Information and Communication Technologies in Bangladesh
Trends, Opportunities and Options for Women Workers

Nidhi Tandon
Networked Intelligence for Development

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Women workers at electronic plant in Export Processing Zone, port city of Chittagong, Bangladesh
# Glossary of Terminology

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Call Centre</td>
<td>A physical location equipped to handle a large volume of telephone calls (especially for taking orders or serving customers). Call centres are generally set up as large rooms, with workstations that include a computer and telephone headset hooked into a large telecom switch and one or more supervisor stations. It may stand by itself or be linked with other centres. It may also be linked to a corporate computer network including main frames, microcomputers. Increasingly, the voice and data pathways into the centre are linked through a set of new technologies called computer telephone integration. Most major businesses use call centres to interact with their customers. Examples include utility companies, mail order catalogue firms, and customer support for computer hardware and software. Some businesses even service internal functions though call centres. Examples include help desks and sales support.</td>
</tr>
<tr>
<td>Convergence</td>
<td>A term applied to the way in which computing, telecommunications and, more recently, television are moving towards a common technological basis characterized by the use of digital systems.</td>
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<tr>
<td>Electronic commerce (e-commerce)</td>
<td>The conduct of selling, buying, logistics, or other organization-management activities via the Web.</td>
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<tr>
<td>Electronic funds transfers (EFT)</td>
<td>The process of exchanging account information electronically over private communications networks; also known as wire transfers.</td>
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<tr>
<td>Electronic data interchange (EDI)</td>
<td>A system for exchanging trading information in standard form by computer systems through the use of electronic messaging systems – for instance, examination entries, personnel records and transactions between trading partners.</td>
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<tr>
<td>Information and Communication Technologies (ICTs)</td>
<td>The application of modern computing technology to process information - in particular the use of electronic and computer software to convert store, protect, process, transmit, and retrieve information from anywhere anytime.</td>
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<tr>
<td>Internet</td>
<td>Also known as the ‘net’, the inter-communicating computer networks which host and provide access to the world wide web, file transfer, e-mail, news and other services.</td>
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<tr>
<td>Internet Service Provider (ISP)</td>
<td>An organization with a direct connection to the internet acting as an intermediary for other users, providing them with an e-mail address and software, access to the world wide web, and often space on web servers for home pages etc.</td>
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<tr>
<td>Value chain</td>
<td>A way of organizing the activities that each strategic business unit undertakes; categorizes activities as primary or supporting</td>
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<tr>
<td>Intermediaries</td>
<td>Companies in an industry value chain that occupy an intermediate step between the manufacturer and the final consumer</td>
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<tr>
<td>Disintermediation</td>
<td>The process of one company removing another company from an industry value chain</td>
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<tr>
<td>Reintermediation</td>
<td>The process of one company entering an industry value chain with a new way of providing value to the other participants in the industry value chain</td>
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<tr>
<td>Web portal</td>
<td>A search engine, directory, free e-mail site, chat room, or other site that includes free features designed to attract a large number of visitors and that seeks to be the doorway to the Internet for its visitors when they begin their Web surfing at that site</td>
</tr>
<tr>
<td>Virtual community</td>
<td>A gathering place for people and businesses that does not have a physical existence but helps companies, their customers, and their suppliers to plan, collaborate, transact business, and otherwise interact in ways that benefit all of them; also known as a Web community or an online community</td>
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Executive Summary

Today’s converging information and communication technologies (ICTs) are revolutionizing the international trading system, greatly facilitating the ‘fragmenting’ of production processes once performed in a single country into multiple stages of production and distribution of goods and services. For many women across the world, ICTs have created new possibilities of employment and helped to overcome traditional barriers to their entry into the formal market economy.

Trade and development in the context of globalization is as much female-led as it is export-led. To some extent, this is because men are already employed in traditional sectors and more women are available to fill new employment openings. In many sectors, a range of gender-linked characteristics ranging from flexibility to dexterity influences employer choices. Yet, despite the increased number of women in the paid workforce and the growing acknowledgement of women’s needs and potentials in agro-industry and small businesses, the fact remains that gender disparities continue to work against women’s remuneration levels, conditions of work and overall economic empowerment.

Developing countries are evaluating ways to capitalize on the promise of ICTs and ensure that the opportunities to gain are spread throughout the society. As social attitudes in Bangladesh are changing, more and more women are taking up new opportunities for economic and social development, with far-reaching implications for household, community and market relations. There are plenty of reasons for optimism about the development of ICTs and the benefits that may accrue to women, and especially to poor women.

This optimism is, however, conditional upon two main factors. The country’s ability to develop new comparative advantages in technologically sophisticated economic activities, and the implementation of 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 tend to exacerbate the existing contours of income and economic divides, with the poorer sections of the population being further marginalized, exploited and impoverished as a result.

Information and data on the ICT industry in Bangladesh is fragmented and difficult to access. As an industry in its formative stages, however, this situation is not entirely uncommon. Forecast figures and user statistics are quickly outdated as the rate of change in the diffusion and use of ICTs is very high.

Poor women are not a homogeneous group, in some instances the urban poor are more isolated, marginalized and vulnerable than the rural – as the latter may still have access to some security through land use and entitlement. Most of the successful examples of poor women appropriating and using ICTs for their own interests arise where women have ‘clustered’ into formal or non-formal networks – whether through employment interest groups such as the Self-Employed Women’s Association (SEWA) in India, or business collectives such as the Tortas bakers in Peru, or under the umbrella of micro-credit such as Grameen. Poor women are most effectively reached, not as individuals, but as groups – and this requires both leadership and participation. By extension, this has important implications for the delivery of services and training to poor women.

1 See glossary of terms for definition
Public policy has a defining role to play in building up a country’s human capital and knowledge endowments through promoting quality education, life long learning, innovation and creativity in its workforce. In order to promote women’s full participation and involvement with ICTs, national and sector policies need to be consolidated to support women’s contribution to economic growth as agents of change.

**Scope and Methodology**

A comprehensive gender assessment of ICT use in Bangladesh needs to examine, among other issues, the nature of decision-making powers between men and women at the household, community and market levels, how ICTs and by extension, the new knowledge economy impacts upon men and women differently, and whether enabling women’s appropriation of ICTs will ultimately have a positive impact on gender equality and poverty reduction in Bangladesh.

This research study is not exhaustive, but contributes to the growing discourse among decision makers in Bangladesh and the region on the shift from natural, resource-based economies to knowledge-based ones. It concentrates on the main issues relating to women’s access to, use and appropriation of ICT tools in the labor market and in self-employment in Bangladesh and determines what strategic options could be pursued to improving their access – under the broad assumption that lacking access to these technologies is detrimental to women’s participation in the knowledge economy in the long run. The study assumes that the specific societal and cultural roles that Bangladeshi women navigate are common knowledge to the reader – and focuses on the poor, marginalized or under-privileged women in Bangladesh because they are less likely to be able to negotiate their strategic interests and needs in this arena.

The core of the study draws from policy papers, case studies, secondary research publications and correspondence with partner organizations in Bangladesh. Case studies are drawn from South Asia as far as possible – so as to be able to pool best practices from the region where women share similar gender-specific roles and status. There is very little ICT data relevant to this study – recommendations are therefore drawn from anecdotal and qualitative analysis. The International Telecommunication Union (ITU) compiles ICT statistics but these are not comprehensively disaggregated by sex. The study uses the garment industry as a point of reference because this is the one sector that mostly employs women, and especially poor women, and because the sector

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2 Gender and ICT statistics: [http://www.itu.int/ITU-D/ict/wict02/doc/pdf/Doc07_E.pdf](http://www.itu.int/ITU-D/ict/wict02/doc/pdf/Doc07_E.pdf) The availability of Information and Communication Technology (ICT) statistics showing a breakdown by gender at the country level is limited, indeed almost non-existent. Examining the availability of overall ICT statistics helps explain this. First, not many government organizations collect national ICT statistics in a consistent and regular manner. Of those government agencies that compile statistics, most do not provide a breakdown by gender. Second, traditional ICT statistics are either obtained from telecommunication organizations (e.g., telephones) or estimated based on shipment data (e.g., personal computers). These organizations have their own operational or analytical reasons for maintaining the data and gender is not one of them. Also in some cases, gender disaggregated statistics are not intuitively logical. Where disaggregation is available, it is usually by sector rather than sex (e.g., business, government, home or education). Therefore, it is safe to say that until primary ICT data collectors see market value in obtaining gender disaggregated statistics; the data will not be widely available.
itself is undergoing change as a result of competition, globalization and technological developments.

The report concludes with a three dimensional framework of recommendations that outline *principles of engagement* with ICTs; *gender specific activities* that address structural constraints faced by women, and the macro level *gender-mainstreaming policies* required to secure and underpin these activities.

**Study outline**

The study is divided into five sections. Section 1 provides a broad framework within which to understand the continuing evolution of ICTs and their impact on women’s employment – particularly in developing countries. It also offers an interpretation of the different dimensions of ICTs, and how gender concerns can be integrated into ICT planning. Section 2 examines in greater detail the socio-economic status of women in Bangladesh, and how this situates their interaction with ICTs in the labour market in different sectors. It also considers how ICTs can be a positive contributing factor to addressing the main constraints that women face. Section 3 outlines the context of the knowledge economy as it exists in Bangladesh today, mapping out the status of various development policies, telecommunications infrastructure, the ICT export market and the status of ICT training across the country. Section 4 identifies the main points of intervention that can promote the social inclusion and economic empowerment of women in Bangladesh through supporting their engagement with ICTs. This includes using ICTs to improve delivery of services directly to women. The final section draws together the summary conclusions for future action. Examples from other countries are highlighted throughout the study to provide “best practices” that may be fungible in other countries.
I ICT trends and contexts: opportunities for women workers

1. The significance of ICTs: a means to an end

The knowledge economy, the digital revolution, the information society — these are some of the new terminologies that speak to the dynamism and speed with which information is processed and transmitted and the impetus this is having globally on productivity and trade. While the “knowledge economy” is often taken to mean high-technology industries or information and communication technologies (ICTs), in fact a deeper interpretation of the concept embraces the means to using new and existing knowledge and know-how to improve productivity, services and overall welfare in an economy.

Knowledge and information are key drivers of growth and are increasingly important aspects of economic growth. Export-oriented agricultural commodities and services are important sectors for many developing countries. Information about prices, markets, policies and regulations that may affect the sector, as well as information on buyers and producers is important for both sectors. Similarly, knowledge—of how to use new tools and products for increasing productivity, how to modify and adapt technology, and how to deploy technology effectively are vital aspects of dynamic economies. ICTs can be used to level the playing field by providing small producers and entrepreneurs with access to new information and knowledge that otherwise may remain in the hands of elite individuals and institutions.

ICTs have the potential for promoting equitable and sustainable growth and development; the tools, the content and how these are used can enable women to become equal stakeholders in the knowledge economy. Yet, without careful planning and the development of appropriate policy measures, ICTs may exacerbate differences between the rich and the poor, and men and women. ICTs programs and policies may be oriented toward generating new employment opportunities for highly skilled professionals as well as augmenting existing production facilities (manufacturing, export-commodities) to increase productivity or sales. In order to contribute to pro-poor growth strategies, ICT programs and policies should also be developed to increase the poor people’s access to information, transmit these technologies to resource-poor areas so that people learn how to use these tools, and be harnessed to improve the quality and delivery of education and health care in resource-poor areas.

In the absence of a deliberate policy, the diffusion and use of ICTs and their intended benefits tend to follow the existing contours of income and economic divides, with the poor being further marginalized or excluded. Due to socio-cultural norms, there are persistent gender inequalities in men and women’s access to ICTs. For example, women’s mobility may limit their access to Internet centers, or ICT training courses may not advertise in places that women frequent. However, there are many examples (see Annex I) that exemplify how, when given the tools and support to use ICTs, women have developed new domestic and export businesses, started new associations to represent their interests, and used e-governance to communicate more effectively and efficiently with their local government officials.

The goal of enabling marginalized groups to appropriate ICTs is in fact as much about overcoming the “information divides” as it is about pushing forward the processes of social
inclusion. In other words, closing the information and communications divide could be seen as a means to closing the economic and social divide between men and women.

2. The evolution of ICTs and its cross-cutting character

While ICT is a common acronym for Information and Communication Technologies, in fact the diverse set of technological tools covered by the term is still open to interpretation. Technologies are usually defined in terms of their properties or in terms of their applicability to specific contexts and as these continue to change with time, the acronym includes a wider range of technologies and applications. With technological hardware, accessibility and regulatory reforms, software applications and falling prices continuing to evolve, so do the range of opportunities for integrating ICTs into all spheres of activity at different levels and in different contexts. Low-cost wireless solutions, ranging from multi-access radio to cellular to fixed-wireless and satellite, are now available in rural areas at affordable prices. In other words, the applications of ICTs are still open to experimentation and discovery. For the purposes of this study, reference to ICTs will concentrate on the "new information and communication technologies" which include the developing technologies of telecommunications, computing and microelectronics.

Convergence - the pulling down of the technical and commercial barriers that hold telecoms and computing apart - will continue to open up all kinds of additional opportunities for employment and small business development. The benefits of economies of scale in processing all types of communications through the same "pipe" are especially achievable in developing countries where the bulk of population has still to be wired for television and telephones. At the same time, technology trends mean that businesses can increasingly rely on wireless telephony as their primary connectivity means.

The three defining characteristics of these ICTs are their convergence, their speed and increasingly their comparatively low operating costs, which have created a wide spectrum of possibilities for information collection, manipulation, transmission, storage and presentation. This in turn opens up whole new modes for sharing information and for conducting business, as well as creating an entirely new sector that services ICT development and deployment.

The ICT sector is extremely broad since activities producing or distributing ICT products are de facto in every sector of the economy. ICT applications cut across all sectors – be they education, health services, transport or manufacturing. What this means is that all development interventions must work with women stakeholders to ensure that women’s appropriation of these technologies

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3 This is not to say that traditional ICT channels are not as important. The role of radio in women’s lives cannot be understated and should be included in any work on enabling women to access information, resources and communication channels. Audience research in Bangladesh found that only 23% of males and 21% of females own working radios however, 71% of males and 44% of females surveyed have regular access to radio broadcasts (WrenMedia 1999).

4 The OECD’s current definition of the ICT Sector is determined by principles underlying the definition as follows: For manufacturing industries, the products of a candidate industry: • Must be intended to fulfill the function of information processing and communication including transmission and display. • Must use electronic processing to detect, measure and/or record physical phenomena or control a physical process. For services industries, the products of a candidate industry: • Must be intended to enable the function of information processing and communication by electronic means.
in all sectors are not inhibited by cultural dictates on seclusion, restrictions on mobility, or the unequal division of labor in all sectors.

3. Demarcation of ICT use and their employment implications

For ease of understanding differences between levels of ICT use, and the competencies and skills required for each level, the following demarcation might be useful.\(^5\)

- **Digital literacy**: familiarity with basic computer use, including the ability of the user to establish an email account, communicate via email, navigate the Web, understand the basic etiquette of using the Web, download information, use of CD ROMs and other interactive materials, ability to use electronic forms of communication for distance education. These are basic learning and communication ICT skills needed for workplace tasks.

- **Applied ICT skills**: ability to use and apply generic ICT tools in workplace settings and to upgrade these skills in line with the requirements of business and industry. These skills include all aspects of information working such as web design, call center consultant, analyst programmer, information technology manager, software project manager, desktop publishers, librarians, computerized sewing, multimedia products and services.

- **Professional ICT skills**: encompass the specific skills required to design and develop, implement and repair ICT tools (includes hardware and software manufacturing, electronic manufacturing, network operating systems, cabling, router programming.)

Sex disaggregated statistics on the employment of women at these different levels of ICT use are not readily available.

4. Cautionary aspects of ICTs impact on women’s work

ICTs fundamentally change modes of organization, management, production and distribution, and by extension change modes of employment. In sum, the proliferation of ICTs has three main impacts on women’s work in the context of increased competition:

- a shift from automation to computerization in the manufacturing sector
- disintermediary and intermediary\(^6\) trends in the service sector

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\(^5\) That said, the definition of jobs and functions continues to evolve – with the emergence of new Internet and multi-media related occupations, traditional ICT professions are constantly changing. In ICT services, and increasingly in E-publishing, market growth is in value-added services oriented toward the specific requirements of markets. Hybrid profiles that connect ICT related skills with other competencies continue to grow around traditional computer-related work.
♦ computerization of back office functions.

At first glance, ICTs have an overall positive impact on women’s work, livelihoods and overall opportunities, but this is not easily quantifiable. Unless gender considerations are incorporated into employment policies, ICT diffusion strategies, or national policies, strategies may inadvertently result in negative unintended consequences that compound gender and income disparities.

