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MOVING BEIJING FORWARD: GAPS AND CHALLENGES

(Panel I of the tentative programme)

GENDER RESPONSIVE INFORMATION SOCIETY*

* This paper was prepared by Dr Nancy Hafkin, Director of Knowledge Working Consulting Firm and former Chief, the Development Information Section, UNECA (1995-2000) and former Chief, the Pan African Development Information System. The opinions, figures and estimates set forth in this paper are the responsibility of the author, and should not necessarily be considered as reflecting the views or carrying the endorsement of the United Nations.

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Table of Contents

Introduction	1
Gender and the World Summit on the Information Society (WSIS).....	3
Major gender and information society concerns in the ESCAP region.....	5
Intra-regional differences	17
Selected references	18

**Globalization and the economic empowerment of women:
Defining and building a gender-responsive information society
in the ESCAP region**

Introduction

This issue has been included on the agenda of this meeting upon the recommendation of the Expert Group Meeting in Preparation for the High-Level Intergovernmental Meeting on the Review and Implementation of the Beijing Platform for Action (March 2004) which identified information and communication technology as one of the emerging challenges in the region, vis-à-vis the Beijing Platform for Action (BpfA) and the Outcome Document of the Global Review of the BpfA. It should also be recalled that the five-year review of the BpfA found that gender differences and disparities had been ignored in policies and programmes dealing with the development and dissemination of improved technologies, resulting in women benefiting less and being disadvantaged more by technological advances. The five-year review recommended that actions needed to be developed and implemented to avoid new forms of exclusion and ensure that women and girls have equal access and opportunities to new developments in science and technology (DAW, 2001: 294-295).

Why the concern about gender and the information society in the ESCAP region?

The Asia-Pacific region is going through a period of rapid and far-reaching economic and social change, driven particularly by accelerating globalization and the transition to knowledge-based economies, built on the foundation of ICT. Among the impressive developments in the application of ICT are the Malaysian Multimedia Super Corridor, the 15 newly established digital universities in Korea and 67 on-line colleges established by conventional universities in China. Technology-enabled service industries are growing at dizzying rates. However, most of the growth has been sharply uneven, concentrated in richer countries and in urban areas within countries, in a diffusion that mirrors economic and social divides. There is a concern about deeper and wider exclusion of women in the ESCAP region with the further growth of the information society.

...In reviewing and developing policies and corresponding strategies and programmes which encourage innovation, access and the development of advanced skills and channel new technologies towards the most urgent needs of the world's poor people, it is critical to ensure that the gender dimensions are equally addressed (ESCAP, 2002: 2, 4).

ESCAP has clearly articulated its position on the gender digital divide:

Closing the gender divide is a UNESCAP priority enabled through gender-responsive ICT capacity development for women's organizations, policy recommendations, research publications, and mobilization of international, civil society and governmental organizations. It is essential to focus on the gender dimensions of the digital divide, not only to prevent adverse impact of the digital revolution on gender equality and to enhance women's access to the benefits of ICT, but also to ensure that ICT becomes a central tool for women's empowerment

and the promotion of gender equality. Policies need to ensure that the gender perspectives of ICT access and use are fully addressed so that ICT actively promotes gender equality and ensures that gender-based disadvantages are not created or perpetuated. (<http://www.unescap.org/esid/GAD/Issues/ICT/index.asp>, accessed 29 August 2004).

Before proceeding to consider the main areas in the construction of a gender-responsive information society in the ESCAP region, this paper will set forth some basic definitions of terms and issues under discussion and review the deliberations of the recent World Summit on the Information Society on gender.

What is information society?

Information society is a society in which people interact with technology as an important part of life and social organization to exchange information on a global scale. It is a society influenced and impacted by the changes taking place in the information, communications and technology (ICT) sectors and a society in which advanced technologies are used to improve living and working conditions for all citizens. It is a society is a term that is conversant with — and reliant upon — information and communications technology.

The information society is concerned with both life in general as well as the world of work. It is not limited to urban elites that are most closely associated with computer use. It is about the use of information technologies as tools to improve the lives and livelihoods of all citizens and, thus, is closely associated with the alleviation of poverty.

What do we mean by a gender-responsive information society?

A gender-responsive information society is the corrective to the gender digital divide. There is a gender digital divide in both developed and developing countries, although its attributes are different according to levels of economic and social development. It is particularly evident in developing countries. Ironically, where it is most pronounced, it is also statistically invisible. It recognizes that gender-blind information society does not respond equitably to the needs of both men and women, but rather that specific attention must be paid to gender if gender-positive results are sought (Hafkin, 2002).

What are ICTs?

