ROLL OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTS) ON EMPOWERMENT OF INDIAN WOMEN

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ABSTRACT

The Information and Communication Technology (ICT) revolution has not only opened up new opportunities for economic growth and social development but has also posed problems and challenges. It can shape and enhance wide range of developmental applications in agriculture, industry and social sectors and is influencing all sections of the society. ICT provides unique opportunities for human development. At the same time, ICT has been widening the gaps between and within countries, regions, gender while increasing disparities divide between the rural-urban, rich-poor, elite neglected and also within the different categories of women in various spheres of activity. It is necessary to build up women capacities to involve them in productive activities, institutional building, family and social transformation, decision-making process, political representation, trade and commerce, entrepreneurial development and social leadership. There is a need to enhance opportunities to women to enable them to own, manage and control industries and service enterprises including IT-based units. There is also need to provide more opportunities in e- related sectors to them in higher managerial, technical positions in government and non-government agencies, research, educational institutions in private and public sectors, without confining their role to only call centers, telecentres, data-entry level and lower levels in the organizations. ICT has to address to all these problems of women as a whole and has to be used to facilitate to build a women empowered society.

Keywords: Information & Communication Technology, Gender development, Women Empowerment, ICT Tools, Knowledge Network System and Information Economy.

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1.   INTRODUCTION

Information and Communication Technology (ICT) has become a potent force in transforming social, economic, and political life globally. Without its incorporation into the information age, there is little chance for countries or regions to develop. More and more concern is being shown about the impact of those left on the other side of the digital divide the division between the information "haves" and "have-nots." Most women within developing countries are in the deepest part of the divide further removed from the information age than the men whose poverty they share. However, it is not a choice between one and the other. ICT can be an important tool in meeting women's basic needs and can provide the access to resources to lead women out of poverty [1]. Women work two thirds of the world's total working hours spending mainly on growing food, cooking, raising children, caring for the elderly, maintaining a house, hauling water, etc., which is universally accorded low status and without pay [2].

2.   DEFINITION AND SCOPE OF ICT

Information and communication technologies (ICT) comprise a complex and heterogeneous set of goods, applications and services used to produce, distribute process and transform information. The ICT sector consists of segments as diverse as telecommunications, television and radio broadcasting, computer hardware and software, computer services and electronic media (e.g., the Internet, electronic mail, electronic commerce and computer games) as well as the content of these media.

3.   OBJECTIVES

This paper focuses the current ICT tools like e-governance, e- learning, e-education, e-finance e-marketing and ICT development like BPO (Business Process Outsourcing) and KPO (Knowledge Process Outsourcing) and their impact on women empowerment in India. We are also looking at the changes there on to the educational system and build up a strong socially viable KNS (Knowledge Network System).

4. ICT- WOMEN EMPOWERMENT

Despite the numerous challenges to equity in the ICT arena, many social actors have exploited ICTs as tools for social transformation and gender equality. Women artisans   are   directly

accessing global markets through e-commerce initiatives and are using the Internet to support their activities with market and production information. E-governance programmes have been initiated using ICTs for delivering government services; in some cases with an explicit strategy to ensure these services reach women and others who face barriers to access. Health educators have used the radio to communicate information related to women's sexual and reproductive health. Email, online newsletters and List Serves have enabled women to communicate on a global scale, resulting in increased collaboration to push the agenda of gender equality.

New technologies do offer remarkable advantages in terms of ease of communication, unprecedented possibilities for interaction, and efficiency in information storage and retrieval; however they are not universally available. New initiatives have been most effective where they go beyond issues of access and infrastructure to consider the larger social context and power relations [3].
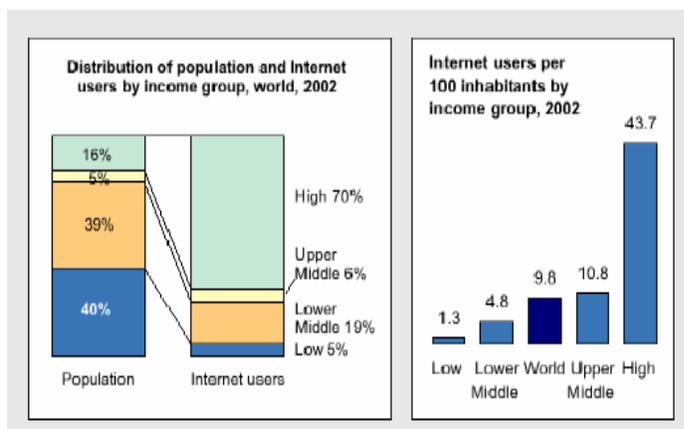
Knowledge acquisition