**Maximum flexibility, minimum protection:** ICTs and the digitization of information enable businesses and companies to locate and manage production away from the main site. This has implications both for individual employment of women and individual investment in ICT tools as well as for the growth of clusters of small enterprises and their ICT investments. In theory, ICTs should offer women the possibilities of both flexible locations and flexible hours through telecommuting or self-employment. Conversely, women’s “flexibility” may also result in casual, part time, piece-rate, and seasonal employment.

**Supply chain competition:** networks and communications infrastructures have also intensified competition in an unpredictable manner through facilitating decentralization of many aspects of supply to manufacturing and service industries. The miniaturization and modularization of products, intermediation and disinter-mediation of processes, combined with cheap mobile capital has an enormous impact on the value-add specialization in the supply chain. “The presence of new supply alternatives with radically different economics now take the traditional ‘supplier squeeze’ to a new level”. Where one is in the supply chain is directly linked to one’s skill set and ability to negotiate - that usually leaves women at the lower end of the value-chain with a low chance of upward mobility.

**Compounding gender differences in employment:** the ILO report on *Work in the New Economy* makes the following observations about the ICT sector:

“Patterns of gender segregation are being reproduced in the information economy where men hold the majority of high-skilled, high value-added jobs, whereas women are concentrated in the low skilled, lower value-added jobs. As traditional manufacturing industries that previously employed women gradually disappear, the women finding jobs in the new, often ICT-related industries are rarely the same ones as those who lost their jobs in the traditional sectors. New inequalities are therefore emerging between women with ICT-related jobs skills versus those without”.  

While teleworking has certainly created new employment opportunities for women, the downside is that women can be excluded from other, better career possibilities. Instead of finding a balance, family responsibilities are combined with paid work, so that women end up acquiring new tasks on top of the old. Another common ICT employer of women is in the call-service sector.

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6 Disintermediation is the process of cutting out the middle agent. When companies bypass traditional retail channels and sell directly to the customer, traditional intermediaries (such as retail stores and mail-order houses) are no longer employed.


8 ILO report on Work in the New Economy 2001
Effective call service often requires ‘client-communication’ or emotional labor, and the latter tends to be considered an ‘inherent’ skill to women and is usually financially undervalued.

Recent studies\(^9\) of women working in call centers\(^10\) in Europe found that, contrary to notions about skill development and flexible career advancement, women’s data processing work is often routinized, deskilled, and devalued. Women in these centers rarely advance beyond “team leader” roles to managerial positions. Research in India also confirms that employment of women in the software and IT-enabled services sector closely mirrors the prevailing tendency of the market to reinforce existing socio-economic inequities.

**ICTs alone do not flatten trade barriers:** current arguments for the adoption of ICTs by small enterprises point to their potential to become more competitive using the Internet to access information about cheaper finance or markets for instance, by improving customer service and by reorganizing procurement processes. While the Internet may make it easier and cheaper for small enterprises to access new, better quality suppliers as well as to market their own businesses\(^11\) a constant obstacle to the participation of small enterprises in international trade continues to be the lack of adequate trade-supporting services, this includes finance terms for small businesses, insurance, transport and the availability of related business information Small enterprises for instance, have less access to international trade mission initiatives and their specific information needs are often not addressed.

According to the World Bank’s *Global Economic Prospects 2002*, the average poor person selling into global markets confronts barriers that are roughly twice as high as those facing the typical worker in developed countries. Since poor people work primarily in agriculture and labour intensive manufacturing, and since these sectors confront the greatest trade barriers, it stands to reason that with the larger proportion of the poor made up of women, small-scale women entrepreneurs face greater barriers in local and regional markets.

The typical woman-led enterprises are pragmatic practices that straddle both the informal and formal sectors. Women pick and choose those elements of the formal sector that will enable the business entity to maintain the optics of accountability and transparency, critical for business auditing and export-trading purposes. But they also maintain a “shadow” business that keeps some of the income “safe” from declaration.\(^12\) By implication, the application of ICTs to small enterprises might push these business entities from the informal to the formal economies – and by extension into the realms of competition that threaten the businesses’ viability.

The combined impact of increased competition, a global under-valuing of women’s economic work, and women’s tendency to be employed in the lower rungs of ICT work, make for a less than optimistic scenario of gainful employment, sustainable livelihood and social empowerment of women.

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\(^9\) Alteri, Giovanna, Imogen Bertin and Ursula Huws. 2002. *Call Centre Employment in Europe: Some Interim Results From the TOSCA Project.*

\(^10\) See glossary of terms

\(^11\) UNCTAD 2001 *E-commerce and development report*

\(^12\) Networked Intelligence for Development, training experiences 1999 to 2004.
5. Recent trends in the micro, small and medium enterprise sector

Trade and development in the context of globalization is as much female-led as it is export-led. Increasingly, policymakers and business leaders alike are acknowledging the profit value of women’s involvement in small business; they 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 SMEs as part of their value chain. They arise from a clear understanding that engaging with small businesses usually means reduced costs, improved and competitive supply quality, increased market access, and less direct responsibility for employee relations or terms of employment. In other words, in today’s competitive market, it is to the distinct advantage of large corporations to outsource production a range of entrepreneurs who can deliver quality at low cost.

While sex-differentiated data is difficult to come by and almost non-existent in the micro-enterprise sector - a 1994 survey of SMEs in Asian Pacific Economic Community (APEC) economics found that small businesses account for 90% of all enterprises. Between 1995 and 1997, women business operators increased by 9% while male business operators increased by 2.6%. These businesses typically specialized in small farming, retail, or craftwork sector. More recent figures in Asia suggest that women head 35% of small and medium sized enterprises in the region.

The communication and commercial aspects of ICTs lend themselves to a growing range of competitive entrees in the small business sector through, among others, sub-contracting, joint ventures and partnerships, franchising, licensing, network-marketing and supplying other companies and countries with on a second- or third-tier basis. The computing aspects push the frontiers of an expanding universe of applications from electronic mail, Electronic Data Interchange (EDI) applications in procurement and logistics management, to demand-driven manufacturing and retailing, and groupware. E-commerce is limited to those enterprises that have the technical and financial infrastructure to support encryption, on-line transaction processing, just-in-time production systems and order handling and management systems. Enterprises in developing countries that have less reliable access to this infrastructure may be excluded from the potential business benefits offered by these new tools.

On the other hand, a more abstract understanding of what ICT for business entails, i.e. the increasing virtualization of the three components of a market (agents, products and processes) lends itself better to envisioning the future of ICT use by small and medium enterprises (SMEs) in developing countries.

Distinct from SMEs that introduce ICT platforms to their routine activities, are those whose core activity is to service the ICT sector. ICT core small businesses comprise a rapidly changing market, initiatives are mushrooming globally, some fizzling out as quickly as they sprout – reflecting the climate of experimentation and reinvention. A lot of the birthing and dying of new

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13 Women in a Global Economy: challenge and opportunity in the current Asian Economic Crises. Bangkok: joint effort of the UNFEM and the CIDA South East Asia Gender Equity program

14 UNCTAD 2002 E-commerce and development report: Chapter 3

15 Refer to glossary of terms
business entities is a direct result of the new re-intermediary and disintermediary processes in the production chain that characterizes the knowledge economy. With the increase in subcontracting and local sourcing opportunities, ICTs have enabled the growth of ancillary small-scale units, and home-based manufacturing production, which is effectively at the bottom of a complex production chain. It is no coincidence that – particularly in the ASEAN countries – women-led micro and small enterprises are growing rapidly.

At the same time, ICTs can also provide a particularly effective learning and information tool for women entrepreneurs, such as on-line training manuals, search engine potentials, virtual international telephone directory, sources of business management models and software. Business transactions consisting of many successive processes (information gathering, comparison, negotiation) can be carried out more efficiently over the Internet, even if the final step of the (financial) transaction is taken offline.\(^1^6\)

**Case example: Shoe Industry E-commerce – Bangladesh**


In Bangladesh, shoes produced find their way mainly to the local market; only a few firms produce shoes for export. The industry provides direct employment to about 25,000 people. Nearly 50% of them are engaged in mechanized and semi-mechanized production units. Women workers are the majority (55%-60%) in the mechanized sector. In 1998, the Jobs Opportunities and Business Support (JOBS) program – sponsored by USAID and implemented by the University of Maryland’s IRIS Center- began a three-year plan to increase exports of shoes to Japan from Bangladesh. Communications between Bangladeshi suppliers and Japanese buyers was conducted via email – with buyers sending pictures of the products they wanted. Some Bangladeshi firms used electronic commerce to source raw materials from new suppliers. After the first year, shoe exports had increased from 160,000 to 200,000 pairs valued at $4.4million, up from $2.6million. By 2001, exports were valued at $20.5million and the initial three firms exporting shoes to Japan increased to ten. About 200 new jobs have been created, many of them filled by very poor women from villages near the factories. Because many of the exported shoes require handiwork – village women are subcontracted to do delicate hand stitching in their homes.

Gender specific comment: although women are able to take advantage of the opportunity of home-working and micro enterprises in the shoe industry, they do not themselves have any direct participation with ICTs, they are the indirect beneficiaries of a business that uses ICTs to promote competitiveness and efficiency in the market. Women do not receive any training in the use of ICTs, they are merely supplying a product within the supply chain.

Studies show that women tend to have less time to devote to their businesses than men, and must balance paid work, family, household and childcare. Women also tend to be more reticent to take the time to seek counseling and advice often because these services do not target women-owned SMEs, are provided in “male” oriented settings, and are not adapted to the specific constraints faced by women. Simply creating the space to foster dialogue between women entrepreneurs and representatives from financial intermediary services, Internet service providers, local government and IT policy makers is of critical and timely importance.\(^1^7\)

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\(^{1^6}\) UNCTAD, 2001, E-commerce and development report

\(^{1^7}\) For example, NID’s training event in Tanzania in 2002 brought together 30 women entrepreneurs with senior staff of the National Micro-credit Bank (NMB) who recently launched a 2.5% micro-loan
6. **Integrating gender concerns into ICT planning**

In an age where many of the poor in developing countries are interacting with ICTs for the very first time, ICTs are very often perceived almost entirely as mechanisms for connectivity and communication. Its applications for computing, information systems management and commerce are disregarded altogether or given secondary importance. In fact, all three dimensions of ICTs are equally important in determining the overall impact of ICTs.

The first dimension, the connectivity factor – changes the mode and immediacy of communications, and in the process, created different organizational relationships between different stakeholders. The continuing momentum in the development of mobile connectivity has important implications for women in terms of their own mobility, security, privacy and the time it takes to access information.

Computing, data and information management aspect of ICTs comprise a second dimension of ICTs where applications are designed, adapted and simplified for use in local contexts. The software required for cataloguing materials in a community library for instance, need not be an off-the-shelf mainstream software package, but can be a user-specific software designed by a local company at half cost.

The third dimension of ICTs revolves around their potential to provide a platform for commercial engagement, with its related income implications. Table I introduces a sample of gender-specific initiatives that address women’s interests through these three dimensions, many of these examples will be amplified by real cases through the remainder of the study.
Table I: Integrating Gender Concerns into ICT Planning: priority issues & solutions

<table>
<thead>
<tr>
<th>I. Connectivity &amp; Communication</th>
<th>II. Computing &amp; Applications</th>
<th>III. Commerce &amp; Markets</th>
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<tbody>
<tr>
<td>Changes economic and social organization e.g.</td>
<td>Changes business &amp; information management practices e.g.</td>
<td>Changes modes of production &amp; distribution e.g.</td>
</tr>
<tr>
<td>Access points for connectivity</td>
<td>Smart cards</td>
<td>Virtual malls /commercial sites</td>
</tr>
<tr>
<td>Networking values</td>
<td>Software support services</td>
<td>Cooperative producers /retailers</td>
</tr>
<tr>
<td>Channels of advocacy</td>
<td>Financial and accounting packages</td>
<td>New delivery mechanisms</td>
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<tr>
<td>Interest representation to policy makers</td>
<td>Inventory stock</td>
<td>New economic activities &amp; services</td>
</tr>
<tr>
<td>Training modes &amp; methods</td>
<td>Revenue forecasting</td>
<td></td>
</tr>
<tr>
<td>Mobile telephony</td>
<td>Simplifying applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Micro credit applications</td>
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</table>

- Access points (public & private) need to be established where women may naturally congregate – e.g. community health clinics, places of worship, rural libraries, local markets.
- As ICTs become more mobile & portable, their location within local knowledge systems will need to be decentralized to ensure widespread access amongst women in the community.
- Women’s natural inclination towards peer group networks needs to be built upon to advance virtual networks or cooperative networks around ICT use and appropriation.
- Creation & exchange of local relevant content by & for women should be supported.
- Women-specific support groups & networks can promote more effective interest representation to policy makers.
- Training methods need to be women-targeted, single-sex applied activities made available to women at times convenient to their schedules and responsibilities.
- Different modes of distance and interactive learning can supplement formal learning, which should be made available to girls and women.

- As women become more familiar users of ICTs for communications, facilitate dialogue at training workshops on computing and other application needs.
- Women’s knowledge needs to be valued, and made accessible to both local and wider communities through ICT applications and databases.
- With more connectivity access simple computing applications, such as micro-credit programs, are better tapped into by women.
- ICT applications can promote accountability, transparency and privacy – which could give women more control over information and resources – e.g. in personal banking.
- Women want to learn about financial, inventory and accounting packages and other small business applications. Training and business support services need to develop their service outreach to clients.
- Women will need support to access and compile information on employment opportunities, business information and other comparative data.

- A number of initiatives show that women are open to using e-commerce channels to sell products and services.
- Women can be clustered together as cooperative producers /retailers to produce standardized and high-quantity products for sale through the web to domestic and international markets.
- New income opportunities present themselves to women in the ICT service sectors, including local sourcing.
- Entirely new kinds of economic activities & services to support the ICT sector continue to develop and employ women.
II ICT trends in Bangladesh: emerging issues for women

Bangladesh has yet to peg its development strategy to the range of technologies and processes spawned by ICTs. Recognizing the challenges and opportunities in the context of globalization and the knowledge economy, Bangladesh is re-positioning its export market, foreign direct investment and overall global competitiveness. Low-wage labor is no longer sufficient by itself to create and retain a competitive advantage in the world market. Bangladesh is seeking to diversify its industrial base towards higher value-added exports and a higher-skilled and entrepreneurial labor force.

7. An optimal time for change

In many ways, Bangladesh is at a critical juncture for systemic change and a push for the further social inclusion of women in all spheres of activity. Given that the ICT sector in Bangladesh is very much in its infancy, immediate actions can be taken to promote a strategic rollout of ICTs that engages with women and men equally. At a time when Bangladesh’s development plans emphasize technical education in the country and ICTs are being incorporated into science and technical courses, the time is right to promote and support the inclusion of women and girls into the field.

Landlessness and poverty are just two of the economic pressures that are driving social change in Bangladesh – particularly with regards to the shifting relations between men and women in pursuit of their livelihoods. These shifting relations have fundamental implications for the rights and responsibilities of men and women in Bengali society, and by extension, for the resources made available to men and women. ICTs could have an important role, both in channeling the distribution of resources, and in providing new ways for earning a living. There are key challenges, however, that constrain women’s access to both the tools and the content of ICTs. One of the most critical challenges is that of the socio-economic status of women, and especially poor women, in Bangladesh.

8. The status of women in Bangladesh - scale of the issue

Bengali women conform to highly regulated roles within public and private spheres of conduct. 40% of girls are under 14 years old at marriage – and this is most common in the rural areas. In a population of 144 million (July 2005 est.), a third of the population is under 15, and 63% are between the ages of 15 – 64 with women making up the lesser proportion in relation to men in both age groups. 83% of the population is Muslim, and 16% Hindu. See Annex II for further statistics on gender profile of Bangladesh.

**Sharia:** The important milestones in a woman’s life - marriage, divorce, inheritance, child custody etc – are governed by Islamic “Sharia”. Impoverished and underprivileged Bangladeshi women face enormous difficulties, which are compounded by cultural and societal norms and the ways in which women are perceived by both men and women. Traditional institutional arrangements around arranged marriages tied to heavy dowries and the male’s ability to divorce and send the wife back to her family are dominant. Early marriages and early first pregnancies
jeopardize the health of both mother and child, and women have little voice in matters of family planning. Adequate preventive health information and care facilities are scarce, especially in remote areas.

**Poverty, trafficking and child labor:** The human poverty index shows social disparity growing rapidly with girls and women the biggest group of victims. The number of women and children sold to sexual slavery and prostitution has reached unprecedented numbers. On average, 4500 women and children are smuggled into Pakistan every year – non-government appraisals put the number of prostitutes in the country at over 100,000 and almost half are children. An estimated 11 million (7.63% of total population) are involved in child labor activities, over 1 million domestic workers – predominantly girls – in Dhaka alone. These figures do not reflect the hidden work that is done by female children – 80% of whom live in rural areas. In the slum areas around Dhaka, a survey of employment patterns among married women showed that domestic service was the main occupation (for about 31% of all working wives) followed by garment factory work (at 22%) and brick breaking (at 14%). Less than a fifth of working women were self-employed or working for the family business.

