

## Part III

# Globalisation and ICT: Employment Opportunities for Women

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### Introduction

This paper is an agenda for research and action for advancing women's employment and livelihood opportunities in developing countries in the ICT-related sectors. The objective is to identify areas of policy intervention that will allow women to participate in the globalised digital economy on a par with men. It will explore the possibility and potential of ICT in bringing gender equality in the world of work, be that in employment or in trade and commerce. The arguments are based on the conviction and observation that women face different challenges from men in entering the digital economy. The analyses also focus on the importance of women as human resources that attract flow of foreign trade and investment in the ICT-related sectors of developing countries.

It is written with the aim of promoting distributive justice for women and the productive efficiency of their countries. The first section is devoted to a survey of the current position of women in the digital economy. In order to assist in the formulation of appropriate policy measures, the analysis highlights novel opportunities as well as threats arising from the emerging globalised digital economy. Certain questions become particularly relevant in the context of the current UN emphasis on poverty reduction.<sup>1</sup> They also reflect the spirit of the resolutions undertaken in the Beijing +5 summit that urged UN agencies to go beyond the task of assisting the use of ICT for networking and media to that of exploring the potential of the technology for economic empowerment of women in poorer countries. A distinction is made between self employment and formal employment ; the paper also highlights the limits of export-led growth and stresses the importance of building a strong local base for sustainable development. The need for policy makers to explore the potential of novel institutions e.g., telecentres and call centres, for improving the quantity and quality of women's employment is also discussed. Attention is drawn to new methods of working such as telework. Finally a framework is suggested for policy oriented research undertaken through the collaboration of major stakeholders, such as government, the corporate sector and NGOs.

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<sup>1</sup> The first United Nations Decade for the Eradication of Poverty takes place during 1997-2006. The United Nations General Assembly in its resolutions 48/183 of 21 December 1993, 49/110 of 19 December 1994, 50/107 of 20 December 1995 and 51/178 of 16 December 1996 declared the observance of the International Year for the Eradication of Poverty (1996) and the first United Nations Decade for the Eradication of Poverty (1997-2006). At its 55<sup>th</sup> session, the Secretary General submitted a report on the implementation of the UN resolutions on poverty eradication, stating the progress made in the implementation of measures, recommendations and activities relating to the first United Nations Decade for the Eradication of Poverty, including an examination of the impact of globalisation on the eradication of poverty. The report focused on progress achieved in global poverty reduction since the World Summit for Social Development, highlighting the need for more concerted and sustained efforts to eradicate poverty. The theme "Globalization and the eradication of poverty" is also addressed, with particular reference to the impact of globalisation on the least developed countries which have so far not been able to take advantage of the opportunities offered by globalisation. The report outlines a range of possible actions, policies and measures that may be undertaken both at the national and at the international level to enable developing countries to better benefit from globalisation.

## 1. Why Women?

Women face major challenges as a result of changes in the world economy arising from rapid globalisation, fast-paced technological progress and a growing informalisation of work. As a result, as the ILO notes, women's labour market status has greatly altered. Although women's representation in the labour force is increasing all over the world – to at least one-third in all regions except Northern Africa and Western Asia – their participation rates are still lower than men's, and they are disproportionately represented in non-standard and lower-paid forms of work, such as temporary and casual employment, part-time jobs, home-based work, self-employment and work in micro enterprises.<sup>2</sup> The paper posits that without appropriate policy measures, the pattern of the traditional so-called Old Economy will appear also in the digital or ICT-assisted New Economy.

According to the World's Women 2000:

- Women now comprise an increasing share of the world's labour force – at least one third in all regions except in Northern Africa and Western Asia.
- Self-employment and part-time and home-based work have expanded opportunities for women's participation in the labour force but are characterised by lack of security, lack of benefits and low income.
- The informal sector is a larger source of employment for women than for men.
- More women than before are in the labour force throughout their reproductive years, though obstacles to combining family responsibilities with employment persist.
- Women, especially younger women, experience more unemployment than men and for a longer period of time than men.
- Women remain at the lower end of a segregated labour market and continue to be concentrated in a few occupations, to hold positions of little or no authority and to receive less pay than men.
- Available statistics are still far from providing a strong basis for assessing both quantitative and qualitative changes in women's employment.

*Source: United Nations, 2000.*

## 2. Relevance of Globalisation

In understanding the impact of ICT on poorer countries, it is important to understand globalisation, since ICT has become one of the major driving forces in bringing national

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<sup>2</sup> ILO, 1998.

markets to the international domain. It is the digital divide which determines the divide in ability of the rich and poor countries to gain economic benefits from an expanding global market and the resulting new trade in information-intensive services and goods. Countries are thus affected by globalisation either through inclusion or exclusion; this polarity in economic well being increases as the world economy becomes reliant on information technologies.

Globalisation is not a new phenomenon, but the distinguishing feature of the current form of globalisation is that both developing and developed countries, have become increasingly connected through trade in digitised information. Combinations of computer and communication technologies culminating in networking technologies have enhanced the speed and reduced the cost of communication to such an extent that the question of distance has become less relevant in commercial and business transactions. With 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 the outsourcing of a vast range of information processing work, both to subcontracting and satellite units within a country as well as to those developing countries that possess a low waged computer-literate and English-literate workforce.<sup>3</sup> The position of women, even in the developing world, has been far from uniform or unilinear in this emerging global scenario. In some developing countries, such as India or the Philippines, women have become major recipients of this globally distributed work.

In addition, digitisation of information and the Internet have made it possible to sell goods and services beyond the boundaries of national states. Some of the case studies cited in this paper indicate that here too women have made some gains. The market for e- business and e-commerce is, at least potentially, global. Hence the internet, if and when available, makes it technologically possible to have access to global knowledge that includes prices, markets and tools. It has strengthened their ability to more effectively compete even in the domestic market. When they have been included in the digital economy, women have benefited (albeit to a lesser degree than men) by having access to:

- global markets;
- globally distributed work;
- global knowledge.

