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Economic Empowerment of Women through Information Technology: A Case Study from an Indian State

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Abstract

It is universally accepted that Information Communication Technologies (ICT) offer immense opportunities for the comprehensive social and economic development of the people all over the world. Without its adoption, there is little chance for countries or regions to develop. However, the potential of ICT as a technology for promoting micro-enterprises by poor women is still unused in many countries. This article discusses the success story of a government project for poverty eradication using ICT. The case study on 'ICT micro-enterprises by self-help group of poor women' describes the story of a self-help group, which uses potential of ICT for poverty eradication through economic empowerment of poor women. It illustrates how ICT can effectively be used as a technology for micro-enterprises, which are promoted by poor women under self-employment scheme. The article also deals with SWOT analysis that identifies the strengths, weaknesses, opportunities and threats for ICT based micro-enterprises. The article proves that if a country has the necessary enabling environment permitting the establishment of ICT micro-enterprises, poor women can promote such business for their economic empowerment.

Keywords: Information Communication Technologies, women empowerment, Self-help Groups, Digital divide

The ICT Concept

Information Communication Technologies (ICT) consists of computer hardware, software, Internet and other communication networks, and media used to collect, store, process and transmit information in the form of voice, text, data and images. In short, ICT deals with the use of electronic computers and computer software to convert, store, protect, process, transmit and retrieve information. (http://en.wikipedia.org). ICT revolution is the result of integration of computer technology and communication technology. ICT industry includes all companies that are engaged in production and marketing of hardware, software, services and networking. ICT offers flexibility of time and space. These attributes make ICT a valuable resource for women especially in developing countries who suffer from limited availability of time, social isolation, and lack of access to knowledge and productive resources.

However, there are two major areas of concern that have emerged due to variation in production and consumption of ICT in different countries. They are the *Digital Divide* and the *Gender Divide*. The term digital divide refers to those who can benefit from ICT, and those who don't. Also, gender-based inequalities limit how women can

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benefit from the opportunities offered by Information and Communication Technologies (ICTs) and how they can influence the developing global knowledge economy, creating a gender divide. (Anita Gurumurthy, 2003). The World Submit on Information Society (WSIS) in 2003 affirms that despite significant regional variation, ICT development affects women and men differently and in all regions women face fundamental barriers to benefiting from ICTs as well as influencing ICT development policies (UNDP/UNIFEM, 2004). This report highlights imbalances between women's and men's access to and participation in ICT and asserts that more needs to be done to ensure that women equally enjoys the benefits arising from global knowledge based economy at all levels of ICT policy and practice.

The support of women's entrepreneurial activities is an important benefit of ICT, which has not been realized properly in many developing countries. However, there are isolated experiences where ICT is judiciously utilized for the economic empowerment of poor women. Such experiences need detailed documentation and analysis to identify key barriers to women's participation in ICT as well as some innovative areas where women can participate in ICT revolution

Historic Perspective

The phenomenal growth of Microelectronics during the period 1970 to 1980 sowed the seeds of information technology revolution. The ongoing ICT revolution, which resulted due to the integration of computer technology and communication technology has been accelerated due to innovations in fibre-optics and satellite communication on the one hand and computer hardware and software on the other. Over the last three decades, the world has witnessed unprecedented revolution in every aspect of ICT. The Internet and other ICTs have fundamentally changed the way world works. ICTs are increasingly recognized as a powerful instrument for reducing poverty, providing good governance and facilitating sustainable development.

According to International Data Corporation, world-wide spending on information technology by end users hit $1.16 trillion in 2006, and will increase at a compound annual growth rate (CAGR) of 6.3% to reach $1.48 trillion in 2010(IDC 2007). As per the Strategic Review 2007 report by NASSCOM, Indian software and services exports are expected to jump nearly 33% to $31.3 billion during the fiscal year ending Mar 2007.