**Employment discrimination:** Women workers in Bangladesh can be characterized as young, and mainly single. They provide a flexible supply of labor and work in low-paying jobs for long hours. Women’s unpaid labor is high as well. In rural areas, 83 percent of the employed women aged 15 years and over are engaged as unpaid helpers. Women's increased labor force participation has shifted over time to manufacturing and agriculture from services and household activities. However, female agricultural activities are mostly concentrated in post harvesting and livestock rearing, which have relatively lower returns compared to other activities such as fishing.

Women face employment discrimination in Bangladesh. Compared to men, women have less access to formal employment. Even within South Asia, Bangladesh has one of the lowest female economic activity rates (11%) in the formal economy. In all sectors, employed women earn less than similarly employed men and are more severely affected by unemployment. More than 80% of all female workers are unpaid helpers, and more than 90% of all economically active women are agricultural workers. Only 4.5% of working women, compared to 13.1% of men, are employed in the formal sector. In addition, nearly 1 in 5 women with a university degree is unemployed (compared with only 1 in 50 men) indicating that educated women are unable to secure equal access to paying jobs. Socio-cultural norms support women staying at home, rather than pursuing a career. Surveys of the garment sectors indicate that most workers are unaware of their legal rights, 42% of the women workers are paid less than the minimum wage and do not claim labor rights such as maternity leave.

The gender disparities within the labor market in Bangladesh seriously limit the extent of women’s economic opportunities. Predominantly female occupations include agriculture and

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18 [www.focalpointngo.org/ngonews/bangldsh.htm](http://www.focalpointngo.org/ngonews/bangldsh.htm)

19 Asian Development Bank: The Situation of Women in Bangladesh 2001


garment factory work, but they are excluded from a whole host of occupations including the transport sectors, most skilled craftwork and the majority of service industry or retail sector jobs. Some areas from which women are excluded – such as fish selling – are clearly high income ones. Segregation is evident within those sectors where both men and women work. Within the export-oriented garment industry, for instance, a female worker earns only 58% of a male worker’s earnings. Surveys reveal gender differences in every job category in the industry. One study underscores this fact:

“Women’s employment is also concentrated in sectors with low returns on labor and is often temporary due to low skill levels and discriminatory attitudes regarding “suitable” work for women. These trends mean that in 1999-2000 according to the labor force survey (LFS) of the Bangladesh Bureau of Statistics, 41.7% of women drew salaries of less than Tk 750 per month compared to 7.3% of men, and 71.5% of women were earning less than Tk 1,500 per month compared to only 26.4% of men. Women are also concentrated in low or unpaid agricultural work in rural areas with almost 75% reporting underemployment (working less than 35 hours per week)”

Recent developments: In recent years changes at the macro level and interventions by the state and NGOs (micro-credit, health, provision for women’s political empowerment) have positively affected women’s bargaining power and their ability to challenge certain social norms, both within and beyond the household. The lives of rural women in particular are changing – this is a reflection of their changing needs and demands:

♦ They are increasingly visible in the cash economy, which was largely male dominated until quite recently;
♦ Their increased mobility means more presence in traditionally male public domains;
♦ Increased mobility also means that more women are migrating to urban areas;
♦ Micro-credit programs for women have initiated new economic opportunities and may have affected traditional social relations.

There is also increasing evidence that opening employment opportunities to women has an impact on their social status through:

♦ Fostering new social networks on the factory floor (particularly in the garment industry);
♦ Giving women a greater voice in household decision making;
♦ Increasing women’s status within the family and the respect due them;
♦ Enhancing women’s self-esteem and self-reliance.

These positive influences are taking place even without pro-active support for women workers.


<table>
<thead>
<tr>
<th>Gender-specific factor</th>
<th>Implications for women</th>
<th>ICT solutions</th>
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<tr>
<td>Higher levels of illiteracy amongst women</td>
<td>The literacy rate is about 35% among the rural female population and about 57% among the urban female population. Illiterate women are “information poor” – they need to make informed choices, to be able to unite around their common objectives. Basic literacy is integral to future reskilling of women in the ICT labour force, as well as enabling women to push for their legal rights.</td>
<td>Mobile telephony may jump-start women’s access to information without literacy – but illiteracy levels are nonetheless an obstacle to women’s participation in the knowledge economy. There are simple and successful applications developed and applied in the field to include illiterate users in accessing information important to their socio-economic welfare – (examples in sections 18 and 19)</td>
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<tr>
<td>Women’s relatively lower access to and control over resources</td>
<td>There are distinct differences between men and women in their access to resources, information and support structures. Women usually face higher barriers to the kinds of applied training that can equip them with computer literacy or engagement in ICT-related employment than men. As well, compared to men, women have less time in which to balance out the tension between earning an income and household and childcare.</td>
<td>There are numerous examples from around the world where community, rural and women’s organizations have taken the initiative to bring ICTs into the immediate realm of women’s activities. As women are given the means to using ICTs, first for communications and information purposes – they are able to tap into resource avenues hitherto unavailable to them, to access entitlements, credit, employment and sources of income.</td>
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<tr>
<td>Imbalances in education and training between men and women</td>
<td>This is a significant challenge even under ‘normal’ circumstances. Bengali women, however, face an even more challenging set of circumstances where both the schooling system and the social structure reinforce each other and work against women’s equal access to training – from primary to higher qualifications.</td>
<td>ICTs are an important interactive tool of education and need to be introduced into all forms of formal and informal peer learning. Women also need to be introduced to the concept of life-long learning and provided with the tools to create their own teaching materials for women by women. Distance education through ICTs also presents an important opportunity for the otherwise isolated or time-constrained woman.</td>
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<tr>
<td>Imbalances in economic independence between men and women</td>
<td>Women are dependent because they do not have their own economic base or security back up. The chief inputs they need to build such a base - skills, credit, and land - are largely inaccessible to them. Less access to collateral and subsequently less access to finance and capital means that they are less likely to invest in or to pay for ICT use.</td>
<td>ICTs are becoming an integral platform for the delivery of critical services to the poor. As government social and education services – such as land ownership data bases, registration for health support, information on legal rights - are diffused, women are better able to tap into these information channels for their economic and strategic needs.</td>
</tr>
<tr>
<td>Inequities in industry, working conditions and remuneration between men and women</td>
<td>As jobs become more technologically advanced and in turn more remunerative, female workers often remain clustered in low-skilled occupations with lower pay and a lower priority for training or skill upgrading.</td>
<td>As modes of production, distribution and service delivery change, women can apply the tools of ICTs to set up and run their own businesses. ICTs also present an important advocacy and networking tool for women to use to lobby and negotiation for improved working conditions.</td>
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</tbody>
</table>
How these changes affect women’s decision-making powers and enable them to challenge social norms, at the household level and beyond, will depend on women’s security net (i.e. the resources available to them), and will be influenced by class identity and social capital (the network of relationships women are involved in), and how women perceive their long-term responsibilities and interests. In short, Bangladesh poses special problems when it comes to enabling women to access ICTs – given the combined problems of illiteracy, immobility and perceived inferiority of girls and women compared to men. At the same time, ICTs can be a part of the solution in addressing the disadvantages that many women face. Table II presents a set of gender obstacles and possible solutions.

9. **Employment and labor implications for women**

During the 1980s, aggregate employment growth in Bangladesh kept pace with labor force growth, at 3% a year, only by absorbing the additional workforce in very low level occupations in the informal sector. It is currently estimated that the labor force is growing at almost twice the rate of population growth, and this relationship is likely to remain unchanged for the next two decades or more as a direct result of the changing demographic dynamics. Decelerating population growth is being more than offset by increased participation rates, especially of women whose social role and greater education are changing and widening their choices.

The future expansion of industry, as a percentage of GDP, is expected to compensate for the decline in the size of crop agriculture. By 2020, the target is for industry to make up 35-40 percent of GDP compared to its present size of about 26 percent. Much of the gain in industrial production is likely to come from labor-intensive export-oriented production, from the benefits of global integration of production, and the leadership role played by private enterprise, which will have replaced public enterprises as the leaders in industry by 2020. A report on the future of employment in Bangladesh suggests that low-wage labor is an asset for Bangladesh—one it should capitalize on.

Backwardness - in the form of cheap labor - gives Bangladesh a strong, potential, competitive edge even in such areas as data processing and even over the Southeast Asian developing nations in whose path it would follow. The increasing globalization of world commerce and industrial production makes the country's geographic position and energetic workforce alluring dual assets to foreign firms looking for new manufacturing bases.

This observation is disturbing, as it suggests that the “backwardness” of Bangladesh’s labor is a factor to be capitalized on. On the contrary, with changes in technology, enterprises need to invest in worker training to remain competitive, and this is easier done when the work force is

24 CARE report December 2004
25 These shares are based on revised national accounts estimates by BBS. The revised structure of GDP differs significantly from earlier statistics.
26 World Bank Bangladesh 2020 study
27 ibid
well educated to begin with. The implications for women in particular are critical – as the likelihood of investments being channeled to women is less than that of men. It is a vicious cycle - as long as women do not participate in the decision-making processes relating to their employment and education, they will continue to be at the mercy of the markets. As long as they are at the mercy of the markets – their vulnerability will be exploited and entrenched. As in every other employment market, women need to be able to negotiate favorable terms of employment for the overall impact to be a positive one for them.

10. Sector applications of ICTs and opportunities for women

This section examines the interface of ICTs in the marketplace that have direct implications for women – in the agricultural sector, in industries where women are an established workforce, (e.g. garment industry), and in the service sector. Broadly speaking ICT applications in the marketplace can be categorized into three sub-groups:

a) ICT programming and applications in primary, secondary and tertiary production: embracing a wide spectrum of applications and remote services from electronic communications to management information services (such as medical transcription, data processing and insurance claims processing) to advanced distance learning tools and software design.

b) ICT platforms that support micro, small and medium enterprises.

c) Manufacture, servicing and repair of the full range of hardware and software that comprise ICTs.

The report focuses on (a) and (b) as there is no reliable information on women’s employment in (c).

Agriculture, fisheries and livestock remain the direct and indirect base for the economic livelihoods of the majority of Bengalis. Depending upon the appropriate levels of public and private investment and achieving the right balance between public and market interest, natural resource-based activities can have high productivity growth with forward and backward linkages, niche market development, and can become knowledge intensive industries just as modern manufacturing is. The sector’s dynamism can be improved through product differentiation, infrastructure, enhanced skills and the application of ICTs to the range of processes in agribusiness, planning and management, and in the growth of an agro-industry cluster.28

While ICT applications in the business aspects of agro-industry are generic to other business needs, there are information aspects of ICTs that have immediate and direct implications for the rural poor:

♦ Managing, sharing and storing agricultural related information and data
♦ Access to time sensitive information and public (government) information
♦ Links and networks that support participatory information sharing.

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28 An industry cluster is a group of business enterprises and non-business organizations whose membership within the group is an important element of each member firm’s individual competitiveness – it is the sum ‘network’ effect for businesses.
80% of Bangladesh’s 135 million people live in rural areas, often accessible only by unpaved, poorly maintained roads. As a result, sending produce to markets, seeds and fertilizers to farms, children to school, and family members to health clinics is time consuming, expensive, and during the monsoon season, often impossible. Access to information enables farmers, fishermen

Case examples of ICT applications in rural contexts:

**The National Institute of Agricultural Extension Management (MANAGE), India**
http://koraputatma.org/kptaboutmanage.htm
The Ministry of Agriculture has set up Village Information kiosks in 11 villages in the Ranga Reddy (RR) district of Andhra Pradesh. This project is an agriculture extension initiative, which seeks to provide for quick dissemination of technological information from the agricultural research system to farmers in the field and the relaying of their feedback to the system. The kiosks are managed by local Mutually Aided Cooperative Thrift and Credit Societies (MACTCS) of women and are a window to information on the prices at the farmers’ markets in the state. Villagers use the net for seeking information on a range of entitlements, link up with schemes, and also check their eligibility for housing loans and crop loans. An interesting aspect in the MANAGE kiosks is the use of CDs on income generation activities. Encouraging women to manage the information kiosks has a positive impact on other women’s use of the kiosks.

**The MS Swaminathan Foundation (MSSRF) in Tamil Nadu, Southern India** has been experimenting with ICTs as a means of facilitating development in poor rural communities. Swaminathan’s e-villages have developed an approach to empowering people through increased access to computer terminals (rather than telecentres), which have been pre-loaded with a database of useful information relating to government services, such as agricultural extension, health, and police that contain the relevant contact details for each village. In each case where the computers have been installed in a community center, women have been encouraged to run the center, to provide information services to the village and to run training courses for other women. A central ‘hub’ located in the nearby town of Vilanur provides support and daily information bulletins. Trained IT personnel staff the hub and are on hand to respond to requests for information and training from the villages. Training courses for up to 25 people can be held at the Vilanur hub and larger courses such as for making incense sticks and small scale paper production from banana leaves have been developed to facilitate livelihood diversification through small business activities. The daily information bulletins are sent by e-mail to the networked villages, which receive a summary of the main news stories from the local newspapers, the local weather report and prices, and are collected from local markets each morning.

**Inter-village connectivity and empowering the members of rural communities, Thailand** for villagers and particularly youth – both girls and boys, who want to use ICT as a tool for community development (especially in the areas of family accounting, community savings and community store accounting). The sites are Ban Samkha, Ban Tung, Ban Gom and Ban Don Fai in Mae Ta district, Lampang province. In particular, the project tries to extend the learning experiences in Ban Samkha to the other three connected villages by means of ICT laboratories in those villages. Project staff also organize and coordinate the sharing of learning among all residents of the targeted villages.

and herders to make informed decisions around supplies, prices, markets, rural services and entitlements, as well as local weather. At the same time, this information can feed back into the government’s long term policy decisions around capacity building, technical support for livelihood development, agricultural extension, health and education initiatives and improves the overall understanding, monitoring and risk management of systems and processes.
The importance of gathering, storing and dissemination of women’s agricultural experiences and indigenous knowledge cannot be overstated. Farming practices with indigenous drought-resistant grains and rice and preservation methods, for instance, are at risk of being lost in agrarian monocrop cultures that rely upon word of mouth. A comprehensive database at the village level that records and maintains information on local biodiversity, gender disaggregated demographics; land holding patterns and income profiles will have long-term implications for sustained agricultural development. Geographic information systems (GIS) can also be used to record and monitor water, soil and other environmental systems in a local area, for instance. In Jaipur, India for example, the Ajit Foundation had created an interactive water-map of the village, recording amounts of water available from each source, water quality, maintenance, demand and harvesting systems – which in turn help the locals to make informed decisions about their local water resources. Fishing communities in Pondicherry, South India, benefit from maritime information recording wave heights and wind directions in the Bay of Bengal. The information is accessed from a naval website and broadcast over loudspeaker – if the waves are over 40 feet, the fishermen stay home.

Rural Community Based Organisations (RCBOs) are becoming increasingly information poor compared to organisations operated from Dhaka or major district towns. Although RCBOs often have telephone facilities, and sometimes computers, they tend to lack the technical knowledge to maximize their potential. There is also a paucity of information that is relevant to their members, especially content that is presented in a format understood by villagers, many of whom are illiterate. The RCBOs are increasingly excluded from information published on websites by institutions such as donors and the Government of Bangladesh (GOB). In response to this knowledge gap, Intermediate Technology Development Group (ITDG) in Bangladesh has been working since 1995 to strengthen the capacity of over 20 selected RCBOs to manage and support the enterprise initiatives of their beneficiaries. The programme has gained considerable knowledge in operating information enquiry services and developing micro-enterprise information and disseminating business information through ICTs.

**Recommendations:** a recent World Bank “rural roads and markets improvement project” improved public facilities and added shops reserved for women – traditionally absent at markets in Bangladesh. These shops could incorporate a physical space that could be dedicated to introducing women farmers to the information that is available over the Internet. Information provided to women farmers through extension services has tended to be top down; *women’s rural associations need to be supported in compiling information and shared knowledge from the field.* Initiatives to bring together information consultants with established local NGOs and producer associations to develop user-friendly information sources for women need to be supported. For instance, PROSHIKA, one of the largest national NGOs in Bangladesh working with women in aquaculture, fish processing and net making, can integrate ICTs into it training, revolving loan fund, technical assistance and demonstrative projects. By offering courses on ICT use, as well as inter-active training materials through CD ROMS, or through distance learning, PROSHIKA can provide its membership with additional IT skills and the potential for using ICTs for communications and learning over time.

**Manufacturing industry:** the 1980s and 1990s saw tremendous expansion in opportunities for women’s employment in urban areas – particularly in the ready-made garment (RMG) industry in
which around 1.5 million women are currently working.\textsuperscript{29} Rates of women’s participation in the urban labor force rose from around 12% in 1983/4 to 21% in 1995/96.