Nevertheless, in spite of the new opportunities that ICT has offered to women, one can only be cautiously optimistic. The success of women has so far been limited to a handful of (mostly Asian) countries. The beneficiaries are generally from urban areas, whereas the majority of women, even in the high profile Asian countries, live in rural areas where connectivity is rare or non existent. Women are generally engaged in meeting local and family needs and are overwhelmingly not linked to a global digital economy that is essentially geared to trade and anchored in market transactions.

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<sup>3</sup>Braga, 1995; Mitter and Efendioglu, 1999)

Exclusion implies missed opportunities and a widening of the gap in material well-being between the excluded and the included. Since women form the majority of the poor in most developing countries, exclusion affects more women than men. There is thus a strong case to be made in applying a gender focus to policy analysis in relation to globalisation.

### **3. Universalities in Women's Needs**

In formulating a research agenda to rectify gender bias in the digital divide, it is important to acknowledge that women's position in the world of work is determined by factors other than their gender, such as ethnicity or class. Nonetheless, women in all strata of society share some common challenges. 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 the Old Economy, and is likely to persist even in the so-called Digital or New Economy. Women often find it difficult to engage in new forms of self-employment. Opportunity to establish businesses in telekiosks or cyber cafes often eludes women who do not have the same access as men to family property or institutional finance.<sup>4</sup> They also have to face greater barriers than men in obtaining education and training that can equip them with computer literacy, English literacy and business skills.

Societal roles or biological qualities do not always work against women. For example, the patience and persistence needed for repetitive work, or the ability and inclination to work on a team are the qualities that management often associates with women. This perception, real or stereotyped, partly explains the feminisation of the workforce in the manufacturing industries of export-processing zones in the developing world. Similar considerations now lead to the recruiting of young women in large numbers in emerging institutions of the digital economy, such as call centres. It has created new opportunities but often leads to insecure employment, as in call centres, where employees can be dismissed with ease. The emergence of a non unionised workforce may not bode well for the quality of work or the sustainability of these jobs. The quality as well as the quantity of work should be included in any evaluation of the impact of ICT-led globalisation.

### **4. Differences and Diversities**

It is important to respect diversity in cultural and material conditions in each country. For women, culture as determined by the history and tradition of their countries to a significant extent determines the parameters of entry into a market economy, of which the digital economy is a component. This discussion draws particularly on the experiences of Asian countries as, of all the developing regions, Asia has attained the maximum visibility. The Asian experience, however, may or may not have relevance to Africa or Latin America. As a result, one important area for further research will be to compare the

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<sup>4</sup> Gothoskar, 2000; Mitter, 2000.

situation of women in Asia with the emerging participation of women in the IT sector in Africa and Latin America.

It would thus be useful to place the issue of women's livelihoods in the context of their country's competitive position as well as that of the region in which they reside. The question of gender also has to be placed in the wider context of development and growth. Regional and country level differences in participation in B2B commerce illustrate this. Table 1 shows the two segments of trade in digitised information: Business to Business (B2B) and Business to Consumers (B2C). The current share of developing countries in both B2B and B2C is minute. Asia is the leading region among the developing countries in B2B and B2C, followed by Latin America. The share of Africa and other developing countries is virtually nil. Even within Asia, these are concentrated in a handful of countries such as India, Malaysia, China and the Philippines. Distributive justice alone will bring little benefit to women unless and until the countries concerned achieve productive efficiency. With this in view, further research is recommended to explore how ICT could enable developing countries to harness the cognitive skills of their female workforce and improve their competitiveness in an increasingly globalised world. It will be difficult to ensure women's equitable participation in the digital economy if their countries lag behind.

It will, likewise, be necessary to evaluate in which segments of e-commerce women's opportunity lies. In spite of the publicity given to e-retailing – B2C e-commerce – its scope and spread in the poorer parts of the world has remained small. This is partly because the volume and value of B2B trade and commerce far exceeds that of B2C worldwide (see Table 1). The reasons for the limited participation of even the talked about Asian countries in B2C commerce is not difficult to understand. Even large firms in poorer parts of the world face difficulties in establishing secure modes of payment and consumer confidence in the quality of goods and services sold over the Net. The problems are more acute for small businesses, and it is in the small scale business sector where women operate in the developing world.

It is not surprising that both male and female entrepreneurs, even when they operate as a cooperative in a telecentre, find it challenging to engage in business over the Net, nationally or internationally. One could argue that the success stories, such as that of a Peruvian community using Internet connection for global e-commerce,<sup>5</sup> are specific cases and not amenable to replication. Women usually sell commodities such as garments or handicraft products, the delivery of which cannot take place online. The use of ICT even in an ideal world is confined to advertising and collecting payments, so that women have to cope with consumers' uncertainty about the quality of goods. In fact, the limited evidence available so far shows that women have found a market niche in a different area: the buying and selling of information. An example is the Grameen Phone in Bangladesh, where women run successful businesses selling communication services via mobile telephones to other women.<sup>6</sup> In India and Malaysia, women provide online delivery of services as freelance journalists to newspapers and other publishers.<sup>7</sup>

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<sup>5</sup>See [www.undp.org/info21/e-com/e.1.html](http://www.undp.org/info21/e-com/e.1.html)

<sup>6</sup> Hafkin and Taggart, 2001.

<sup>7</sup> Ng, C. 2001a.

*Table 1. Global B2B and B2C e-commerce spending by region, 2000 and 2005*

Country/ Region	2000						2005					
	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*

The main opportunity for women lies in the B2B segment of e-commerce, which deals with transactions of digitised data online. The convergence of computer and communication technologies has made it possible to undertake such transactions when there is adequate supply of infrastructure and bandwidth. The targeted locations are usually those that offer a cheap, skilled, computer and English literate workforce.

