Exploring Employment and Livelihood Opportunities for Women in the ICT Sector in South and Southeast Asian Countries

Section1: Prologue

In this paper I present an agenda for research in the use of information and communication technologies (ICTs) for the economic empowerment of women, a traditionally disadvantaged group in South and Southeast Asia. The agenda is placed in the context of current economic restructuring in this region in response to globalisation resulting partly from gradual but steady liberalisation and deregulation of national economies.

The need for such a research agenda becomes particularly pertinent against the background of the forthcoming WSIS (World Summit of the Information Society)[1] which has led to a fresh awareness of the significance and relevance of gender issues in the technology policies of developing countries. This awareness has highlighted the need to identify factors that explain the differential impact of information and communication technologies (ICT) on women and men in the emerging digital economy. It has also stressed the urgency to understand why women face challenges that are different from men in gaining entry into the digitally driven New Economy. It is now generally acknowledged in the policy circle that exploring the use of ICT for women's empowerment has so far been limited mainly to the media and networking[2]. Current emphasis on ICT as a tool of economic empowerment for women thus calls for new research questions that are relevant both for advocacy work by NGOs as well as for policy intervention by national and international bodies.

This agenda refers specifically to women's position in the globalised internet economy. Combinations of computer and communication technologies, culminating in networking technologies, have fuelled the growth of the digital economy, by increasing the speed and reducing the cost of communication. The question of distance, consequently, has become less relevant in many a commercial and business transaction. Networking technologies, in essence, condition the extent and nature of our current globalisation. These technologies have

[1]The World Summit on the Information Society provides a unique opportunity for all key stakeholders to assemble at a high-level gathering and to develop a better understanding of the information revolution and its impact on the international community. It aims to bring together Heads of State, Executive Heads of United Nations agencies, industry leaders, non-governmental organizations, media representatives, and civil society in a single high-level event. The roles of the various partners (Member States, UN specialized agencies, private sector, and civil society) in ensuring smooth coordination of the practical establishment of the information society around the globe will also be at the heart of the Summit and its preparation. It was decided that the Summit would be held under the high patronage of the UN Secretary-General, with ITU taking the lead role in preparations. In 2001, the ITU Council decided to hold a Summit in two phases with the first phase to be held from 10 to 12 December 2003, in Geneva, Switzerland and the second in 2005 in Tunis, Tunisia.

[2] The United Nations Fourth World Conference on Women held in Beijing in 1995. During the Conference, a platform for action was designed to create equal opportunities and empowerment and advancement of women. One of the platforms for action relates to ICTs and the empowerment of women. In September 1995, more than 180 governments signed the **Beijing Platform for Action.** Five years later in June 2000, a special session of the United Nations General Assembly was convened at United Nations headquarters in New York to review progress achieved and obstacles remaining to full implementation. Informally called Beijing +5, the review's official title was “Women 2000: Gender Equality, Development and Peace for the Twenty-First Century”. Beijing +5 redirected world attention to the progress made by governments toward implementing the Beijing Platform for Action (PFA), a 12-point global agenda for achieving gender equality. **The shift in emphasis was from ICT, women and media to ICT, women and employment.**

made it possible to sell services (such as website designing) or to advertise products and prices (as in bookselling) over the internet, nationally and internationally creating a new pattern of retailing described as B2C (Business to Consumers). In addition, with the digitisation of information, it has become possible, and generally cost effective, to transfer information processing work, both in manufacturing and in services, to offices and work units that are remote from main premises, within and across national boundaries. In OECD countries, it has given rise to outsourcing of a vast range of information processing work both to subcontracting and satellite units within a country as well as to units to some developing countries that possess a low waged computer-literate and English-literate workforce (Braga, 1995; Mitter and Efendioglu 1999). The trade that such outsourcing gives rise to is described as the B2B (Business to Business) segment of e-commerce and covers a wide variety of activities that range from programming in software houses to customer-care services in call centres. Asia's share in such transnational B2B commerce, as Table 1 indicates, has been considerable when compared with that of Africa and Latin America. Countries such as India or the Philippines have already received a substantial proportion of this outsourced e-business, creating new avenues of employment for women as well as for men.

There are, however, no gender-disaggregated statistics as yet, either at the macro or at the meso level to monitor whether women are gaining an equitable share of the new business and employment opportunities. Equally, there is an absence of information as to the role that women have played, as economic units, in creating the comparative advantage enjoyed by countries that have made a successful entry into the digital economy. Carefully constructed and methodologically sound qualitative case studies in a select number of Asian countries would be a major and timely step in redressing this imbalance.

Table 1: Global B2B and B2C e-Commerce Spending by Region, 2000 and 2005

	2000						2005					
Country/ Region	B2B		B2C		Total		B2B		B2C		Total	
	Value ($B)	Share (%)	Value ($B)	Share (%)	Value ($B)	Share (%)	Value ($B)	Share (%)	Value ($B)	Share (%)	Value ($B)	Share (%)
United States	117	41%	44	60%	161	45%	1,561	36%	256	36%	1,817	36%
Western Europe	57	20%	13	18%	70	20%	1,465	34%	253	36%	1,718	34%
Japan	69	24%	6	8%	75	21%	504	12%	75	11%	579	11%
Asia/Pacific	13	5%	6	8%	19	5%	516	12%	83	12%	599	12%
Canada	11	4%	2	3%	13	4%	135	3%	23	3%	158	3%
Latin America	5	2%	1	1%	6	2%	71	2%	9	1%	80	2%
Rest of the World	10	4%	1	1%	11	3%	77	2%	8	1%	85	2%
Worldwide	282	100%	73	100%	355	100%	4,329	100%	707	100%	5,036	100%

Source: International Data Corporation.

In the proposed agenda for research I make a careful distinction between women as entrepreneurs and women as employees. The dynamics of inclusion into the digital economy for these two categories of women are different and any research questions must take due account of this. Likewise, the research issues should differentiate between export oriented and local e-commerce. This differentiation will be particularly important in assessing the sustainability of the emerging opportunities in the face of changing market structure and technology.

The research agenda also makes a case for investigating the effectiveness of ICT-assisted innovations for facilitating women's entry into the digital economy in modes of working (as in teleworking) or in the location of work (as in telecentres). In evaluating women's current and future prospects in the internet economy, the agenda acknowledges the importance of researching into the implications of emerging institutional innovations. One such institution is the Call Centre that provides customer care services, primarily on behalf of overseas companies from an offshore location.

The agenda acknowledges that women do not constitute an undifferentiated category, yet it also stresses that women make a valid analytical category, despite wide inequalities in their life chances arising from differences in class, caste, religion, and ethnicity. This is because, in spite of stark inequalities, women, on the ground of being born women (Mukhopadhyay in the press) face certain challenges that are universal. These arise out of the predicaments that women face, in all strata of society. The biological and social roles of women as mothers, homemakers and carers circumscribe their ability and opportunity to function on an equal basis with men in most economic spheres. It happens in traditional occupations and sectors, loosely described as Old Bricks and Mortar Economy, and is likely to persist even in the so-called Digital or New Internet Economy. When there is an acute shortage of trained ICT personnel, the corporate sector willingly intervenes to help women with skills by providing childcare facilities at the place of work (Mitter, 2000). Companies likewise show awareness of the need to provide flexible timing and location in order to enable women to combine career with motherhood. Such support has been geared so far mainly to educationally privileged women in software engineering and may not be forthcoming during the current economic downturn resulting in a glut of skilled personnel in South and South Asia (See Box 1).

