Networking India’s Interior

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The interior of India, as in remote regions throughout the world, is far behind the country’s urban areas in the use of ICTs. Many government programmes, often in cooperation with NGOs and private interests, are working to bridge this gap. Information kiosks, where the rural population can access the Internet, for governmental, healthcare, educational, financial and other services have been successful. Building the infrastructure, providing wireless connectivity, developing local language content and applications and making it affordable have been a challenge.

It is a fact that Information Technology (IT) is playing an important role in all issues concerning human life, be it social, economic or political. Today, it does not effectively exist without the network, and ICT—Information Communication Technology—is a better description.

India can be divided into urban, semi-urban and rural areas. Urban areas are the metropolitan cosmopolitan cities and state capitals. Semi-urban areas are the towns at district headquarters. Rural areas are the villages in a district.

In urban areas of India, ICT, the connectivity infrastructure for backhaul and access, Internet reach, applications and services are growing fast.

The presence of multiple telecom, mobile, and Internet service providers has brought enormous benefits to the urban community, contributed to the urban life style and to industrial efficiency and is helping meet the growing needs of society.

In the interior, though, the communication infrastructure and Internet reach is poor, not at all comparable to urban areas. This has created a digital divide between urban and rural India. The digital divide also implies educational, health, income, and opportunity divides.

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There have been many initiatives in recent past to bridge the divide in different pockets of the country including:

- eSeva, Integrated Citizen Services, in Andhra Pradesh;
- Lok Mitra and Jan Mitra Projects from Rajasthan;
- e-BillPost and e-Post Services of the Department of Posts;
- RASI (Rural Access to Services through the Internet) earlier called SARI and n-Logue Communications;
- Gyandoot—Rural Intranet project—Madhyapradesh;
- Community Information Centres (CIC) Project (Dept. of Info Tech., Govt. of India) in North Eastern region;
- Bhoomi—Land Record Digitisation project—Karnataka;
- ITC eChoupal—project by ITC’s international business division, to establish efficient agricultural supply chain;
- Kuppam i-community, project by Hewlett Packard, Andhra Pradesh, The technology incubator and hub at...
Kuppam set out to deliver programmes in education, healthcare and e-governance to develop low-cost products for emerging markets;

- Akshaya—Kerala Govt’s Hundred Per cent ICT Literacy Project;
- Information Village Research Project—IVRP by M. S. Swaminathan Foundation;
- GRAMDOOT—Project in Jaipur by Aksh broadband Ltd;
- Pravara Village IT Project (PRA-GATI) — 7 lane IT development project.

ICT for women’s empowerment

- Community Radio—Deccan Development Society;
- Community Radio—Kutch Mahila Vikas Sangathan (KMVS);
- Sisu Samrakshak ICT—enabled Child health care by UNICEF;
- hange Initiatives—Nabanna—Empowering women 94;
- SEWA.

Bridging the divide

There are unique features in every project, but they share many features. Information Kiosks are the access points for the villagers. Typically a Kiosk consists of one or more PCs, Printers, Web Cameras and communication equipment (modem or wireless equipment). Depending upon the services offered, one might find low cost ATMs, finger print authentication devices, telephones, etc. The kiosks, mostly run by local entrepreneurs, typically provide one or more of the following services:

- Internet access;
- Rural Services—contract farming, medicinal plant promotion, organic farming advice;
- E-Governance Services—Jobs related to District Administration, application processing;
- Trading services—Selling and buying of agricultural goods and handicrafts;
- Outsourcing jobs—Data entry jobs;
- Tele-consultancy (from district head quarters to the client at kiosk)—health care, agricultural advice, animal husbandry;
- Urban Services in Rural Areas—telecom services (cash cards, new connections etc.), travel services (railway & bus reservations), financial services (insurance, vehicle financing, cash, transfers, courier, etc.);
- Telephony services—free emergency calls, local telephone calls;
- Community radio broadcasting services.

Business models for digital inclusion

Business models play a vital role in the success or failure of these projects. Currently, the most accepted model is built upon partnerships between private and public organisations like government, NGOs, technology partners, industries, finance organisations and, importantly, local entrepreneurs.

One successful project, in a remote place called Pravaranagar, Ahmednagar district in Maharashtra state, serves as an example. Promoted by National Informatics Centre (NIC) of the Ministry of Information Technology, the PRAGATI project connected one hundred villages, with a population of more than 250 thousand, using a combination of fixed telephone and wireless Wide Area Networking (WWAN) technology.

Today, reliable Internet and Intranet is now available. The ICT infrastructure improved the quality of life of the rural population. The seven-lane programme is helping the villages by establishing local IT centres, disseminating information regarding government schemes, helping market agricultural products, making healthcare available, and providing access to education, agro processing and economic development.

The benefits are many; the project links all high schools in 50 villages within a radius of 10 km and lets teachers and staff stay in touch with the regional school administration. It helps introduce modern teaching methods, including computer-based, virtual school, learning at hours convenient for children who work during the day.

Students at professional colleges can acquire knowledge using the Internet that will help them find new jobs. Farmers communicate with the agricultural experts and learn new farming techniques and better ways of storing and packing their products for marketing. Village health care professionals consult specialists at Medical Colleges and Hospitals about specialised treatment or for on-site information about emergency care.

People can interact with appropriate government officials without leaving their village to obtain information about social welfare programs — this is of particular benefit to rural women.

Challenges, issues and concerns

Building an ICT infrastructure in India’s interior is a challenge. ICT infrastructure has three key components namely, connectivity infrastructure, content and applications, and end-user devices.

Connectivity infrastructure — An Internet point-of-presence is normally available at district head quarters, but district-wide access is a challenge. Dial-up telecom services are a simple solution used in many projects. Since these are not always available or reliable, wireless technologies are preferred. Standard Wi-Fi LAN and related technologies are mostly used but some projects use indigenous WLL technology. Nevertheless, line-of-sight, antenna site and regulatory issues persist.

Content and Applications—India is a country with many languages. Content and applications should be in the local language to benefit the user communities. Localised content development, a major challenge, is being addressed.

End-user devices—The cost and affordability of end-user devices is a major issue. The user computers and the software must be economical. That is why most of the applications are developed using open-source software like Linux.

There are other issues as well, such as the lack of skilled manpower to run the show, unreliable power supplies that make it necessary to have alternate energy sources (solar panels, generators, etc.), and finding ways to motivate local entrepreneurs to sustain the business.