These phenomena explains why companies in the OECD countries such as those based in Silicon Valley, USA or Munich, Germany tend to outsource service operations to countries like India or the Philippines. From the empirical evidence, one can deduce that there is a relationship between the availability of a skilled female workforce and foreign direct investment in information processing work in the developing countries. The software services sector in countries such as India and the Philippines exemplify or confirm this hypothesis. The salary difference between the US and India or the Philippines for similar skills is great<sup>8</sup>. Yet the difference cannot offer a full explanation for the failure of software services to relocate countries where salaries are even cheaper, such as Bangladesh or Uganda. The success of replicating the experience of India or Philippines depends on creating the right policy framework. It is also contingent upon ensuring the promises of requisite ICT skills. A South –South dialogue among policy makers on these topics would be a useful contribution.

## 6. ICT and Women Entrepreneurs

<sup>8</sup> In India the average annual salary of a computer programmer is less than 1/6<sup>th</sup> of that of a programmer in the United States. In the Philippines it is 1/7<sup>th</sup>. The cost of hiring a medical transcription secretary is \$1,200 in India compared with \$25,000 per annum in the United States. See Mitter and Sen, 2000.

Although data is not collected systematically for all regions, we know that women head 35% of small and medium enterprises in Asia. The main advantage of the web is it may allow these women to find new markets and enhance existing enterprises. The success of women's small and medium enterprises using ICTs, in this region has, to some extent, already been documented but mainly in a case study fashion.<sup>9</sup> No systematic survey has been carried out as yet. From this limited evidence it is apparent that digital opportunities in ICT-enabled businesses exist for women entrepreneurs. These include Internet/cyber café/kiosk employment initiatives in Thailand and Malaysia, and the Grameen Phone project in Bangladesh discussed below.

The Grameen Phone project in Bangladesh is often presented as a best practice model which combines lending to women's micro enterprises with literacy training and skills development. As described by Hafkin and Taggart, the Grameen Bank provides wireless phones as an in-kind loan to village phone operators, 75% of which are women. The operators resell the mobile phone service to fellow villagers, earning an average annual income of \$300 as against the national average per capita income of \$286. About 90% of the women operators are married with no formal education. The phone business can be managed simultaneously with other business or while doing household chores. The major advantages of this type of IT-enabled enterprise are minimal educational requirements (just some basic mechanical aptitude), and the small amount of capital needed, which can be supplied by micro credit schemes. Such schemes are particularly useful for rural development where access to telecommunications and internet technology is limited.

A successful example of an ICT-enabling business which has access to the Internet and a micro financing component is the use of smart cards by Indian women milk collectors in Rajasthan. The smart cards are used to record the quality, fat content, and sales of milk to distributors and also serve as a bankbook, allowing them to make decisions on spending and increasing their profits through the elimination of middlemen called dhudhwala.<sup>10</sup> In Latin America, a nationwide network of housewives called Tortasperu who sell Peruvian baked goods to expatriates over the Internet, is an example of a lucrative opportunity for women who work at home while taking care of their children and at the same time bring in much-needed foreign exchange. The model has been replicated in Africa, in initiatives such as Ethiopia's virtual gift shop where traditional Ethiopian costumes, food items and spices produced by women are sold over the Internet; and in the Middle East, where handicrafts made by women artisans of Morocco, Tunisia, Lebanon, Egypt, and Jordan are sold in a virtual shop called elsouk.<sup>11</sup>

These businesses have the advantages of low capital and skill requirements. Aside from telephony services, women's handicrafts could also be developed using B2C, although difficulties in terms of marketing and management skills, supply and delivery logistics need to be addressed.

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<sup>9</sup> Hafkin and Taggart 2001.

<sup>10</sup> World Bank, "Innovative Interventions in the Gender and Digital Divide in South Asia" downloaded from [www.worldbank.org/gender/digitaldivide/interventionsasia.htm](http://www.worldbank.org/gender/digitaldivide/interventionsasia.htm)

<sup>11</sup> See [www.tortasperu.com](http://www.tortasperu.com); [www.ethiogift.com](http://www.ethiogift.com); [www.elsouk.com](http://www.elsouk.com).

The main advantage of the Web for 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.<sup>12</sup> Yet, for the majority of women in Asia, Africa and Latin America, it has proven difficult to realise this potential in view of barriers in access to:

- internet technologies
- language of the Internet,
- credit or finance
- technical and business skills
- information on trade & customs regulations
- payment over the Net; and/or quality control of the product.

## 5. The Question of Finance

Aside from access and English language proficiency (e.g., education), as discussed in Section 4, 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. They both involve employing about five people or less, mostly family members. 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 with no collateral. The most likely source of finance could be found in micro credit schemes that specifically target women because of their high levels of repayment and for the social dividends reaped from lending to them.

Micro finance or micro credit programs should be aimed at empowering women, rather than at the setting up or expansion of micro enterprises. Specifically, micro credit schemes, when appropriately implemented, increase women's income levels and their economic independence, enhance women's autonomy over household decisions on expenditures, promote positive attitudes to women's social and political roles in communities, and provide them with information and support networks which allow them to protect their individual and 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 positive and negative impacts of micro finance programs on women have been intensively studied, and in most cases, the negative effects outweigh any positive effects. Mayoux, for instance, argues that the enterprises set up by women in these programmes demonstrate few income-augmenting, and there is often a cost to be borne in terms of

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<sup>12</sup> See Section 8.5 below for a discussion on the advantages and disadvantages of telework.



heavier workload and repayment pressure.<sup>13</sup> Worse, loan proceeds in many cases have been appropriated by men to set up enterprises over which women have no control and in which they are required to participate as unpaid labour. In many successful ventures, women's increasing autonomy has led to the withdrawal of male support, as well as decreases in male contribution to household expenditures. There is a possible role here for NGOs to control collective resources in order to ensure their continued availability to women, and to impart an identity independent of the family. The experience of Self Employed Women's Association (SEWA) in initiating such an approach will be useful.