The introduction of the garment industry created employment for a large number of young women who visibly entered the male monopolized public space for the first time. Today the garment industry is still the cornerstone of the Bangladeshi economy – accounting for 75% of total export earnings and employing primarily women working in small and medium enterprises\textsuperscript{30}. Gaining entry into international markets is critical – especially with the rising competition from countries like China and the phasing out of the Multi Fibre Agreement.\textsuperscript{31} Although 90% of garment workers are women, 88% work in production processes, including sewing and finishing. Only a few have post-production or supervisory jobs. There are no women in the higher paid positions as cutters or quality control operators. Moreover, there are very few women in departments dealing with computerized machinery.

At the same time, there are signs that the garment industry is upgrading from the simple assembly of shirts, and the value added component is now estimated at 37-40 per cent\textsuperscript{32}. There has also been an increase in local sourcing and some 80 per cent of the accessories used are now sourced locally – primarily amongst women owned businesses. Conditions of work are improving as a result of external pressures exerted by major buyers, governments, international organizations, and NGOs, including trade unions and consumer groups\textsuperscript{33}.

Low labor costs are not enough to retain a competitive position in the world market. The ability to respond rapidly, at the appropriate cost and quality levels, is vital. Countries which are far from main markets, and do not have their own raw materials and textile base, will find it difficult to respond quickly enough to market demand and may be overlooked by lead firms. Distant production platforms like Bangladesh may still be able to supply certain commodity items (bulk, standard garments), which do not rely on rapid delivery and are less fashion sensitive, but in the higher value added, fashion-sensitive segments of the market, Bangladesh will face strong competition from export platforms closer to main markets. The immediate challenge facing Bangladesh is to improve the productivity and quality of its thousands of small, family-run factories through investments in new technology and training of both direct labor and

\textsuperscript{29} Sarah Salway, Sonia Jesmin and Shahana Rahman. ibid
\textsuperscript{30} The Bangladesh ready-made garment industry (RMG) has grown from nothing in the 1970s to become the country’s principal export earner in the 1990s. The first exports took place in the mid-1970s and have grown by 20 per cent per annum to earn US$3.4 billion from sales to 45 countries in the 1996-97 financial year. This accounts for almost 70% of Bangladesh’s total exports. The United States is the main market with 50% of exports by value, followed by the EU with 40 per cent. The International Finance Corporation’s South Asia Enterprise Development Facility (SEDF) has helped the country’s SME garment manufacturers to find new buyers in Canada – which agreed in late 2003 to drop all trade barriers on Bangladeshi apparel imports. SEDF partnered with the Canadian Manufacturers and Exporters Association to arrange trade fairs in Montreal and Toronto – as a result, industry leaders expect garment exports to Canada to double, reaching US$300 million in 2005
\textsuperscript{31} International Finance Corporation Annual Report: Adding Value to Private Sector Investment 2004
\textsuperscript{32} Statistics source: Bangladesh Garment Manufacturer’s and Exporters’ Association
\textsuperscript{33} Many Bangladeshi garment factories are now required to observe codes of conduct imposed by their large retail chain customers. Those codes relate mainly to working conditions and health and safety provisions. They rarely mention human or workers’ rights.
management. They could then offer a wider range of services to their clients, enabling them to move from assembly towards full package production. Factory infrastructure and the organization of work would also need to be addressed.\(^{34}\)

A garment factory in Sri Lanka, for instance, employing a workforce of 6000, 95% of whom are women, uses computerized machines for design, sewing and embroidery – producing 700,000 pieces per month. The high literacy rate means that the women in the workforce are easily trainable, and the computerization ensures that timelines, pricing and quality standards meet the requirements of the international market.\(^{35}\)

**Recommendations:** international competition is forcing the garment industry in Bangladesh to upgrade its manufacturing and marketing processes using new computerized and communications technologies. As these are introduced at different levels of the garment manufacture and marketing processes, women could be positioned to take advantage of the opportunity for applied training in computerization in the industry. This training could afford women more mobility between jobs, as the basic IT functions become applicable elsewhere.

**Small and medium enterprises:** there is a lack of reliable information on small enterprises and women’s self-employment as entrepreneurs in Bangladesh. Traditionally, rural women have always been involved in different kinds of self-employment both agricultural and non-agricultural. They also sell or hawk clothing, ornaments and cosmetics used by women in the village market. According to one study\(^{36}\) a larger proportion of women (37%) used purely manual production methods compared to 22% of men, and a larger proportion of men (17%) than women (9%) reported using modern technology. There is also a difference in the division of male and female entrepreneurs between sub-sectors – with the largest proportions of women working in sectors that build on their traditional skills such as handwork sewing, tailoring, dying and printing. The largest proportions of men are in the traditionally male-dominated sectors, which use modern technology including wooden products (29%) and metal products (26%). We can deduce that this pattern of technology use differentiation between men and women is very likely to be repeated in the ICT sector and in the use of ICTs.

**Recommendations:** BRAC, [www.brac.net](http://www.brac.net) offers probably the most extensive support for enhancing the viability of small-scale enterprises and experimenting with new, higher profit income-generating activities and improved technologies. Programs that provide training, technical advice, access to inputs, and other support services to members cover the following sectors: irrigation, livestock, poultry, fisheries, social forestry and vegetable cultivation, and sericulture. In addition, its Rural Enterprises Project experiments with new enterprises such as women-run restaurants; poultry feed mills and chick hatcheries, mechanics workshops and pearl culturing. Some of these programs also train women as para-vets, poultry vaccinators, or tree caretakers, activities that provide paid employment. ICTs need to be integrated into all these activities – and the experiences of organizations such as SEWA can be drawn upon.

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35 Asia and Pacific Centre for Transfer of Technology: [www.unescap.org/esid/GAD/events](http://www.unescap.org/esid/GAD/events)

36 ILO SEED Working Paper # 8: Jobs, gender and small enterprises in Africa and Asia
Case examples: women's e-commerce initiatives

SEWA’s Trade Facilitation Centre, India has had some success in its e-Commerce endeavors supported by its websites www.banascraft.org and www.kutchcraft.org. An innovative approach to reach producers and artisans 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. See separate box on SEWA for further information.

Hipknit, Nepal www.hipknit.com initiated by the Society for Health Environment and Women’s Development (SHEWD), markets online a wide range of custom-designed wool clothing hand-knitted in Nepal. By marketing without the middle agent, the Hipknit project gives some of the poorest women in Thaiba, a chance to work for a fair wage and gain economic independence. In the process, they learn profitable handicraft skills as well as business skills. Part of the profits is reinvested by SHEWD in other community projects in the areas of health, environmental awareness, and education.

PEOPlink www.peoplink.org is a non-profit organization that helps artisans in developing countries to sell their products over the Internet. The PEOPlink website features many artisans’ products, permitting remotely located customers to browse and purchase them online. Business is conducted directly between producers and consumers, and avoids the expense of a middleman. Email enables consumers’ requests to be relayed directly to the artisans, thus allowing them to better know their distant and culturally distinct market, and to adapt their products accordingly. Ekota Forum in Bangladesh is an NGO with 14 organization members representing 100,000 women. Their website http://www.peoplink.org/ecota/ showcases many of their products, all of which were made by poor people in rural Bangladesh. Peoplink’s work stands out in the that it provides customized website training to its members and 24/7 software support on line around the world to all the artisans who have a direct relationship with the design of their website.

Cottage Industry Global Market (CIGM), India www.k2crafts.com is a network with horizontal and vertical linkages. The core of the network is comprised of women’s weaving cooperatives in rural Himachal Pradesh, northern India whose main products are handmade woolen shawls and other woolen attire. CIGM fosters links between the cooperatives as well as links with other “players” including local NGOs, the local government, Georgetown University (US) and the World Bank’s Development Marketplace (the funder). Three women are responsible for co-coordinating materials supply, marketing and record keeping out of a center that also provides training to the cooperative members. Government policies towards cooperatives include support in the form of loans, training and marketing.

Women cake sellers – Tortas Peru www.tortasperu.com.pe
Initiated in 1996, Tortas Peru is a woman-owned enterprise that uses ICT to reach and service a wider market selling its cakes and deserts. A network of housewives take Internet orders for their cakes and uses the net to provide baking tips, in Spanish and English. The company covers the major cities of Peru, including Lima and guarantees delivery within 72 hours or a full refund. Tortas Peru also targets over 2 million Peruvians who live outside the country through their website, clients in San Francisco or New Zealand can send a home-made cake to friends or family in Cusco, Lima, Arequipa, Trujillo, Ica, Juliaca and Puno. The tortas are prepared and delivered by one of the housewives in the Tortas’ network. Customers can order a cake from a catalogue and pay using credit cards, cheques, money orders or electronic payments to the bank. The order is sent by e-mail and depending on the destination they contact a housewife-member of the Network to bake and deliver the cake. To maintain low prices the company is based mainly on the Internet, making it necessary for the housewives-member to be familiar with computers and Internet. Peru has an innovative national network of public computer booths, more than one thousand, where Internet access is cheaper than phone calls. Prior to joining in the Tortas business the housewives have to participate in a basic course of marketing, cake-baking, and using the Internet and E-commerce tools. With just three hours of instruction the women learn to use E-mail; find the web site and interact with clients. Once women familiarize themselves with the tools, they use public computer booths and get the information they need.
Although not an easy avenue, the possibilities for poor women producers to benefit from e-commerce does exist, (see case examples) provided organizational support for efficient enterprise management that meets up with the challenges of selling to a global market are in place. In some instances, ICTs are introduced to existing production and retail units – for instance, both Peoplalink and SEWA likewise integrates and adapts ICTs for use in several aspects of its production and training activities bringing in more efficient, economic and seamless marketing to wider markets. Both organizations empower their members directly by providing on-going training and business support. Tortas Peru on the other hand, introduced a new business concept to women, bringing their cake-making abilities and individual hand-delivered service together with the capacity to take orders from around the world over email. The national network of public computer booths, and the network of simple training made available to the women, makes this a viable business idea that gives women some solid business and technical skills.

_The ICT Services Sector_, presently makes up half of GDP, and is considered to be the major source of employment creation, absorbing about half the incremental labor force of 50 million in the next 25 years. This sector covers trade, transport, and financial, technical and professional services. The primary IT aspect of the service sector is in information processing, particularly data entry, and publishing. Other new jobs are in call centers, in Geographical Information Systems (GIS), and in software development, all of which require higher skill levels than data entry. India and Malaysia have captured the bulk of these jobs, but the job market continues to expand – and China and Bangladesh are positioning themselves to enter this market.

Opportunities for women come not so much from the high value end of the information processing work, such as software programming or system analysis, as from the relatively low value added operations that include a wide range of activities from customer services in call centers to secretarial work for medical transcriptions. These are categorized as Information Technology Enabled Services (ITES): jobs related to these services require proficiency in written and spoken English, familiarity with the culture of the client countries as well as social skills.

“These skills do not need training of elite and expensive institutions; hence can be acquired by those, who, because of their class or gender, do not have access to elite technical institutions. In call centers in India, the proportion of women in total employment could be anywhere between 38 to 68 percent. The rapid growth in the ITES jobs has given women a new confidence and social empowerment, as has not been experienced ever before. Two hundred dollars to $400 per month, although small by the standard of the richer countries, is a high salary in India or the Philippines and assures a woman, in her twenties, a quality of working life that is much better than what she could have had in traditional feminized occupations”.

Although ICTs are a comparatively new field, a division of labor between women and men is already emerging. In general, women tend to be clustered around lower skilled ICT jobs related to word processing or data entry, comprising only small percentages of managerial, maintenance, and design personnel in networks, operating systems, or software development. Data processing work is typically low skilled work with few options for further skills upgrading, a flat promotion structure, and tedious work – thus limiting the jobs as potential careers for all but the small

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37 ILO SEED Working Paper # 8: Jobs, gender and small enterprises in Africa and Asia

ICTs in Bangladesh - implications for Women Workers
minority who may advance up the career ladder. What data processing does offer is some training in technology related areas that can be applied in other industries. Within the service sector, for example, the major employment for women is in information processing jobs, the high-tech equivalent of the secretarial positions that women have traditionally held.

Similarly, in the banking sector in Bangladesh which has the most intensive use of computers, requiring operation skills, systems analysis as well as programming and data processing – the higher the degree of computer skill the more likely that men are promoted to the position and not women. The current trend shows reduced opportunities for women’s promotion in banking – and they are, once again, relegated to the lower end jobs.

**Recommendations:** the Strategic Objective Agreement with the Bangladesh Government (SOAG) specifies under the ICT Sector Development section 3.2 the following recommendation:

> “USAID’s ITES sector assessment highlighted the critical need for more qualified human resources if Bangladesh hopes to capture a part of the booming ICT service market. Initiatives in this area may involved public educational institutions, private ICT training institutions, and/or private sector ICT firms”.

The document then proceeds to highlight the training programs conducted in collaboration with Cisco Networking Academy and the Institute of Information Communication Technology of the Bangladesh University of Engineering and Technology. If women are to be encouraged to pursue work in the ICT service market, they will need to be targeted for training and skills development. Initiatives will need to also include non-formal education; training through women’s associations, and incentive packages presented to private sector ICT firms to encourage the participation of women at all levels. This would need to be part of a ‘sea-change’ to open opportunities for women in all aspects of the ICT sector.
III  An overview of Bangladesh knowledge economy

11. Bangladesh’s national ICT policy - implications for women

Despite a number of international consultations on ICT and gender policies and the acknowledged need for a policy framework on ICT and gender, in reality gender concerns and initiatives continue to remain an after-thought. For the most part, existing national ICT policy frameworks and strategic plans do not refer specifically to gender issues – notable exceptions being the Republic of Korea and the Government of Australia. As a result, there are pilot initiatives in many developing countries that address the specific information, communication, resource and employment needs of women, but no national policy that systemically involves women in all the decisions around ICT design and deployment.

Bangladesh’s National Information and Communications Technology (ICT) Policy (2002) has outlined a number of measures for the introduction of ICT education in public and private universities, teachers’ training in ICTs, deployment of virtual ICT teachers and web-based

Case examples – pro-active policies on gender and ICTs

**Gender study on teleworking and development policy – Malaysia**  
[www.nitc.org/my/resources/papers.html](http://www.nitc.org/my/resources/papers.html)  
On the basis of research studies on telecommunications, banking and finance, airlines, software, printing and publishing, findings were published on the ways in which telework could improve women’s career opportunities and life quality. This analysis strengthened the gender focus in policy-making of the Ministry of Human Resources, the Economic Planning Unit and the National Information Technology Council of Malaysia. As a direct result of the study, telework and its influence on women’s employment feature in Malaysia’s five year planning. This is one of the few studies that examine the opportunities for women, almost half of whom have secondary and tertiary education.

**Case example: Mongolia Telecom: Employment of Women in Urban Mongolia**  
Mongolia Telecom started in 1992 as a public sector enterprise and was privatized in 1995. It offers services such as international telephone calls, telex, leased lines, television and radio broadcasting, the Internet, payphone, cable television, and facsimile services. Of its 4500 employees, 54 percent are women. In 1996, Mongolia Telecom adopted a human resource development plan that reduced the crowding of women at lower levels by equipping them to move to managerial levels. The two-pronged strategy included measures to help women cope better with their dual responsibilities at home and work, and measures to enable professional development and career growth of women. The target was to have **women fill at least 20 percent of the managerial positions**. A large number of training and management programs were organized and drew extensive participation from women employees. The company understood the work-family conflict experienced by its female workers. To help ease pressure on women employees, a number of measures were taken. These included company assistance for single mothers and financial aid for childbirth and education of children. There is an annual "Best woman achiever" award with a two-week stay in a rest house or health resort at company expense. As a result of these proactive steps women now constitute over 20 percent of senior managers, compared with just 9 percent when the plan was introduced. Mongolia Telecom avoids gender discrimination and the Mongolian Labor Law, a regulating as well as workers’ protection law, has contributed to maintaining gender equality. Human-resource development has been very successful. In 2000, 37 training programs were conducted, and 735 participants attended the courses. More than 65 percent of the participants were women. This shows that proactive and supportive organizational policies can help women acquire relevant competencies and move up the organization ladder and that enlightened official regulations and well-conceived organizational interventions can together help women overcome the invisible glass ceiling common to many organizations, specifically in the ICT sector.
coursework. There is no mention, nor indication however, about how these measures will address the barriers to gender equality and education. The policy document also mentions that cyber kiosks will be set up in all post offices and local government centers, public spaces that are highly unlikely to be frequented by rural women. This is because cultural and social restrictions on women tend to prevent them from entering public spaces (see point 16). While the policy focuses on the growth of export-oriented software industry, there is little attention given to the growth of small and medium enterprises or their ICT needs.