Information and communication technologies (ICTs) are the tools that people use to share, distribute and gather information and to communicate with one another through the use of computers and computer networks. Commonly, they are understood to include computers, communication technologies (including radio, television, video, telephone, fax, mobile telephony, and Internet), networking and data processing capabilities and software. The phenomenon of convergence means that telecommunications, broadcasting and ICTs are becoming increasingly linked and interchangeable. Additionally, the definition of ICTs is coming to encompass both new and older information technologies, as the new work together with the old to further information exchange and communication (e.g. the linkage of Internet and radio). New developments in ICTs,

particularly in wireless communication and the use of SMS in mobile telephony, are cutting the costs and extending the reach of the new technologies to areas and populations that were previously un- and underserved, thereby increasing the possibilities of access for poor women and for all women living in rural areas. IT (information technology) is frequently used to refer to the information technology industry; it has also come to be used interchangeably with ICTs, in that virtually all information technology is inseparable from communications and networks. Therefore it goes without saying that IT is ICT.

Gender and the World Summit on the Information Society (WSIS)

Despite a process that was rife with months-long struggle over the inclusion of gender issues (see Hafkin, 2004), the conclusions of World Summit on the Information Society (phase I, Geneva, 2003) contained many positive references to gender issues. Analysis of the main recommendations proposed by the Gender Caucus, an informal, multi-stakeholder group, shows that they were all incorporated into the WSIS Declaration of Principles (WSIS, 2003) and Plan of Action (WSIS 2003a). The table below shows the main recommendations of the Gender Caucus followed by the text from the Declaration of Principles and Plan of Action that reflects those recommendations.

Gender Caucus recommendations	Text adopted by the World Summit
Gender as a fundamental principle for action.	<p>Our challenge is to harness the potential of information and communication technology to promote the development goals of the Millennium Declaration, namely . . . promotion of gender equality and empowerment of women. . . (Declaration of Principles, para 2)</p> <p>To this end [women’s empowerment and full equality in all spheres of society and all decision-making processes], we should mainstream a gender equality perspective and use ICTs as a tool to that end (Declaration of Principles, para 12).</p>
Equitable participation in decisions shaping the information society.	We affirm that development of ICTs provides enormous opportunities for women, who should be an integral part of, and key actors, in the Information Society. We are committed to ensuring that the Information Society enables women’s empowerment and their full participation on the basis of equality of all spheres of society and in all decision-making processes (Declaration of Principles, para 13).
New and old ICTs in a multimodal approach.	<p>Traditional media in all their forms have an important role in the Information Society, and ICTs should play a supportive role in this regard (Declaration of Principles, Media, para 55)</p> <p>Encourage and promote joint use of traditional media and new technologies (Plan of Action, Information and communication infrastructure, para 91).</p>
Designing ICTs to serve people.	<p>Applications should be user-friendly, accessible to all, affordable, adapted to local needs in languages and cultures, and support sustainable development (Declaration of Principles, ICT applications, para 51)</p> <p>Facilitate access to world’s medical knowledge and locally-relevant content resources’ to promote men’s and women’s health (Plan of Action, E-health, para 18b)</p> <p>Encourage the adoption of ICTs to improve and extend health care and health information systems to remote and underserved areas, recognising women’s roles as health providers in their families and communities (Plan of Action, E-health, para 18e)</p>

Gender Caucus recommendations	Text adopted by the World Summit
Empowerment for full participation.	<p>Literacy and universal primary education are key factors for building a full inclusive information society, paying particular attention to the special needs of girls and women (Declaration of principles, Capacity building, para 4)</p> <p>Work on removing the gender barriers to ICT education and training and promoting equal training opportunities in ICT-related fields for women and girls. Early intervention programmes in science and technology should target young girls with the aim of increasing the number of women in ICT careers (Plan of Action, Capacity-Building, para 11g).</p> <p>Governments, in collaboration with stakeholders, are encouraged to formulate conducive ICT policies that foster entrepreneurship, innovation and investment, and with particular reference to the promotion of participation by women (Plan of Action, Enabling Environment, para 13I)</p> <p>Encourage the development of best practices for e-workers and e-employers built, at the national level, on principles of fairness and gender equality, respecting all relevant international norms (Plan of Action, E-employment, para 19a)</p> <p>Promote teleworking to allow citizens, particularly in the developing countries, LDCs, and small economies, to live in their societies and work anywhere, and to increase employment opportunities for women . . . (Plan of Action, E-employment, para 19c)</p> <p>Promote early intervention programmes in science and technology that should target young girls to increase the number of women in ICT careers (Plan of Action, E-employment, para 19d).</p> <p>Strengthen programmes focused on gender-sensitive curricula in formal and non-formal education for all and enhancing communication and media literacy for women with a view to building the capacity of girls and women to understand and develop ICT content (Plan of Action, cultural diversity and identity, para 23 h)</p>
Research analysis and evaluation to guide action.	<p>In cooperation with each country concerned, develop and launch a composite ICT Development (Digital Opportunity) Index. It could be published annually, or every two years, in an ICT Development Report. The index could show the statistics while the report would present analytical work on policies and their implementation, depending on national circumstances, including gender analysis (Plan of Action, Follow-up and evaluation, para 28a).</p> <p>Gender-specific indicators on ICT use and needs should be developed, and measurable performance indicators should be identified to assess the impact of funded ICT projects on the lives of women and girls (Plan of Action, Follow-up and evaluation, para 28d).</p>