## 6. Technical and Business Skills

The major barrier to success in self-employment in the Internet economy is the lack of technical and business skills. Unlike the telephone, the use of Internet requires more complex and demanding skills, including that of troubleshooting. In a situation of self-employment, women experience a greater level of techno-fear as compared to men because of less experience in solving technical problems. This fear restricts women from 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, both women and men entrepreneurs, even when they operate as a cooperative, find it challenging to operate businesses over the Net, nationally or internationally. The restrictions on and the cost of international transactions (see Box1) pose challenges. A survey of women's exact needs in technical and business skills in developing countries would be a useful contribution in this respect.

### **Box 1. Small businesses face difficulties in global e-commerce**

We sell art calendars with photos taken by young women in our cooperatives and sell them abroad. We publicise their availability over the Net to customers abroad. We find customers but it is not easy to sell. 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, at a workshop organised by IDRC in Delhi, 3 March 2002.*

## 7. Telecentres

Telecentres present more promising opportunities to small and micro women entrepreneurs, particularly to those who cannot afford to buy their own computers and associated networking technologies. 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 distance employees.<sup>14</sup> It depends on the ability of the telecentre to meet

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<sup>13</sup> Mayoux, 1997.

<sup>14</sup> Tschang, 2002.

the specific needs and demands of the community it serves. It also may involve a rethinking of the definition of telecentre sustainability, as Sonia Jorge has argued. In many instances, demand is sufficient to ensure sustainability only after the community understands the value of the centre and how it can benefit from the ICT services provided. This takes time. As a result, policy makers also must recognise that in many areas incomes are so low that the population cannot afford to pay for ICT services, despite great potential demand, even at subsidised rates.<sup>15</sup> And finally, it should be kept in mind that women do not currently enjoy equal access to or benefits of telecentres.

In view of women's greater preference for institution-based teleworking, it may be worthwhile for NGOs to collaborate with government bodies, development agencies and the corporate sector to plan for a different type of telecentre, one that provides facilities for business and employment opportunities on a cooperative basis for poorer women. This vision of telecentres is different from the prevailing approach of social service provision.<sup>16</sup> Facilities for business may need to be subsidised in the beginning but, in the long term, these centres could be self supporting. The participation of the corporate sector will be crucial in advising the cooperatives on evolving market niches where women, even with modest education and limited finance, are able to find regular custom. Government bodies, likewise, can be instrumental in providing women's cooperatives with access to business generated through e-governance. Mitter drafted a blueprint for such an initiative at the request of UNIFEM, India and the Confederation of Indian Industries. The participants were members of the government, the corporate sector, and NGOs from different parts of India.<sup>17</sup> With some modification, the blueprint perhaps may be used by other agencies as a starting point to explore the potential of ICTs to create employment and livelihood opportunities at the grassroots community level.

## **8. Women in the Formal Sector**

### **8.1 Assessing parity**

For a gender focused policy analysis it will be important to evaluate the position of women in comparison with men in formal employment. Assessing the parity between women and men in the digital economy, however, is a complex task which involves looking at the quality as well as the quantity of work. Women are not always losers. As the survey by Cecilia Ng in Malaysia in 1999 shows, in the software sector women are close to attaining parity in numbers with men.<sup>18</sup> However, in general, they are clustered in the low-skilled level of the hierarchy with little potential for career advancement. Male workers dominate the technical and managerial occupations. This occurs for a variety of sociocultural and economic reasons, including household and family responsibilities, and level of education.

Some of the reasons for this include gender stereotypes about women's technological abilities. At the same time that women are highly valued for low-level IT employment

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<sup>15</sup> See Huyer and Sikoska, 2003.

<sup>16</sup> For experiments with such multipurpose community centres in sub-Saharan Africa by the Canadian International Development Research Centre (IDRC) see [www.idrc.ca/acacia/acacia-e.htm](http://www.idrc.ca/acacia/acacia-e.htm).

<sup>17</sup> The blueprint is found in Mitter, 2000b.

<sup>18</sup> Ng, 2001a.

because of their “nimble fingers,” they are often considered unsuited for many other types of technical jobs. In Brazil, male technical training teachers tend to steer women towards “female-appropriate” work in software, graphics and desktop publishing, while hardware design and maintenance is considered men's work. In Africa, Cisco Systems Networking Academy Program found that employers perceive women as unqualified for networking jobs because of the supposed physical demands of the work.<sup>19</sup>

Attitudes such as these are reinforced by assumptions that men are the breadwinners of the family, so that income earned by women is less important to the household. In some countries where maternity leave is standard, employers prefer men over women by employers because of the costs associated with such leave. But it is not necessarily discrimination by employers that accounts solely for the unbalanced distribution of men and women in the workforce. Social assumptions about women's role in child rearing mean women often leave the workforce once their children are born. For example, in Korea, 89 percent of single women are employed, but this number drops to 30 percent after marriage. Conversely, the proportion of women working in family enterprises and self-employment increases after marriage.<sup>20</sup> While Korea is just one example, Sharma confirms this situation for women in Asia more generally: “Women are expected to marry and have a family, and it is commonly believed that a university degree will not help to find a bridegroom.”<sup>21</sup> Often women themselves settle for less demanding jobs as they have to be responsible for looking after the children.<sup>22</sup> A survey in Kerala found that some mothers gave up work in software development because of the stress involved in meeting deadlines and tried to make use of their skills by taking up more flexible jobs such as teaching in computer training.