Other Highlights of Indian ICT industries are

- The Indian IT industry has grown its revenues ten fold in the past decade, from $4.8 billion in FY 1997-98 to $47.8 billion in FY 2006-07.
- Its contribution to GDP is estimated to have grown from 1.2% to 5.4% in the same period.
- The Indian IT industry is estimated to top $60 billion exports in 2010.
- Total IT Software and services employment to reach 1.6 million in FY07.
- The total size of the Indian domestic market is expected to cross $ 15.9 billion in FY 2006-07, a growth of 21% over FY 2005-06

Indian IT Industry by Sector- Figures in Million US$				
USD billion	**FY 2004**	**FY 2005**	**FY 2006**	**FY 2007E**
IT Services	**10.4**	**13.5**	**17.8**	**23.7**
-Exports	7.3	10.0	13.3	18.1
-Domestic	3.1	3.5	4.5	5.6
ITES-BPO	**3.4**	**5.2**	**7.2**	**9.5**
-Exports	3.1	4.6	6.3	8.3
-Domestic	0.3	0.6	0.9	1.2
Engineering Services and R&D, Software Products	**2.9**	**3.9**	**5.3**	**6.5**
-Exports	2.5	3.1	4.0	4.9
-Domestic	0.4	0.8	1.3	1.6
Total Software and Services Revenues	**16.7**	**22.6**	**30.3**	**39.7**
Of which, exports	**12.9**	**17.7**	**23.6**	**31.3**
Hardware	**5.0**	**5.9**	**7.0**	**8.2**
Total IT Industry (including Hardware)	**21.6**	**28.4**	**37.4**	**47.8**
Source: **Nasscom Strategic Review 2007**				

Table No.1 Indian IT industry by Sector

According to the Nasscom Strategic Report 2007, Indian software and services sector provides employment for 1.63 million people. The sector wise break up of employment is given in table No.2

Sector	Year 2004	Year 2005	Year 2006	Year 2007
IT Services	215000	297000	398000	562000
ITES-BPO	216000	316000	415000	545000
Engineering Services and R&D, Software Products	81000	93000	115000	144000
Domestic Market (including user organizations)	318000	352000	365000	378000
Total	**830,000**	**1,058,000**	**1,293,000**	**1,630,000**

Source http://www.metrics2.com

Table No.2, Employment in Indian software and Service Sector

Methodology

The research report was prepared after thorough analysis of primary and secondary data collected from ICT industries, promoting agencies both in government and private sector, IT professionals and related web sites. Specific case study on the ICT projects promoted by Kudumbashree Project was conducted to ascertain various factors that contributed to the success of the project. The officials of Kudumbashree project have been interviewed to elicit more information regarding their experiences with promotion of ICT micro-enterprises. With these data SWOT analysis was conducted to ascertain the strengths, weaknesses, opportunities, and threats of the ICT based micro-enterprises promoted by poor women's self-help group.

Background Information about Kerala

Kerala is one of the federal states of India, having an area of 38,863 sq. km and a population of 31.8 million, out of which nearly 75 percent live in rural area. Kerala, known as 'God's own Country' for its natural beauty, is one of the world's top tourist destinations as well; having been listed as one among world's 50 'must see places' of a life time (National Geographic Traveller, 1999).

The state takes a proud position in the indices of human development measured in terms of life expectancy, education, and healthcare. The literacy in the state is 90.92 percent, male literacy being 94.20 percent and female literacy being 87.86 percent. According to the 2001 census report, the state occupies the foremost position in the country with respect to education, healthcare, and population control (Government of Kerala, 2005). The achievements in these sectors are comparable to some of the most developed countries in the world.

Notwithstanding all these positive attributes that the state possesses, it is equally true that the famed 'Kerala model of development' is facing a crisis. The state's achievements in the social sector did not go hand in hand with its progress in material production sector. The crisis in production sector is manifested in the virtual stagnation of the agricultural sector, deplorably lower level of productivity of important crops, growing apathy among cultivators, structural decay of the industrial sector dominated by ailing traditional industries and overburdening of the fragile ecosystem. The development paradox of Kerala lies in its high social development not being matched by its economic performance. This imbalance is largely explained by Kerala's stagnant agricultural and low industrial development. The logical outcome of this pattern of growth, which has evolved in Kerala, is the mounting unemployment in the state (Mathew, 1997).