In today's developing environment usage of Information Technology has become a day-to-day activity which has exposed women to the new technologies, and hence are not difficult to be trained on them. It is observed that women in general have good concentration power owing to their nature of work, and hence are easily trained to acquire any new skills. As the women at lower strata are constrained to the homes, if we can get the technology to the women at home we will be sure to succeed in empowering them. NGO's and Government departments have to plan training programs, to provide the required skills and establish groups for the follow up action.
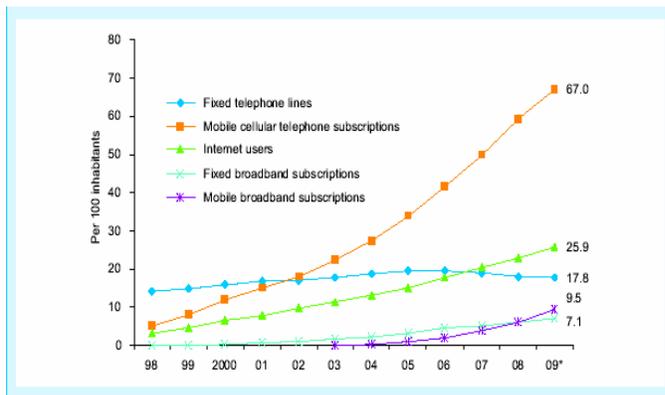
Knowledge Networking System-women

Women stand to benefit tremendously from the inroads laid by ICT in the domain of knowledge networking. The pertinent question is not whether they stand to benefit but how do they benefit and what are the mechanisms to ensure that the benefits accrued to the women community do not remain restricted to mere trickle-down effects? At the very conceptual level, ICT have the potential to digitally link each and every woman in the world in a star topology network, which opens up endless possibilities for information exchange. This mechanism could be used by women in creative ways, both to communicate with other people who are online, and also to

disseminate information to people in the outside world who are not online through the use of convergence and hybrid technologies such as community emails, community radio broadcast, tele-centres, newsletters, videos etc. This mechanism forms the skeletal process through which women communities could overcome the constraints of seclusion, mobilise resources and support, reach out new markets, and open up avenues for life-long learning. We could broadly classify the spaces in which women stand to gain under the spheres of Empowerment and Governance. This condition forms the basis of evolution of women as equal contributors and end-users of knowledge in a knowledge society [4]. NGO's and the Government bodies have to come forward to setup and build a hierarchical network comprising of social groups which are successful in a venture from the village level to the state level. The success stories should be circulated to emulate them. Training groups have to be built up from these groups to percolate the knowledge to the different levels. Graph-1 shows, 70 per cent of Internet users belong to the top 16 per cent income bracket; and the bottom 40 per cent by income constitutes only 5 per cent of all Internet users. Apart from location and income, language is another determinant of the digital divide. The predominance of English on the Internet is a barrier for most users globally. Speakers of non-   European and indigenous languages including a large proportion of women tend to be left out of the information loop. Even among the educated, proficiency in the dominant European language of a region may not be such that the user feels comfortable in using the Internet for training or involvement in List Serves [5].

Graph-1: Access to ICT

Source: Graph   based   on   data   from   ITU,   2004,   http://www.itu.int/ITUD/ Ict/statistics/at_glance/Internet02.pdf
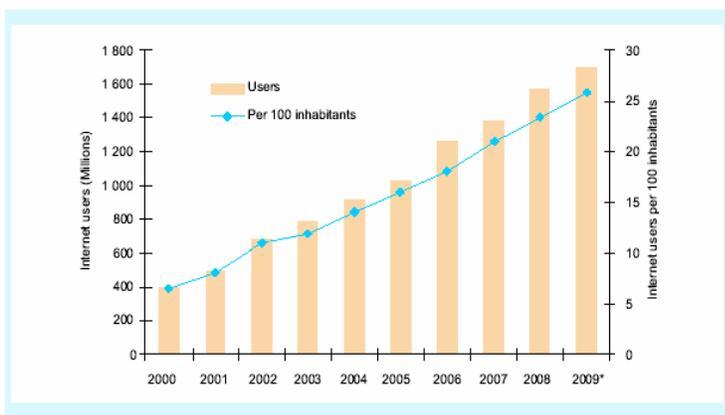
Graph-2: Global ICT Development

Note: *Estimate.

