Role of ICT in Empowering Rural India

Dr. Syed Azaz Ali
Assistant Professor
DSR College of Education (B.Ed. & M.Ed.), Aurangabad,
Maharashtra

Dr. Shaikh Ehteshamuddin
Assistant Professor
DSR College of Education (B.Ed. & M.Ed.), Aurangabad,
Maharashtra

Abstract: ICT has opened the door for outsourcing without changing the geography. These new outsourcing opportunities create employment, generate income and enable poorer countries to participate in the global market in a similar way, ICT provides a dynamic way to connect people with their government and access information easily, efficiently and cost effectively. Under Planning Commission, a National Information infrastructure has been evolved known as NICNET. The NICNET is a satellite based nationwide computer communication network having over 3500 nodes connecting national capital, state capitals and the district headquarters to one another. Thus, in today's fast knowledge growing society, ICT can facilitate to generate and exchange the community based information.

Index Terms: ICT, Rural Empowerment, Development, Role of ICT in Empowering India.

➢ **What is ICT?**

ICT comprises a diverse set of technological tools and resources to make, distribute, store and manage data and information. Traditional ICT tools e.g. T.V. Radio and telephone have already established their credibility and effectiveness in promoting the developmental schemes in rural and marginalized areas. The modern ICT tools are computers, internet, wireless communication technologies along with powerful software which can process and integrate sound, text and video into electronic media The world wide electronic network of computers, popularly referred as internet and wireless telephony, have generated an unprecedented global flow of information, people, products, capital and ideas. Until early 1980s, communication was generally restricted to analogue signalling, therefore, voice traffic was carried over the phone and high frequency broadcast networks were dedicated to send video & audio signals while telnet net was used to deliver the text. With the emergence of digital communication technologies, internet carries pictures, drawings, moving images, sound and text.

➢ **Why ICT is required in Rural India?**

One third of our population is living in 11.50 Lakh villages of India and a reasonably high percentage of these villages are located in remote parts of the country. Indian economy is heavily dependent on the agricultural yields and trends of rainfall/monsoon. Thus, Agro-based economy is the major parameter of India's GDP. Even after 72 years of independence, the infrastructure like communication networks, roads, transport, power supply, health care, education system, etc. in the villages could not be developed up to satisfactory level. All these further deteriorate the living conditions of rural people and enhancing the divide between affluent and poor. Comparatively, poor living conditions of rural inhabitants than their urban counterparts are encouraging to rural youths to change their destiny just by changing their geography. And, due to heavy migration, there is a big challenge before our policy makers and development managers to check this growing burden of population on overburdened metros and other big cities.

➢ **Need to Bridge the Existing Digital Divide**

More than 42 % of India's population lives in absolute poverty and majority of them are either in rural regions or migrant population living in the urban slums. To improve the poverty level of the country, govt. needs to work out on policies and strategic planning and to define strategies to decentralize the development process, to build up an equal level of infrastructure in telecom connectivity in the rural regions, check the migration and offer equal opportunities particularly in education, employment, healthcare and empowerment to the youth within their own villages. Today, even after 72 years of independence, the most pressing problem is to find out the means to improve the living standard and the income level of rural poor. The mass poverty in the rural areas also affects the India's ability to compete for direct foreign investment against countries with better physical infrastructure, have connectivity, well informed citizenry and well educated population.

In the age of information communication technology (ICT), now the poverty is assessed in information terms rather than in economic terms. It is believed that a well-informed citizenry can exercise its rights to carry out its responsibilities in a better way and that in turn can enhance their income level too. In our country the economic and social structure is so rigidly interlinked that no single formula for poverty reduction can be evolved. It has to be an integrated approach enabled to address the social,

economic, religious and political factors responsible to cause and perpetuate poverty. In brief, timely access of information and knowledge resources, can change the face of our poor living in rural, isolated and under privileged regions.

Thus, to some extent the efficacy of poverty reduction work depends on poor people's ability to empower themselves, to access information and knowledge resources through which they would be able to analyse the situation, learn necessary skills, and participate in equal economic opportunities without changing their geographical boundaries. Therefore, to create information enabling environment through ICT should be the main thrust of our development policies. There is no society or nation in the world which is technologically backward and has attained wide spread, well-being prosperity and economic power. Hence, efforts should be made to bridge the existing digital divide in the society in such a way that ICT benefits should reach to masses along with the classes. It means all people; regions and communities should be well trained to use the technological products.