It is difficult to obtain comprehensive data by sector on the distribution of Internet economy jobs. Two surveys in India and in Malaysia provide certain pointers and elucidate diversity in the experiments and experiences of countries in the region.<sup>23</sup> Despite some differences, one can argue that in South and Southeast Asia the majority of employment in the Internet economy has so far emerged in the export oriented segment of the market, of which software is a major sector. This expansion has broadened the employment potential for 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 positions.<sup>24</sup> This figure in the field of software services is higher than any other field of engineering.

## 8.2 Information Technology Enabled Services

Although impressive, the prospects for women, as recent research and projections indicate, lie more in 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

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<sup>19</sup> Hafkin and Taggart, <http://www.usaid.gov/wid/pubs/it01.htm>.

<sup>20</sup> Kim, 2000.

<sup>21</sup> Sharma, 1996.

<sup>22</sup> Arun and Arun, 2002)

<sup>23</sup> Mitter, 2000; Ng Khay Jin, 2000; Ng, 2001a)

<sup>24</sup> Mitter, 2000; Ng, 2001b)

decade, to USD 671 billion by the year 2005. 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 target a large part of the market.<sup>25</sup> In 1999, NASSCOM projected that by 2005 employment figures in ITES in India could reach 1.1million. There are no gender-disaggregated statistics on the employment that results from these outsourced services 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 taken by women. The percentage of women is likely to be similar in countries such as the Philippines.<sup>26</sup> The Remote Services or ITES that refer to relocated back office

### **Box 9. Gender Structure in Back Office Services**

Routine: requiring only basic skills - Women predominate

1. Data capture and processing.
2. Customer call centres – for routine queries, order taking, and referrals.
3. Hotel or rental car reservations.
4. Virtual service centres (e.g. home delivery pizza companies).

Discretionary: requiring technical training and problem solving - Women predominate

5. Data verification and repair (e.g. optically scanned documents).
6. Claims processing.
7. Mailing list management.
8. Remote secretarial services.
9. 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.

<sup>25</sup> *Communiqué India*, No. 2, Feb. 2002

<sup>26</sup> Interview by Swasti Mitter with Sushanto Sen, the Deputy Director of CII, India on 8 March 2002.

operations<sup>27</sup> open up opportunities for women. Yet one has to be cautious about the future (see Box 9). There are various types of back office services requiring different levels of skills from women and men, and there is a discernible trend to employ women in operations that require less complex skills.

Recent qualitative case studies in India by Mitter and Sen indicate that women are concentrated in those areas that require routine or discretionary skills.<sup>28</sup> Women are less visible in the specialised areas of back office operations. The next round of technological developments in the areas of computer voice recognition and image processing may make some of these routine skills less desirable in the international market. In order to sustain women's place in the Internet economy, it will be important to ensure that women receive opportunities to gain flexible skills for complex and specialised jobs, including providing a broader base of education and training to enable them to survive the withdrawal of vocational ICT employment.

One area where women workers in Asia have found a market niche, both nationally and internationally, is in web site design. The growing incorporation of the Internet into business operations has led to this new window of opportunity, in which the stereotyped image of femininity can provide women with comparative advantage. Women are considered to be better creators and designers, familiar with layouts and colour matching, and are considered to be "natural" shoppers. The extent of the market and its future growth are yet to be quantified.

### **Box 2. 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. 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*

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<sup>27</sup> 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, Feb 2002).

<sup>28</sup> Mitter and Sen, 2000.

### 8.3 Sustainability of ICT-Related Jobs

The recent volatility in the US economy 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.<sup>29</sup> This turnaround in business has had a major effect on the recruitment and salary of Indian graduates in ICT-related courses (see Box 2). Significantly, Infosys is investing USD 5 million in setting up a business process outsourcing unit for 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.

The relatively brighter prospect of the ITES segment of e-commerce bodes well for women. Yet threats of job loss from technology developments remain. As well, these jobs are footloose in nature, a result of growing competition among developing countries. For example, African countries such as Ghana that have made visible entries into the Internet economy are attracting jobs that previously went to India.<sup>30</sup> Wages in African countries are much lower than those prevailing in Asia and 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 USD480 per annum in Ghana; wages for comparable skill is USD1,250 in India and USD 25,000 in the US. In addition, although these jobs open up new opportunities and higher pay, other concerns such as working conditions, pay rates, and the long-term health of the female employees engaged in data processing arise (Box 3).

#### **Box 3: Electronic Sweatshops?**

If you are caught playing your radio too loudly in Times Square, selling ice cream while parked in a Harlem crosswalk or dumping your kitchen trash in Prospect Park, your ticket does not just go to City Hall to be processed. It goes to Ghana. Just days after the tickets are written out on New York City streets, they are scanned and sent as digital photographs to computers in a small office in downtown Accra, Ghana's hot and crowded capital. From New York's perspective, it hardly matters whether the work is done in Africa or Delaware: the contract is simply a way to process the half-million environmental tickets the city hands out every year. It is good work, by Ghanaian standards. The typists earn 500,000 cedis a month (almost \$70 -- three times the Ghanaian minimum wage and more than twice the average per capita income) to type the offender's name, address, fine and offence location into a searchable database that is sent back to New York. It can then be stored electronically and used to generate payment notices. The company's contract requires it to return the transcribed information with an error rate of no more than 1 percent and within 48 hours of pickup. The employees work in revolving eight-hour shifts that run 24 hours a day. They are immaculately

<sup>29</sup> Financial Times 11 April 2002, p.27.

<sup>30</sup> Worth, 2002 #46.

dressed and sit silently at computer terminals, typing as fast as they can in a plain office. The workers get one 30-minute and two 10-minute breaks per shift to use the bathroom, eat and call friends. Their computers have no e-mail because it could be a distraction. Soon, workers will be paid by the keystroke, with deductions for errors. Data Management, the name of the office is the largest Internet centre in West Africa. Visitors at the Internet centre downstairs jokingly call Data Management an "electronic sweatshop." But the jobs are so popular that dozens of people apply for each opening, even when the company does not advertise. And to many people in this city of open sewers and vast unemployment, the data entry operation represents a beacon of hope.