The agenda makes a case for estimating and evaluating positive as well as the negative consequences of ICT on women's opportunities and the quality of their working lives. Societal roles or biological qualities do not always work against women. Patience and persistence needed for repetitive work or the ability and inclination to work in a team are the qualities that management often associate with women. This perception, real or stereotyped, partly explains the feminisation of workforce in the manufacturing industries of export-processing zones in the developing world. Similar considerations now lead to recruiting of young women in large numbers in emerging institutions of the digital economy such as the call centres (Gothoskar, 2000; Rasiah and Chang, 2001; Ng, 2001b). In the short term ICT may enhances the earning power of women, but, insecurity and anxiety may also arise from being part of a workforce that have to accept low pay, long hours, and stringent work conditions.

Box 1: Is There a Skills Shortage?

Women encounter a better prospect in internet economy when there is a shortage of skills. The recent economic slowdown in the U.S. economy spawned by the September 11 attacks has resulted in dramatic revisions in e-recruiting services. Major ICT markets are now faced with a pending glut of IT skills, as massive IT layoffs and hiring freezes have suppressed talks of an erstwhile IT skills shortage in the U.S. and elsewhere. The International Data Corporation (IDC) estimated a total of 300,000 layoffs in American IT companies in 2001. Thus, while pre-September 11 conditions saw IT industry leaders petitioning the U.S. government to expand the number of visas for IT skilled workers from abroad, the post-September 11 scenario proves bleak for skilled IT workers from developing countries into occupying lucrative positions in the advanced economies. The situation has led to glut of skilled people in the countries in South and Southeast Asia that relied on outsourcing work from developed countries or in exporting IT workers.

Source: Various reports of the International Data Corporation and IT Index 2001, Outsourcing Institute.

Section 2: Does ICT Enable Women Entrepreneurs?

Historically, most women in South and Southeast Asia have been excluded from the formal employment workplace and in order to find a means of livelihood they were forced to engage in small trade and minuscule business. Given access to the requisite expertise and finance, internet technologies may present such women entrepreneurs with the possibilities of being connected to a wider national and international market.

In Asia, 35% of small and medium enterprises are headed by women. The main advantage of the web is that it may allow these women to find new markets and enhance existing enterprises. The success of women has, to some extent, already been documented but mainly in an anecdotal fashion. No systematic survey has been carried out as yet. From this limited evidence it is apparent that in IT-enabled businesses, there are digital opportunities for women entrepreneurs along the models of internet or cyber cafes/kiosks in Thailand and Malaysia and the Grameen Phone in Bangladesh. These businesses have the advantages of low capital and skills requirements. Aside from telephony services, it will be worthwhile to explore how women's handicrafts could also be developed using B2C. Difficulties in terms of marketing and management skills, supply and delivery logistics also need to be addressed.

The main advantage of the Web on small home-based businesses is that networking opportunities could, in an enabling environment, make these endeavours profitable rather than marginal. The potential to earn income at home while raising a family – with the technology to communicate inexpensively with customers around the world, and handle accounting and order processing online – makes the internet an attractive working tool for women. Yet, for the majority of women in Asia, it proves difficult to realize the potential as they face barriers in not having access to:

internet technologies
language of the Internet
credit or finance
technical and business skills

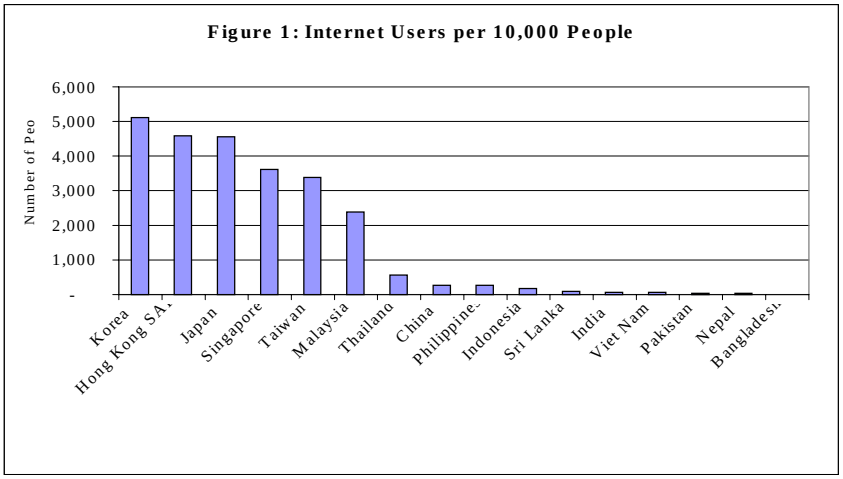
The relative importance of each of these barriers should be investigated in each case, as it will vary from country to country and will depend on the nature of the e-commerce as well as on the educational and economic background of the women entrepreneurs.

Access to Internet Technologies

Of the more than 300 million people connected to the Web world-wide, only 3.2 million or just over one percent live in Southeast Asia. Globally, UNDP reports that more than three quarters of Internet users live in high income countries which contain 14% of the world's population. Asia as a region has a reasonable presence in the map of internet users and it may have a more impressive record in the future. The International Data Corporation reported that 90% of Internet usage is located in industrialized countries, where about 60% are already dominated by the USA and Canada. However, with an annual growth rate of 38% by 2005 the forecast is that US would fall to third place in terms of Internet usage, trailing behind Asia-Pacific, which would capture 27% of the market and Europe, which would garner more than 30%.

However, aggregate statistics on the rapid deployment of telecommunication infrastructure and facilities within Asia and the Pacific are misleading. The region is vast and diverse with heights and depths in terms of ICT. For example, apart from spectacular progress made in China, Singapore, Taiwan, South Korea, and Japan, the rest of the Asia-Pacific countries are languishing. At the present rate of development, Bhutan, for example, would take until 2050 to achieve the tele-density that Singapore has today. The International Telecommunication Union reports that fewer than two in ten thousand Cambodians and Vietnamese use the Internet, while nearly four out of every ten Singaporeans use the Internet (See Figure 1). Investigating women's opportunities in the region has to be placed in the context of the inter- and intra-regional inequalities which exist in access to internet technologies and this digital divide is also found within a country. For example, among India's 1.4 million Internet connections, more than 1.3 million are in the five states of Delhi, Karnataka, Maharashtra, Tamil Nadu and Gujarat. Even in these states, women as well as men in the rural and in semi-urban areas are generally excluded from the opportunities of the digital economy. Prospects for women in rural areas need to be evaluated in the light of this inequality.