Source: ITU World Telecommunication/ICT Indicator Database 1998-2009

Graph-2 illustrates, a number of alternative and popular indicators used to measure ICT uptake. It shows that ICT services have grown steadily over the last decade. With the exception of fixed telephone lines, penetration rates for ICT services, especially mobile cellular telephone subscriptions, have grown rapidly. Both fixed and mobile broadband are relatively recent technologies, but are also growing steadily. These findings suggest that communication services are spreading rapidly and that more and more people are using ICTs.

One ICT service that lends itself to a literal interpretation of "within their reach" is *mobile cellular communications*. A mobile subscription is usually personal, with the mobile handset carried by an individual. Few other ICTs can match this in terms of proximity. Moreover, despite some shortcomings, data on mobile cellular subscriptions are widely collected, so the target can be measured for practically every country in the world [6].

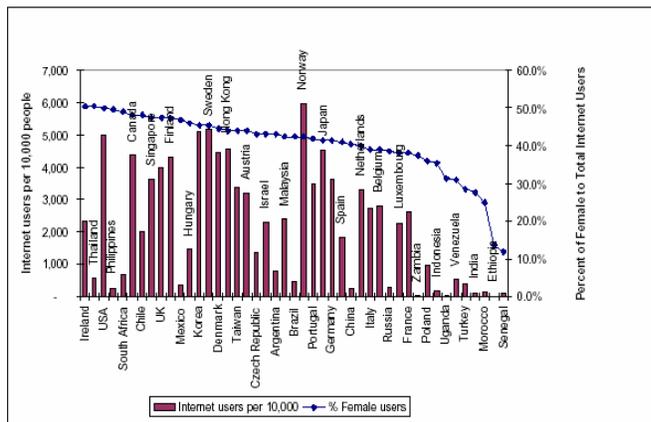**Graph-3: Global number of Internet Users, 2000-2009**

Note: *Estimate.

Source: ITU World Telecommunication/ICT Indicators Database 1998-2009

Internet uptake

Since the target of ensuring that more than half of the world's inhabitants have access to the Internet goes to the very essence of the information society, a country cannot be said to have an information society if the majority of its citizens are not online. Currently, access to the Internet is far less widespread than mobile communications. At the end of 2009, ITU estimated that some 1.7 billion people around the world were using the Internet, i.e. just over a quarter of the world's population (26 per cent see graph-3). In the developing world, less than 20 per cent (17.8 per cent) were online [7].
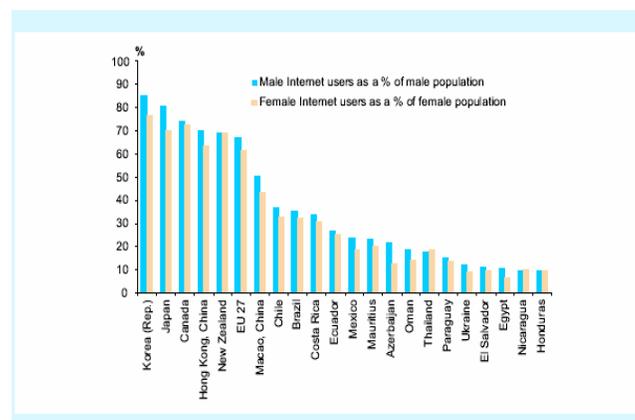
Women's access to the internet

The gender divide within the digital divide can be seen in the lower numbers of women users of ICTs compared to men. One illustration of this is the number of women Internet users. The majority of the world's women do not use the Internet. They are excluded from the World Wide Web. The digital divide within countries broadly reflects the gender divide. Women are in the minority of users in almost all developed and developing countries. The trend for differentiation in use starts early, as seen in the United States where boys are five times more likely than girls to use home computers and parents spend twice as much on ICT products for their sons as they do for their daughters. It is extremely difficult to get data on use by gender by country for developing countries. Also, statistics on Internet use need to be interpreted with caution. Even in the developing countries where women do make up a high percentage of users, total users themselves constitute very small elite. Graph-4 illustrates this showing that in some cases where women make up a relatively high percentage of users, the total proportion of the population using the Internet is very small, as in the cases of Mexico, Philippines and Indonesia [8]. India will have breached anew and previously unthinkable landmarks- half a billion wireless connections making it the second largest group of mobile phone users after China. The teledensity (phone connections per 100 population) of roughly 45%, an urban teledensity closer to 97% and a rural teledensity of about 18%. India had crossed 488.40 million wireless connections at the end of October 2009 and nearly 30 % of the women users [9].