WSIS-phase 2

Women have already begun organizing for WSIS Phase II, to be held in Tunis in November 2005. There is interest in strengthening the gender principles articulated in the Declaration of Principles, Many gender advocates feel that the gender principles included in the Declaration of Principles (viz., - ‘Women are key actors in the information society. We are committed to ensuring that the information society enables women’s empowerment and their full participation on the basis of equality in all spheres of society and in all decision-making processes) are much weaker than that the statement contained in an earlier draft of the declaration. Emphasis is also on working to ensure that delegations implement the gender-related recommendations in the Action Plan and

identifying lacunae in gender issues that remain to be addressed in the Declaration and Action Plan. Some of these are:

- exploitation, violence against women and sexism on the Internet
- explicit recognition of the use of traditional communications technologies
- references to women and/or gender equality in the suggested indicators/targets for 2015
- references to women and decision-making in ICT policy, in addition to the references to ‘all stakeholders.’

Major gender and information society concerns in the ESCAP region

All of the WSIS recommendations are pertinent to the ESCAP region. However, there are issues and points of emphasis that are of specific importance to the region that we will now proceed to examine. These are listed below, not necessarily in priority order.

- Employment
- ICT for Development (ICTD)
- Access
- Capacity building
- Content
- Sexual exploitation and harassment on the Internet
- Statistics and indicators
- Gender in ICT policy

Employment

Outsourcing

The ICT industry employment picture in the ESCAP region overall is male-dominated, with women working at lower levels and concentrating in data entry, word processing and transcription work. This reflects training patterns, where young women tend to be the large majority of those enrolled in office application computer courses, but a small percentage of those studying programming or computer engineering.

Upon enlarging the picture, one sees that the rapidly developing area of Business Process Outsourcing (BPO)¹ has changed many aspects of women’s IT employment and has become the major issue in women’s information society-related work in the ESCAP region. BPO is the single largest technology-enabled employer of women and one in which women are earning significant livelihoods in several countries. However, it is not without controversy.

In the first place, the growing trend towards outsourcing of information processing work pits developing countries against developed. In the present run up to the presidential election in the US, the loss of jobs to outsourcing has become a major political issue, with

¹ Business Process Outsourcing (BPO) is also known as Information Technology Enabled Services (ITES).

each candidate trying to establish himself as more opposed to outsourcing than the other as voters who have lost their jobs to overseas deployment enter the voting booths. The reality, however, is that US-based, and other, multi-national corporations, are unlikely to reverse their increasing use of outsourcing for both software and hardware development as well as BPO, the service segment of IT work of which women are the vast majority.

Beyond the controversy at the level of macro-economic globalization issues are the questions of its meaning for women's lives and work. Does BPO employment constitute gender-responsive participation of women in the information society? Views on this subject diverge widely. Critics of the young women working in call centres focus on the self-denying cultural aspects, where the pressure is on to learn American accents, popular speech and culture and to adopt American first names as well (where Deepti becomes Dottie). Such employment has been termed 'dumbing down of a generation' because:

It is mind-numbing and deskilling-the knowledge and skills acquired in school and college are inapplicable here. The working is boring but stressful, and girls are expected to retain their composure and patience even in the face of verbal assaults by irate customers (Gaerlan, 2004).

In addition, women do not profit from the flexibility that ICTs are supposed to represent, but rather become tied to shifts that match U.S. peak call times, but that frequently come after midnight in India, the current centre of BPO work. Worse off than the women working in call centres are those doing as home-based technology work in the unorganized sector. These women, found in substantial numbers in India and the Philippines, do medical and legal transcription and maintenance of daily accounts for small businesses located in northern countries. (They are frequently termed 'virtual assistants'). While able to work at home, they perform their work in addition to all the standard domestic labour expected of married women (the call centre employees are generally unmarried women living with their parents), for low wages relative to those working in the organized sector and under insecure employment contracts (if contracts exist at all). Women working at home have to make substantial investments to secure their work- the purchase of computers, paying for electricity and Internet connectivity and personal sacrifices -staying up all night to meet deadlines. The numbers of women in home-based IT employment, however, are relatively small compared to those in BPO.

In the organized sector, there are also the issues of women in management and levels of women's employment. BPO employment is not professional information technology employment. The work in hardware and software development that is contributing so much to the Indian economy, through companies such as Wipro, Tata and Infosys, as well as to the economies of other ESCAP nations, is highly male-dominated. Very few women are employed in this area. Few, also, are the women managers in the BPO area.