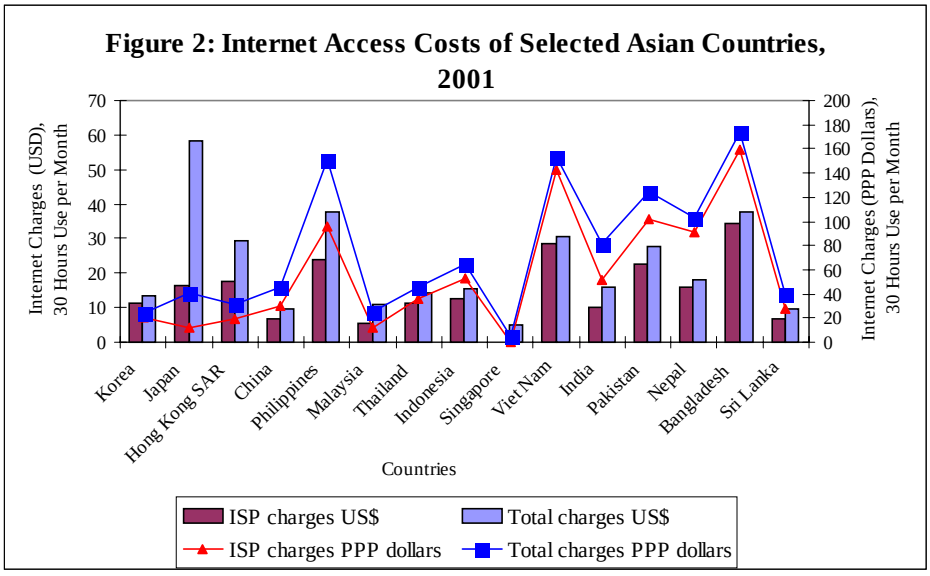
Disaggregation of Internet usage by sex, even in urban areas, is difficult to obtain and available data is unreliable and not comparable with other countries. However, even if the figures are not reliable, the numbers of women Internet users are certain to be miniscule and insignificant. In most countries aggregated statistics show an insignificant proportion of Internet access for the entire population (See Figure 1). The ITU recently released some statistics on female internet usage in its Telecommunications Outlook, see Table 2. However, there is no information regarding, whether women use internet for trade or business.



Source: World Telecommunication Development Report 2002, ITU

Table 2: Estimated Number of Female Internet Users in Selected Countries, 2001			
	Internet Users	% Female of all Users	No. of Female Internet Users
Asia			
Thailand	3,536,000	50.5%	1,785,680
Philippines	2,000,000	49.5%	990,000
Singapore	1,500,000	47.5%	712,500
Korea	24,380,000	45.5%	11,092,900
Taiwan	7,550,000	44.0%	3,322,000
Hong Kong SAR	3,100,000	44.0%	1,364,000
Malaysia	5,700,000	42.5%	2,422,500
Japan	57,900,000	41.5%	24,028,500
China	33,700,000	40.5%	13,648,500
Indonesia	4,000,000	35.5%	1,420,000
India	7,000,000	27.5%	1,925,000
Source of Basic Data: ITU, World Development Report 2002.			

Accessing the internet is one thing, owning a computer is another. Access to a computer and to the internet at home in developing countries is minimal. Even, privileged professional women often do not have access to an affordable telephone line which would make internet access both possible and feasible (See Figure 2).



Source: World Telecommunication Development Report 2002, ITU[3]

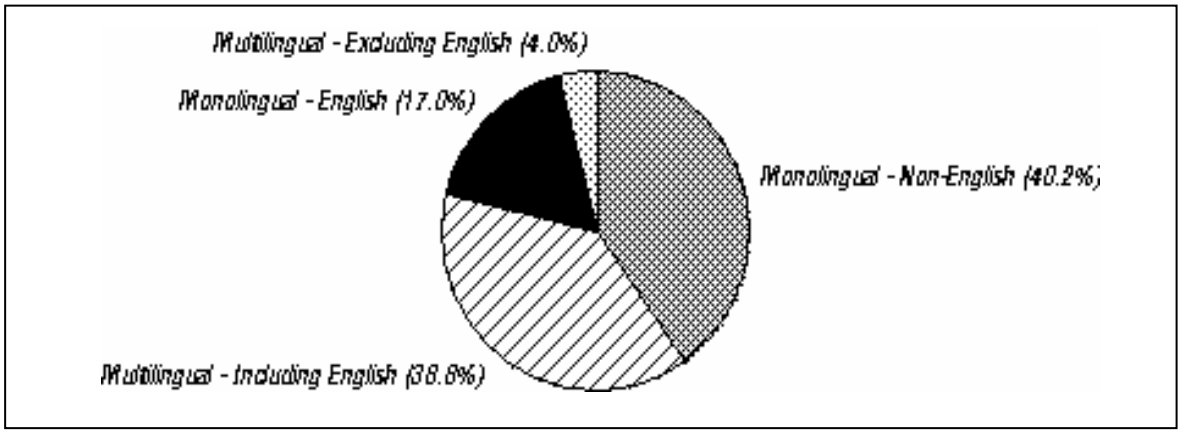
[3] (PPP$) Defined as the number of local currency units of a country required to buy the same amount of goods and services in the domestic market as the U.S. dollar would buy in the United States. The PPP conversion factors to the official exchange rate ratios were taken from the latest World Development Indicators of the World Bank. The ISP charges from the ITU were thus converted to year 2000 PPP conversion factors data.

Language Issues and the Internet

It will be important to inquire whether the dominance of English as the language of the Internet has led to the exclusion of the majority of women in this region who are non-English speaking. Women, far less than men, are given formal international language education. According to Hafkin and Taggart, language was among the top barriers to Internet usage that women cited in their response to the Association for Progressive Communications (APC) Women's Networking Survey in 1996 (Hafkin and Taggart, 2001). However, the picture has changed since then.

In 1999, 95% of Web pages were in English although estimates have further declined to 68.4% by 2000. Thus, there has been a steady decline in English internet content in the last two years. The IDC's World 2001 Survey revealed that about 43% of all Web sites are multilingual and 38% of them include English. If we count multilingual as well monolingual English sites with 17%, English still dominates as the language of the Internet with 56%.

Figure 3: Worldwide Website Language Availability



Source: www.idc.com

The agenda seeks to investigate, whether the predominance of English is a threat to the social inclusion of women in the digital economy, either as an entrepreneur or as an employee. However, a common global language for the internet could become a major advantage and there is a case to be made for research in evaluating the efficacy of alternative strategies.

One such strategy might be the improvement of women's access to formal schooling where English as a second language can be learned. For example, Box 2 looks at the case of the Internet in Thailand where the government is faced with the dilemma of either increasing Thai content, or expanding English language instruction to its citizens or a mixture of both in the form of a 'Thailish' website. An Indian computer chat programme in Hindi is touted to improve India's low-literacy rate and overcome any fear of new technology (See Box 3).

Box 2: Thailish: Thailand, English and the Internet

One barrier to increased Internet penetration in Thailand is language. On the one hand there is not enough Thai language content while on the other hand, manoeuvring through cyberspace requires some degree of English fluency. According to a survey conducted by NECTEC, the vast majority of Thai Internet users had some English proficiency. This suggests that if you cannot understand a little English, then you will not likely surf the Internet. This is reinforced by another finding of the survey where around one fifth of Thai Internet users cited language as a problem with the Internet. Language barriers severely restrict the potential Internet market with only an estimated five percent English spoken Thais. An added complication is that the Thai written language has its own character set. There are some 44 Thai constants and around 30 vowels requiring almost 90 different letters on the keyboard (compared to 66 for English). So not only does Thailand have to cope with English and a lack of local content but also with all the complexities that arise from fitting Thai to computer hardware and software. There have been, as a result, controversial attempts to expand English language training in primary and secondary schools. Thailand faces the dilemma of whether to increase Thai content or expand English language learning among its citizens. Or it could opt for both. Indeed many Thai websites today have English menu choices such as "About Us" or "FAQ" mixed in with Thai text, a sort of Thailish of cyberspace.