The state of Kerala has the highest incidence of unemployment in the country (Government of Kerala, 2005). It needs to be emphasized, however, that while general unemployment can largely be overcome through achievement of adequate growth of the economy, unemployment of the educated is not solved through higher rate of economic growth alone, although it is a necessary condition. It really requires an innovative strategy to create large-scale employment. Though late, the government has now realized that ICT can play an important role in generating large-scale employment opportunities, suitable to the educated unemployed in Kerala.

The ICT Environment in Kerala

The ICT revolution in developed countries was viewed with suspicion by the trade unions as well as the people of Kerala, for more than a decade because they considered it relevant only in rich countries that have shortage of manpower. (K.G.K.Nair, and Prasad, 2002). The trade unions were against any positive action for encouragement and promotion of this technology. They feared that computerization would ultimately lead to destruction of job opportunities, which will be fatal for a state like Kerala, where unemployment is the main problem. They believed that the benefits of ICT would remain confined to the higher classes of the society. Consequently, the government did shy away from the promotion of ICT, even when intensive promotional activities were going on in neighboring states like Karnataka, Andhra Pradesh and Tamil Nadu.

It took some time for the state to realize that the ICT is relevant to all the countries, irrespective of their level of economic development or varied local problems. Before 1995, the Government of Kerala did not make any serious attempt for the promotion of ICT. However, the growth of ICT in nearby states and all over the world, along with the lucrative jobs obtained by Keralites in ICT outside the state were eye-openers and the potential of ICT in creating large scale employment was realized by the state, albeit a little late (K.G.K. Nair, and Prasad, 2002). Though the government had initiated some activities in early nineties, it was only in 1998, that the government formulated a comprehensive IT policy, with a view to step up ICT promotion activities (Prasad, 2003). The IT policy was revised in the year 2001, incorporating many new features, with a view to increase the employment opportunities through the application of ICT.

Fortunately, there are many factors, which justify adoption of ICT as technology for the micro-enterprises in Kerala (KGK Nair and Prasad, 2004). The ICT industry has been found to be ideal for Kerala in terms of its potential to generate employment opportunities, with little pressure on land, environment and other resources. Kerala is a potential ground as it has many positive factors, which are conducive to the growth of ICT industry. Some of the factors, which contribute to the promotion and growth of ICT industry in Kerala, are:

- High literacy and phenomenal growth in education, health and other services
- Ease of geographical access in extent and stretch both longitudinal and lateral
- Large migrant population with extensive demands for connectivity
- Extensive telecom network reaching all towns and villages
- Availability of educated youth
- Export based trade and commerce
- Potential for tourism industry

ICT-New Opportunities and New Jobs for Women

Revolutionary changes in ICT have been reinforcing economic and social changes, which in turn have been transforming the business and the society. There are different views on the involvement of developing countries in the ICT revolution. According to Avgerou, developing countries are usually seen as problematic hosts of information and communication technologies. Not only do most developing regions lack economic resources and indigenous techno-scientific capabilities to develop and deploy modern information system infrastructures, but they also tend not to make the best use of the opportunities of technology transfer. Comparisons with advanced economies show poor exploitation of the ICT in developing countries (Avgerou, 2000).

The participation of developing countries in the production of information technology (as opposed to the use of information technology in other industries) poses significant opportunities and challenges (Hanna, 1991). IT industries are likely to constitute the largest industrial sub-sector. The ICT effects on employment pattern are complex and shifting. It has been observed that because of lower wages, developing countries gain skilled job (Talero, and Gaudette, 1996).