The interface between education and ICTs is also noticeably absent from Bangladesh’s Education Poverty Reduction Strategy Paper (PRSP). There is one reference to ICTs in the entire document and that relates to distance learning:

“4.41. Investing resources in new technologies. A high priority should be given and resources invested for taking advantage of new information and communication technologies for making learning resources available, improving quality of instruction, and increasing flexibility of academic offerings in higher education institutions. Bangladesh Open University, providing an avenue for higher education to the less well off, should adapt to methods and programs to realize the potential of the new technologies. The Internet, e-mail, teleconferencing and videodiscs should be put to use in distance education programs of the Open University to offer diversified opportunities to learners and to bring the world of learning to Bangladesh. The Open University and other institutions should use on-line course materials from international sources. Easy Internet access for faculty and students should be standard provision for higher education institutions”.

The National Strategy for Economic Growth, Poverty Reduction and Social Development (2003) recognizes women’s contributions to economic and human development and has incorporated gender equality into some key sections of analysis. It also acknowledges that women workers earn considerably less than male workers and that there is persistent lower average calorie consumption for females indicated by higher severe malnutrition, mortality, and morbidity rates for girls and women than for males. There is, however, no analysis in the policy of household economy that provides the link between the gender gaps identified and their causes. The NSERGPRSD does identify the impact of the deteriorating law and order situation on women and how gender-based violence is limiting the capacity of women to participate in market activities and to access social services such as education and health39. Broad commitments are made, but more follow-up work is necessary to ensure that specific budget allocations are made especially in some of the more ambitious areas identified such as “creating woman-friendly institutional environments.”

The Local Consultative Group on Women and Gender Equality (LCG WAGE) recently issued a study on gender mainstreaming that recommends that the Ministry of Women’s and Children’s Affairs (MWCA) withdraw from project management and take a stronger role as an oversight agency facilitating and monitoring gender mainstreaming across line ministries. The findings were presented to the Minister and Secretary of MWCA as well as to the donors, and a dialogue has started on action that can be taken to follow up the recommendations from this review.

ICTs in Bangladesh - implications for Women Workers

39 Government of Bangladesh, 2003, National Strategy for Economic Growth, Poverty Reduction and Social Development,
LCG WAGE is considering taking a more programmed approach to providing support to MWCA that coordinates efforts both within the ministry and with other key line ministries to fulfill its mandate.

With the upcoming World Summit on the Information Society (WSIS)\(^\text{40}\) in Tunis this year, and the preparations of the WSIS gender caucus and women’s lobby groups\(^\text{41}\), there is a timely window of opportunity for Bangladesh to initiate a realistic policy framework that pulls together the range of issues. The Ministry of Science and Information and Communication Technology (MOSICT) is the focal point for WSIS and has formed a committee with relevant government ministries, private sectors, media and civil society in preparation for the WSIS process. At the time of writing, the only reference in the Bangladesh WSIS plan of action\(^\text{42}\) to women falls under item 10: Ethical dimensions of the Information Society – the Information Society should respect peace and uphold the fundamental values of freedom, equality, solidarity, tolerance, shared responsibility and respect for nature.

‘Gender equity: steps are taken to bridge the ICT gender divide within the country by eradicating factors that restrict equal access to ICT through greater use of both new and traditional ICTs as tools for development and for greater voice and empowerment of women. Bangladesh believes in equal right where applicable for disabled/disadvantaged groups to access the ICT facility’.

Despite this goal, the policy sections on capacity building, ICT applications; local content and access to information and knowledge make no mention of gender considerations or of women. A comprehensive review of the different sector policies, as well as a review of the MWCA’s mandate as an oversight agency would be an important avenue for mainstreaming gender into national ICT policies. This could be done following stakeholder workshops and consultations with policy makers in line ministries. In summary:

- **Bangladesh’s national ICT policy needs to be reviewed in light of gender differences before it is implemented;**
- **Bangladesh’s gender and development policy and the work of MWCA needs to be reconsidered in the light of ICT developments and gender differentials;**
- **All the line ministry plans of action in education, health, business development etc should be reviewed to include both ICT and gender concerns throughout;**
- **This preliminary study can contribute to the gender and ICT discourse at WSIS on behalf of women’s organizations in Bangladesh.**

\(^{40}\) [http://www.itu.int/wsis/](http://www.itu.int/wsis/) - the conference takes place in November 2005

\(^{41}\) Most recent Gender and ICT conference took place in Korea in July 2005 – coordinated by the Asian Pacific Women's Information Network Center (APWINC), the Korea Agency for Digital Opportunity and Promotion (KADO) and the ITU

\(^{42}\) [http://www.itu.int/wsis/docs2/pcl/contributions/bangladesh.pdf](http://www.itu.int/wsis/docs2/pcl/contributions/bangladesh.pdf)
12. Telecommunications and Internet use and trends in Bangladesh

The Internet was introduced in Bangladesh in 1996 - the number of Internet users has since increased multifold, at its present rate it is expected that by the end of this year about a half a million of people will have access to Internet. Bangladesh tops the list of other Least Developed Countries (LDCs) in personal computer and Internet subscriber trends between 1997 and 2002. The greatest numbers of PCs are in Bangladesh, Senegal and Sudan with an estimated 450,000, 200,000 and 200,000 respectively. The Internet subscriber-base increase in LDCs compares favorably with growth rates in the developed world, with Bangladesh, Senegal, Togo, Uganda and Yemen at the top of the list.  

At the time of writing, the technology of choice in terms of bridging the ‘digital divide’ between rich and poor, is the cellular telephone, and not the personal computer - “emerging markets will be wireless-centric, not PC-centric”. Mobile telephone subscriptions will continue to increase at a very dramatic pace, rising from an estimated 15 million in 2004 to 191.8 million by 2014 – raising the penetration level from 2.2% to 19.4% in all LDCs. Phones allow fisherman and farmers to check prices in different markets before selling their produce, make it easier for people to find work, can be shared by a village, pose no problems for the illiterate and the content is in local dialect and instantly shared. Moreover prepaid calling plans reduce the need for a bank account or a credit check. In anticipation of the potential growing markets in developing countries, cell phone manufacturers are designing cheaper more durable handsets.

Lower prices of handsets will make a second barrier more apparent: high taxes and duties imposed by government on both hardware and services. In Bangladesh – the government just imposed a tax of 900 Tk (US414.00) on all new connections in addition to an import duty of 300 Tk on all imported handsets. Nonetheless the use of wireless technologies will continue to outpace wire line connections – there is no need for capital intensive capacity build out – in China mobile phone use has grown three time faster than wireline phone.

GrameenPhone was the first operator to adopt a mass-market, low-tariff strategy and by the end of 2003, had quickly built a subscriber base of telephone users reaching 1million. The availability of an affordable, reliable service has increased cellular penetration from 0.1% in 1999 to 1.25% in 2004, more than double the rate of fixed-line use. This growth has also spurred reforms in the country’s telecommunications sector, including the establishment of an independent regulator. The company significantly increased rural connectivity through its village phone program, in which local individuals, often supported by a micro-finance loan from Grameen Bank, operate a pay telephone in their communities. About 50 million people benefit from cellular services provided through this program, and it has been instrumental in improving the economic position of women who operate these phone businesses in these areas.

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43 ITU statistical Yearbook 2002 Annex  
44 C.K Pralahad, quoted in The Economist July 9-15 2005: Calling an End to Poverty  
45 ITU – the application of ICTs in the Least developed countries for sustained economic growth - 2004  
46 On June 29th 2005, Philips, the Dutch electronics company, announced a new range of chips designed to take handset costs below US$20.00.  
13. **Outsourcing trends in Bangladesh.**

Bangladesh has an IT industry estimated at a value of $150 million and growing at an estimated 20% a year – ICT businesses are ready to grow but still need a supportive business environment in place.\(^{48}\) The ICT sector, declared a “thrust sector” by the government, is one of the fastest growing sectors of the economy and the government has formulated legal frameworks and endorsed several projects and programs related to ICT for development.\(^ {49}\)

Strategic thinking around ICT development in Bangladesh is as an engine for growth in the manufacturing and service industries. The National Information and Communication Technology Policy\(^ {50}\) has among its several objectives stated that the required infrastructural facilities and legal framework will be developed to support the development of data processing and software industry export, to attract local and foreign investment to the sector and to promote and foster the ICT industry.

Outsourcing and its overseas component, offshoring - is the contracting of once-core business functions to an outside supplier. The first wave of IT skill-intensive industries that were outsourced was in consumer electronics, this was followed by a second wave of skill-intensive industries such as auto components, pharmaceuticals and telecom equipment.\(^ {51}\) Increasingly, outsourcing in the ICT sector ranges from running call centers, to payroll processing, software engineering, and research and development. In 2003, 1.5 million service jobs were outsourced from developed countries, according to McKinsey Global Institute’ study on the Emerging Global Labor Market. The study predicts that in 2008 the figure will be around 4.1 million.\(^ {52}\)

Bangladesh has valuable experience meeting out-source demands, particularly in the RMG sector. While computer software development is an emerging service industry within Bangladesh, medical transcription and data warehousing are still in their infancy. Although software development and data entry are recognized as potential future exports, Bangladesh faces intense global competition in this market. Bangladesh’s ranking on the competitiveness index in software development is equal to that of Myanmar and far behind India and Sri Lanka.\(^ {53}\)

At present there are over 50 software and ICT service companies, employing 4000 technical professionals, exporting services to about 30 countries in the world – with exports for FY 2003-4 amounting to US$ 7.2million – an increase of over 70% from the previous year.\(^ {54}\) Through

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\(^ {48}\) Imran Shauket. 2005. ICT sub sector study in Bangladesh

\(^ {49}\) WSIS and Bangladesh, 25 May 2004 document MOSICT/WSIS

\(^ {50}\) October 2002 [www.bccbd.org/html/itpolicy.htm](http://www.bccbd.org/html/itpolicy.htm)

\(^ {51}\) Ramnath Balasubramaniam and Asutosh Padhi: The next wave in US off-shoring The McKinsey Quarterly 2005 Number 1


\(^ {53}\) The index is a composite measure of a number of variables including institutional capacity, labour skills, level of education.

\(^ {54}\) Bangladesh Association of Software and Information Services: [www.basis.org.bd/it_ind.html](http://www.basis.org.bd/it_ind.html)
technology transfer, the government plans to establish High Tech Zones and a Software Technology Park with dedicated and advanced data communication facilities. The government also intends to set up an ICT-incubator and provide start-up finance for the local software industry.

**Table III: Exports of computer and information services and other business services, 2003**

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(Source: OECD)

In view of large international trade volume in the area of software development, data entry and data processing, private investment will be encouraged and accorded priority. This industry has an enormous potential for generating foreign exchange and employment. To facilitate rapid investment in these activities, exclusive zones for ICT will be established in selected locations within a short time. Guaranteed infrastructural facilities such as electricity and telecommunication will be provided in these zones. Recently the government of Bangladesh has exempted duties (Import, VAT) on computer and accessories including UPS to encourage Software Development, Data Entry and Data Processing Industry.

14. **Status of ICT education and training initiatives in Bangladesh**

The knowledge economy is underpinned by lifelong learning, its bedrock is literacy and basic education and communications skills – literacy creates the demand for information, news and content. Beyond these fundamentals, a digital workforce requires training at all levels – from data entry to network-management to entrepreneurial-management – and throughout their employment career. At the national level, literacy and basic education is still very weak. Although Bangladesh is ahead of most South Asian countries in primary school enrollment and the ratio of female to male primary pupils, nearly three students out of five drop out of primary school, a significant loss that undoes the signal achievement of enrolling more than 100 percent of the eligible children - boys and girls nearly equally - in elementary classes. These weaknesses threaten to undercut the nation's growth prospects in the 21st century by leaving it short-handed when it will need a large, literate workforce capable of competing in technical skills with other developing countries.

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55 High Tech Zones are export promotion zones that are expressly set up for the ICT sector
In many parts of the world, the commercial sector is ahead of the traditional academic sector in education delivery at all levels. What will be sent through the "pipeline" to communities is more than likely to be what will be commercially produced and delivered. In developing countries, as governments struggle to build the infrastructure, vested interests, far more experienced in delivery and with very different motives are capable of providing content in a manner far more attractive to the public than what the academic community is proposing.

Education and training opportunities by distance and open learning are one of the few educational areas in which women in the developing world are well represented. Open/distance learning helps to overcome some of the challenges that women and girls face when the only other opportunities for education are provided through conventional means. However with the onslaught of the new communications and information technologies to deliver distance/open learning, it is feared that this trend may be reversed, and that women may become marginalized in accessing education delivered by distance methodologies due to their lack of access to and control over the technologies themselves.

Bangladesh Open University, which was opened in 1992, is the only university that offers distance and open learning programs: 18 formal and 19 non-formal courses range from secondary to postgraduate level through six academic schools. The courses have been designed particularly for the rural disadvantaged groups including women, agricultural workers, unemployed youth, uneducated adults and health and family planning workers etc. (a diploma in computer applications programs is also offered). However, enrolment and the financial viability of the university have been shaky due to a number of management and standards problems. And while ICTs are the natural channel for dissemination of distance learning, the infrastructure is not yet established – particularly in rural areas.

There are a few examples where women have appropriated ICTs, including radio and television, for their educational purposes. Increasingly – as women become familiar with the uses of digital communications, they can be introduced to inter-active audio-visual means of education, which can be used to provide technical and vocational training at the workplace, through business development agencies for small enterprise management, and other skills relating to activities in the traditional sectors of food processing and agriculture.

Despite, or perhaps because of, the lack of systemic ICT training for women and girls, there are a number of independent community-based ICT training initiatives across the country that are engaging children and women. These pilot-programs are being established by public/private partnerships between NGOs, private sector interests, educational institutions, government and donors. Over time, these training programs need to be assessed as a useful gauge of the publics’ readiness for this kind of training. From all accounts, ICT training that is practical and applied to the learning context is generally welcomed, by both sexes. A few examples are summarized in Table IV to show the kinds of training in the field that have taken place, it is noticeable that there were no initiatives found that focus on poor women. The Grameen phone initiative, while it does strategically work with women, is generally available only to literate, low-income women and not to the poorest of the poor.

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56 Quote from Internet communications with Andrew Garton – 18-7-05 on the Learn Foundation initiative in Bangladesh – “I can tell you though that the most keen and enthusiastic of responses came mostly from the girls. And yes, at the girl’s school I don't recall any parents present. If there were, they would most certainly have been their fathers.”
**Table IV: current training initiatives in Bangladesh**

<table>
<thead>
<tr>
<th>Training Initiative Details</th>
<th>Numbers of women trained</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Microsoft Unlimited Potential (UP)</strong> is a community initiative of the world’s largest software company that aims to help underserved young people and adults across the globe overcome the &quot;digital divide&quot; by teaching them technology skills. Microsoft is partnering with LEARN Foundation, a registered non-profit trust based in rural Sylhet, to provide skills training through a network of ICT training centers in Sylhet and Sunamganj districts. Learn Foundation will convert 5 of the existing 1,000 rural public telephone centers and 3 Learn ICT training centers in Sunamganj District into community-based technology learning centers (CTLCs).⁵⁷</td>
<td>A network of TCP/IP nodes encompassing the whole district of about 3,000 villages with 3 million people over a period of three to five years. No sex-disaggregated data available.</td>
</tr>
<tr>
<td><strong>Commonwealth Science Council and the Association for Advancement of Information Technology (AAIT)</strong> initiated a project to build skills among women scientists, researchers and technologists – highly educated women. A survey was conducted to identify the actual trained needs – 515 applications were received and the surveys revealed that despite their education, women had not been able to acquire ICT skills due to social and cultural norms, lack of opportunities and lack of initiative by the women and their employers. Further courses were designed for women in the medical profession and related sciences – nutrition, physiology and microbiology for 52 women in the northern region in the year 2000.</td>
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<tr>
<td><strong>Grameen Bank</strong> has established a Village Computer and Internet Program⁵⁸, which provides some low-cost computer training to villagers – including email and word processing which, amongst other things, enables the locals to stay in touch with families members who have moved away. Most of the users and trainees are village women – a deliberate project objective.</td>
<td></td>
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<tr>
<td><strong>Cisco Networking Academy Program</strong> has established a scholarship program offering quality technology education to men and women through established university settings such as the Bangladesh University of Engineering Technology (BUET) and the Chittagong University of Engineering Technology (CUET). In 2005, of the 685 graduates, 178 were female – comprising 26% of the total figure. The program also had five female instructors compared with none the year before.</td>
<td></td>
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<tr>
<td><strong>REACH BANGLADESH</strong> is a non-profit organization that runs an IT training center in Dhaka with a staff of 15, four of whom are female. The center provides training in office computing applications, data management and basic programming. The minimum requirement for admission to training is Grade 12 (HSC) passed. Most of the learners are interested in Office Package like MS Word, Excel, PowerPoint, and Access. In 2005, out of a total number of 60 students, 18 are women. In the last six months, 100 trainees completed their courses – 30 in data management and the rest in office computing packages. No sex-disaggregated figures are available for this group.</td>
<td></td>
</tr>
<tr>
<td><strong>Government of Bangladesh</strong> is implementing a project ‘Conducting Standard Computer Training Courses in the Divisional Headquarters’ – Ministry of Science and ICT in cooperation with the public/private sector is offering courses for professional and skilled ICT labour and an ICT Award Program. Between 1997 and 2001, fellowships were granted to 32% women – of 66 fellowships for research and senior research positions, only 6% and 9% were offered to women.</td>
<td></td>
</tr>
</tbody>
</table>


⁵⁸ [http://www.grameen-info.org/vcip/services.html](http://www.grameen-info.org/vcip/services.html)
IV Engaging women in the knowledge economy: points of intervention

Five priority areas are suggested:

♦ Literacy, education, training and content
♦ Access, mobility and control
♦ Industry, employment of and outreach to women
♦ ICT platforms for delivery of services to women and entrepreneurship
♦ Strategic use of ICTs to promote inclusion

15. Literacy, education and training

**Literacy:** It is taking the development community some time to appreciate and act on the obvious correlation between literacy and ICT access. Communication and the sharing of knowledge require a foundation of functional literacy (see Box I). Literacy and language will have to continue to be the primary focus of attention for girls and women in Bangladesh. Any efforts to introduce ICTs to women’s activities will need to offer parallel training in the fundamentals of literacy and other baseline education – otherwise women will simply not be able to contribute to the knowledge base that the next generation of girls might access electronically.