➢ **ICT Evolution and Its Significance**

Due to rapid evolution of microprocessor technology, the computer power is being doubled in 18 to 24 months while advances in fibre-optical network technologies, doubling the communication power. The technological advances have also drastically reduced the cost of transmitted digital information anywhere in the world and enabling the villagers to gain the benefits of modern ICT Since early 80's govt. and non-govt. agencies are making efforts to generate the awareness about of computers and its potential in rural development. The National Informatics Centre (NIC) was set up and through Computerized Rural Information System Project (CRISP), the NIC and Rural Development Ministry collaborated to deploy ICTs in each District Rural Development Agencies: DRDA, The emphasis was given for the implementation of ICT, particularly in social sectors e.g. education, health and rural development. ICT has established its utility and significant role in poverty alleviation as experimented worldwide by various development agencies.

- The poverty alleviation strategies have been concerned with improvement in the provision of micro credit to enhance small and medium-scale business, effective livelihood and product.
- Modern ICT has to offer in meeting the information-communication needs of rural communities in respect to marketing, training programmes, empowerment of women and disadvantaged groups, building self-help networks and strong grass root participation.
- ICT can improve the access to health services, micro credit and govt. services provide training and education create direct employment opportunities and provide support to rural poor in production, storage and marketing of farm and non-farm products by providing demand-driven information and services.
- Access to information is the key for building human capabilities. The flow of information and data is available to the people of all classes, castes and regions irrespective of the language they speak for over all prosperity of country and individuals.

In brief, modern digital ICT has opened up new vistas in the life of poor, rural and disadvantaged and in minimizing rural-urban divide to a minimum.

➢ **Impact of ICT on Rural Empowerment**

ICT has opened the door for outsourcing without changing the geography. These new outsourcing opportunities create employment, generate income and enable poorer countries to participate in the global market in a similar way, ICT provides a dynamic way to connect people with their government and access information easily, efficiently and cost effectively. Under Planning Commission, a National Information infrastructure has been evolved known as NICNET. The NICNET is a satellite based nationwide computer communication network having over 3500 nodes connecting national capital, state capitals and the district headquarters to one another. Thus, in today's fast knowledge growing society, ICT can facilitate to generate and exchange the community based information. This demand driven information can stimulate and empower rural poor to establish small and medium sized enterprises. The recent ICT initiatives for the rural poor are broadly categorized into 6 areas e.g.

i. Information services
ii. E-commerce
iii. Employment generation
iv. Education & training
v. Good governance
vi. Social empowerment of women

Information Services: ICT provides easy and cheap customized information systems affordable by poor and disadvantaged. Internet offers more flexibility in the collection, retrieval, updating and presentation of information than traditional media e.g. radio and television. The most popular and successful pro-poor initiatives in India are Knowledge Village Centres (M.S. Swami Nathan Research Foundation (MSSRF) in Chennai, Tamil Nadu and Warana Wired Village in Maharashtra. Similar efforts have

been made in other Asia Pacific Regions e.g. 'Smart Community' in Malaysia; Rural Net Project in Thailand and 'Techno Pinoy' project in Philippines.

E-commerce: E-commerce involves sale/ purchase services of goods over computer mediated networks. Rural poor through easier access to market in developed countries may have better thrashing opportunities resulting to higher income. The best example of the marketing of traditional products all over the world through website by an NGO in Tamil Nadu known as PEOP Link. The Green-Star's solar powered community centres is an ambitious project connected New Delhi, London, Tokyo and Los Angles. With the help of 'Green-Star', a non-profit organization, some villages in India, Israel, Jamaica and Ghana have begun to sell digital culture' (e.g. Art, Literature, Music) and export crops (e.g. coffee, spices, handicrafts, etc.). 'Greenstar' not only provides solar powered electricity but also provides fast communication, education, employment and telemedicine services. The Task Force known as e-ASEAN (Association of South Asian Nations) takes initiative in removing all kinds of barriers for the development of e-commerce in partner countries e.g. cyber laws, secure messaging infrastructure, payment gateways and on-line services and products. Thus, e-commerce reduces transaction costs substantially, eliminates layers of intermediaries and expands business activities from local confines global market.