*Source: Worth, 2002*

#### 8.4 Call Centres

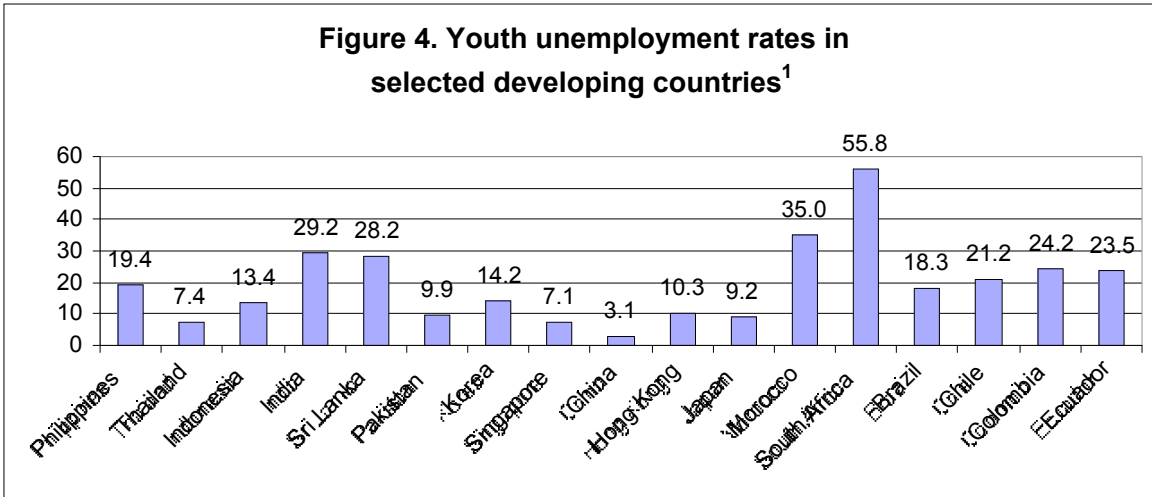
The relocation of customer care services to call centres in developing countries is one of the most publicised effects of e-business. Call centres are characteristic institutions of the Internet economy as distant and/or external sites for answering customer queries. Offshore call centres are located in low wage, multilingual countries where the overhead costs are relatively low. There has been a steady growth of call centres in this region, providing white-collar employment to women who would have found it difficult to obtain employment after a modest education. These new opportunities are welcome in the regions where youth unemployment is particularly high (see Figure 4).

There is no uniform pattern in the dynamics of call centres. The business is not always export oriented. In Malaysia, call centres are geared primarily towards the finance, banking and airline companies of Malaysia. In India, in contrast, entrepreneurs in the business of call centres target multinationals, such as British Airways or American Express. The emergence of e-governance has also prompted establishment of call centres that are geared to answering queries in relation to obtaining and processing of government forms. Mitter's survey in India and Malaysia indicates 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.<sup>31</sup> They are, to quote a 22-year old programmer in Kolkata, too young and career oriented to think of maternity leave and child-care.<sup>32</sup>

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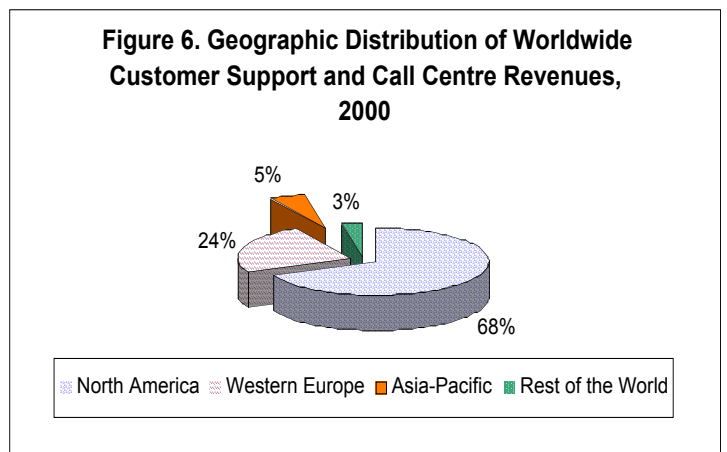
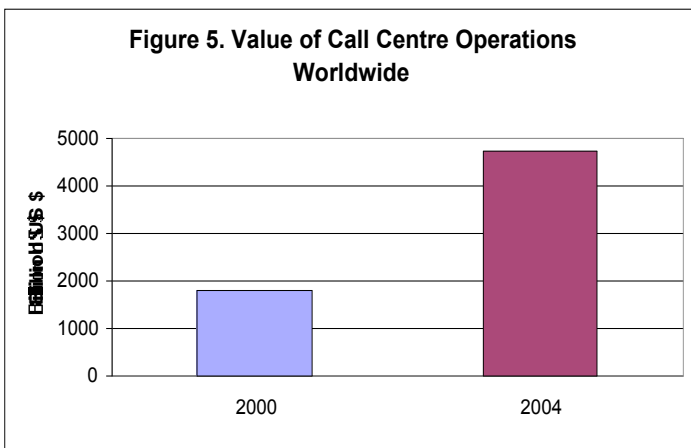
<sup>31</sup>Gothoskar, 2000; Ng, 2001b

<sup>32</sup>Mitter, 2000



<sup>1</sup> Based on latest available data per country ranging from 1998-2000.  
Source: Millennium Indicators, United Nations Social Division.

In view of the projected growth of these call centres worldwide (see Figure 5), women in the Asia-Pacific region are likely to benefit, at least in terms of quantity of work, from this segment of e-commerce. This is plausible, as Figure 6 shows that the countries of this region are the main recipients of call centre revenues and jobs. The question that needs to be addressed in this context is that of the sustainability, conditions, and desirability of these jobs.



