

Research Note :

INFORMATION TECHNOLOGY : A NEW TOOL FOR RURAL DEVELOPMENT

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Information is key to development. Information is power and an informed society is more conducive for development. Communication of information about man and material resources; information on market prices, supply and demand, about policy makers, producers, ultimate users, etc. are essential. This is being made possible with the use of new communication technology.

opportunity. The information and communication technology has created potential for developing countries to create more jobs and diversify their economies, as they need less initial investments. They are labour-intensive; they provide new jobs and wages for educated workers.

Reasons for limited IT facilities in the rural areas :

- ❖ Poor telecommunications systems, with very less telephone lines in the rural areas.
- ❖ Insufficient power supply in the villages causing serious interruptions in data transmission.
- ❖ Less service providers like Internet service providers, technical and software expertise and hardware engineers, thus resulting in higher costs, delays and less access to these services.
- ❖ Low purchasing power of the people.
- ❖ Low literacy rate in the rural areas in comparison to urban areas.
- ❖ Limited and insufficient coverage of issues related to rural areas by radio and television service providers.
- ❖ High cost of connections.
- ❖ Slow service responses to telephone problems.
- ❖ Slow connectivity rate in case of Internet.
- ❖ Less awareness about new information and communications technologies in the rural areas.
- ❖ Poor maintenance of information and communications technologies.

The above limitations clearly reveal the

The phenomenal growth of the information technology (IT) and communications systems is changing the world scenario entirely. There is no doubt that developments in IT during the last decade have radically changed the way we live. Recent advancements in microelectronics, storage technology, telecommunications and systems development have significantly changed the role of IT in our society. The UNDP Human Development Report 2001 has stated that in the network age every country needs the capacity to understand and adapt global technologies for local needs. It has also recognised that information and communications technology can break barriers of human development in three ways: (i) Breaking barriers to knowledge because the Internet and world wide web (WWW) can deliver information to the poor and the rich alike. (ii) Breaking barriers to participation. The poor people and marginalised communities who were often isolated and had no means for collective action have got their global communication network power to hold governments more accountable. (iii) Breaking barriers to economic

widening gap between urban and rural India, with respect to present and future access to information and communications technologies. The need is to bridge this information gap between the "information-rich" and the "information-poor" to ensure that the rural communities are better informed.

Information Technology : Indian Experiences

The Government of India has realised the significance of information and communications technologies and the need to adopt it in all functional areas. In 1998, Union Communications Minister Shri. Ram Vilas Paswan had stated that all panchayats in the country would be provided with fully equipped communication centers. Some successful examples of application of IT that have made a difference in delivery of services in rural India are discussed as under.

❖ **Warna Wired Villages**—An IT revolution is sweeping Warna Nagar in Maharashtra, where a farmer can now monitor various processes sitting at his village. Information regarding various crop cultivation practices, pesticides and disease control, marketing, dairy and sugarcane-processing unit etc. is served right upto the farmers' village level. Warna Wired Village Project connects 70 villages attached to the Jatyasaheb Kore Cooperative Sugar Factory with each other and also to the rest of the world through Internet.

❖ **Information Villages Project**—A pilot study undertaken by M. S. Swaminathan Research Foundation in villages in Pondicherry has evoked encouraging results on the impact of IT on rural societies. The aim of this project is to bring the benefits of modern information and communications technologies to the poor and asset less families in the villages in Pondicherry.

❖ **Computerised Milk Collection Centres**—Cooperative milk collection centers under National Dairy Development Board (NDDB) are using IT-based machines to measure fat, SNF content of milk, test the quality of milk and thus resulting in instant payments to the farmers. The process has instilled confidence in farmers in the cooperative setup.

❖ **Computerisation of Mandal Revenue Offices in Andhra Pradesh**—The Andhra Pradesh State Wide Area Network links the state government's secretariat with 23 district headquarters, for improved coordination at all levels. Mandals are served by this two-way communication and further, electronic commerce applications are also being developed.