On the other hand, highly regarded scholars of women and ICTs in Asia such as Swasti Mitter regard offshore outsourcing of information processing work as a major opportunity for the economic empowerment of women, pointing to 'unprecedented benefits' offered to women working in these areas in India, Malaysia and the Philippines, with salaries generally running at the \$5000/year level-a near fortune for women in poor countries where the per capita income is less than \$500 per year. According to Mitter, 'This is one

of the cases where it is possible to say with confidence that globalization has yielded gains for some developing countries and women in them' (Mitter, 2004:3). Aware of the burnout syndrome, where women quit from the stress, anxiety and mental fatigue of BPO work, Mitter maintains that the benefits to women in such employment are higher than the costs. She cites BPO as a positive dimension of globalization for which ESCAP region national governments should create a policy environment to capture a greater share of the global market in information processing and ensure its sustainability and replicability. They also need to be pro-active to assuage the fears of job losses and the growth of protectionism in developed countries and by pointing out that the United States and other developed countries are net beneficiaries of such trade flow. The area of ICT services and back-office work in India is expected to swell five times to US\$57 billion, employing four million people and accounting for 7 percent of India's GDP by 2008 (Kripalani and Engardio, 2003).

For gender advocates, the challenges are to be aware of the pitfalls in such employment, to support women workers in their desire for decent working conditions and to ensure that women retain an equitable share of employment in each phase of technological change.

Self employment

Digitization of information and the Internet have made it possible to sell goods and services beyond the local market. The possibilities of e-commerce for women entrepreneurs in Asia have been enthusiastically touted, including women craftspersons in the informal sector. In Cambodian villages and Banaskantha, India, for example, women are using ICTs for their economic empowerment through e-marketing. However, the obstacles to success are still great. The majority of women in Asia still live in rural areas where connectivity is either rare or non-existent. The list of other obstacles that women entrepreneurs who want to take up e-commerce face is fairly daunting:

- Lack of information and education
- Lack of knowledge of Internet languages
- Lack of credit
- Insufficient business and technical skills
- Lack of information on trade and customs regulations
- Difficulties in quality control
- Difficulties in managing payments over the Internet
- Lack of information and confidence around security issues
- Unsupportive government regulation policies (Mitter, 2003)

E-commerce aside, women entrepreneurs, who head 35% of small and medium enterprises in Asia, can make profitable use of ICTs in ICT-enabled businesses, as well as in using ICTs to facilitate existing businesses (Hafkin and Taggart, 2001). One successful example of an ICT-enabled business is that of the smart cards used by Indian women milk collectors in Rajasthan. The cards, used to record the amount of milk women sell to milk distributors, as well as the quality and fat content of the milk, include picture identification, serve as a non-transferable bank book and eliminate the "Dhudhwala," the

urban middleman, thus increasing profits for rural women. Women in the Smart Card milk project have raised their incomes by up to 45%. (*Times of India*, 23 March 2000). Such businesses have the advantages of low capital and skill requirements. Other similar possibilities exist in the telephone rental business, as in Grameen Village Phones, and the operation of telephone/fax/Internet kiosks and STD booths.

Grameen Village Phone is frequently cited, but remains the best case in point. Grameen Phones in Bangladesh, which sets up Village Phone Operators to resell wireless telephone services has contributed greatly to women's economic empowerment and has tremendously increased women's cellular telephone use. Where women were operators (and they are the majority of operators), 82 percent of the users were women; with men operators, women comprised only 6.3 percent of Grameen phone users. (Cite Don Richardson, Hafkin, 2001).

Box 1: Promotion of self-employment: Korea and Uzbekistan

Korea

The Ministry of Gender Equality has organized programmes at 12 Korean universities for women who want to work in an e-business or to start Small Office-Home Office (SOHO) businesses. The Asian Pacific Women's Network Center (APWINC) at Sookmyung University trains women to work in IT, including as freelancers and in their own businesses.

Uzbekistan

A project about to be launched by UNDP in rural Uzbekistan targets women, who constitute the majority of entrepreneurs, focusing on capacity building in ICT management, business planning, fund-raising and project management to transfer two existing business incubators into ICT Business Units. The incubators will provide training and other ICT services to local communities. ICT training and website development will also be provide to women in micro-finance institutions and micro-entrepreneurs (UNDP and UNIFEM, 2004:21).

Information and Communication Technologies for Development (ICTD)

The Okinawa Charter on Global Information Society (2000) adopted at the G8 summit, signalled a new global focus on the development potential of ICT and the hope that ICTs could be leveraged by poor countries, communities and individuals to leapfrog into a more empowered, equitable and prosperous future. This was not the beginning of a connection between ICT and development, which had been strong from 1995-2000, but rather the beginning of a movement away from using ICTs to accomplish specific project objectives to trying to articulate and establish the linkage between ICTs and poverty alleviation. Many development actors – including bilateral, multilateral, multi-national corporations and NGOs have – embraced the idea that ICTs can be important tools for addressing global and national inequalities. In this approach, generally known as ICT for Development (ICTD), ICTs go beyond technological tools to become development enablers. Some detractors are sceptical about the role of ICT in poverty reduction, while others argue that basic needs should be met before expenditures are made on ICTs. Still others maintain that the evidence is not yet in to establish ICTD outcomes. However, the experiments and efforts in this area have become prolific. Most importantly for gender concerns, the linkage of ICTD with development challenges such as poverty alleviation

and elimination of gender inequality has meant that gender concerns have been mainstreamed in ICTD. Talking about ICTs for rural poverty reduction in Asia and the Pacific, Prof. John Urea wrote:

...at least a more equitable distribution of access to ICTs is widely regarded as a means toward the reduction of poverty, especially in rural areas. . . . There seems to be plenty of evidence that the key to poverty reduction in general is the reduction of poverty among women and their empowerment in terms of status and responsibilities within communities (Ure, 2003).