To start with, changes in technology may alter the volume and 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 manage multi-dimensional tasks. Women will need access to training and life-long education in order to retain their share of the call centre jobs in future.

The impact of call centre jobs on quality of life, as has been documented so far, gives rise to concern. First, in the export-oriented segment of the business, employees generally pretend to be European or American in order to convince customers that they are not calling offshore countries, and that their personal information is not sent outside their country of residence. The cultural schizophrenia that this entails for employees (Box 4) has its cost.

#### **Box 4: 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), left, and C. R. Suman (a.k.a. Susan Sanders) seem all-American at work in Bangalore, India. Anthony, 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 Airways 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: New York Times, March 21, 2001*

Second, there is the prospect of 'burn out'. 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<sup>33</sup>.

While welcoming the new opportunities that digital trade brings to their lives, young women employees in India view this type of job simply as a brief interlude in their lives before marriage (see Box 5).

#### **Box 5. The Mixed Reaction to Call Centre Jobs ( India)**

"But to tell you the truth, the work itself is very boring. There is nothing creative or challenging in the work itself. Sometimes, we wonder what are we doing here."

"As compared to other factory jobs, getting 5,000 as a start seems damn good. That is only till you have family responsibilities."

"We work 5 days a week. The off-days may vary from one month to another. But that is fine. Besides, we have meetings of the teams every once a month. We can raise any issue we want to in these. Like if we have problems with taking leave or anything. But there are no problems at all for us to raise. So we do not raise anything at all."

"But the main thing is that all of us want to leave at some point; so there is not much of an interest in improving things. You talked about some organisation or collective body of employees. No we don't have any such thing. That is the reason. There is not that sort of interest."

*Source:Gothoskar, 2000.*

### **8.5 Teleworking: a Blessing for Women?**

Tele means distance, so that teleworking refers to ICT-mediated distance employment. The term usually implies home-based work or telecommuting. Strictly speaking, tele-mediated remote employment also covers institution-based work, such as that in telecentres, neighbourhood centres and satellite offices in addition to telecommuting. Home-based teleworking, in theory, could enhance the participation of women in e-commerce as it allows certain flexibility both in timing and location of work.<sup>34</sup>

<sup>33</sup> Ng, 2001a.

<sup>34</sup> Mitter, 2000

There has been a wealth of empirical research by feminist scholars on the potential of telework to allow women to combine the demands of domestic duties with those of a career. However, research so far has taken place mostly in developed countries, except for two research projects in India and Malaysia undertaken by Mitter in collaboration with local research teams to explore the potential and spread of teleworking in developing countries.<sup>35</sup>

With responsibilities at home, women often welcome the flexibility offered by telework and telecommuting, but as surveys in India and Malaysia coordinated by Mitter indicate, not without reservation. Whereas some women celebrate the opportunities that teleworking brings, she found that the majority fear that home based work will deprive them of the status they have as working women, and of dignity at work. In addition, academic activists like Sujata Gothoskar rightly fear that teleworking may lead to insecure, flexible employment which in turn may lead to isolation, loss of career prospects, and difficulty in engaging in any kind of collective action to achieve dignity at work. This can lead to new types of informalisation of women's employment<sup>36</sup>. Other researchers have commented that women may feel a sense of isolation, which, when combined with their absence from office networks, may produce negative effects in their careers and job performance.

Surveys by Mitter's research team revealed that the incidence of home based telework is extremely low, even in centres of commercial activity such as Mumbai and Kuala Lumpur (1.0 and 0.35 % respectively). The survey of women's attitudes towards telework, on the other hand, showed that in India and Malaysia women prefer institution-based teleworking, such as in telecentres. As Cecilia Ng reports, in Malaysia,

interviews with women's groups indicated that the telecentres, commercial and state sponsored, may be the ideal site for externalised work that will allow women (and men) to combine work with collective childcare facilities; enable women (and men) with peer groups and thus allow them to acquire and improve their tacit skills; and provide facilities for state and corporate sector supported vocational training in the field of computer literacy<sup>37</sup>.

Managerial concerns may provide a further explanation for the low rates of teleworking in India and Malaysia. In a survey of management perceptions of teleworking, most respondents reported that in Malaysian culture, face-to-face interaction is essential<sup>38</sup>. In India too, Mitter's research revealed reluctance on the part of management to embrace

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<sup>35</sup> 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 background and material from the project, see Mitter, 2000. 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, see Mitter, 2002.

<sup>36</sup> Gothoskar quoted in Mitter, 2000.

<sup>37</sup> Ng and Khay Jin, 2000

<sup>38</sup> Ng, 2001a.

home-based telework. In the financial sector, for example, companies prefer to outsource work to call centres rather than to teleworkers.

In institution-based teleworking it is easier to monitor and supervise employees in the traditional way. Widespread implementation of home based teleworking will require a fundamental shift in the culture of management from direct supervision to a basis of trust. For self employed and freelance workers, home based teleworking will involve skills in self-management and time management. It is important for women to acquire these skills, in order not to get distracted by household chores nor to work overly-long hours at home. Judging from the paucity of relevant training modules and literature in this area, one can assume that home-based teleworking is not as prevalent in developing countries as in the developed world. In South and Southeast Asia, home-based teleworking has taken hold only in those operations that can be outsourced without commercial impediments.