Source: Gray, Vanessa, Tim Kelly and Michael Minges (2002), Bits and Bahts: Thailand Internet Case Study, ITU, March, downloadable from http://www.itu.int/ITU-D/ict/cs/thailand/material/THA%20CS.pdf

Box 3: Hindi Chat Box Breaks New Ground

A computer chat programme that speaks Hindi could open up computers to India's illiterate millions. Computer science students in Chandigarh, 248 kilometres (154 miles) from Delhi, have developed an interactive software programme called *Deepti* which can converse intelligently with people in natural language. "The good thing about *Deepti* is that it is suitable for the Indian environment," explained Ritvik Sahajpal, one of the students who developed the software. "*Deepti* speaks in Hindi and since the majority of people in India are computer illiterate and don't speak English, this feature is really great," he told the BBC programme 'Go Digital'.

Source: Alfred Hermida, BBC News Online technology staff downloadable from http://news.bbc.co.uk/1/hi/technology/2209775.stm

Availability of Finance

Apart from access and English language proficiency (e.g., education), capital is the third input required for women to initiate and sustain IT-enabled business. But IT-enabled businesses are no different from other traditional micro enterprises. Both involve employing about five people or less, mostly family members and the only differentiating factor is the use of new technologies. Either to start up IT-based businesses or to employ IT tools to enhance existing businesses, these women will need capital from special financial institutions that lend specifically to poor women entrepreneurs without any collateral. One of the likely sources of finance could be found in micro credit schemes that specifically target women because of their high take up and repayment records and for the social dividends reaped from lending to them.

The micro finance or micro credit programmes are aimed at empowering women in their social milieu and not just for the setting up or expansion of micro enterprises. In an ideal situation, micro credit schemes increase women's income levels and their economic independence, enhance women's autonomy over household decisions about expenditures, promotes positive attitudes to women's social and political roles in communities, and

provides them with information and support networks to protect their collective interests at the local and macro levels. Shared credit schemes could be extended to provide shared facilities with regard to computer hardware and internet access. The experience of organisations on the ground such as SEWA (Self Employed Women's Association, in India) in initiating such an approach will be useful to explore. The micro credits programmes, however, do not always work for the benefits of women and in some cases has led to augmenting the control of men and of the lending agencies in the lives of women (Mayoux, 1997). Research will be necessary to establish the conditions under which such schemes could assist women in ICT-related business and also to explore the desirability of alternative modes of providing capital to women entrepreneurs.

2.4 Technical and Business Skills

The major barrier to success in self employment in the internet economy comes from the lack of technical and business skills. Unlike the telephone, the use of Internet requires more complex and demanding skills including that of trouble shooting. In a situation of self-employment, women experience a greater sense of techno-fear as compared to men because of the lack of familiarity in solving technical problems. This fear restricts women in engaging in businesses over the Net. Again, for women, the questions of quality control or of regulatory policies may remain unnoticed. Because of a lack of marketing or business skills, women or men entrepreneurs, even when they operate as a cooperative, find it challenging to do businesses over the Net, nationally or internationally. Restrictions and the cost of international transactions have also to be reckoned with (See Box 4).

Box 4: Small Businesses Face Difficulties in Global e-Commerce

We publicise the availability of art calendars, over the Net, with photos taken by young women in our cooperatives and sell them to the customers abroad. We find customers, but it is not easy to sell the material. It costs us nearly USD3 to cash a cheque or a draft of USD5, the maximum price we can get. In addition, there are bureaucratic wrangles to receive payment from abroad.

Source: Interview by Swasti Mitter with Shahidul Alam, DRIK Picture Gallery, Bangladesh, taken at a workshop organised by IDRC in Delhi, 3 March, 2002.

2.5 Glocal Rather than Global?

Scant evidence gathered so far shows the success of ICTs in promoting opportunities in self employment in this region comes mainly from its use in catering to local demands or in improving the efficiency of an existing business process. For example the ICT-enabled Grameen Phone Project in Bangladesh Bank which provided wireless phones as an in-kind loan to village phone operators, 75% of which are women. This is regarded as a best practice model combining lending to women's micro enterprises with literacy training and skills development. The major advantages of this type of IT-enabled enterprise are the minimal educational requirements (just some basic mechanical aptitude), and the small capital needed enough to be supported by micro credit schemes. There are positive externalities also in accelerating rural development where telecommunication density is sparse. Another successful example of ICT-enabling business with a micro financing component is the use of smart cards by Indian women milk collectors in Rajasthan. The smart cards were used to record the quality, fat content, and sales of milk to distributors and served as their bankbook, thereby empowering them with spending decisions and increasing their profits with the

elimination of middlemen called *dhudhwala*[4]. The conditions and possibilities of replicating these success stories in another locality and/or in another time will be useful.

The spread of e-governance in the region may present new openings in the future for women, as illustrated in Box 5, by catering to local needs. Further research in the areas of local e-commerce would thus be appropriate.

Box 5: Experimentations by the Government in Andhra Pradesh with G2C.

The State Government of Andhra Pradesh is currently planning integrated call centres for faster G2C (Government to Customers) services. To this end, the government is developing integrated portal - AP Online - to provide information to all government services and a mega portal for online transaction processing. The State Government is also assessing possibilities of upgrading existing public call offices (PCOs) into internet kiosks by using low cost devices. Since there are 80,000 PCOs in the State, even if a section of them could be converted, they could serve as centres of government – citizen interface. Such integrated call centres and internet kiosks are likely to create business opportunities for women, even for economically under privileged women, but not without intervention by development agencies and policymakers in the areas of training and business finance.

Source: (www.blonnet.com/2002/08/06/stories/2002080601391700.htm).

Section 3: Positioning Women in the Formal Sector

In the expanding globalised internet economy, one could argue that prospects of women in Asia in the coming decade depend primarily on the trading strength of their home countries. It will be difficult for women in Asia to benefit from the emerging economic order until and unless their countries develop and strengthen their competitive advantages. In some of the countries women themselves have contributed to these advantages. In the Philippines and India it is the availability of a large pool of English and computer literate female workforce, amongst other factors, that has encouraged outsourcing companies in OECD countries to locate information processing work there. Yet, even a successful entry of a country into the global internet economy does not necessarily guarantee gender equity in the distribution of jobs and it will be important to gain an insight as to why such inequalities persist.

3.1 Assessing Parity

Assessing the parity between women and men in the digital economy is another research task which involves looking at the quality as well as the quantity of work. Women are not always losers. In the software sector, as Cecilia Ng's research shows, women in Malaysia are becoming numerically almost as visible as men. However, they are generally clustered in low-skilled end of the hierarchy with little future for career progression (Ng 2001a). Male workers dominate the technical and managerial occupations. It is not necessarily discrimination by employers that accounts for this skewed distribution. It will be significant, from the point of view of gathering information, to investigate whether women themselves settle for less demanding jobs as, in all strata of the society, they have to be mainly responsible for looking after the children (See Box 6).

[4] World Bank, "Innovative Interventions in the Gender and Digital Divide in South Asia" downloaded from www.worldbank.org/gender/digitaldivide/interventionsasia.htm

Box 6: Reasons for Women Leaving Highly Paid Jobs: Examples from Software Houses in Kerala, India

Normal working hours were eight hours per day for six days a week. However, employees from all categories felt that they spent more time than this in the work place, largely because of tight project deadlines and the need to put in extra hours to meet those deadlines. Both men and women with children and with other domestic responsibilities found these market-driven work practices to be stressful, particularly as teams worked in an extremely competitive way to finish projects before deadlines.

