fully benefiting from ICT services by the year 2015. It commits the African Union and countries of the region to adopt gender-sensitive approaches to enable women to better access ICTs.

http://www.commit4africa.org/declaration/african-regional-action-plan-knowledge-economy-arapke-framework-action

http://www.uneca.org/aisi/docs/ARAPKE%20version%20of%20September%202005.pdf

Organization of American States and the Santo Domingo Declaration

The Santo Domingo Declaration is a commitment from the 34 foreign affairs ministries of the Organization of American States to take all measures needed to develop ICT in their countries. The declaration recognises the importance of the gender perspective and the need to enhance women's equitable access to the benefits of ICTs. It also aims to ensure that ICTs become a central tool for the empowerment of women and promotion of gender equality. Policies, programs, and projects need to address gender inequalities in access to and the use of ICTs.

http://www.realinstitutoelcano.org/materiales/docs/997/DECSANTODOMe04.pdf

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7 Final comments

In essence, ICTs are no longer an optional extra to other services. The use of the Internet, mobile phones and social networking sites are becoming as commonplace as television, newspapers and radio. Consequently, not having access to these technologies is a form of illiteracy itself. Virtually all international agencies and governments recognize this. Millennium Development Goal 8 contains specific targets with respect to ICTs, and the next round of targets developed after 2015 will undoubtedly place even greater emphasis on the centrality of communications technologies and computing to international development.

At the same time, increasing numbers of governments and international organizations are also recognizing the importance of empowering women and girls. Women's empowerment is, and should continue to be, pursued primarily as a rights-based objective. Women and girls make up half of humanity and all political and economic strategies must give explicit recognition to this fact. There is also increasing recognition of the overall importance of women's empowerment to social and economic development.

Programmes aiming to use ICTs as tools to empower women are therefore directly related to two of the foremost development challenges of the early twenty-first century: expanding ICT access and empowering women. Both objectives also relate to a host of other developmental goals. Empirical research from all corners of the globe proves that empowering women helps reduce poverty, child morbidity and mortality, and increases children's enrolment in schools. As the United Nations Secretary General, Ban Ki Moon, puts it: "Investing in women is not just the right thing to do. It is the smart thing to do."[48]

As shown by the selection of case studies in this module, establishing community ICT centers can be an important way to introduce and expand women's access to ICTs. However, simply establishing the center and assuming that women will come and use it is not enough. As with any development project, the beneficiaries themselves (in this case local women) must be involved from the inception phase onwards. Moreover, the center must be made relevant to the day-to-day needs of the women it is serving. The center must be maintained from a technological point of view, and it must be compliant with the socio-cultural norms of the society in which it is operating.

Amartya Sen[49] argues for the centrality of women in the knowledge society. “Knowledge is not only for economic growth, but its foremost use should be to empower and develop all sectors of society to understand and use knowledge to increase the quality of people’s lives and to promote social development. A socially inclusive knowledge society empowers all members of society to create, receive, share and use information and knowledge for their economic, social, cultural and political development.” It is, therefore, an imperative from the perspective of women and ICTs that emphasis and focus be placed on gender relations in communications and learning. Once we do that, we may see that the information society is not an end in itself but rather the innovation of ordinary people.

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[48]Secretary General speaking on women’s day, March 8th 2008, at UN Headquarters, New York. http://www.un.org/News/Press/docs/2008/obv684.doc.htm

[49]Sen, Amartya. (1999). Development as Freedom. New York: Anchor Books.

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Credits

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Annex I: Technology Facts and Figures

Technology Facts & Figures

TABLE I: Individuals who used the Internet (from any location) in the last 12 months, by gender (%), 2009 or latest year available.

Country name	Latest	Gender	?	?	?
?	year	Male	?	Female	?
Australia	2009	75.1	?	73.4	?
Austria	2009	78.8	?	68.3	?
Azerbaijan	2009	32	?	23	?
Belgium	2009	79.5	?	72.9	?
Brazil	2009	40.6	?	37.9	?
Bulgaria	2009	47	?	43.1	?
Canada	2007	74.1	?	72.3	?
Chile	2006	36.5	?	32.6	?
Costa Rica	2008	33.8	?	30.8	?
Croatia	2009	55.4	?	46.1	?
Cyprus	2009	53.3	?	46.6	?
Czech Republic	2009	66.4	?	62.5	?
Denmark	2009	87.9	?	85.8	?
Ecuador	2008	26.6	?	24.9	?
El Salvador	2008	11	?	9.3	?
Estonia	2009	72	?	72.7	?
Finland	2009	82.2	?	82.7	?
France	2009	70.8	?	72.3	?
Germany	2009	83.2	?	75.3	?
Greece	2009	49.2	?	40	?
Honduras	2008	9.4	?	9.8	?