“Literacy instruction is most effective when it involves content that speaks to the needs and social conditions of the learners. And, as with ICT-related material, this content is often best developed by the learners themselves.”

In countries with higher literacy rates for women, women are able to secure jobs higher up the value-added supply chain. In Malaysia for instance, while the number of women programmers, designers and system repair technicians is still low, 30% of employees in the IT professions are women. In India, 20% of the software industry employees are women.

**Formal Education:** The Bangladesh government has undertaken a number of programs to enhance the quality and infrastructure of educational institutions. Twelve new science and technology universities are planned, sixteen polytechnic institutes, including three for women, are also being set up. Ten thousand computers have been distributed to female secondary schools in rural areas across the country. While there has been some progress in increasing the number of girls’ attendance at primary level school, and national policies have identified the ‘engendering’ of secondary education as a priority, more needs to be done, *ICTs have to be incorporated as fundamental tools of teaching and learning into the overall education system.*

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59 Mark Warschauer, Technology and Social Inclusion: Rethinking the Digital Divide. February 2003
Case example: Taiwan Association for Educational Communications and Technology

This grant aims to empower women and enhance their lives by improving their computer literacy. TAECT brings IT skills to nine segments of women’s groups by working with key partners throughout Taiwan: National Union of Taiwan Women's Associations, Frontier Foundation, PWR Foundation, National Association for the Promotion of Community University, Council of Agriculture, and 104 Job Bank. The largest segment (total 1.32 million) is women who want to re-enter the job market for financial reasons after many years of being a homemaker. Without basic IT skills, it is almost impossible for them to even get an interview opportunity. Another key segment is peer networking, which is limited for stay-at-home women but via information technology can be overcome by creating peer groups via the Internet. The project uses a model of volunteer “seed trainers.” These 1,000 volunteers must be influencers who can effectively attract 10 or more other women to participate in the e-learning program, and potentially be a member of a specific interest community group. Job placements are also part of the program and are one metric for measuring the program’s success.

Gender specific comment: this is a good example of both, the importance associated with computer literacy and women’s job placements, and the peer networking between women, who help each other to participate in training and in finding employment. It is also a good example of the kinds of linkages that can be nurtured between a range of institutions.

Box I: Measuring educational achievements

Gauging educational achievement has been changing dramatically in recent years. Old measures such as literacy rates and scores on standardized tests are being updated with new, comprehensive testing methods that test not only the ability to perform in narrowly defined academic assessments – but also an individual’s ability to solve problems that one might encounter in everyday life and to apply knowledge to new and unusual situations. The OECD developed two such testing systems in recent years: the International Adult Literary Survey (IALS) and the Programs for International Student Assessment (PISA).

The IALS defines literacy as “the ability to understand and employ printed information in daily activities, at home, at work, and in the community – to achieve one’s goals and to develop one’s knowledge and potential.” The three domains of literacy skills include:

- Prose literacy – functional command of common texts.
- Document literacy – understanding and using data in contexts such as maps, tables, forms and charts.
- Quantitative literacy – manipulate numbers in circumstances that might be encountered in occupational or private life.

The IALS emphasizes general skills such as communication, adaptability, flexibility, problem solving and the use of information technologies. Broadly adaptable, it could be used to assess the strengths and weaknesses of any country’s education system.

The PIDA also tests the knowledge and skills that individuals will need to function as an adult, assessing proficiency in three major areas:

- Reading literacy – functional command of common texts.
- Mathematical literacy – abilities in using math and developing skills in everyday situations
- Scientific literacy – identifying evidence, evaluating and communicating conclusions.

Source: OECD, Literacy in the Information Age: Final report of the IALS, Paris 2000
**Teaching methods:** Teaching methodologies in Bangladesh are still teacher-centered, and rote learning is the norm. This does not encourage the building of self-confidence and self-expression among students, particularly for girls, who are allowed less self-expression than boys. As well, there are generally more male teachers at the secondary level, which may be a factor to consider with regards to female student participation levels. In a CISCO community impact assessment of the Networking Academy Program’s gender initiative in Bangladesh, while 14 out of 17 women students in co-ed classes responded that they were comfortable with men in the class – a majority proactively expressed their preference for women-only classes. The lack of appropriate teacher training and motivation is one of the main obstacles in changing the teaching methodology. Furthermore, the nature of ICTs lends itself to “problem-based learning”. Women are less likely to invest the time required to explore ICTs on their own, but are more inclined to ask questions and to determine their training needs in an applied group dynamics workshop (see Box II).

**Points of intervention:** A parallel set of initiatives and investments is needed to establish viable and appropriate ICT components in education and training for girls and women at different levels (see section 21 for examples). The immediate objectives behind ICT training for women will need to focus on breaking myths and pre-conceptions about the new technologies – this is an “outcome” objective as opposed to an “output” objective. The demystification of ICTs goes hand-in-hand with the promotion of local content in local languages – content that will engage the interests and meet the information needs of women. This is the groundwork for an organic dissemination and exchange of relevant information, knowledge and experiences amongst women, women-workers, women’s organizations and other representatives of women’s interests.

There will be a ready take-up of ICT use by women once the “information value” of ICTs takes root. For this to happen, women need to value their own information, and understand that they have the right and the ability to contribute information and to communicate, first with each other,

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**Box II: Dissection of a participatory ICT training workshop**

Typically an ICT training workshop is most effective when it situates ICT within an immediate context and brings together participants who share common information objectives. Women farmers for instance, or small business owners who are likely to work together or to benefit from sharing information with each other will have an added incentive to use ICTs to communicate with each other long after the training workshop has ended. Conducting a simple needs assessment prior to the workshop that asks women what it is they want to know is important because the responses are usually over simplistic and tend to focus on access concerns, but will provide the trainer / facilitator with a good sense for the knowledge gaps to be included in the workshop content. By bringing together the widest spectrum of knowledge economy stakeholders, the workshop can provide the physical and intellectual (learning) space for dialogue that will enable enterprising participants to form alliances with ISPs, business support services, financial intermediaries, employment agencies, career counselors and other institutions.

In this way, the facilitator designs a training program in collaboration with participants, resource persons and local ‘mediator’ organizations wherever possible. This ensures full and active participation on an ongoing basis between participants and local resource persons, and maximizes the learning process. The focus of the training is people centered rather than goal oriented and is guided ultimately by the process of self-discovery. As well, providing on-line ‘laboratory’ conditions for participants to experiment with and experience web navigation and software packages is important. This method of training encourages confidence building, skills in problem solving and self-empowerment. It is a particularly effective mode of training for women, who value the creation of networks and peer groups to build future alliances, to support each other and to share ideas. Using a local computer training center that has hours open to the public is also an important way to ensure that women will return to the ‘familiar’ space to try out her new skills.
and then with the wider community, on issues of significance to their social and economic well-being. In other words, involving women in the deliberation and composition of their own knowledge and information positions them as equal stakeholders in the knowledge economy—and should not be brought in as an after-thought to technological access.

This leads to the issues around language, where it is generally assumed that Internet users need to speak English in order gainfully use the Internet. In fact, once women realize that not only is web-based information available in their national language (or local dialects), and that they can access Government data, news or health information in local languages, it takes only a further step to encourage women to contribute their own information in their own dialects to enrich the scope of information available on the Web. There are few websites in Bengali for poor women reflecting the reality of illiteracy but more work needs to be done to value indigenous knowledge, and to create communities of local know-how, through running local stakeholder and participatory workshops within these communities.

While the outcomes may be gradual and long term, women-run workshops for women and peer-group learning with local content, determining what kinds of information gaps they have and how these gaps might be best addressed, need to be set up immediately across the country. Applied training manuals have been developed and can be easily modified and translated to fit into the Bangladeshi context.

16. **Access, mobility and control**

Next to literacy and training, access and mobility issues need to be resolved.

**Physical access:** One of the more effective ways to encourage women’s engagement with ICTs is to bring the technology right into their routine arenas of activity. This is especially true for a country like Bangladesh where cultural and social restrictions on physical mobility may prevent women from entering or using public telecenters, post offices or their equivalent. In general, while public telecenters are still a new phenomenon, women tend to use telecenters much less than men. Preliminary evaluation studies show that women are not keen to try out the equipment on their own, nor do they have the disposable income to pay the usual fees charged by telecenters unless they are sure of how to use the technical equipment. Women are more likely to

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62 Nua Internet Survey May 24 2002: Non-English speakers outnumber native English speakers when it comes to using the Internet, according to new research from Global Reach. Around 59.8 percent of the total world online population is from non-English speaking zones, compared to 40.2 percent from English speaking zones. Spanish is the number one European language for non-English speaking Internet users. Internet users from Asian speaking zones account for 25.8 percent of the total world online population. This is equivalent to 146.2 million Internet users. Chinese is the number one language in the Asian-speaking zone. Around 55.5 million Chinese speakers use the Internet, compared to 52.1 million Japanese speakers and 25.2 million Korean

63 In a training program with women in Lithuania, participants were astonished to find several information and e-commerce websites in Lithuanian (many of them Canadian) and were able to observe first hand how much certain traditional art pieces were being sold for in the West. This encouraged them to put up their own information and price their own art and crafts to meet the competition. Networked Intelligence for Development training program 2000
use public ICT spaces once they are confident of their overall technical abilities and of their information or communication objectives.

**Know-how access:** The value of physical access is gained only if women are provided with basic computer literacy. In all the case studies recording women’s successful use of e-commerce or e-education tools, some initial basic training must take place. The instruction should be in local language and preferably for women by women in peer-group applied workshop settings.

**Control issues:** The power to decide who has access to ICTs and how ICTs are used is a decisive issue for women. In a women-only space, these issues can be easier set and determined by women than in a mixed-gender space. Control issues determine where ICT access might be made available for women and how they then control what they do with the information. If women are systematically excluded from decision making within the household, in the mosque, in the community, then it is highly unlikely that they will have any decision-making authority on where and how ICTs can be best made available to them. ICT training workshop, can however, facilitate this as a point for discussion and decision.

**Content access:** ICTs can build upon existing information channels that women already have access to, including community information centers, radio broadcasts, television and other local forms of popular media, print and theatre. There are many pilot initiatives around the world where women have successfully adapted audio-visual and interactive media to tell their stories or to record their experiences.

**Geographic mobility issues:** A recent survey in India reports that despite the fact that 45% of the enrollments in technical institutions are women; employment in the ICT sector still favours men – who comprise 70–75% of the labor force. In the South Asian region, 75% of the mobile ICT workers are from India followed by Malaysia, Singapore, Sri Lanka and other countries. The predominant age group is 21-30, with men accounting for over 87% of mobile ICT professionals. Women tend to be less mobile on account of dependency on spouse or domestic responsibilities to the extended family. The same study notes that mobility is directly linked to better productivity and increased transfer of knowledge – which again works against women and their potentials for upward mobility in the ICT sector. Restricted mobility also means that women are less likely to own their own enterprises and/or control the business income. ICTs could arguably “open” up women’s access to business – through bypassing (male) middle agents and delivering services or products virtually.

**Affordability:** Women in poor households cannot afford to use public facilities. Even those women who meet the criteria to own phones in the Grameen Village Phone Program are women with some economic means that place them at a certain income level beyond the poorest. That said, there are studies that show that the poor value information as highly as they might water – and are prepared to pay for information and communications.

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64 P.Pichappan: Toward Optimising Mobility in ICT Sector to Create International Paradox and Gender Balance

ICTs in Bangladesh - implications for Women Workers
Case example: community libraries:

**Jhuwani Community Library, Nepal**

For more than a decade, READ - Rural Education And Development, Nepal - has been building community libraries. These libraries are run with the active participation of the community and have their own income-generating scheme for meeting operating costs and financial sustainability. Over time they have organically expanded into community centers, dynamically involved in the overall development activities of the community. The Jhuwani Library at Chitwan formed a separate women’s group to further the empowerment of women in the community. “Even when we want to sit together and discuss our problems, we do not have any space, and tea shops are not a place that our society accepts for women. Libraries being a place of education, offer a neutral and safe space for us to meet, and enables acceptance from our husband and families”. The formation of women’s groups helped the women gain self-confidence through increased interaction, encouraged their journey into the public sphere and honed them for participation in decision-making roles. Jhuwani Community Library organizes frequent awareness raising programs for women, and organizes interaction programs promoting dialogue and discussion around women’s rights. This platform has helped them to identify problems within their areas and to seek solutions through dialogues with concerned parties. Discussions on issues such as violence against women, trafficking, women's legal rights results in greater awareness amongst members of the community library, and these groups have been able to take action against social injustice at local level.

Although the women in the area have little training and experience in leading rights-based campaigns, they have benefited greatly from participation in group activities and interactions. They are instrumental in designing and planning the content of trainings and workshops, often utilizing library materials for preparation. In July 2005, a new component was added to the myriad activities at Jhuwani Library - the Open Knowledge Network (OKN) project was launched. This project includes the installation of computers in the library and provision of training to the community on the use of computers for addressing issues in the community.

**Community Information Centers, Cambodia** [www.cambodiaCIC.org](http://www.cambodiaCIC.org)

In 2003, The Asia Foundation partnered with USAID and Microsoft to establish a network of Community Information Centers (CICs) in 22 provinces and municipalities across Cambodia, reaching every major population center in the country. The project goal is to create a communication network that allows NGOs, political parties, government officials, and development organizations to increase information sharing, communication, and collaboration between provincial and headquarters offices, and between organizations. The project is also providing greater access to news and information for people and organizations in the provinces outside Phnom Penh on topics including women’s rights, elections, economic development, small business development, education, and health. Today, the centers are regularly used by NGO workers, local government officials, political party members, teachers, small business owners, students, monks, and election monitors. A key element of the project is the development of a local-language web portal that provides user-friendly access to a variety of news and development-related information, such as Mekong River flood levels, human rights contacts, prices of goods and services, job listings, and tourism figures.

**Ganokendras (community libraries) Bangladesh**

Aidlink’s relationship with DAM began in 1995, and has focused on literacy programs aimed particularly at women and children, and the rehabilitation of women who have left the sex trade. Over the past eight years Aidlink has secured funding for 6 projects facilitated by DAM. DAM has set up Ganokendras (community libraries) all over Bangladesh. The Ganokendras supply educational resources as well as training in literacy, gender development, primary healthcare, environmental preservation, and skills development. They also provide a focal point for social and cultural activities. All of DAM’s initiatives involve the full participation of local communities, as beneficiaries, and as part of the decision-making process.
Points of intervention: The issues of access and control are complex and inter-related and the solutions require a holistic regard for women’s status and mobility in her community. Program initiatives need to be imaginative in making changes to address women’s needs. The Cisco Networking Academy Program in Bangladesh, for instance, includes this concern in its recommendations:

“A significant factor hindering women’s better utilization of the course is the tenuous law and order situation that make any after-dark travel for women a very real danger. While evening meetings for the Academy Program are generally preferred so that students can pursue work or other study during the day, this automatically limits the options for women students and the amount of time they are able to stay on campus to use the equipment or access study materials…since transportation and safety issues are a significant barrier to women’s greater participation in the Academy Program, one solution is to integrate the Academy Program into the normal academic curriculum of each institution.”

Similarly, the National ICT policy’s stated goal of establishing connectivity hubs in all post offices – will not reach women, and a physical alternative has to be found that women feel more familiar with. In the rural areas for instance, women-only stores could have a connected computer terminal with a dedicated trainer able to provide basic computer use skills – to enable women to explore information. Similarly, primary health care centers and maternity clinics can, over time, become a convenient location for digital communications. Bringing applied and basic computer training to women working in the garment industry, or encouraging women’s access to computer training in the banking sector is another possibility. There have also been examples of involving the local Muslim clergy “mouvi” in providing access within the mosque where women have a separate space. It cannot be assumed that community-based ICT initiatives will necessarily include women into the net of beneficiaries. In Sri Lanka for instance, one pilot project was located adjoining a garage on the premise that those who came to the garage for vehicle repairs would use the multi-purpose telecenter – but those who patronize the garage are men. Careful planning, an on-going commitment to addressing gendered barriers to access, and the collection of benchmark data from which to begin monitoring progress is necessary.