Gender advocates picked up this theme at Beijing +5, urging UN agencies to go beyond the task of assisting the use of ICTs for networking and media to that of exploring the potential of the technology for economic empowerment of women in poorer countries (United Nations, 2000). Thus, ICTD has become a major development theme, with its application to women's empowerment as a strategy for poverty reduction as a frequent subtheme.

Box 2: Case study in ICTD and Women's Empowerment- Korea and India

ICT for Women's Empowerment in Korea

The Ministry of Agriculture and Forestry encourages the use of IT by women farmers through onsite and mobile computer education and technical support services. Real-time information on market prices is posted on the web. The web site also operates a shopping mall for agricultural products. Technical assistance is available to farmers in building personal web sites.

The Kyonggi Province Program for women IT professionals (<http://www.womenspro.org>) provides training and lifelong education for women tailored to the different stages of women's lives. Unemployed women, women heads of households and handicapped women who want to enter the work force are trained in business incubation and capacity building (including gender training). About 600 women have completed the 10-12 month course as IT specialists, of which nearly two-thirds have either found employment or started their own businesses. The course made numerous accommodations to meet women's needs and daily schedules.

Datamation (India)

Datamation Foundation employs over 1400 employees, one-quarter of whom are women, across 24 locations within India providing ICT services to the leading national and multi-national firms while generating employment in ICT for the poor. Datamation services include document management, scanning and imaging, data conversion and data entry, application programming, e-services, portal development, e-commerce solutions and geographical information system applications. Datamation collaborates with *Nari Raksha Samiti* (NRS), an organization that assists women from marginalized backgrounds in Delhi to secure supportive and stable employment in the ICT sector.

Women are already working at Datamation in software development. Network administration and maintenance is other potential field where demand is on the rise. Datamation is aiming to increase the demand and supply of female workers in the IT and related sectors. It plans to offer hostel facilities or rental houses to those workers who otherwise could not afford to live in urban areas like Delhi.

Many projects have sprung up in the ESCAP region on this subtheme, but for the most part they are small scale, and not yet replicated, yet alone evaluated.

The latest entry into this category is a project undertaken by Microsoft under a new \$1 billion global initiative called Unlimited Potential aimed at empowering rural women through the use of technology.² The programme aims to create socio-economic opportunities for women through training in ICT skills at Community Technology and Learning Centres. The curriculum for the India problem has been development in Hindi and aims to train nearly 6,000 women with less than high school education in slum areas of Delhi and rural districts of Madhya Pradesh. They are being trained for jobs in data entry, teaching computer skills and call centre offices, as well as to integrate ICTs into existing businesses. Microsoft is working with Tarahaat, which has been a pioneer in India in giving girls computer education and assisting them in becoming wage earners (*The Hindu Business Line*, 2004).

Access

The most basic gender issue is access, which is inextricably linked to the availability of the necessary infrastructure. In virtually all developing countries, communications infrastructure is weaker and less available in rural and poor urban areas, where the majority of women live. Simply by being the majority of the population in rural areas, women have a smaller chance than men to access new technologies. It is likely that phone lines are fewer, that there are no relay stations for mobile phones and no earth stations for satellites. As UNIFEM and the UNU/TECH noted: 'Women, with their special responsibilities for children and the elderly, find it less easy than men to migrate to towns and cities. The urban bias in connectivity thus deprives women, more than men, of the universal right to communicate' (UNIFEM and UNU/TECH, 2000). As in the rest of the world, there is an urban bias in women's access to and use of ICTs in Asia and the Pacific (AWRE, 2001).

Women tend to have less access than men to those ICT facilities that do exist. They also have less disposable income to spend on communications than men. Frequently, information centres or cybercafes are located in places that women may not be comfortable frequenting or that are culturally inappropriate for them to visit. Since most communications facilities in developing countries are in offices or involve shared public access, women also have problems of time. Given gender-defined multiple roles and heavy domestic responsibilities, their leisure hours are few, and the public centres may not be open when women can visit them. Or they may be open evenings, when it is problematic for women to visit them and then return safely to their homes in the dark. Their mobility (both in the sense of access to transport and ability to leave the home) is also more limited than that of men. Some accommodations that may be needed to ensure gender equity in access and use of ICTs for women are adaptation of schedules to suit women's hours and availability of women support staff and trainers.