Graph-4: Total internet users and female internet users

Source: Huyer and Mitter-2003.

The number of IT users as well as IT professionals has been increasing over the years. The number of Internet users has been rising over the years. It was estimated that there were .01 million internet users in 1995 which increased to 18 million Internet users in March 2003 and their number was expected to increase up to 23 million in Dec 2003. Internet usage was most widespread in 18-24 yrs age group. Men constituted 77% of users while women users were around 23% Women   are expected to emerge as a large segment on the internet in the next 20 years [10].

Graph-5: Empowering Women- Internet Users by Gender

Source: ITU World Telecommunication/ICT Indicators Database 1998-2009.

In ensuring that half the population has access to ICTs, it is also important to look at the gender dimension and to ensure that women, who represent about half of the world's population, have equal access. ITU's Internet user data broken down by gender show that in the majority of countries still more men than women use the Internet [11].

Impact on women's work

Information and communication technologies are both enabling as well as a contributing factors to globalization. Information and communication technologies made global financial markets possible. Examining the issue of the impact of information technology on women's work in the context of globalization underlines the differences in the issues of information technology and women's work between developed and developing countries. In developed countries, most of the literature on the impact of information technology on gender and work deals with the association of men with technology and power.

In developing countries, women are looking at the issue not only in terms of gender relations with the men in their society, but also at Western dominance over innovation and as the source of technology. Some argue that the new technologies are not appropriate for women because they are imported. However, this position seems to be head-in-the-sand. Information technology is no more foreign than air travel or electricity. The technologies are there and will not be displaced. It is more appropriate and effective for women to devise ways of dealing with them to improve the situation of women than to reject them for being foreign. As with globalization generally, the impact of information technology on women's work through globalization has been most evident in Asia first, than in Latin America and the Caribbean. Africa is effectively absent from this process.

Gender in the information economy

Women have relatively little ownership and control of the ICT sector. While data is lacking, it is clear that women are underrepresented on the boards and senior management of IT companies, policy and regulatory organizations, technical standard-setting organizations, industry and professional organizations and within government bodies working in this area. Women's participation as employees in the sector presents a more complex picture. The new economy rides on the power of ICTs. Job outsourcing is an important business strategy today and has given rise to a new global division of labour. Internationally outsourced jobs, such as medical transcription work or software services, have made a considerable difference to women's work opportunities in developing countries. According to UNIFEM, women hold 9 per cent of mid- to upper-level IT related jobs in engineering and make up 28.5 per cent of computer programmers

and 26.9 per cent of systems analysts. Only among data entry workers the women form the majority at 85 per cent [12].

Information technology has brought employment gains for women, but trends highlight many challenges. The ILO Report on Work in the New Economy 2001 makes the following observations about the IT sector: Patterns of gender segregation are being reproduced in the information economy where men hold the majority of high-skilled, high value-added jobs, whereas women are concentrated in the low skilled, lower value-added jobs. Therefore, a Policy should encourage girls and women to use ICTs early in education, and pursue higher studies in ICTs as well as technical careers as scientists, researchers, administrators and educators. In addition to policies that ensure gender equality at the firm level, within the ICT sector, a strong role for state regulation of job security, insurance, maternity leave, and healthy and safe working conditions is vital for gender equality in the information economy [13].

5.   ICT TOOLS-WOMEN EMPOWERMENT

Livelihoods

New ICTs provide opportunities to reorganize economic activities in ways that can bypass the traditional dependence of women producers on male-dominated and exploitative market structures, including "middle-men". In many places, initiatives are being tried that link women artisans directly to global markets through the Internet, as well as support their activities with market and production information. The 'Inter-city Marketing Network of Women Entrepreneurs' project in Chennai, India has set up a communication network among women's community-based organizations (CBOs) to market their produce. The CBOs are provided with cellular phones, and women have been trained to maximize the use of telephones for selling not only in their immediate neighbourhoods but also reaching new markets within the city. The impact is that poor women from CBOs constrained by pressures of time and mobility are able to assess and aggregate market demand by trading through their peer CBOs, and evolve cost-effective mechanisms to increase business turnover by making the most of business networking [14].