17. Industry, employment and entrepreneurship

As the fundamental characteristic of Bengali labor force shifts from labor intensive to technology intensive, a number of policies need to be put in place to protect the position of women and their rights. Many of these policies require a legal framework to ensure that women workers are employed fairly and that they are remunerated and provided with employment options as men are. In the micro and small business sector: enterprise support agencies, business intermediaries


66 Leelangi Wanasundera 2005

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and the whole array of membership and non-membership agencies that are broadly referred to as business service providers (BSPs) can have a critical role to play in supporting women entrepreneurs\(^{67}\). In NID’s experience working with women entrepreneurs, it is clear that this is an area that is lagging far behind in supporting an important sector of business development, and this is further confirmed, for instance, by the Donor Guidelines for Business Development Services which point out that it is a field yet to be developed\(^{68}\).

Private sector representative organizations do exist in developing countries, in practically every developing country, Chambers of Commerce and Industry and small enterprise representative associations are active. In comparison to their counterparts in developed economies\(^{69}\), however, membership is not obligatory and these business representation organizations often lack the funding and the political clout required to service their membership. Low membership seems to be a general feature of these agencies. In most African and Asian countries, it is still the government agencies that, for the most part, dominate MSE support programs.

Chambers of Commerce have the potential to play an important role in facilitating the growth of ICT-based services for local enterprises and for the markets they service, but are often under-resourced themselves.

Small business owners need to be able to explore new alliances and networks in a secure environment – developing partnerships with business service providers, and influencing the decision-making and planning of Business Support Providers to promote their services to women-owned businesses.

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\(^{67}\) The ILO’s WEDGE findings also come to the conclusions that to develop and grow, women entrepreneurs require business support services, rather than support in the form of welfare or charity. In some countries, women experience barriers mainly at the stage of entering into business. Once established, they face many of the same problems common to all entrepreneurs. Women have difficulty accessing finance, and even when they do so they obtain smaller loans than men. Growth programmes for women entrepreneurs can only succeed when they address power relations, and improve access to and control over economic opportunities and resources.

\(^{68}\) Hofstede, Gerry. Gender best practices and quality of business development services ILO/SEED Third Annual Seminar on Business Development Services Turin 9 – 13 September 2002

\(^{69}\) Most support for MSEs by private sector NGOs in developed countries comes from associations, federations and Chambers of Commerce. In most European countries, in North America and in Japan, there is a strong movement to create small firm representative bodies that are distinct from the larger business associations. The main purpose of these bodies is to advocate and lobby government to respond to the interests of small-scale businesses in the formulation of national policies. In many of these countries, membership in the local Chamber of Commerce is obligatory.
**Case example: the SEWA applied ICTs model, INDIA** - India's self-employed women's organization, has been organizing women in the informal sector since 1972, and has a membership of over 215,000. It is one of the first organizations in India to realize the potential of harnessing ICTs for the productive growth of the informal sector. By organizing computer awareness programs and offering basic computer skills to its team leaders and association members, SEWA is implementing a well-considered strategic plan for integrating ICTs in some of its main activities. The organization now uses software applications developed for its embroidery, watershed development, salt production and savings and credit projects. The software can generate customized reports on artisan members, grade their products, record their market activities, and keep accurate up to date information for efficient production planning.

SEWA has also used video as a tool of women’s empowerment. SEWA’s cooperative, VIDEO SEWA, has produced video footage on many issues including livelihoods of poor women, using the medium to share information with and raise awareness amongst their members as a tool for training and teaching new skills, and to reach policy makers. The women who run the cooperative and make the films had never even seen a video camera till they underwent training with SEWA. The video now is an integral part of SEWA’s activities.

SEWA’s satellite technology program has enabled the organization to work in over 10 districts of Gujarat, to provide interactive training, linking women to experts and policy makers. ICTs can thus aid many organizational functions in a member-based organization like SEWA including, identity and solidarity building, linkages with and access to the offices of the government, internal governance and capacity building.

**18. Strategic use of ICTs to promote inclusion of and outreach to women**

The networking element of ICTs is invaluable and often understated. The growing numbers of women joining, forming and using virtual networks is almost a natural phenomenon of the Internet. Advocacy groups for political gains have successfully used ICTs for women that further their needs and rights as workers. Compared to other countries in the region, Bangladesh has hardly used ICTs for networking among women organizations, a reflection of the relative low level of diffusion of connected computers and its early stages in community use. The ability to build new social networks at a regional and national level can help to bring benefits to existing networks and institutions at a local level. In order to deliver information services to the poor, information providers need to form strong partnerships with peer information providers, organizations that promote services and raise awareness, as well as organizations that offer the technological and financial infrastructure to keep the network viable. Research studies and experiences show that strengthening the knowledge and information systems of the poor need to incorporate traditional interactive media that can promote two-way knowledge sharing.

It is when ICTs are locally appropriated, with local content, that the political impact is most pronounced. In Kenya for instance, trained women’s groups in Nairobi’s slum areas used video to communicate directly to policymakers about their situation and development priorities. The videos were viewed by government ministers, housing directors, donors and NGOs (and later won the Betinho Award for Technology and Social Justice). The women gained self-confidence and the ability to express their strategic interests, made contacts regionally, and have now set up a local resource center with information on health, training, tenure and employment opportunities.
19. **Using ICTs to improve service delivery to women**

A study of ICTs and its interface with poor women is incomplete if it does not address some of the more revolutionary aspects of the transformation of existing information-intensive industries. It is only a matter of time before ICTs will become an integral part, if not the underlying platform, in the delivery, pricing, monitoring and planning of a wide array of critical services – including water, sanitation, energy, transport, financial services, health care, education, entertainment and government services. It is in the harnessing of ICTs tools as part of the broader strategies and programs in development and poverty reduction, that the immediate and quantifiable impact of ICTs on poverty can be measured.

Two key sectors that have a direct impact on Bengali women are in micro-credit and financial services, and in government services. Innovative ICT solutions might be used to streamline service delivery and thereby benefit a greater number of women.

**The transformation of micro finance service delivery:** Grameen Bank remains Bangladesh's largest provider of micro credit. The other major micro finance institutions (MFIs) are the Bangladesh Rural Action Committee (BRAC), the Association for Social Advancement (ASA), and PROSHIKA. However, community development funds, NGOs, 19 government agencies, and eight commercial and specialized banks also provide small-scale loans to the rural and urban borrowers alike. One of the most urgent and critical applications for ICT is in the arena of micro credit and related financial services (such as insurance) for women. As yet the interface of ICTs with credit delivery is in its infancy, but the need and potential is enormous. The shortage of affordable capital is one of the most critical, if not the most critical factor constraining the sustainability of micro-enterprises.

Arguably, community-based support networks have been ingenious through the ages in pooling together resources and capital; the barter system continues to work for rural communities in both industrialized and developing economies, and these models can be further extended and built upon. However, as the formal cash economy encroaches further and further into household economics, the need for savings and borrowing is gradually increasing.

The financial intermediary sector that services small businesses is beginning to extend it’s reach to poorer sections of the economic community and taking it’s services to those clients who might not otherwise have access. There are a number of ways in which ICTs can service the credit and savings expectations of the poor:

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70 According to Women’s World Banking, to reach just 10% of the low-income entrepreneurs by 2025 requires about US$12.5 billion. To reach a target population of about 180 million low-income entrepreneurs by 2025 would require about US$90 billion.

71 Just as interesting aside, in the US, women own 9 million companies – 38% of all US enterprises, but collect only a tiny fraction of venture-capital investments. In 1999, women-led companies received less than 5% of the roughly $36 billion invested by VCs. Yet according to the Small Business Administration, women’s start-ups outpaced those headed by men in revenue growth by a margin of two to one. In the equalizing space of the Internet, women are retooling their marketing, advertising, sales and publishing skills and graduating from business schools with identical technical expertise to men. Interestingly, some of the more innovative models that businesswomen in the US have initiated take their designs from cooperative finance lending amongst women in countries like Bangladesh.
♦ Adapting and simplifying accounting and loan tracking software;\(^72\)
♦ 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;
♦ Taking savings and credit schemes through mobile banking, smart cards, handhelds, and modified ATMs, to bypass the traditional methods of providing bank services.

As prices of relevant technology like ATMs, biometrics, voice recognition, smart cards, and PDAs continue to fall, more MFIs will be able to take advantage of the benefits they offer. New technologies and applications are constantly being developed aimed at increasing the reach and efficiency of micro-finance organizations. Improvements will make operations more secure, increase transparency, scalability, reduce repetitive tasks, and provide data-mining capabilities that will allow MFIs to compete effectively and better manage their operations.\(^73\)

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\(^72\) The Loan Performer software, [www.loanperformer.com](http://www.loanperformer.com) has grown from humble beginnings in Uganda and now services some seventy MFI institutions around the world. Various software packages are contributing to the increase in efficiency of many MFIs. HISAAB, for example, is group-level microfinance software designed for illiterate and uneducated users. The software is used to document transactions, and allows for more macro-level analysis of lending patterns, cash flows, and repayments. Other software features include the ability to record meeting attendance and savings/credit account transactions, and to exchange data with the central bank office. Cooptions Technologies has developed a software package, Pax@2000, which will computerize the activities of cooperative lending societies and micro-lending banks. The software features online disbursals, data transfer to managing banks, savings/credit account modules, and financial accounting systems. Another, Microfinancer MATRIX, is designed for large micro-lenders. It links the head office to branch offices, and also has built-in accounting and evaluation capabilities.

\(^73\) A new effort to explore such cooperative approaches, and the ICT tools to make them possible, is the Micro development Finance Group (MFG), an initiative convened by technology giant Hewlett-Packard as part of its pro bono initiative under the UNICT Task Force working group on entrepreneurship. The MFG is developing new "end-to-end" technology solutions for microfinance as well as new organizational forms that could increase cooperative efforts such as credit bureaus or pooling loans across many MFIs to access capital markets.
**Case example: Automatic Teller Machine for rural masses, India**

ICICI Bank, India’s largest private commercial bank, uses traditional automatic teller machines (ATMs) to deliver its financial services to the rich and middle class – mostly in urban areas. ATMs are not however suitable for servicing poor and low-income people in remote rural areas – they have high capital and maintenance costs but more importantly – cannot process the small denominations and worn bank notes that are the main currency in Indian villages.

With the help of the Indian Institute of Technology in Chennai and others, ICICI Bank has built user friendly market compatible, low-cost village ATM from home made parts and programming. The machine can survive extreme weather conditions and power outages and uses fingerprint scanning to identify savers who are illiterate or who are unable to use a personal identification number.

The rural ATM is being pilot-tested. Depending upon results, ICICI Bank expects to use it to mobilize savings and to provide deposit facilities to millions of poor families.


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**Case example: Prodem Fondo Financiero Privado, Bolivia**  [www.prodemffp.com](http://www.prodemffp.com)

In Bolivia, one MFI is providing ATM-enabled banking services to Bolivians that do not have access to the traditional banking system. ACCION International established PRODEM FFP as an NGO in 1986. Since 1999, it has been a regulated, privately held financial fund focused on bringing microfinance services to underserved communities, both rural and urban. In a country where 70% of the general population and 94% of the rural population are classified as poor, PRODEM has designed its own ATM, tailored to meet the needs of its rural customers.

The company provides its customers with a smart card, so that the ATMs are able to verify the customer's identity and complete transactions without being electronically connected to the central office, thereby allowing PRODEM to expand its reach into remote areas. The ATMs also serve customers who cannot come to their branches during normal business hours. Moreover, the ATMs are capable of "speaking" to their users in their local language, thus enabling illiterate customers to access their services. Audio instructions are currently available in Spanish, Quechua, or Aymara. Combined with a touch screen interface, customers are able to deposit and withdraw funds without filling out a deposit slip or withdrawal form. Additionally, the ATMs facilitate money transfers, and provide access to government programs that provide work for low-skill workers and make payments to senior citizens.

PRODEM's ATM software was developed by a subsidiary of PRODEM, Innova Empresarial, which specializes in technology and consulting services. Its features include an easy-to-use administrative interface, as well as a number of reporting options, including daily, weekly, and monthly. In addition, Innova is in the process of developing palm technology that would enable PRODEM to take their financial services, via a handheld, into local homes and businesses of their customers. ICTs are also being used by VOXIVA to allow MFIs located in Peru to expand their reach. The company uses a phone-based system with voice prompts to expand microfinance networks into rural areas that have high numbers of illiterate people. The service reduces operating and transaction costs, resulting in savings that can be passed on to the borrower.

Bringing banking services directly to the poor is not a new phenomenon – there is ample evidence of the economic value of extending credit and savings services to rural women in particular. Introducing the electronic factor to this service however has immense implications both in enabling women to track their own accounts and to conduct their own financial planning,
and also in terms of maintaining the transparency of accounts at both the individual and the institutional level. Women workers, such as RMG workers, are unlikely to be able to visit the bank after work—being met at the factory door on pay day, however, means that she can make a payment towards a loan, add to her savings, and in this way, her financial literacy is deepened.

At the same time, women might not have access to government scheme information, which allows them to tap into the financial subsidies that they are due. As this kind of information becomes available over the Internet – the same ICT devices that bring credit and savings management to women can also be used to record and monitor women’s use of these facilities. As banking services become a built-in function of mobile wireless telephony, these aspects of recording and completing transactions will expand.

20. **Government Services**

As ICT tools, computerization and information management systems are applied to government activities and services, the efficiency and efficacy of government should improve – with direct benefits to the poorer sections of citizenry. ICT and e-government applications will reduce personal interactions between government and citizen and can increase the transparency of government operations.

Under current models of information delivery from the government to the citizen, the poor find it more difficult to access information on their entitlements, let alone act on them. Social education content – (such as on HIV/AIDS prevention, reproductive health, etc) needs to be designed in a way that promotes effective channels for citizen access. Business people also generally lack information on their legal rights and government procedures to obtain the services that they require. Small local associations of businesses, known as *samities* attract mainly SME members and have the potential, with capacity building support, of advocating for business rights. Similarly, ICT applications that can be applied to land ownership/title data bases, procurement documents and registration procedures will ensure accountability and transparency.

As the government begins to make current government documents and forms available on-line, and extend this initial service to the provision of licensing and registration processes, poor sections of the population will be better able to make applications for their entitlements or for information. As Box III summarizes, the current National ICT Policy does identify with the importance of providing the public with a broad spectrum of information and related support services. What is not clear is how the government will initially gauge what kinds of information gaps exist – and how women in particular will be involved in determining the content of these

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74 E-Government refers to the use by government agencies of information technologies that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions. Traditionally, the interaction between a citizen or business and a government agency took place in a government office. With emerging information and communication technologies it is possible to locate service centers closer to the clients. Such centers may consist of an unattended kiosk in the government agency, a service kiosk located close to the client, or the use of a personal computer in the home or office.
services. In Rajasthan, India, an e-governance program called RajNidhi focused on the easy-to-use software and provided information in Hindi, but due to the centralized design of the program, did not take local conditions into consideration, and the program no longer exists. A comprehensive, decentralized and locally involved e-government program on the other hand, such as that implemented in Kerala, is a model that needs to be replicated.

**Box III: Extract from National ICT Policy 2002 – Bangladesh**

**3.10 Social Welfare**

3.10.1 Nation-wide ICT systems will be implemented for rural development activities, agricultural, horticulture, fisheries and livestock extension for farmers, career guidance for youth, technology guidance for rural enterprises, micro level planning etc. Communities and user groups or beneficiaries would be actively encouraged to participate in all such activities.

3.10.2 Public grievance redressal will be incorporated in the ICT-based system to facilitate access to citizens through any of the kiosks, public facilitation centres or Government offices. It would be made email based and strengthened to facilitate monitoring and on-line responses.

3.10.3 Non-government organizations will be encouraged to establish centres at the village level for providing hardware/software or other support services. At the same time the Government will use both the formal and non-formal channels to disseminate information about the application, advantages to communities of the use of ICT.