Employment Generation: ICT is creating fast growing market for outsourcing labour intensive jobs. Software outsourcing work in India by software engineers for developed western countries and USA is one of the examples of generating ample job opportunities. Service industries, involving labour intensive tasks such as airlines, banking, insurance etc. can set up operations in lower wage countries, when they are linked through internet. The emergence of ICT services in rural India has also generated new business enterprises e.g. setting ICT equipments and accessories, providing ICT services such as internet access, web designing, word processing and telephone operations; provide training and educational support: repairing and maintaining ICT equipments, etc. and providing direct job opportunities to teachers computer operators, technicians, administrative and secretarial support staff. ICT also offers innumerable indirect employment opportunities through improving business prospects of market information, improved production technology and more efficient marketing system through telecenters.

Education & Training: ICT has created enormous opportunities for networking of educational institutions in developing countries for exchanging learning materials, educational curricula, scholarship & fellowship opportunities, educational training, research resources, etc. Three notable pilot projects sharing online educational training are -ASEAN School net, ASEAN educators Online and ASEAN Training Network.

With recent efforts, ISRO (Indian Space research Organization) has developed a more sophisticated system based on a satellite interactive video-audio teleconferencing network. This system is used for imparting training and continuing education to diverse groups of people including agricultural extension workers, farmers, rural women, local govt. officials and students. It enables the simultaneous training of a large number of geographically dispersed people and access to high rated instructors and learning resources.

Similarly, the Grameen Bank of Bangladesh and Massachusetts Institute of Technology of USA have jointly developed a voice operated learning system to help illiterate villagers to learn, read and write. In the village level tele-centres, speech technology transcribes the local spoken language on the screen and reads it back to the computer users. These centres also provide opportunities to learn through the information provided on the internet and the training programmes conducted by tele-centre operators.

Good Governance: ICT promotes efficiency, accountability and transparency in govt. services. It enables citizens to pay utility bills, procure goods and services flow intra govt. information, etc. Gyandoot project is a break through on e-governance which has been successfully implemented as a pilot project among the tribal population of Dhār district in Madhya Pradesh.

Social Empowerment of Women: The Beijing Platform of Action noted that traditionally gender differences and disparities had been ignored in policies and programmes dealing with the development and dissemination of improved technology, as a result women became more disadvantaged with the technological advances. The active involvement of women in defining, designing and development stages of new technologies can bridge this divide between sexes. Recognizing the advantage of ICT for women's empowerment, a number of women organizations have begun to adapt ICT to support their information communication and networking initiatives. Since 1998 ESCAP in collaboration with Asian Women's organizations, is utilizing web based information services and other ICTs in training to women organizations in electronic networking, in policy advocacy as well as and in developing databases.

➢ **Key Issues to be addressed**

The analysis of various pilot projects and case studies conducted in India infers the major issues needs to be addressed are given below to serve the rural poor through ICT in true sense –

- Connectivity
- Accessibility
- Content and services
- Skills development
- Sustainability
- Partnership with Local stake holders
- Sensitivity for gender and disadvantaged groups

Connectivity: Connectivity means the availability of ICT infrastructure (communication lines, satellite hardware for communication, computer networks, etc.) including electricity to operate ICT services properly. The Federal/State Governments have a key role in providing legal and regulatory frame work for this competitive telecommunication sector to attract private sector for investments. Another barrier is highly urban focused market led ICT expansion and therefore, the role of Government has become really critical in expanding ICT connectivity in rural areas. Govt. may establish partnership with the private sector either by sharing part of the investment cost or by providing appropriate incentives e.g. tax exemption, tax free loans and free to market research data, etc.

Accessibility: Installation of ICT infrastructure alone cannot guarantee to access due to involvement of a high recurring expenditure. It is still quite expensive and unaffordable by many of the poor. Language is also a barrier because 90 % of the information on web is available in English. Therefore, combination of modern ICT with traditional electronic (TV and Radio) and print media can broaden the access.

Content and services: The biggest challenge before ICT initiatives is to develop the database that can truly address the information needs of the intended users. For example the migrant workers would require cheaper telephone services and links with micro banks that may provide digital remittance services at lower cost than the money order and D.D. Services. To create need-oriented ICT applications, combined participatory approach of field surveys, village meetings and consultations with stake holders working directly in rural areas, is needed. It will be helpful to ensure that the contents are closely matched to the needs of the target groups. A number of telecenters have made significant strides in providing relevant content to their target communities e.g. sources and prices of agricultural products and inputs for crop production and protection technologies, directory of hospitals and medical practitioners, database on local medicinal plants and their applications, sea conditions for fishermen, school examination results, employment opportunities, etc.