ICT will affect employment pattern all over the world mainly in three ways: 1) As an industry, it creates new jobs in various companies; 2) It will change the pattern and level of employment in other industries, which are using ICT for competitive advantage; 3) It will create opportunity for creating new economic activity.

The UN commission on status of women commented that women who constitute half of world's population, performs two third of world's work, receive one tenth of its income and owns less than hundredth of its property. Women represent three-quarters of heads of households in developing nations and for every one woman in poverty there are four dependent children (UNICEF, 2001). According to DATA and Statistics report, women are the poorest of the world's poor, representing 70 percent of the 1.3 billion people who live in absolute poverty (Data and Statistics, 2001). Nearly 900 million women have incomes of less than one dollar per day (UNESCO, 2001).

The International Labor Organization's analysis of employment trends shows that in spite of progress in some areas, women generally continue to earn lower incomes- suffer higher unemployment and remain largely restricted to low skilled part-time, informal, and unstable jobs (ILO, 2001). The ILO's World Employment report 2001 "life at work in the information economy" suggests that the development of ICT offers many new opportunities for women. But unless these are supported by deliberate policies to ensure participation, ownership, education, and ICT training for women- as well as family friendly policies in information work place, the old gender bias will persist.

It is generally believed in India, that for getting an employment in ICT industry one need to be an expert in computer. However, the fact is that a large number of young people, especially women who are matriculate or graduates in any discipline can get suitable remunerative job in ICT (Prasad. 2003). According to John Gage of Sun Microsystems, three fundamental changes in ICT are responsible for explosion in their use to promote economic development are plummeting cost, expanding access to network, and more powerful human to machine interfaces. These three changes will continue and accelerate. Consequently, ICT will permeate the poorest regions of the world over the next twenty years (John Gage, 2002). ICTs promise an endless stream of benefits through technologies that generate employment and economic growth, link

people closer together and promote mutual understanding, and applications that serve societal needs of people.

The World Employment Report 2001 states that ensuring that workers have access to the technologies and that they possess the required education and skills to use them are the fundamental policies that the developing countries need to consider. The report places formidable emphasis on the independence of work from any physical location. Work that is independent of location has a growing share of employment in industrialized countries. Women are often thought to benefit from the new independence of work location. Call centres and data processing in developing countries are predominantly female occupations. As per the ILO report, through telecentres, the countries like Bangladesh, India and Senegal have been able to create direct employment for thousands of women and men. Such local entrepreneurial activities are likely to have positive externalities on local economies as well. It has been estimated that women operated telecentres increases the participation of women as consumers of these services (ILO, 2001).

According to Bhatnagar, improved literacy, particularly of females, can have a lasting impact on rural poverty. However, another kind of education, which focuses on self- help, understanding one's own political rights, and more open access to information, can lead to transparency in resource allocation and reduced corruption. ICT provides an enabling potential to improve women's lives. IT can be an important tool in meeting women's basic needs and can provide the access to resources to lead women out of poverty (Bhatnagar, 2000).

Case Study: ICT micro-enterprises by Poor Women Self Help Group

The Kudumbashree is a poverty eradication project, officially launched in the state of Kerala on May 17, 1998. The Kudumbashree is being implemented through the local bodies, jointly by the Government of Kerala and NABARD (National Bank for Agriculture and Rural Development). The objective of the project is to eradicate poverty completely from the state (Government of Kerala, 1999). The project gives importance to women and children from Below Poverty Line (BPL) families and targets their overall development. The project is being implemented through neighbourhood groups, which are formed by 15 to 40 members; each member belonging to a risk family. Among the BPL families, risk families are being identified based on the following nine risk factors.