However, the stress of work – life balances seemed to fall disproportionately on female rather than male software staff. For example, around 82 per cent of women felt that domestic responsibilities were affected by longer working hours, whereas only 69 per cent of men felt the same. Respondents reported that, when someone was sick at home, it was women who typically took time off from work. Similarly, many women discontinued software work on becoming pregnant or having children as no support was provided, and they were unable to undertake roles both in the home and the workplace without such support.

Some mothers who gave up careers in software development had continued to try to make use of their skills by taking up more flexible jobs such as teaching in computer training institutes. For those women who continued (or began) working in software after having children, familial support was the major factor enabling continuity of work.

Source: Arun and Arun, 2002.

It is difficult to obtain comprehensive data on the distribution of internet economy jobs. Two surveys, in India and in Malaysia, directed by the author, gave certain pointers and elucidate diversity in the experimentations and experiences of the countries in the region (Mitter, 2000; Ng and Jin, 2000; Ng, 2001a). Despite some differences among countries in South and Southeast Asia, the majority of employment in the internet economy has so far come from the export oriented segment of the market of which software is one major sector. This expansion has broadened the job prospects of women in new areas. The limited statistics that we have so far indicate that women in some of the Asian countries occupy more than 20% of professional jobs (Mitter, 2000; Ng, 2001b). This figure in the field of software services is higher than any other field of engineering.

Although impressive, the prospects for women, as the recent research explorations and projections indicate, lie more in the Information Technology Enabled Services (ITES) than in software services. The worldwide demand for ITES is expected to grow at a dramatic rate in the coming decade and is expected to be USD 671 billion by the year 2005 (*Communiqué India*, No. 2, February, 2002). With revenues of USD 870 million from ITES (also called Remote Services) in 2000-2001 and an annual growth rate of 66%, India currently has the potential to address a large part of the market (*ibid.*). In 1999 NASSCOM projected that, for the year 2005 employment figures in ITES in India to be nearly 1.1million.

There are no gender-disaggregated statistics on employment that arises from this outsourced ITES in South and Southeast Asia. According to the Deputy Director of the Confederation of Indian Industries (CII), at least 40% of these newly created jobs are given to, and taken by, women. The share of women is likely to be similar in countries such as the Philippines[5]. The

[5] Interview by Swasti Mitter with Sushanto Sen, the Deputy Director of CII, India, 8 March, 2002.

Remote Services or ITES that refer to relocated back office operations[6] open up opportunities for women. Yet one has to be cautious about the future (See Box 7).There are various types of back office services requiring different levels of skills from women and men, and there is a discernible trend in hiring women in operations that require less complex skills.

Box 7: Gender Structure in Back Office Services

Routine: requiring only basic skills - **Women predominate**
- Data capture and processing.
- Customer call centres – for routine queries, order taking, and referrals.
- Hotel or rental car reservations.
- Virtual service centres (e.g. home delivery pizza companies).

Discretionary: requiring technical training and problem solving – **Women predominate**
- Data verification and repair (e.g. optically scanned documents).
- Claims processing.
- Mailing list management.
- Remote secretarial services.
- Customer call centres – account queries, after-sales support.

Specialised: requiring specific expertise and managerial authority – **Men predominate**
- Accounting, book keeping, payroll processing.
- Electronic publishing.
- Website design and management.
- Customer call centres – problem/dispute resolution.
- Technical transcription (e.g. medical, legal).
- Medical records management.
- Technical online support.
- Indexing and abstracting services.
- Research and technical writing.

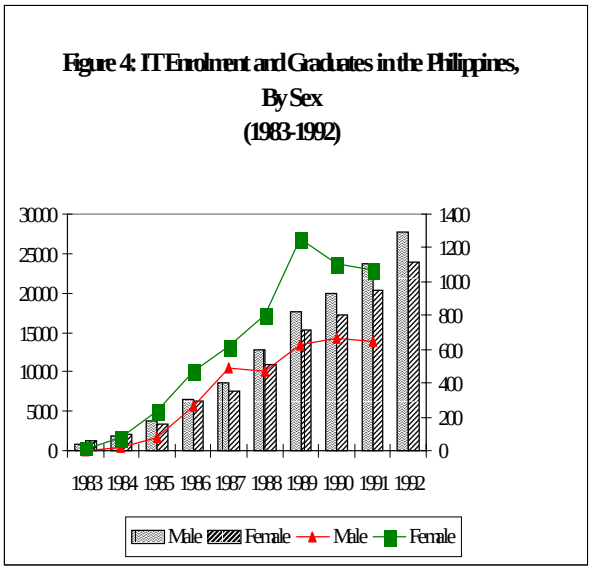
Adapted by Swasti Mitter from *I.T. Information Technology,* Vol. 11, No. 2, December 2001. *EFY Enterprises Pvt Ltd, New Delhi. Page29.*

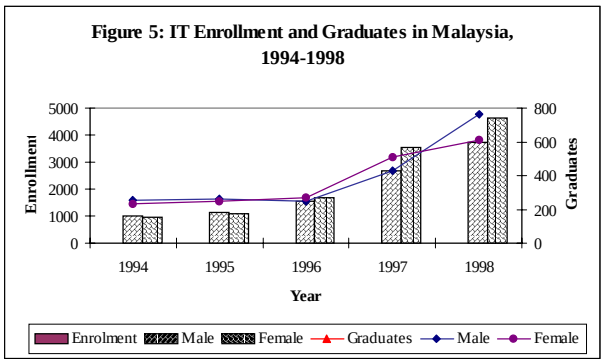
The qualitative case studies in India by Mitter and Sen indicate that women are concentrated in those areas that need routine or discretionary skills (Mitter and Sen, 2000). Women are less visible in specialised areas of back office operations. The next round of technological changes in the areas of voice recognition and image processing by computers may make some of these routine skills less saleable in the international market. In order to make women's place sustainable in the internet economy, it will be important to ensure that women receive opportunities to learn flexible skills for more complex and specialised jobs. In the light of this it would be better to research as to how to provide a wider form of education to women to enable them to survive the withdrawal of employment which depends on their vocational ICT skills.

Gender discrimination is not obvious if one looks at the enrolment and graduation statistics for computer related courses in some Asian countries (See Figures 4 & 5). Considerations of class and back ground need to be taken into account when considering the figures. Women from an underprivileged or relatively less privileged background do not have access to this expensive training, their needs have to be catered for through different subsidised modes in order to give them entry to the internet economy. Research in this area is particularly

[6] Back office operations are the offsite delivery of a range of non-core service functions, including routine administration tasks, customer service and technical support. Back office operations involve the use of an outsourcing base in another country (*Communique, India,*Vol. 11, No. 2, February 2002).

important as parents often are reluctant to spend money on expensive computer training for their daughters who leave parental home at marriage and need a dowry to find a husband.





3.2 Sustainability of ICT-Related Jobs

The recent volatility in the US economy and in Wall Street has affected the volume of e-business in software. Even NASDAQ-listed Infosys, India's second largest listed exporter of software services, has come under pressure as US clients sharply cut spending on technology services (*Financial Times*, 11 April, 2002, p. 27). This turnaround in business has had serious impact on the recruitment and salary grades of Indian graduates in ICT-related courses (See Box 8). Significantly, Infosys is investing USD 5 million in setting up a business process outsourcing unit for receiving back office tasks such as bill processing. This business is seen as low margin and high volume requiring repetitive skills, feminised and amenable to automation. It may not sustain in the next phase of technological change, but currently provides much needed cushioning against impending recession.