Health

The technologies are being successfully used in many places for information dissemination about health. The Self Employed Women's Association (SEWA), a trade union of women workers from the informal sector in India uses video to convey basic health information to its women members. Women themselves have produced video footage on how to address diarrhea through oral rehydration therapy, and they distribute this through their networks. New ICTs can also play a critical role in health delivery. The use of networked information exchange systems, and offline information tools like CD ROMs, databases and mobile ICT devices can enhance public health delivery. They can enable health education and information dissemination, bring communities and health facilities closer to each other through regular and systematic information exchange, and offer simple solutions for collecting and analyzing information about disease and health-seeking behaviour to help health interventions become more locally relevant. ICTs are being used in response to the crisis posed by HIV/AIDS. ICTs to promote better access to AIDS advice, counseling, and test results without fear of being stigmatized.

e-Education

ICTs like satellite, radio and TV offer many possibilities for non-formal and continued education, which can have important gender implications. They can deliver education content to the doorstep, which, for women with constraints on mobility and access to public places, can be a significant starting point. Technologies are being used the world over for open and distance learning. Azim Premji Foundation in India is among the few NGOs that work with the government to strengthen the public education system. The organization produces CD ROMs of creative content based on the primary school curriculum, which is gender-sensitive, uses local dialects and is designed to appeal to rural students. In India, computers are being introduced in schools, as a tool to support the learning process and ICT interventions is a precondition to ensure equal access and effective use by girl students of computers in the classroom environment. In the formal education at the graduation level the educational system should introduce Job Oriented Certificate courses as an add-on course and should be made mandatory for a student to get trained at least in one of them.

Apart from direct employment, ICT has benefited women in a number of ways. It is a viable tool

of information and communication which goes a long way in empowerment of women. Immense amount of information is obtained through the internet. Effective and efficient use of information technology like internet can help in assimilating information about variety, range and quality of products, publicity and marketing of products and services. Apart from being used as a tool of information and communication and employment, application of ICT has created avenues for women empowerment. Noteworthy examples are that of Gyandoot, Embalam, SEWA, Datamation and Smile [15].

SEWA: (Self Employed Women's Association), uses ICT for women empowerment. The main goal of SEWA is to promote local income generating opportunities among women. The Self-Employed Women's Association SEWA, with 200,000 memberships is spread over 800 villages in Gujarat. It uses an interactive satellite communication and Internet-based training programme to develop a cadre of barefoot managers among the poor women workers, focusing on women in panchayats, forests, water conservation and so on. Through ICT, training is provided on issues as disaster management, leadership building, health and education, child development etc [16].

Gyandoot: is a project started in Madhya Pradesh to fund rural networked cyber kiosks through panchayats. The project was started in Dhar district, to offer villages multiple services through internet based project. Through this project, information is available about rural life and agricultural projects. The internet gives information which was earlier available through middlemen. Information is available about education and employment opportunities. Complaints can be lodged on the internet which is of great help to men and women [17].

Swaminathan: research project in Pondicherry in Embalam district has led to creation of information villages. Ten villages are connected by a hybrid wired and wireless network, consisting of PCs, telephones, VHF duplex radio devices, and email connectivity through dial-up telephone lines that facilitates both voice and data transfer. This has enabled villagers to obtain the information that they need and use this information to make improvements. Local volunteers gather the information, feed it into an Intranet, and provide access through nodes in different villages. There is Value addition to raw information, use of the local language (Tamil), multimedia (to facilitate illiterate users), and participation by local people. Most of the operators and volunteers, providing primary information, are women more than 50%, thus giving them

status and influence.

Smile: (Savitri Marketing Institution for Ladies Empowerment) is a voluntary organisation in Pune. This project has increased literacy level of underprivileged women through the usage of ICT. Internet has also helped them market their various products like soft toys, candles, bags, utility items, etc. Through Internet, there is greater awareness and exposure and market reach for the products.

Datamation Foundation: started a project in 2003 in Seelampur area of Delhi for Muslim women. The project localised appropriate communication and information networks by setting up an ICT centre at a Madarsa. This helped link resource-poor women to the information and tools for knowledge management. It also helped establish buyer-seller linkages towards eradication of absolute poverty. It has established its standing in the community and became a big attraction for the women of Seelampur. People drop in to consult on matters other than computer training. The ICT centre has created self confidence in women and creating awareness about their interest and helped them take collective decisions.