Capacity building

Women and girls are poorly placed to benefit from the information and knowledge economy for several reasons: they have less access to scientific and technical education specifically and less access to education in general. They also have less access to skills

² The project itself is funded at US\$323,000.

training and development, which will enable them to gain IT employment, and when they do work in the IT sector, as we have seen, they work at lower, lesser-paid levels. These disadvantages have largely prevented women and girls from benefiting equally from the opportunities that IT can bring. Yet, conversely, IT also offers many opportunities for women and girls to gain the education and technical skills required for them to participate equally in the IT economy. It also offers possibilities to gain education that might previously have been inaccessible to them.

Throughout the world, there are problems in attracting young women to science and technology studies. The picture globally – and the ESCAP region is no exception – is a steady decrease in the percentage of girls and women in S&T as one moves up the educational structure, beginning with the primary level. The ‘leaky pipeline’ is a concept that has been used to refer to the steady attrition of girls and women throughout the formal S&T system, from primary education to S&T decision-making. The leaks are found at every stage of the process, resulting from a series of barriers to girls and women, and can be categorized in four categories:

- **Cultural and attitudinal barriers**, such as perceptions about the role and status of women, which emerge across countries, despite widely different circumstances.
- **Situational barriers** include lack of family commitment, lack of partner support and living in rural or isolated areas.
- **Qualification barriers:** lack of formal math and sciences education or experience in computer programming skills is often perceived as a barrier, both by admissions departments and by the students and teachers.
- Finally, **institutional barriers** block women’s access to S&T education. These include the lack of female teachers and assumptions of male teachers about capabilities of women students; inflexible admissions, selection and entry requirements which do not take into account women’s varying educational backgrounds, approaches and abilities; and heavy attendance requirements for practical skills and laboratory work which are more difficult for women to meet in view of their family and domestic responsibilities.

The result of the leaky pipeline is insufficient numbers of women entering the critical tertiary-level with sufficient background to pursue studies in science and technology. This is crucial, for even in OECD countries where women are at or approaching parity in Internet use with men, they are not acquiring the skills and qualifications to use information technology at high levels and to move into scientific, technical and management positions in the field. Tertiary-level education is the prerequisite for women to be able to develop ICT applications and to shape gender-sensitive ICT solutions. As the ICT use continues to expand rapidly throughout the ESCAP region, women should be encouraged and supported in pursuing jobs such as IT analysts and software programmers. Malaysia is an example of a country where women have had success in this area, coming close to parity with men as software programmers (Ng, 2001).

Ehwa Women’s University and Sookmyung Women’s University in South Korea both emphasize information technology, and in that country women now hold 35 percent of IT high-level positions. Regrettably, there does not seem to be sufficient support for women

in tertiary-level ICT education in many other countries of the region. While the recent UNESCO report on higher education in Asia and the Pacific (UNESCO, 2004:19) cites the continuing shortages of specialists for the knowledge and information industries, there are no references to encouraging women to fill these vacancies.

Support and encouragement is needed for the increased participation of women and girls at every level of scientific and technical education. This will increase national capacities in science and technology and contribute to increased standards of living. Initiatives to achieve this include:

- Encouragement of girls and women to continue their education past primary levels.
- National and university programmes to increase the recruitment and retention of girls and women, especially in science and technology.

Box 3: Case studies: Information and Communication Technology for women’s capacity building

Between 2001 and 2002, the Ministry of Information and Communication (Korea) trained one million housewives in computer and Internet use. The Ministry of Labour runs computer training for unemployed women, especially those who are heads of households. The Ministry of Education and Human Resource Development has a project to enhance IT skills of girl students from elementary through high school.

Training computer technicians (India)

The World Bank, under its Third Technician Education Project is training personnel for key areas of economic growth, with a focus on information technology. In India women are the majority of students in technical schools and are highly represented in the technical work force. The technician education project provides scholarships and hostels for women students, giving them the opportunity to study in their home states, thus accommodating the resistance of parents’ to sending young girls off long distances from home to study.

Cisco Systems Networking Academies

The Cisco Systems Networking Academy Program is a successful IT training programme that reaches women and has the potential to reach large numbers of women in developing countries. It consists of a global training programme that teaches students to design, build, and maintain computer networks, preparing them for industry-standard certification as networking professionals. To increase female enrolment it uses female role models in advertisements and promotional materials, and the curriculum includes a gender-equality training module. It has also formed partnerships with international organizations, non-profit organizations and NGOs to address the gender gap the IT field and to promote women in IT.

Women continue to be an overlooked target group for IT skills development, despite their substantial participation in the labour force. ICTs can provide innovative ways for women to obtain and update skills for equal participation in the knowledge economy. The experience of the Cisco Networking Academies and other initiatives indicate that women successfully take advantage of opportunities for high-level technical education. Among the measures that would support this would be the reservation of places for women in skills training programmes, and women-targeted training.