❖ **Gyandoot Project in Madhya Pradesh**—On January 1, 2000, Dhar district in Madhya Pradesh began the new millennium with a mass based information revolution. Twenty one Soochanalayas (Information Centres) were established in five blocks of the district and each of them provides user charged based services to approximately 15 Gram Panchayats and about 25 to 30 villages. Thus, the Gyandoot network benefits over half a million villagers living in 311 Gram Panchayats and over 600 villages.

❖ **Community Information Centres (CIC)**—IC Project was launched for providing IT facility in each and every block of Sikkim and other north-eastern states of India. It will assist the government functionaries to use e-mail and Internet for communicating with the district and state level officers. The IT infrastructure at CICs will also serve to highlight the information about local resources throughout the world via Internet so as to attract investors from

different parts of the world to the block.

- ❖ **Fatehabad District of Haryana Created History**—The district was first in the country in October 1999, to have a district computer network linking all subdivisions, tehsils, sub-tehsils, block, municipal committees and district offices to a dual server installed at the district headquarters. It was also the first district to release a CD-ROM about its revenue data and the first in the state to have its own website on Internet (Mathew, 2001).

Information Technology : A New Tool for Rural Development

The above discussions clearly portrays the fact that IT can efficiently as well as effectively contribute in all round development of our country. IT is increasingly being seen by experts as an important rural development tool and that it is generating possibilities to solve problems of rural poverty, inequality and giving an opportunity to bridge the gap between the "information-rich" and the "information-poor", and support sustainable development of the rural agricultural communities. IT presents a wide range of scope to the rural societies as given below.

- ❖ **IT will Promote Rural Business**—Remoteness from markets, policy makers and information sources is one of the major factors inhibiting the efficiency and effectiveness of business located in remote and rural areas in India. Provision of access to IT services will provide farming as well as other businesses located in the rural areas to become more efficient by having direct links with their customers, thereby removing order lags from the supply chain.
- ❖ **Maintain Parity between Rural and Urban Areas**—IT facilitates maintaining equality of opportunities between rural and

urban population in areas such as education, shopping, access to government services, etc. Although it is impossible to completely eliminate the disparities but they can be minimised. Telemedicine and Telecentres, two new concepts are gaining popularity in this effect.

It is well known fact that the urban people have had access to a superior level of health services than the dwellers of rural areas. Telemedicine has the capacity to overcome this, at least part of this disparity. The Ministry of Information Technology has initiated a development project on Telemedicine in association with leading medical institutes. Indian Institute of Technology, Kharagpur has developed a technology suitable for rural application, which is presently in use at the School of Tropical Medicine, Kolkata. Telemedicine is creating the scope of providing services to the rural and remote populace of the country that was never available in the past. An advanced development that is being explored for providing rural access to modern information and communications technologies is through Telecentres or Telecottages, which was initially implemented in Scandinavia with the objective of counteracting remoteness (Qvortrup, 1989). Telecentres can provide a plethora of services including desktop publishing and printing; education and training opportunities delivered through satellite and computer based technology; telephone and fax facilities, affordable access to e-mail and Internet, and also to databases and libraries. Telecentres can also link the Internet to local media such as radio and television and help make information accessible to a wider audience. Besides, Telecentres also help in

organisation of virtual village-to-village meetings and teletraining events thus facilitating local sharing of information.

- ❖ **Facilitates diversification of Economic activity in Rural Areas**—A major opportunity that IT and communications infrastructure provide to the rural society is not only the ability to diversify their youth and attract teleworkers into their communities (Schoeffel *et al.*, 1993). The direct employment opportunity that is created by the information and communication technologies infrastructure is highly significant to the rural communities. Besides, "Call Centres" have been extensively used in the remote regions of Ireland and Scotland (CEC, 1991) as an option for employing the unskilled labour in these areas using telecommunications. Teleworkers sitting at rural "Call Centres" provide services like directory assistance for IT based companies and help desks for different companies where base information needs to be provided at a whole different range of times of day, as in case of airlines and insurance companies. But this requires good telephone systems, good computer links to databases and on a whole a good information and communication technology infrastructure. Further, training is the prime component in this process.