- People who have no houses of their own
- People for whom potable water is not available within 150 meters of their houses in urban areas and 300 meters in rural areas
- People having no primary facilities like latrine
- At least one member of the house must be illiterate
- Dependence on only one member for the income of the family
- People who have no means to get food twice a day
- Families having children below the age of five years
- Any one member of the family is liquor –drug addict
- If they are scheduled caste /scheduled tribe (lower caste) families

If any four or more of the above risk factors are applicable to a family, such a family is treated as a risk family. Only one adult woman from a risk family will be enrolled as the member of neighbourhood group. The Kudumbashree project gives importance to health, nutrition, education, employment and improvement of economic status, which are related to the risk factors and the social environment of an individual or family. Even when attention is being given to the environmental sanitation, the overall education and the healthcare, the project activities are focussed on the awareness that the absence of economic self-reliance is the problem for the existence of many a family. Accordingly, activities like empowerment of women through community based organizations, community based service co-ordination, encouraging thrift and credits, and starting of micro-enterprises are being promoted by the Kudumbashree.

Deviating from the pattern so far followed by various government and private agencies for implementing self-employment schemes, promotion of micro-enterprises based on applications of ICT were tested for the first time under the Kudumbashree project. The emphasis in the Kudumbashree enterprise programme was to encourage innovative business ideas rather than on the "tried and tested" ones. A simple and practical way for identifying enterprises was devised; any idea that could solve a problem existing in the society (Problem Solving), fill the gap that existed (Gap Filling) or cater to new opportunity (Emerging Opportunities) was converted into an enterprise. The officials of the project have decided to tap the potential of the ICT for employment generation and poverty eradication. This was contrary to the opinion (or rather misconception) of the common people of Kerala and the political leadership, as they believed that the ICT is for the elite people and it can generate employment opportunities only to the highly educated people, well versed in computer programming. However, the Kudumbashree officials encouraged the poor educated women from the neighbourhood groups to set up micro-enterprises based on the application of ICT.

Fortunately, there were many poor women in the neighbourhood groups trained in computer applications. They had short-term training in data entry, data processing, desktop publishing (DTP), and IT education. The officials of the Kudumbashree selected and organized them into self-help groups of 10 members each. Entrepreneurship development training was imparted to them under the Kudumbashree project. These women acquired necessary skills for setting up micro-enterprises and more importantly; they learnt to function as a business group. Each group was motivated to set up micro-enterprises for data entry, data processing, and IT education.

The first micro-enterprise unit was started in Trivandrum on 15, September 1999. The unit was named as Techno World Digital Technologies. The required capital was mobilized through the subsidy under self-employment scheme and bank loan. The unit, which started with five computers, presently has ten computers and all other related accessories to handle any type of data entry and data processing work. It was reported that the monthly earnings of the group members have been steadily increasing to the level of income tax payers in the state.

The success of the pilot unit, which was set up in Trivandrum, close to the office of the Kudumbashree, encouraged the project officials to start similar micro-enterprises in other places also. In a span of seven years, more than hundred ICT micro-enterprises have been established throughout the state and these provide employment to 1500 women

who belong to BPL families. Majority of the units are engaged in ICT applications like data entry, data processing, DTP works, E-mail service and IT education.

These micro-enterprises owned by poor women functioning in various locations have established credibility and they are getting regular work for data entry, data processing, and DTP works from various government and private organizations. They even compete with big private and government companies and emerge successful in getting state level contract for data entry and data processing. The data entry work of revenue cards for the whole state, state level B.P.L family survey, election identity cards etc. are some of the state level projects, which are being handled by these units. Some of these units are engaged in software development, web design and manufacture and supply of computers.

For each unit, there are 10 women entrepreneurs who were drawn from BPL families as promoters. These micro-units have an average investment of Rs 0.25 million, 50 percent of which is subsidy and the balance is bank loan. These women are able to earn average monthly income of Rs. 3500. These micro-enterprises owned by the poor women are performing very well and proved to be self-sustainable. The Kudumbashree officials are providing necessary support only in the role of facilitators. At present, all these units have E-mail address and they make use of this facility to interact with the Kudumbashree and their customers. Thus, the monitoring and follow-ups are made more effective through the application of ICT. The success of the micro- enterprises promoted by the Kudumbashree highlights the following valuable findings, which are very useful for the policy makers and administrators.