Skills development: Development of skills among rural to use ICTs is a key component for operating the computer, browsing the internet and making use of various communication tools such as e-mail, chat rooms and video conferencing. Gov. must assume a leading role in this particular task. The national ICT policy needs to address the provision of basic computer literacy and education for disadvantage groups and develop the training materials that are suited to local needs. Educational reform is needed to integrate ICT applications with standard curricula from primary to university level. A pilot project should also be designed to promote informal and lifelong education through modern new ICT based educational services. Participatory and practical approaches may be adopted to develop skills among villagers for effective use of ICT in their life Sustainability: The financial sustainability of telecenters is difficult to achieve because of the high cost of telecommunications and low prospects for generating income from rural poor. The sustainability of ICT projects in rural areas should have the support of community, government and private sectors. In general rural population is unaware with the locally relevant content and services that are made available to them for their benefits by these telecenters. It is also significant that paying costs for services must be affordable.

Partnership with Local Stake Holders: The success of ICT initiatives is enhanced with the involvement of community participation (e.g. leaders/inhabitants) in the assessment of information and communication needs and implementation of the project concerned. If the people are poor or not adequately educated, even then, their participation as co-decision makers and co-implementers of the project must be ensured. The information needs of the rural poor cover wide- ranging topics including trade, agriculture, education, health and culture. Collaborative efforts by various local stake holders are crucial in developing relevant content for services. NGO's are in a better position to work together with local people, putting together indigenous knowledge, providing training and promoting the ICT services.

Gender and Disadvantages Groups Sensitivity: Men and women play different productive and community roles in rural development and have different needs and preferences. Whenever, new technologies are introduced they are usually male dominant and women have often been left out of the initiatives associated with the new technology Women's participation in technology oriented activities and recognition of their role as economic contributors and possessors is negligible. Most of the indigenous knowledge is critical to community development. ICT has profound gender implications for both men and women in the areas of employment, education, training and other personal and productive developments in life. Therefore, to ensure the realization of national development goals, the participation of all the citizens i.e. women, disadvantaged and disabled should be deliberately integrated into ITC projects as well as in other initiatives during development and implementation stages. Persons with disabilities are doubly disadvantaged if they reside in rural areas. Computers can aid to bring perfection in Indian Accent English as well as can aid to hearing/speech-impaired to hear electronic text while it can permit to the visually impaired to take its printout in a Braille format.

Our Country has to determine its own approach to use ICT services for poverty alleviation and development of rural and disadvantages. These are as follows:

- To promote private investment for ICT infrastructure development through supportive activities and incentives
- Development of pro-poor ICT applications in public institutions e.g. schools, libraries, hospitals and govt. departments
- Ensure participatory approach in development of local ICT contents reflecting the knowledge level and need of target groups.
- To promote ICT access among all sectors of the society.
- To develop links between established technologies society such as radio and TV with modern ICT teleconferencing (e.g. computer, networking Internet etc.)
- The integration of ICT into general education and Reference professional courses as well as into specific initiatives to raise awareness and develop skills to use ICT optimally
- Generate awareness among rural poor and disadvantaged about the benefits of ICT and motivate them to utilize the available facilities optimally

➢ **References**
1. Higher Education in India: Issues Related to Expansion, Inclusiveness, Quality and Finance, New Delhi, UGC.
2. Ranganathan, R. & Lakshmana Rao, S V. Reformation of Higher Education in India: Quality Concerns, University News.
3. NKE, Report to the Nation, National Knowledge Commission.
4. New Realities, New Possibilities: The Changing Face of Indian Higher Education, New Delhi ERNST and FICCI.
5. Improving Higher Education: Total Quality Care, Oxford, Oxford University Press.
6. Facing Global and Local Challenges: The Ne Dynamics for Higher Education, MHRD, New Delhi.
7. Access and Equity in Higher Education (Selections from University News-15), New Delhi.
8. Special Issue of University News, Foreign Providers in Indian Higher Education System.