Hong Kong, China	2009	72.9	?	66.1	?
Hungary	2009	63.3	?	60.5	?
Iceland	2009	94.7	?	92.2	?
Ireland	2009	65.9	?	68.8	?
Israel	2008	62.7	?	56.2	?
Italy	2009	54.1	?	43.6	?
Japan	2009	81.2	?	74.8	?
Korea (Rep.)	2009	85.9	?	77.1	?
Latvia	2009	67.8	?	66	?
Lebanon	2005	12.5	?	7.9	?
Lithuania	2009	60.8	?	58.8	?
Luxembourg	2009	92.1	?	82.5	?
Macao, China	2008	51.5	?	47.1	?
Malta	2009	61	?	56.7	?
Mauritius	2008	23.5	?	20.2	?
Mexico	2009	29.8	?	27	?
Netherlands	2009	92.4	?	86.9	?
New Zealand	2009	79.8	?	79.6	?
Nicaragua	2006	9.6	?	10	?
Norway	2009	94.8	?	89.3	?
Oman	2007	18.8	?	13.7	?
Palestinian Authority	2009	38.1	?	26.2	?
Paraguay	2008	15	?	13.5	?
Peru	2008	34.5	?	26.8	?
Poland	2009	61.1	?	57.1	?
Portugal	2009	52.8	?	43.9	?
Qatar	2009	80	?	78.3	?
Romania	2009	38.4	?	34.8	?
Serbia	2009	47.3	?	36.3	?
Slovak Republic	2009	77.1	?	73.3	?
Slovenia	2009	65.7	?	62.9	?

Spain	2009	65.7	?	59.5	?
Sweden	2009	91.2	?	90.4	?
Switzerland	2008	82.9	?	71.8	?
TFYR Macedonia	2009	54	?	49.5	?
Thailand	2009	19.8	?	20.4	?
Turkey	2009	46.8	?	26.3	?
Ukraine	2008	12.2	?	9.1	?
United Kingdom	2009	84.5	?	81.2	?
United States	2009	67.9	?	68.8	?
Notes: Age scope varies among countries. (1) In the last 3 months. (3) Sample results. (5) In the last month. (7) In the last 6 months.					

Souce: International Telecommunication Union World Telecommunication/ICT Indicators database[50]

TABLE II: Ownership and usage of mobile phones by age, women in low and middle income countries[51]

Age????????	Own??????	Borrow???	yet to make use
14-20	61	29	10
21-27	65	27	8
28-36	65	20	15
37-49	60	20	20
50-74	50	25	25

In a 2010 Cherie Blair Foundation survey, girls and young women between 14 and 27 had the highest rates of mobile phone ownership among women.

[50]International Telecommunication Union. (2010). Measuring the Information Society. (http://www.itu.int/ITU-D/ict/publications/idi/2010/index.html) http://www.itu.int/ITU-D/ict/publications/idi/2010/Material/MIS_2010_without%20annex%204-e.pdf

[51]Women & Mobile: A Global Opportunity A study on the mobile phone gender gap in low and middle-income countries, Cherie Blair Foundation 2010

Annex II: Case Studies: Community ICT centers and ICT applications that cater to women's needs

List of Case Studies

Reference Documents

- African Women and ICTs: investigating technology, gender and empowerment
- ASPBAE Research on Information and Communication Technology
- Code of Best Practices for Women and ICT
- Connecting the first mile: a framework for best practice in ICT projects for knowledge sharing in development
- Connecting the first mile: investigating best practice for ICTs and information sharing for development
- Gender and ICT - UNDP-APDIP and Elsevier
- Gender Enpowerment through ICTs, iREACH, Cambodia
- Gender Evaluation Methodology for Internet and ICTs
- Gender-oriented Entrepreneurship Promotion: A Manual for Practitioners
- Globalization, ICT and the Economic Empowerment of Women in Nigeria
- Guidebook on Developing Community e-Centres in Rural Areas
- How can ICTs enhance the capacity of Women in Leadership in Open Schools?
- ICT for Development Success Stories: Youth, Poverty and Gender
- ICTs provide a platform for innovative education in India and South Asia
- Information and communication technologies and their impact on and use as an instrument for the advancement and empowerment of women
- ITU/InfoDev ICT Regulation Toolkit
- Journal of Community Informatics
- Multinational Development of Women in Technology, Inc. (MDWIT)
- Revolution in ICT infrastructure: Hope for the Ghanaian woman
- Socio- Economic Empowerment of Women and IT: The Practices & Lessons from the Provincial Government'
- Socio- Economic Impacts of Rural Telecenters in Iran', Women`s Economic Empowerment and the Role of ICT
- Sustainable Telecenters: Public policy for the Private Sector
- Telecenters and Community Resource and Information Centers in Pakistan
- Telecottage handbook: How to establish and run a successful telecenter
- Training telecenter managers, staff and users

- Women's Entrepreneurship Development - ILO
- World Bank ICTs for Women's Socio-economic empowerment

Case Studies

- Case Study I. Advancing Learning and Employability for a Better Future (ALEF) in Morocco
- Case Study II. CISCO Systems Networking Academy
- Case Study III. Datamation Gender Resource Center, India
- Case Study IV. Guanabanet – The Taiguey Foundation in the Dominican Republic
- Case Study IX. The Women's Technology Empowerment Center (W.TEC) – Nigeria
- Case Study V. IKRAA - Computer Based Software for Illiteracy Eradication in Lebanon and Egypt
- Case Study VI. Rural Knowledge Centers in India
- Case Study VII. School-Net Uganda - Inspiring Science for Girls Using ICTs in Uganda
- Case Study VIII. Thai Telecenter Movement
- Case Study X. Modemmujer - ICT literacy and women's citizen participation in Mexico