- ICT offers many opportunities for women
- ICT units can be set up for poverty eradication
- ICT benefits are not confined to higher classes of the society.
- Educated unemployed can be equipped to take up ICT related jobs through short-term courses in computer applications.
- Micro- enterprises based on ICT application can be set up in rural areas.
    - Poor women can successfully run micro- enterprises based on ICT.

SWOT Analysis

A comprehensive SWOT analysis was conducted to identify the strengths, weaknesses, opportunities and threats those are related to ICT based micro-enterprises, through primary and secondary date as explained in the methodology.

The study shows that there are many strong aspects to provide a conducive business environment for ICT based micro-enterprises. These are identified as:

- Good ICT infrastructure in the state
- Availability of unemployed educated women
- Preference of ICT jobs by the women community
- Unity and harmony among self help groups
- Government support, especially change in labor law allowing night shift for women.
- EDP Training, technical and marketing support by Kudumbashree
- Government priority for computerization

- Low capital investment

Despite many areas of strengths, the promotion of ICT based micro-enterprises is constrained by several major and interdependent weaknesses. The factors identified as weaknesses are:

- Lack of facility for micro-credit
- Insufficient number of ICT trained women
- High cost of ICT training
- Lack of supporting organization

Though, the growing market due to rapid computerization and outsourcing presents good opportunities, there is little reason for complacency as there are potential threat factors. The micro-enterprises are facing tough competitions from large-scale private sector organizations. The unstable political situation and frequent bandh and hartals were also highlighted as potential threats to the growth of ICT based micro-enterprises in the state.

These SWOT factors are depicted in a SWOT matrix as below.

Strengths	**Weaknesses**
❑ Potential of ICT for micro-enterprises ❑ ICT infrastructure in the state ❑ Availability of unemployed educated women ❑ Preference of ICT jobs by the women community ❑ Unity and harmony among members of self help groups ❑ Government support especially change in labor law allowing night shift for women. ❑ EDP Training, technical and marketing support by Kudumbashree ❑ Low capital investment ❑ Government priority for ICT promotion	❑ Lack of micro-credit ❑ Insufficient number of ICT trained women ❑ High cost of ICT training ❑ Lack of supporting organization ❑ Lack of marketing skills
Opportunities	**Threats**
❑ Huge market as a result of large scale computerization and content development ❑ Growing Outsourcing market	❑ Competition from large scale units ❑ Frequent work interruptions due to bandh and hartals

SWOT MATRIX

Discussion

The ICT micro-enterprises, owned by the self-help groups of poor women were promoted in the state as a part of the project for poverty eradication. In fact, this was a deviation from the usual self-employment schemes of the women in the state, which were predominated by tailoring, followed by dairying, poultry farming, food-processing etc. The success of the Kudumbashree units shows that the application of ICT offers many new opportunities for women.

It may be noted that the ICT based micro- enterprises are being established in the state under financial assistance for self-employment. As there are opportunities for setting up a large number of micro-enterprises, funds under self-employment schemes alone is not sufficient for their promotion. More provisions for financial assistance to the promotion of ICT based micro-enterprises would have accelerated the growth of this sector. Planning and implementation of more micro credit schemes for self –help groups can contribute to promotion of more micro-enterprises thus leads to economic empowerment of the poor women resulting in alleviation of poverty.

ICT micro-enterprises set-up by the self-help groups will help the poor in the state to enjoy the benefit of ICT revolution. Hence, the government needs to encourage setting up of more number of such units. The average capital employed by these units is Rs 0.25 million, which means for every Rs. 25,000 of investment, a job is created. In a country like India, where capital is scarce, this is a very effective investment, which needs to be encouraged. It should be remembered that in a state like Kerala, where 70 percent of the unemployed are with matriculation or higher qualification, finding out suitable entrepreneurs from the unemployed would not be a difficult task. The educated unemployed should be suitably trained to take up ICT jobs.