Content

Little Internet content is available that meets the information needs of women in developing countries in a form they can use. The amount of content in local languages, which women tend to use exclusively more than men, is miniscule. If ICTs are to be useful to women in developing countries, they must meet the test of relevance. If this is not passed, ICTs will remain of little interest and value to rural women. Barriers persist such as the high number of illiterate women, and the large number of women in the ESCAP region who do not read the international languages that predominate on the Web (English, German, French, Chinese and Japanese being the most widespread). Few of India's half-billion women know any of these languages, for example. Numerous projects, however, are tackling the literacy and language barriers, as well as lack of computer skills. Educated women, as well as young women (the 'daughters') and community organizations can also help other women cross the digital divide.

Sexual exploitation and harassment on the Internet

One of the most negative aspects of ICT is the pernicious and misogynist use of the Internet for women's sexual exploitation and harassment. This includes trafficking of women through the Internet, pornography, sexual harassment and use of Internet to perpetuate violence against women. Regrettably, increasingly graphic pornography is easily available to all who seek it and even to those who don't. A number of cases have appeared recently where men use web sites to harass women and violate their privacy. Women need secure spaces online where they can be safe from harassment and exploitation. Legislation is needed that prevents ICTs from threatening human rights; at the same time, however, it is a very delicate balance between protecting women's rights while at the same time not giving governments *carte blanche* to institute state intervention and censorship over new communication technologies. This is a difficult area that requires further study and innovative solutions, in which women must participate.

Statistics and indicators

There is a paucity of sex-disaggregated information on the information society. The collection and analysis of information on the differential impact of ICTs on men and women is a necessary prerequisite to the achievement of a globally equitable information society.

Standard presentations of ICT statistics pay no attention to gender differentials. To cite one example of this, the World Bank Development Data Group publishes 'ICT at a glance', with breakdowns by country. No breakdowns by sex are shown for any of the indicators, despite the fact that more than half of the indicators are based on demographic data that could be disaggregated by sex. As far as most official statistics are concerned, the gender digital divide is invisible and unmeasured.

Few countries collect gender ICT statistics, and those that do so are typically the countries where the gender digital divide is least marked. Very few countries have official surveys, such as household surveys, to collect gender-disaggregated statistics.

And as with statistics and indicators in general, gender statistics are much more available in rich countries than in poor countries. Those countries where the gender digital divide is most marked are also those where the digital divide in general is hardest to document. It is difficult to bring this issue to the attention of policy makers in these countries because of the lack of reliable data on which to make the case for the inequitable access to and use of ICTs by women in developing countries. This includes ICTs not only for communication, but also for conduct of business (including e-commerce) and employment in the IT industry itself.

Until 2003, the only sex-disaggregated ICT data published by the International Telecommunication Union, the major compiler of statistics on ICTs, was that on female employees of telecommunications administrations. This in itself was a relatively recent addition to the ITU's annual questionnaire. Only one-third of countries were able to supply this data, and a number of developed nations, including France, Germany, Japan and the United States, were unable to do so. However, this data is not very significant because it simply reveals that in most countries the majority of positions within the traditional Public Telephone Operators –that of telephone operators- are held by women. A high percentage of female personnel among telecommunications staff is not an indicator of gender equity in employment the telecommunication industry. The statistic tells us nothing about the comparative access to or use of ICTs by men and women. It also tells us little about employment in the ICT industry.

Progress has been made this year at both the ITU and at the United Nations statistical office in the inclusion of gender ICT indicators. ITU has now increased to three the number of sex-disaggregated indicators included in its annual questionnaire to member States and in its *Handbook of key indicators of the telecommunications/ICT sector*, adopted by the third World Telecommunications/ICT indicators meeting held in Geneva in January 2003. The two new indicators are:

- Female Internet users as a percentage of total users
- Female Internet users as a percentage of females

The available data on female Internet users as a percentage of total users for ESCAP countries illustrates that data tends to be available only for richer countries; and that female Internet use tends to correlate closely with GDP.

Female Internet users as % of total Internet users, 2002

Country	Percentage
Hong Kong	49
Thailand	49
Australia	49
Singapore	47
New Zealand	46
Republic of Korea	46
Japan	41
Philippines	41
China	39
Malaysia	36
Indonesia	35

Source: International Telecommunication Union website.
http://www.itu.int/ITU-D/ict/statistics/at_glance/f_inet.html.

There are several things amiss with this data. First, because it is virtually the only quantitative data that is easily available on gender on ICTs for the region, it is frequently cited. Yet, it is highly misleading. The list is heavily weighted towards wealthy countries and does not contain India, a very important case in terms of gender and ICTs. There is no data at all from the CIS countries, from the small Pacific island countries or from poorer countries from South and South East Asia. The only available data leads us to conclude that the situation of women and ICTs looks good. Women Internet users, as a percentage of total users in the Asia region, range from 35 percent as a low to virtual parity – 49 percent in three countries. As we have seen, Internet use, both among men and women, tends to correlate positively with income and urban locations. A much more significant indicator would be the number of women as a percentage of the total- studying computer science or computer engineering at tertiary level. That data, however, is unavailable. Thus, the absence of data can lead to specious, if not erroneous, conclusions about gender and ICTs.