Box 8: No Jobs for Kharagpur Indian Institute of Technology (IIT), Finalists

Recession has finally hit the ultimate bastion of job security – Indian Institute of Technology, (IIT), Kharagpur.

More than 40 per cent of this year's BTech finalists – ranked top among all IITs – are still jobless. Many have settled for projects less than Rs. 5,000 (USD100) a month. "Anguished" IIT authorities have sent desperate messages to its "high-profile" alumni requesting them to hire the students. Last year saw a "crazy rush over recruitment", with more than 85 per cent of students "well-placed" by December 2000. But year 2001 came as a rude shock, "sans salaries, sans job security, or for that matter, sans a job". And with less than five months to go before "campus days are finally over", it is "grab what you get" for the fourth year students.

Source: *The Statesman*, Kolkata, 31 December, 2001, p. 1.

The relatively brighter prospect of ITES segment of e-commerce bodes well for women. Yet, there is a research motivation. There are threats of redundancies from technological changes. In addition, there is competition from some African countries, such as Ghana, that have made

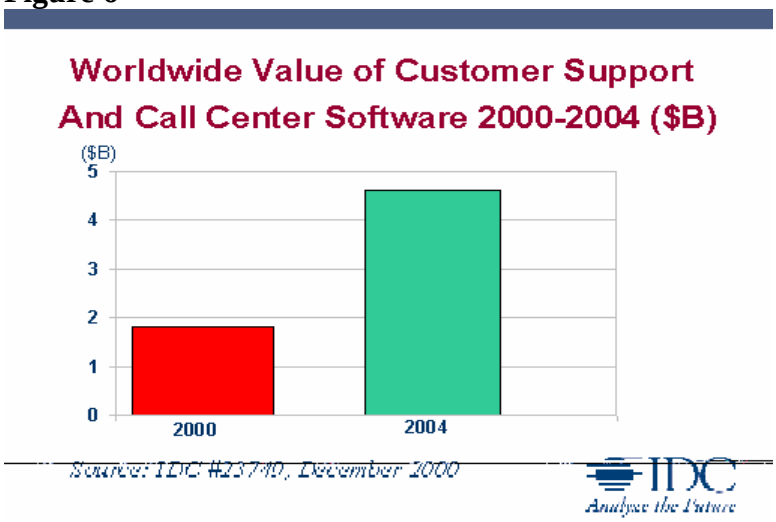
visible entries into the internet economy. Wages in African countries are much lower and conditions of work much more stringent than that prevailing in Asia. The lower cost is likely to make these countries attractive sites for outsourcing companies in the US. The average wage of a data entry operator is USD 480 per annum in Ghana; wages for comparable skill is USD 1250 in India and USD 25000 in US[7].

3.3 Call Centres

One of the most publicised relocations of e-business, from the developed to the developing countries, is in the area of customer care services in call centres. There is no uniform pattern in the dynamics of call centre and their business is not always export oriented. In Malaysia, call centres are geared primarily towards local finance, banking and airline companies. In India, by contrast, entrepreneurs in the business of call centres target multinationals, such as British Airways or American Express, for their custom. The emergence of e-governance has also prompted establishment of call centres that are geared to answering queries from citizens in relation to obtaining and processing of official forms. Survey in India and Malaysia indicate that the proportion of women in the total work force varies from 40 – 70%. They tend to be between 20 – 25 years of age and in most cases this is their first job (Gothoskar, 2000; Ng, 2001b).

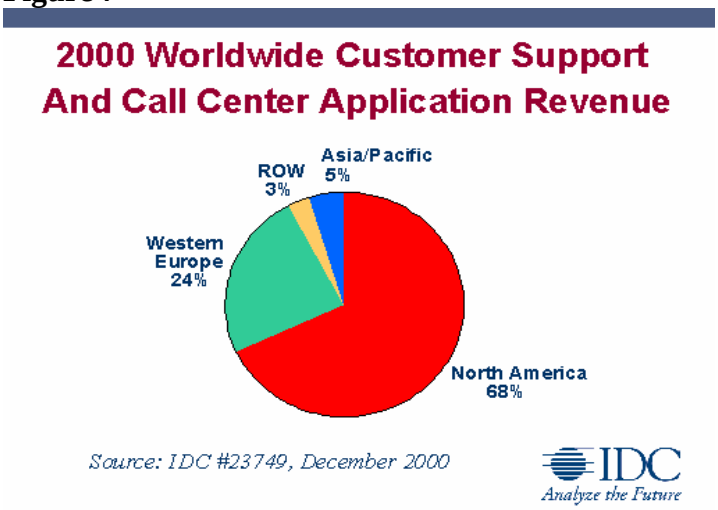
In view of the projected growth of these call centres worldwide (See Figure 6), women in this region are likely to benefit, at least in terms of quantity of work, from this segment of e-commerce. This is plausible as Figure 7 shows that of all developing countries, the countries of this region are main recipients of call centre revenues and of jobs. The question that needs to be addressed this context is that of sustainability and desirability of these jobs.

Figure 6



[7] Source: Worth, Robert. F (2002), "New York Tickets, Ghana Sees Orderly City", *New York Times*, Monday, July 22.

Figure 7



To start with, changes in technology may alter the volume and the nature of call centre service provision. Instead of providing a central base for teleworking, call centre services may be provided virtually, supported by fast data communication linkages among a network of home based teleworkers. The deployment of a portfolio of web-based technologies (Internet, Intranet, and Extranet) may also reduce the market for call centre service provision. In banking, for example, customers may directly arrange their own transactions. In this new techno environment, instead of focussing upon a single task, call centres will be engaged in multi-dimensional tasks. Women need to have access to generic training and life-long education in order to retain their share of the call centre jobs in the future.

The impact of call centre jobs on the quality of lives, as has been documented so far, gives rise to concerns. More research needs to be done in this area. First, in the export–oriented segment of the business, employees generally have to pretend to be European or American in order to convince the customers that the answers are not coming from offshore countries and that their personal information is not sent outside the country of their residence. The cultural schizophrenia that this pretence entails on the part of the employees (See Box 9) has its cost.

Box 9: Hi, I'm in Bangalore (But I Dare Not Tell)

With frosted glass and funky amber lights playing off the turquoise walls, the offices of Customer Asset look more like a Santa Fe diner than a telephone call centre in southern India. The cultural vertigo is complete when employees introduce themselves to a visitor.

"Hi, my name is Susan Sanders, and I'm from Chicago," said C. R. Suman, 22, who is in fact a native of Bangalore and fields calls from customers of a telecommunications company in the United States. Ms. Suman's fluent English and broad vowels would pass muster in the stands at Wrigley Field. In case her callers ask personal questions, Ms. Suman has conjured up a fictional American life, with parents Bob and Ann, brother Mark and a made-up business degree from the University of Illinois. "We watch a lot of 'Friends' and 'Ally McBeal to learn the right phrases," Ms. Suman said. "When people talk about their Bimmer, you have to know they mean a BMW." "Or when they say 'No way, Jose,' there is no Jose," added Ms. Suman's co-worker, Nishara Anthony (a k a Naomi Morrison) and C. R. Suman (a k a Susan Sanders) seem all-American at work in Bangalore, India. Athony, who goes by the Morrison and, if asked, says she comes from Perth Amboy, N.J. The point of this pretence is to convince Americans who dial toll-free numbers that the person on the other end of the line works right nearby — not 8,300 miles away, in a country where static-free calls used to be a novelty. Call centres are a booming business in India, as companies like General Electric and British Air ways set up supermarket-size name Naomi phone banks to handle a daily barrage of customer inquiries. The companies value India for its widespread use of English and low-cost labour.