In order to encourage employment of more women in ICT industry, the government has made amendment to the labor law, which was enacted at a time when the nature of industries and environment and socio-economic conditions of the people were different. The amended labor law allows the working of women in night shifts, giving sufficient protection to them (Government of Kerala, 2001). The ICT industry can make use of the services of female employees between 7pm and 6am subject to special arrangements being made for protection of female employees during these hours:

a. Female employees should be employed jointly or in a minimum group of 10 female employees
b. Arrangements of a rest room should be made separately for the female employees
c. The IT software industry unit shall employ a minimum of 50 persons including female employees between these hours

This change in the government policy is a blessing to the IT enabled service sector. The educated women are able to obtain sizable portion of jobs especially in transcription and jobs at call centres, which have to function day and night in shifts. This is going to benefit a large number of unemployed women in Kerala.

It requires a high degree of entrepreneurship for the success of ICT enterprises. One of the most important things that a woman needs in order to be successful as an entrepreneur is to become empowered. In order to become empowered, women must be able to:

- Overcome shyness
- Talk and act confidently
- Look at herself confidently
- Know and accept her capabilities and limitations
- Break through barriers
- Know her desires and convert these into objectives
- Know that she can acquire the abilities needed
- Develop a strong will to achieve objectives

The government with the help of NGOs, financial institutions, and private agencies should conduct intensive entrepreneurship development programmes for the educated unemployed women. They should be fully equipped to take advantage of the opportunities that the ICT offers them. It is also, necessary to provide short-term training in ICT to the educated unemployed in the state and encourage them to take up self-employment.

ICT provides an enabling potential to improve women's lives. IT can be an important tool in meeting women's basic needs and can provide the access to resources to lead women out of poverty. It is fortunate that the state has a conducive environment for the promotion and growth of ICT based activities. The state's core competence in education can be transformed into economically rewarding and employable skills by deploying the tools offered by ICT.

It is a widely recognized fact that the ICT revolution is resulting in a widening global 'digital divide'. The digital divide between the developed and developing countries is also being replicated within each country, widening the income gap between those who share in the digital revolution and those who live on the other side of the digital divide. Digital divide is soon becoming the most visible component of a development divide. For developing countries, the digital divide, unless tackled, has several potentially harmful consequences, including further marginalization in terms of gender, rural, urban and poor- rich gap (Kumar, 2001). The typical experience in Kerala is to be seen as a positive step towards bridging the gap in the digital gender divide.

Conclusion

It is universally accepted that ICT offers immense opportunities for the comprehensive social and economic development of Developing Countries. Without its adoption, there is little chance for countries or regions to develop. However, the potential of ICT as a technology for the micro-enterprises promoted by poor women is still unused in many countries. As a result of this, gender gap in the digital divide is increasing in many developed countries. It is imperative to ensure that women in developing countries understand the significance of ICT and use them for their economic and social empowerment. In the days to come, lack of proper use of ICT becomes a significant factor in the marginalization of women from the economic, social and political mainstream of their countries.

Information technology can offer significant opportunities for virtually all girls and women in developing countries, including poor women in rural areas. However, their ability to take advantage of these opportunities is contingent upon conducive policies, an enabling environment in their countries to extent increased educational levels, financial

support, and infrastructural support. Hence, efforts should focus on increasing number of women studying IT related subjects in formal schooling and seeking IT training outside of school, as well as related areas to help them fully utilize IT skills.

The ICT based micro-enterprises by the self-help groups of poor women have helped the demystification of the common man that a few elite ones in the society are the only beneficiaries of the powerful ICT. They have begun to consider ICT as a tool for attaining knowledge and development by every one. The strategy to encourage the participation of the poor women in the digital revolution is expected to reduce the gap in digital and gender divide in this state. The economic empowerment of women via ICT enables them to challenge discrimination and overcome gender barriers

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