Preference for type of telework vary among women in the region. As Mitter concludes on the basis of her surveys, age and stage of life are key factors in moulding women's choice 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 who work mostly on-line at home with their own computers. These home-based teleworkers represent a wide range of women: housewives, doctors, lawyers, chartered accountants. The only characteristic they have in common is that they gave up regular employment for family responsibilities. Teleworking gives them a welcome and much needed opportunity to be in touch with the world of work. However, as Mitter comments, it is difficult to ensure that these women can advance, even with adequate access to training and childcare, to high value added jobs.<sup>39</sup>

The situation in Malaysia is similar. As Ng and Khay Jin report, "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 freelancers or as employees. This happens in a particular phase of their life cycle, especially when there are inadequate child care facilities".<sup>40</sup> The provision of child care thus remains a key issue in recruiting, retaining and retraining women in the New Economy, as it was in the Old Economy.

## 9. Local over Global

In exploring women's opportunities in the digital economy, it will be important to be aware of the vulnerability and insecurity that may arise from an over reliance on export-related initiatives. The prospect of employment and livelihood in ICT-related and ICT-enabled business for the global economy depends primarily on the demand for skills and services in the developed countries. Hence, too much orientation on exports in the digital economy leads to a new type of dependency. The prospect of new opportunities for

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<sup>39</sup> Mitter, 2000.

<sup>40</sup> Ng and Khay Jin, 2000.

sustainable employment for women in areas such as e-governance will be worth exploring. It will be equally worthwhile to assess how relevant training in ICT-related skills will enable women to find jobs in the formal sector of the domestic economy.

## **10. Conclusion: An agenda for research**

The framework of analysis in this paper highlights areas where strategic interventions by UN agencies, policy makers and donor bodies can enhance women's employment and livelihood opportunities in the global digital economy. Research for formulating such strategies needs to be innovative and should be undertaken in collaboration with women's NGOs, both for assessing vocational needs of women and for gaining first hand insight into the impact of ICT on women's working lives. The regional nodes of the Gender Advisory Board of UNCSTD could provide effective links with such NGOs. Collaboration with the academic and scientific community will also be essential in this field where technology is changing at a phenomenal rate, making existing skills and tools (hardware and software) obsolete in the short run. A long term vision in training and technology that the scientific community can provide will contribute to the sustainability of new types of business or occupations. The corporate sector should be involved, as the main driver of global digital trade and commerce.

In the context of the projected long term shortages of certain types of ICT skills, the corporate sector may prove to be a willing partner linking women into the digital economy, for example by expanding flexible timing and location of work practices, and ensuring access to career break opportunities as well as child care. The role of government bodies would be to coordinate the contributions of the research partners and to take responsibility for implementation of recommendations.

In addressing research questions, it will be important to explicitly acknowledge the diversities that exist between as well as within regions. There is a place for South-South cooperation in exchanging experience and learning, but it will be counter productive to assume that the dynamics of women's entry into the digital economy will or should be similar. Replicating a successful venture in the use of ICT in India may or may not be successful in Bangladesh or Uganda. There are differences among developing countries in material and human resources; there are, however, even greater differences in cultural and social norms. It will be crucial to respect and identify the specificities as well as commonalities of situations, and to avoid a 'one size fits all' approach. The question of culture thus should be included in formulating action oriented research for the economic empowerment of women.

Further, research should be geared to extending the benefits of Internet technology to improve the productive efficiency of those women who contribute to the wealth creation of the family and the local economy as unpaid family workers, poor workers or business women in the so-called informal sector; they are affected by ICT-led globalisation not through inclusion but through exclusion. There is a similar need for further research to improve the productive efficiency of women who produce goods and services for the local economy in micro enterprises, such as urban street vendors or garment makers.

Professional researchers will need to explore issues of access and education, and of spheres of implementation in new ways. Identifying ways of enhancing livelihood, if not employment opportunities, of women in rural areas will require greater commitment from donor agencies and policy makers, as the corporate sector, understandably, will not have much interest in such initiatives. It will be equally important to share knowledge regarding cost-effective technology and to offer non-elitist ICT-training to women in the informal sector. There is very little research and documentation on the impact of these factors on the entry of women in ICT-enabled business and commerce.

Specifically, there is a need for research on the following topics:

### **1. National Policy**

- Explore how ICT can enable developing countries to harness the cognitive skills of their female workforce and improve their competitiveness in an increasingly globalised world.
- South-South dialogue among policy makers supported by research on how to learn from the experience of India or Philippines in creating a supportive policy framework and developing ICT skills in its population.

### **2. Enabling Women Entrepreneurs with ICTs**

- Models for and approaches to telecommunications policy and infrastructure development which will support small-scale IT-based and -enabled businesses in both urban and rural areas
- Collection and assessment of case studies of ICTs for women's micro and SMEs, including use of ICTs for business training and development; expanding connections to producers and customers; IT equipment as basis for income generation (i.e. GrameenPhone).
- Additional research and assessment of the blueprint providing women's cooperatives with access to business generated through e-governance
- Strategies to provide women with information on international markets, e-commerce techniques and practices, and international and regional trade policies, and how their business can benefit
- Data collection and assessment of:
  - How many women participants use ICT training events, how many dropped out and why, how many return to further training events
  - Which marketing research sites women entrepreneurs frequent.
  - What software, software training and support service do women entrepreneurs in the region prefer, what is the upward trend in use of ASP services
- Which groups of women have or have not been reached with ICT-SME services? What outreach and support strategies have been successful, and which have been unsuccessful? What are the lessons learned? (Tandon, 2003)

### **3. Positioning Women in the Formal Sector**

- Compilation and analysis of statistics and indicators on IT graduates and IT employment by sex and class/socio-economic level in Latin American, Africa, and Asia.
- Research on effects of cultural and management practices in a country/region and relation to rate and job level of women's participation in telework.
- Relation of telework to career advancement, rate of pay and work performance of women.
- Monitoring the quality and sustainability of work in new institutions such as call centres.

### **4. Local vs. Global**

- Comparison of women's prospects in the local economy with those in the global economy (particularly from the perspective of sustainability)
- Comparative research by region on gains and losses in women's income-generation and employment as a result of globalised e-commerce.

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