Source: Weds, March 21st 2001, *New York Times.*

Second, there is a prospect of 'burn out' syndrome. As Ng reports, “While most call centre workers expressed job satisfaction, there were also complaints about how stressful the job was. One reason given was the highly competitive environment as incentives are given to top performers in call success rates (for example, in debt collection efforts), implying reprimands and threats of dismissals for low success rates. These employees have to deal most civilly with their recipients many of whom tend to be abusive or even hysterical. While the call centre industry has the ability to provide young women with the means of entry into the banking sector, the danger lies with it being a dead-end job, with limited career promotion prospects” (Ng, 2001a). While welcoming the new opportunities that the digital trade brings to their lives, young women employees in India too view this type of job simply as a brief interlude in their lives.

Section 4: Teleworking: A Blessing for Women?

There has been a wealth of empirical research by feminist scholars on the potential of telework in allowing women to fulfil the demands of domestic duties with those of a career. However, research so far, has been mostly in developed countries except for two projects in India and Malaysia, undertaken by Mitter in collaboration with local research teams that have explored the potential and spread of teleworking in developing countries[8].

Home-based teleworking, often described as telecommuting, in theory could enhance participation of women in e-commerce as it allows certain flexibility both in timing and location of work (Mitter, 2000).

4.1 Telecommuting

Women, with caring responsibilities at home welcome the flexibility of telecommuting, but as the author's surveys in India and Malaysia indicate, not without reservation. Whereas some women celebrate the opportunities that teleworking brings (See Box 10), majority fear that the home based work will deprive them of the status of working women and dignity at work.

The prevalence surveys by Mitter's research team revealed that home based telework is miniscule even in dynamic cities like Mumbai and Kuala Lumpur (1.0 and 0.35 % respectively). The survey of women's attitude towards telework on the other hand showed that women, at least in India and Malaysia, showed a preference for institution-based teleworking as in telecentres. The managerial concern may also explain the low prevalence of teleworking in India and Malaysia. In a survey of management perception of teleworking in Malaysia, most respondents reported that in Malaysian culture, face-to-face interaction was essential (Ng, 2001a). In India too, Mitter's research revealed a cautious attitude of management towards home-based teleworking. In the financial sector, for example, companies find it prudent to outsource work to call centres rather than to teleworkers. The attitude of the management and of the women may be different now than it was a few years back and will be worth exploring.

[8] Swasti Mitter coordinated the relevant research teams both in India and Malaysia from the United Nations University Institute for New Technologies (UNU-INTECH), Maastricht. In India the survey covered Mumbai, Bangalore and Calcutta. The team consisted of researchers from the National Centre of Software Technology (NCST), Mumbai. and local consultants from women's NGOs as well as from the Mumbai Chamber of Commerce .For the background of and the material from the project, see , Mitter, Swasti,'Teleworking and teletrade in India; Diverse perspectives and visions', Economic and Political Weekly, June 24-30, Vol. XXXV No. 26, pp 2241-2252. In Malaysia, the research team consisted of Dr Cecilia Ng formerly of UNU-INTECH and local academics and consultants. For the scope and the results of the research, seeMitter, Swasti, 'Preface' in Ng,Cecilia(ed.),(2002), Teleworking and Development in Malaysia, UNDP(Malaysia), and Southbound , Penang, Malaysia.

Box 10: Some Women Enjoy Teleworking

Ex-teacher, Rani, who majored in the Tamil language, taught for one year, got married, and had a child in 1996. Because she could not obtain any domestic help, she resigned from the teaching profession to take care of her child. She is now teleworking from home, working as a Tamil translator for a multimedia company. She stresses that she is working because she loves to, rather than for the money. She is disciplined in her work and meets deadlines. Rani, who owns her own computer and printer, is happy teleworking as it saves time and energy. "Other things can be done at the same time; there is more control in my work and it is more flexible. I would not have chosen to work if I could not do it from home."

Source: Mitter, Swasti (2000), Asian Women in the Digital Economy: Policies for Participation, UNDP, Malaysi1, p.23.

Some Show Concerns:

Sujata Gothoskar, the trade union researcher shows concern: Collective action plays important functions. When your work affects your health, when inflation eats into your wage, you can and do raise these issues collectively. If, on the other hand, you are working alone in a far-off distant suburb of the city or town, how do you get your concerns through to people, who make the decisions about your work-life? Another aspect of collectives is the growth of your personality through sharing of experiences, information, and knowledge. What are the possibilities for us? What sort of training is available? How can one access such training? In the current climate of what author calls ‘privatisation, deregulation and adulation of the market economy’, when the emphasis is on the individual devoid of collective identity, isolation of women is all the more scary as the basic vulnerability of women as women and as workers has in no way changed for the better.

Source: Mitter, 2000.

There is no uniformity in the preference for types of telework among women in the region. As Mitter reflects that, on the basis of her surveys, age and stage of life are key factors in moulding women's choice for the type of telework. In Mumbai, while young women work in call centres or offices of foreign airline companies in the export processing zones, older women, with young children, opt for and receive home-based telework. Companies such as Datamatics - a rapidly growing software house, receive assignments from their international clients. In turn, they pass these to women teleworkers who work from their homes, mostly on-line, and with their own computers. These home-based teleworkers represent a wide range of women: housewives, doctors, lawyers, chartered accountants. All that they have in common is that they had to give up regular employment some time ago for the sake of their families. Teleworking gives them a welcome and much needed opportunity to be in touch with the world of work. Yet it is difficult to ensure, as Mitter reflects, that these women can progress, with adequate access to training and childcare, to high value added jobs (Mitter, 2000).

The experience of Malaysia is similar. As Ng and Jin reports "the case studies in software, as well as in printing and publishing, indicate that some women often opt for and find satisfaction in home-based work, either as freelancer or as employees. This happens in a particular phase of their life cycle, especially when there are inadequate child care facilities" (Ng and Jin, 2000).

It is against this base line surveys, more research needs to be directed to confirm or refute the claim that the provision of child care remains a key issue in recruiting, retaining, and retraining women in the New Economy as it was in the Old Economy.

4.2 Telecentres

Access to institution-based telework, as in telecentres, presents a more promising alternative particularly to those who cannot afford to buy their own computers and associated networking technologies. A telecentre generally refers to an institution that provides public access to ICT services ranging from telephony to Internet connectivity for personal or for business use. Generally in the developed part of the world, telecentres mean business centres (as available in airports or hotels). In the developing part of the world, in contrast, telecentres usually refer to institutions that offer free and public access to information services for social development of disadvantaged groups. These centres are most of the time initiated by government and donor agencies to provide information to the local communities on market, government services, local resources, health care, and education. Such centres are dependent on government or donor support. The cost could be justified on the ground of promising universal access and to introduce a culture of technology to the community. But as the evidence shows the long term sustainability of these centres depend on the income generating capacity of the users either as entrepreneurs or as distant employees (Tschang, 2002).