**Case example: State-Intervention ICT Projects in Kerala, India**

<table>
<thead>
<tr>
<th>Project</th>
<th>E-Government objectives</th>
<th>Level of govt. implementation</th>
<th>Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRIENDS</td>
<td>Payment of bills</td>
<td>Capital city</td>
<td>Transparent administration, access to services</td>
</tr>
<tr>
<td>PEARL</td>
<td>Registration of land</td>
<td>Capital city</td>
<td>Transparent administration; access to services</td>
</tr>
<tr>
<td>Project Grameen</td>
<td>Education of local citizens and formulating grassroots programmes</td>
<td>Local council (Panchayat)</td>
<td>Employment, empowerment and increased local participation</td>
</tr>
<tr>
<td>Information Kerala Mission</td>
<td>E-governance</td>
<td>Local council (Panchayat)</td>
<td>Increased participation and empowerment</td>
</tr>
<tr>
<td>Akshaya</td>
<td>Providing e-services</td>
<td>Malappuram District</td>
<td>Governance, employment, participation, participation</td>
</tr>
<tr>
<td>Kudumbashree</td>
<td>Poverty alleviation scheme through women's self-help groups</td>
<td>State-wide</td>
<td>Self-employment, empowerment and poverty reduction</td>
</tr>
<tr>
<td>IT@School</td>
<td>Learning and teaching</td>
<td>All Kerala Government schools</td>
<td>Training and education</td>
</tr>
</tbody>
</table>

**V Summary Recommendations: Policies and Programs**

While data on women’s access to ICTs is inconclusive, there is enough anecdotal information in Bangladesh and in the region that can inform recommendations for ways forward to support women’s increased access to and appropriation of ICTs.
The recommendations that follow cover gender mainstreaming policies as well as gender-specific activities on the ground - both are equally important and need to evolve in tandem.

21. **Policy Recommendations**

There are overarching policy recommendations that need to be secured and enacted immediately, which will underpin all program and project activities that promote ICT use by women. Section II provides the context and framework for these recommendations.

1. Collection and analysis of *sex-disaggregated data* by government ministries, private sector, NGOs and donors regarding ICT use;

2. Review and revision of Bangladesh’s *National ICT policy* to include gender analysis and recommendations throughout the document;

3. Review and revision of the *PRSPs to incorporate ICTs* as a crosscutting factor of development in all documents.

22. **Principles of engagement:**

In addition, there is a set of clear *principles of engagement* that should guide the processes of affecting gender sensitive change:

1. Consolidate and build upon the work of *existing activities and outreach* of NGOs, women’s groups and business associations that are already applying ICTs in their programs and projects with girls and women – build on their existing track record in the field;

2. Work with *existing community networks* such as PROSHIKA and BRAC to support integration of ICTs into their activities in an applied and comprehensive way, work with *existing information systems* and design initiatives that build on these – connecting to traditional knowledge;

3. Involve ICT users – in this case, women – in the *planning, management and design* of ICT applications and their means of access. Avoid top-down initiatives that ‘externalize’ the value of information and knowledge, encourage community-driven initiatives that value indigenous information and experiences and that promote local decision-making;

4. Work with a wide range of *horizontal and vertical linkages* – in a networked world, the value of the network is in the different interests, partners and stakeholders brought around the ‘hub’;

5. Keep the *three dimensions of ICTs* (connectivity, computing and commerce) in mind in all gender and development work.
The range of policies and activities outlined below provide examples of changes that can be implemented and can be read in conjunction with the points of intervention already determined in section IV.

A final comment

The introduction of ICTs into the daily lives and activities of women in Bangladesh represents an unprecedented opportunity to meet their practical needs and strategic interests. While women’s access to ICTs is an important value proposition in terms of their employability in the ICT sector, policymakers should not automatically equate employment with empowerment. Policies and programs need to ensure that women understand the full economic and social implications of working with ICTs, and how they can adopt ICTs as a launch-pad for their education, skills building and empowerment in a much more discerning and systematic way. In other words, women can adopt ICTs, the ‘new’ factors of production, for their personal and long term development as equal stakeholders in the knowledge economy.

Bangladesh’s Grameen Village Phone Program for instance, is one of the most cited examples showcasing an innovative program that popularizes phone use in rural areas by poor people. This initiative – a venture to introduce cellular payphones in villages - is a successful convergence of small-scale credit, small-scale sale of wireless service, and small-scale capital outlay – (underwritten by large-scale financing) - but is not necessarily an indication of future trends either in phone access by women or in the employability of women. The women involved in the Village Pay Phone (VPP) program might be earning an income, providing a service and managing a business, but they are not necessarily being enabled to take key decisions around the use of ICTs or embarking on life-long learning. Similarly, many of the e-commerce based initiatives where women are producing crafts or hand made products to market on line, do not in fact provide women with direct control over ICTs per se – they are quite far removed from the decisions and the applications around ICTs. In contrast, there are initiatives where ICTs are integrated comprehensively throughout an existing institution – such as in SEWA where women learn to apply different kinds of ICTs to their activities or Tortas Peru where women are trained in the tools of trade and Internet necessary for them to conduct their business.

As noted earlier, the key trends in today’s ICT sectors are outsourcing and globalized production networks. Brands like HP, IBM and Dell increasingly concentrate on their core competencies, such as R&D, sales marketing and branding. The actual product production is sourced out to the contract manufacturers, which supply flexible production operations, predominantly in low wage countries. Different levels of contract manufacturers are shaping a new global division of labor.
Through research done by the Center for Research on Multinational Companies\textsuperscript{75}, poor working conditions and environmental degradation in many of these production facilities have come to light. A picture emerges of predominantly women workers working up to 72 hours a week, with compulsory overtime, insecure working contracts, unsafe factory conditions and inadequate protection against hazardous materials, wages that are not enough to live on, suppression of workers’ associations, representations and degrading treatments. \textit{Conditions that, up until a few years ago, were mostly associated with the garment industry.}

Many developing countries turn to the ICT sector as a new opening for attracting foreign direct investment - primarily in data entry and call center facilities. These facilities, however, are currently located in a small handful of countries – India, Israel, Ireland, Mexico, Philippines and increasingly China. The projected development of this aspect of labor-intensive, low-skilled ICT work seems to be no different from the route followed by the long-established garment and electronics industries: poor wages, poor work conditions, the absence of workers’ representation, little to no skill or technology transfer, absence of career growth, and feminization of the low-end low-pay jobs. Poor nations, it appears, are competing with each other to attract transnational corporations in a race to the bottom.

There is a risk, particularly in an economy like Bangladesh, of regarding women’s interface with ICTs solely in terms of upgrading their skills to make them employable in the ICT sector to the exclusion of the potentially deeper and long-term benefits that ICTs might have for women’s overall social and knowledge-based development. \textit{In other words we need to be alert to the reality that ICTs can either reinforce gender differences or can help to overcome them.}

Additionally, a common criticism of ICT for development projects are that they fail to build on existing systems of work in a participatory way and therefore do not achieve local input and local ownership. There is often a gap between the design of an ICT project and the reality of what can unfold on the ground and the long-term implications for women.

Technology access needs to play itself out in the context of social inclusion. Bangladesh can capitalize on the experiences of other countries, and explore approaches based on the positive experiences of women workers in ICT sectors elsewhere.

\textsuperscript{75} www.somo.nl
A selection of web-based resources for further information

Asian and Pacific Center for Transfer of Technology
http://www.unescap.org/esid/GAD/events

Creating Opportunities for Bangladesh – JOBS
http://www.jobsproject.org

ELDIS ICT for Development
http://incommunicado.info/aggregator/sources/22

Gender Equality between Men and Women – an ILO vision

Women's ICT-Based Enterprise for Development project
http://www.womenictenterprise.org

The South Asian Women’s Network
http://www.sawnet.org

CEDEFOP: Generic ICT Skills Profiles

GEM: Gender Evaluation Methodology for Women and ICTs—A Learning Tool for Change and Empowerment; http://www.apcwomen.org/gem/index.htm

National Institute for Women in Trades, Technology and Science
http://www.iwitts.com

International Telecommunications Task Force on Gender Issues
http://www.itu.int/ITU-D/gender/

Development Gateway
http://topics.developmentgateway.org/ict

LCG Bangladesh - forum for donor coordination – click on sub group WAGE for gender issues
http://www.lcgbangladesh.org

USAID ICT projects inventory
http://www.dec.org/partners/ict/ICTsearch.cfm
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ICTs in Bangladesh – implications for Women Workers

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USAID Bureau for Economic Growth, Agriculture and Trade. 2004 Information and Communication Technology for Development: USAID’s Worldwide Program


## Annex I: Summary list of ICT case examples

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<th>Organization</th>
<th>Country</th>
<th>Participation by women</th>
<th>ICT application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoe industry</td>
<td>JOBS program</td>
<td>Bangladesh</td>
<td>Self employed leather workers, mechanized labour in factories</td>
<td>E-commerce applications for export of shoes</td>
</tr>
<tr>
<td>Agricultural extension service</td>
<td>National Institute of Agriculture extension</td>
<td>India</td>
<td>Women manage village information kiosks</td>
<td>Internet based information and CDs on income generation</td>
</tr>
<tr>
<td>e-villages</td>
<td>MS Swaminathan Foundation</td>
<td>India</td>
<td>Women manage pre-loaded computer terminals</td>
<td>Daily bulletins and market info updates received by email</td>
</tr>
<tr>
<td>Trade Facilitation Center</td>
<td>Self Employed Women's Association</td>
<td>India</td>
<td>Women producers links to computer operators</td>
<td>On line selling of products made by women</td>
</tr>
<tr>
<td>HipKnit</td>
<td>SHEWD</td>
<td>Nepal</td>
<td>Women learn handicraft &amp; business skills</td>
<td>On line selling of woolen clothing made by women</td>
</tr>
<tr>
<td>Ecota Forum</td>
<td>Peoplink</td>
<td>Bangladesh</td>
<td>Women's producer organizations become members</td>
<td>On line selling of artisan products made by women</td>
</tr>
<tr>
<td>K2crafts.com</td>
<td>CIGM</td>
<td>India</td>
<td>Women's weaving cooperatives</td>
<td>Networking, marketing and record management</td>
</tr>
<tr>
<td>Women cake sellers</td>
<td>Tortas Peru</td>
<td>Peru</td>
<td>Individuals manage own internet orders</td>
<td>Internet based orders for cakes</td>
</tr>
<tr>
<td>Teleworking &amp; development policy</td>
<td>Government of Malaysia</td>
<td>Malaysia</td>
<td>National study on women's employment in teleworking sector</td>
<td>Five year plan includes women's employment issues</td>
</tr>
<tr>
<td>Proactive employment policy</td>
<td>Mongolia Telecom</td>
<td>Mongolia</td>
<td>Training for women to be promoted to management</td>
<td>Peer networking, ICT training and job placements</td>
</tr>
<tr>
<td>Computer literacy</td>
<td>TAECT</td>
<td>Taiwan</td>
<td>Women's groups and individuals</td>
<td>Training workshops &amp; computer access</td>
</tr>
<tr>
<td>Community library</td>
<td>READ</td>
<td>Nepal</td>
<td>Separate women's group</td>
<td>Training workshops &amp; computer access</td>
</tr>
<tr>
<td>Community information centre</td>
<td>CambodiaCIC</td>
<td>Cambodia</td>
<td>Local language web portal</td>
<td></td>
</tr>
<tr>
<td>Community library</td>
<td>DAM/Aidlink</td>
<td>Bangladesh</td>
<td>Literacy training</td>
<td></td>
</tr>
<tr>
<td>Applied ICTs in all activities</td>
<td>SEWA</td>
<td>India</td>
<td>Women create own training materials, learn IT applications</td>
<td>Software applications, training with video</td>
</tr>
<tr>
<td>ATM for rural masses</td>
<td>ICICI Bank</td>
<td>India</td>
<td></td>
<td>ATM access for poor people</td>
</tr>
<tr>
<td>Microfinance</td>
<td>Prodem FFP</td>
<td>Bolivia</td>
<td></td>
<td>ATM software</td>
</tr>
<tr>
<td>E-government services</td>
<td>State of Kerala</td>
<td>India</td>
<td></td>
<td>E-government tools</td>
</tr>
</tbody>
</table>
Annex II: Bangladesh - Summary gender profile

<table>
<thead>
<tr>
<th></th>
<th>Bangladesh</th>
<th>South Asia</th>
<th>Low income</th>
</tr>
</thead>
<tbody>
<tr>
<td>GNP per capita (US$)</td>
<td>210</td>
<td>280</td>
<td>330</td>
</tr>
<tr>
<td>Population</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total (millions)</td>
<td>85.4</td>
<td>110.0</td>
<td>120.1</td>
</tr>
<tr>
<td>Female (% of total)</td>
<td>47.9</td>
<td>48.2</td>
<td>48.3</td>
</tr>
<tr>
<td>Life expectancy at birth (years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>49</td>
<td>55</td>
<td>58</td>
</tr>
<tr>
<td>Female</td>
<td>48</td>
<td>55</td>
<td>59</td>
</tr>
<tr>
<td>Adult illiteracy rate (% of people aged 15+)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>60.0</td>
<td>55.7</td>
<td>53.2</td>
</tr>
<tr>
<td>Female</td>
<td>82.8</td>
<td>76.3</td>
<td>73.1</td>
</tr>
<tr>
<td>LABOR FORCE PARTICIPATION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total labor force (millions)</td>
<td>40</td>
<td>51</td>
<td>59</td>
</tr>
<tr>
<td>Labor force, female (% of total labor force)</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total (% of total labor force)</td>
<td>..</td>
<td>1.9</td>
<td>2.5</td>
</tr>
<tr>
<td>Female (% of female labor force)</td>
<td>..</td>
<td>1.9</td>
<td>2.3</td>
</tr>
<tr>
<td>EDUCATION ACCESS AND ATTAINMENT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net primary school enrollment rate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>..</td>
<td>68</td>
<td>..</td>
</tr>
<tr>
<td>Female</td>
<td>..</td>
<td>60</td>
<td>..</td>
</tr>
<tr>
<td>Progression to grade 5 (% of cohort)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>18</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>Female</td>
<td>26</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>Primary completion rates (% of relevant age group)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>Female</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>Youth illiteracy Rate (% of people aged 15-24)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>55.3</td>
<td>49.3</td>
<td>46.4</td>
</tr>
<tr>
<td>Female</td>
<td>74.1</td>
<td>66.8</td>
<td>63.7</td>
</tr>
</tbody>
</table>

76 World Bank Database of Gender Statistics.
### Annex III: Bangladesh - ICT Profile (http://www.apdip.net/projects/dig-rev/info/bd)

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>138.23 million</td>
</tr>
<tr>
<td>Rural population as a percentage of total population</td>
<td>76% (estimated)</td>
</tr>
<tr>
<td>Key economic sectors</td>
<td>Ready-made garments, frozen foods and shrimp, tea, raw jute and jute products, leather and leather products, chemical fertilizer, handicrafts, ceramic products.</td>
</tr>
<tr>
<td>Literacy in the national language(s)</td>
<td>56%</td>
</tr>
<tr>
<td>Computer ownership per 100 inhabitants</td>
<td>0.78²</td>
</tr>
<tr>
<td>Telephone lines per 100 inhabitants</td>
<td>4.64³</td>
</tr>
<tr>
<td>Internet hosts per 10,000 inhabitants</td>
<td>0.015 (estimated)</td>
</tr>
<tr>
<td>Internet users per 10,000 inhabitants</td>
<td>19.04</td>
</tr>
<tr>
<td>Internet cafés/telecentres per 10,000 inhabitants</td>
<td>0.19 (estimated)</td>
</tr>
<tr>
<td>Internet users per 10,000 inhabitants</td>
<td>19.04</td>
</tr>
<tr>
<td>Cell phone subscribers per 100 inhabitants</td>
<td>3.91³</td>
</tr>
<tr>
<td>Number of websites in the national language(s)</td>
<td>200 (estimated)</td>
</tr>
<tr>
<td>Number of websites in English and other language(s)</td>
<td>600 (estimated)</td>
</tr>
<tr>
<td>National bandwidth within the country</td>
<td>68 Mbps (data) (estimated)</td>
</tr>
<tr>
<td>National bandwidth to and from the country</td>
<td>112 Mbps (estimated)</td>
</tr>
</tbody>
</table>

**Key ICT Information**

- A computer (Pentium 4 or equivalent with > 128 MB of RAM) can be purchased will full accessories from Dhaka (other cities as well) at approximately Tk. 28,000 (USD451) for a clone computer and about Tk. 55,000-70,000 (USD890 to USD1,130) for a name brand computer.
- Internet connections can be purchased along with computers and are billed on a per-minute basis with costs being at the time of writing, Tk. 0.50 per minute (USD 0.008) and could drop lower during off-peak hours.
- Typical commercial cyber cafes are based upon a dial-up Linux computer with a PPP connection or a Wireless connection to a nearby ISP or a Wireless Client using nearby 802.11b spread spectrum transeivers / access points and an internal local area network serving 5-10 computers.
- For "always-on access" the typical rates are Tk. 800-1,000 per month (USD13-16).
Notes:
2. ITU Estimate, 2003
3. Number of Telephone: Fixed - 1,007,450, Cell - 5,413,800, Total - 6,421,250 (as on 9 May 2005). Source: Bangladesh Telecommunication Regulatory Commission
4. The number of website registered with dot bd authority as on 30 April 2005. In Bangladesh, dot bd is not popular. Businesses and government agencies tend to use dot com and dot org domains.