In a recent study undertaken for UNDP of nine Asian countries to empirically assess linkages between ICTs and human development using Millennium Development Goals as benchmarks, the authors concluded that despite the absence of data at national levels, the role of ICTs in promoting gender equality was perceived as positive (UNDP, 2004)³. They based their argument on deductive reasoning, citing that ICT allows women to take up contract job work (home-based working) while sitting at home. However, the evidence cited above, seems to indicate that home-based IT work further increases the workload of women and adds to an already inequitable gender division of labour. Clearly, the availability of empirical data would allow gender advocates to make the case more strongly for the protection of women working under these conditions.

In this same study, on the index of social sector targeting that reflects the performance of countries in promoting ICT for the well-being of its people, allowing the benefits of the new technology to reach larger sections of the population, the authors conclude is that

³ Data from the following countries were used in the exercise: China, India, Indonesia, Malaysia, Mongolia, Pakistan, Sri Lanka, Thailand and Vietnam.

China ranks highest, followed by India and Malaysia (UNDP, 2004). The targeting may in fact reach large numbers of men, but few women. But without sex breakdowns of the data, there is no way to determine conclusively that ‘human’ development means gender-equitable development.

Gender in ICT policy

There are two main groups that need to be aware of the importance of gender in ICT policy. ICT policy makers, who tend not to be women, need such awareness, but gender advocates need it as well. There is a widespread tendency on the part of gender advocates to disregard ICTs, particularly ICT policy, as a technical area that does not concern women, particularly women who live in rural areas. However, virtually all ostensibly technical issues have gender implications.⁴ Additionally, women need to put on the agenda of ICT policy and strategies the issues that concern them, such as those that are discussed in this paper. Inter alia, these should include:

- Dealing with the large number of women illiterates
- Reducing cost of access for women whose incomes are lower than those of men
- Increasing access to technology by linking ICTs with other technologies
- Using ICTs to empower women and alleviate gender inequalities

If women and gender advocates do not put forth these issues, it is highly unlikely that they will be considered. ICT policy will be elaborated as gender-blind, but the results will be far from gender neutral: it will likely have negative impacts upon women that were not foreseen. And as a likely result of this invisibility in policy, gender issues do not appear in implementation of ICT either.

The recent study on national ICT policies in six ESCAP region countries (Australia, Japan, India, Malaysia, Philippines and Republic of Korea) showed that national IT policy frameworks and strategic plans were ‘largely silent on gender or women-focused concerns. Gender is not an explicit theme in national IT plans’ (Ramilo, 2002; UNESCAP, 2002). The only exception in the six countries was the Republic of Korea that has taken serious steps to integrate a gender-equality agenda into the national IT policy framework. In addition, Australia is gathering gender-disaggregated data related to its ICT and e-commerce policies.

Policies in areas other than ICT may also positively affect women and ICT –e.g. national industrial and labour policy may promote women’s employment in the IT industry. Education policies may encourage women’s scientific and technological education, and thus have a significant impact on their preparedness to enter the labour market. Gender advocates need to examine and follow these policies as well.

⁴ See Hafkin, 2002a ‘Gender issues in ICT Policy in Developing Countries: an overview,’ paper delivered at UNDAW Expert Group Meeting on Information and Communication technologies and their impact on and use as an instrument for the advancement and empowerment of women (Seoul, November) for a detailing of more than 20 gender aspects of ostensibly gender-neutral, technical ICT policy issues.

Intra-regional differences

In describing about the gender digital divide in the vast ESCAP region, we have already noted the divide between countries between urban elites and rural poor, between rich countries and poor. However, there are countries in the region where the gender digital divide is particularly pronounced, beyond those demarcated divisions. The area where ICT has had the least penetration in women's lives to date is the Pacific, where according to the 2003 Gender and ICT Forum "while there are so many success stories of ICT4D projects managed by women in highly populated developing countries, none exists in most small island developing countries of the Pacific". Lemalu Leilua found that "over 99 % of women [in the Pacific] do not know what ICT is all about, have never heard of the terms computer, Internet or cellphone. (Leilua, 2003). However, some developments are taking place. Recently a mobile women's community radio project recently began operations in Fiji (Peace Women, 2004). After the Pacific, the sub-region where ICTs least touches women's lives is the Caucasus and Central Asia. Here most of the gender and ICT activity is in the area of advocacy by women's organizations for gender equality which marked most developing country gender use of ICT between 1993 and 2000; for the most part it has not yet passed into the realm of ICTD (UNESCAP, 2001). These sub-regions stand in contrast to the high levels of women's employment in ICT-enabled industry and involvement in ICTD projects in South Asia and the rapid growth of every aspect of ICT use by women in South East Asia.

Overall, the aim is to build a gender-responsive information society throughout the ESCAP region are throughout the region, along lines elaborated by WSIS:

A people-centred, inclusive and development-oriented information society, where *everyone* can create, access, utilize and share information and knowledge (WSIS, 2003).

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