In view of women's greater preference for institution-based teleworking, it will be productive to identify the conditions that would lead the NGOs to collaborate with government bodies, development agencies and the corporate sector to plan for a different type of telecentre that provides facilities for business and employment opportunities, on a cooperative basis, for poorer women. This vision of a telecentre is different from the prevailing ones that use them solely as an institute for providing social services[9]. Facilities for business may have to be subsidised in the beginning but, in the long run, these centres could be self supporting. The role of the corporate sector in this exploration will be crucial. This is the sector that can give important advice to the cooperatives on market niches where women, even with modest education and limited finance, can find regular custom. Government bodies, likewise, can be instrumental in giving women's cooperatives access to business generated by e-governance. Author has drafted a blueprint for such a research initiative in the year 2000 at the request of UNIFEM, India and the Confederation of Indian Industries (CII) after a brainstorming meeting that they convened in Bangalore. The participants were members of the government, the corporate sector and relevant NGOs from different parts of India[10]. This blueprint, with some modification perhaps, might be used by researchers in other countries for investigating the potential of telecentres for creating employment and livelihood opportunities at a grassroots community level.

Section 5: Epilogue

The previous sections point towards research areas and issues for mapping and exploring employment and livelihood opportunities for women in the ICT-enabled and ICT-assisted sectors using both quantitative and qualitative analyses in a select number of countries. The research will aim to provide a clearer picture of the specific challenges and opportunities that women face in the internet economy so that strategic action can be taken to minimise challenges and maximise opportunity. It is envisaged that NGOs in collaboration with the

[9] For experiments with such multipurpose community centres in sub-Sahara Africa by IDRC, Canada, see, www.idrc.ca/acacia/acacia-e.htm

[10] The blueprint of such an initiative was drafted by Mitter in a commissioned briefing paper entitled “Women and the Information Economy: A Proposal for Collaboration between CII and NGOs,” Delhi: UNIFEM, December 2000.

policy makers, the corporate sector and development agencies will undertake such strategic action in the light of the gained insight.
To this end, the partners in selected countries will be urged to formulate research questions that are geared to:

monitoring factors that lead to differential access to and the impact of ICT-enabled business and employment on women and men;

evaluating gaps in knowledge of macro data, needed for such monitoring, in published sources;

collecting information at the meso level to assess the consequences of the Internet economy on the gender structure of power in the work place, the family and the community; and

assessing the role of culture and tradition in explaining diversities in the entry route of women in different localities and countries.

For this exercise, the partners will need to be able to differentiate between the dynamics of export-oriented and domestically oriented segments of Internet economy and e-commerce. It will also be important to make a distinction between women in employment and self employment in the research exploration.

The agenda also makes a case for exploring the use of ICTs at the local or community level; the aim is to gain experiential knowledge on the scope and limits in the use of ICTs for empowering under privileged women economically. The exploration is envisaged to be placed against the background of some apprehension as to whether it is valid to consider ICTs a tool of empowerment, when there are more pressing and long standing obstacles that women have to face before they can reach the stage of using ICTs for earning their livelihood. The outreach programme of ISST that has just started a computer literacy programme among young women in the Nehru and Sonia camps in Delhi may be a starting point for finding an answer to such questionings. This will also address an oft-quoted query: why respond especially to the needs of women rather than to the needs of the whole community?

Inquiries should be made to assess whether access to information through new technology in an interactive and stimulating way could provide a means for the acceleration of learning and promote an ability to self-teach in many different spheres. This could enable young underprivileged women, given access to infrastructure, an online knowledge resource and training, to be better equipped to compete in the economy. Whilst catering for business and vocational training, such a centre could also provide a platform for the teaching and self-acquisition of key generic skills and background knowledge necessary in order for the women to participate in an Internet economy. The research may lead to the conclusion that the use of new technology does not dilute existing resources but provide additional channels of information and additional means of using traditional literacy and numeracy skills.

According to the author, the two dimensions of the proposed agenda are inextricable. While research on the impact of technology-led globalisation will provide the backdrop for assessing the feasibility of community level initiatives, the experiential knowledge gained at the community level will enrich the academic learning from quantitative and qualitative studies. At the final stage of synthesising the research material, it will be important to respect cultural diversities among the region and highlight commonalities as well as differences in the experiences of women coming from different cultural backgrounds. It will be important to

remember that the prototype of community level experiment as initiated in Delhi may or may not be replicable in another country. It will be prudent to steer away from 'one size fits all' approach at the stage of formulating agenda for research.

Bibliography and Relevant Reading

Arun, Shoba and Arun, Thankom (2002). "ICTs, Gender and Development: Women in Software Production in Kerala," *Journal of International Development,* 14, pp.39-50.

Braga, Carlos A Primo (1995). The Impact of the Internationalization of Services on Developing Countries, World Bank, 2002.

Gothoskar, S (2000). "Teleworking and Gender: Emerging Issues," *Economic and Political Weekly,* 35(26), pp.2293- 2298.

Hafkin, Nancy and Taggart, Nancy (2001). Gender, Information Technology, and Developing Countries: A USAID Analytic Study, Washington: USAID.

Huq, Ershadul (2002). Bangladesh Hosts a Garment Fair-online, *Indo-Asian News Service*.

Mayoux, Linda (1997). The Magic Ingredient? Microfinance and Women's Empowerment, Washington: The Microcredit Summit.

Mitter, Swasti (2000). "Teleworking and Teletrade in India: Diverse Perspectives and Visions," *Economic and Political Weekly,* 35(26), pp.2241-2252.

Mitter, Swasti and Sen, A (2000). "Can Calcutta Become Another Bangalore," *Economic and Political Weekly,* 35(26), pp.2263-2268.

Mitter, Swasti (2001a). Asian Women in the Digital Economy: Policies for Participation, Kuala Lumpur: UNDP.

Mitter, Swasti and Efendioglu, Umit (1999). "'Is Asia the Destination for 'Runaway' Information Processing Work? Implications for Trade and Employment," *Europe and Developing Countries in the Globalised Information Economy, Employment and Distance Education*, Mitter, Swasti and Bastos, M. I, London, New York: Routledge, pp.9-27.

Mukhopadhyay, Swapna (in the press). "Introduction: What is New About Gender Bias," *Golbalization and Gender Inequality in South Asia*, Mukhopadhyay, Swapna and Sudarshan, R. M.

Ng, Cecilia Ed. (2001a). Teleworking and Development in Malaysia, Penang: UNDP Malaysia and Southbound Penang.

Ng, Cecilia Ed. (2001b). "Teleworking: Blessings for Malaysian Women in the Information Age?" *Teleworking in Malaysia*, Ng, Cecilia, Penang: UNDP Malaysia Southbound Penang, pp.111-125.

Ng, Cecilia and Jin, K Khay (2000). "Teleworking in Malaysia: Issues and Prospects," *Economic and Political Weekly,* 35(26), pp.2308 - 2313.

Rasiah, Rajah and Chang, Colin (2001). "Banking and Finance," *Teleworking in Malaysia*, Ng, Cecilia, Penang: UNDP Malaysia Southbound Penang, pp.73-89.

Tschang, Ted *et. al* (2002). "Scaling-up Information Services for Development: A Framework of Icreasing Returns for Telecentres," *Journal for International Development*, 14, pp.129-141.