The above type of opportunity is earnestly needed as it offers flexible working hours and can generate additional income in the rural India. It offers the scope for the young community to remain in the villages because of the ability to earn a steady income for their family.

- ❖ **Dissemination of Farm Information**—Access to farm information and improved communication is *sine qua non* for sustainable agricultural development. In

this light "Cyber Extension" would be the major form of information dissemination in the near future. That is, using the power of online networks, computer communications and digital interactive multimedia to facilitate dissemination of agricultural technology. It includes effective use of information and communications technologies, national and international network services like ICAR's, ARISnet, Internet, expert systems, multimedia learning systems and computer based training systems to enhance information access to end users such as farmers, extension workers, research scientists and extension managers. Cyber extension has opened new vistas for the farming community by catering to their information needs regarding "precision agriculture" about different crops; GIS information; weather forecasts, pests and disease control and marketing information (specifying price details of seeds fertilizers, pesticides and availability of the products, which helps the farmer to take right decision in crop management). Interaction among farmers, extension workers and the research scientists has become easy via e-mail. Thus, the extension and research institutions can obtain direct end users' feedback very easily. A question and answer, and consultancy services are also a reality now between the end users or farmers at their villages and the experts at their research stations in towns, cities through Internet.

- ❖ **E-Governance at the Grass-root Level**—It is encouraging that the Panchayati Raj system in many states in India has adopted e-governance. A successful example is Bellandur Gram Panchayat in Karnataka, which introduced e-governance in the year 1999. All the Panchayat records were computerised. Now, by

pressing a key, a resident in a village can have a look at all relevant data relating to the five villages; land holdings of each family, taxes due on them and the list of beneficiaries under various housing and employment schemes. Fresh applications for power and water connections are also computerised for disposal at the monthly Panchayat meetings. The paperwork has been minimised as the computer operator issue all receipts. Thus, the Panchayat staff is free to attend other important duties (Mathew, 2001). States like Kerala, Madhya Pradesh, Andhra Pradesh, Haryana and Chattisgarh have already launched or are initiating steps for linking all the local bodies through a IT network for better governance at the villages. Other state governments should also follow suit in embracing IT for better governance of the rural areas.

- ❖ **Sustainable Management of Natural Resources**—Systems of data access, information and expertise in sophisticated modeling is being seen as an useful means of helping the rural community to develop sustainable natural resource management systems.
- ❖ **Enhances Quality of Life in Rural Areas**—A well developed IT infrastructure can play an effective role in enhancing quality of life in the rural areas. Quality of life includes a wide range of aspects like access to entertainment, emergency services, television and radio services, mobile telecommunication facilities, and communication links within communities via Internet as well as Intranet.

CONCLUSION :

Information and communication technologies can be highly effective as a development tool by making the rural societies more competitive nationally as well as internationally, and if they don't get access to these new technologies and quickly, they will suffer disproportionately.

The World Bank Report stated that if countries are to obtain effective and efficient delivery of IT services there is a need to change the range of incentives provided. The Report identifies three ways of reforming institutions to improve incentives: (i) Apply principles of commercial management, operating infrastructure more like a business than a bureaucracy, with clear objectives, with managerial and financial autonomy, and with customer satisfaction as a key measure of performance; (ii) Introduce competition, directly where feasible and indirectly where not. Thus giving users more options, as competition makes providers more efficient and more accountable to users; (iii) Give users and other stake holders a strong voice and real responsibility in planning, operating, regulating and other financing services. Our efforts should be more focused on the third area of the above to guarantee a suitable and timely roll-out of IT infrastructure in our rural India. Besides, the need is to make the rural community aware of the latest technologies about "what are the possibilities" and help them to develop a vision. Finally, coordination at each and every step is very much necessary to ensure efficient and effective service to the people living in the rural and remote locations.

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