Dairy Information Services Kiosk: (DISK) is a project which uses Information and Communication Technology (ICT) in the dairy sector in Gujarat. ICT enables the creation of cost effective solutions that strengthen the exchange of useful information between farmers and the union. ICT facilitates dairy farmers with timely messages and education to manage their milch cattle and enhance the production of quality milk. It is also assisting dairy unions in effectively scheduling   and organizing the veterinary, artificial insemination, cattle feed and other related services. Usage of ICT goes a long way in empowering men and women [18].

Capacity building of Women

Several organizations are building the capacities of girls and women to make ICTs accessible and useful to them. At one level, girls and women are being provided general training in ICTs for ICT-related jobs; at another, women in business, women entrepreneurs and women in the professions, are systematically being supported for skill enhancement, career growth and greater work efficiency. In the Deccan Development Society, in South India, socially disadvantaged

women have used radio and video to document and disseminate traditional farming practices, to reach policy-makers, and to archive their community-based development work. Such development activities in fact have deeper meanings; they reflect the recording by women of their own history and reclamation of their knowledge [20].

Rights-based information for women

ICTs have been used by gender equality advocates the world over for putting out rights-based information. From multilateral agencies like UNIFEM to feminist activists at local levels, actors at different levels are involved in creating, collating and disseminating material on rights – legal rights, sexual and reproductive rights, women's human rights. This is done through websites, e-magazines and email. In many developed countries, websites provide assistance to women seeking help on domestic violence.

6.   CONCLUDING NOTES

The majority of women in the developing world do not have access to ICTs due to variety of barriers as such the infrastructural, social, cultural and linguistic.While it may   be necessary for the progressive elite to mediate information dissemination, real democratization of information depends on making ICTs relevant to the majority and accessible to every woman. Today, print media and radio are used extensively by feminist groups for information dissemination. ICTs can strengthen these media strategies. Community access points such as telecentres can be a simple tool for conveying information to women that supports their social and political empowerment. Telecentres need to be used as strategic spaces where information on the law (e.g. violence, religious law), on worker rights (e.g. minimum wages), and citizenship rights can be obtained. Governments and NGOs have to take a lead in this process of universal access to rights-based information, especially in rural areas. ICTs can provide spaces for diverse, bottom-up and low-cost communication. They can amplify women's voices, help publicize women's experiences and perspectives and integrate their specific concerns with the mainstream policymaking and development process.

Engendering ICTs is not merely about greater use of ICTs by women. It is about transforming both gender politics and the ICT system. It is evident that the ICT system is organized on elitist,

patriarchal, techno-centric, non-democratic lines and based on capitalist values. Transformatory gender politics will need to question these values and search for ethical alternatives. This calls for synergy between a new bottom-up culture of ICT production and use and the re-engineering of the global ICT system that will guarantee sustainable changes towards gender equality. Addressing the ICT arena is part of a larger struggle to build an information society based on protecting people's right to communicate, own and use knowledge for their own ends, and resisting curtailments on freedom to use, share and modify information tools and content.

7. SUGGESTIONS

In order to create an enabling environment and to support women's social and economic empowerment through ICT, actions are necessary by different actors, at local, regional national and international levels. The following recommendations are aimed at promoting such actors.

- Adopt legislative, regulatory and administrative measures to promote gender equality in the ICT area, and in particular, adopt legislation in ICT-specific sectoral areas to address gender equality, and create monitoring frameworks and capacity to ensure implementation.

- All educational institutes by law should be made to offer ICT based Job Oriented courses to the down trodden women in the society for free as their societal obligation.

- Develop gender-sensitive technical and regulatory instruments when addressing such ICT policy issues as universal access, regulatory frameworks, licensing, tariffing, spectrum allocation, infrastructure, ICT industry development and labour policies; attention is drawn to the detailed list of ICT policy issues and the gender aspects related to them.

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- Develop reporting mechanisms to monitor progress towards gender equality in the ICT area.

- Collaborate with national machineries for the advancement of women to promote gender equality in ICT.

- Strengthen their own capacity, through increased financial resources and technical expertise, to lead advocacy in gender equality and ICT.

- Encourage and facilitate collaborative action among government bodies with responsibilities for the ICT area and for gender equality.

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