

## **Information And Communication Technology In India**

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### **ABSTRACT**

Information Technology is foremost important for our country to help economic development. An advancement of ICT'S all the information's are access for common people in global level. Like News papers, telephone, mobile phone, voice in telephony, text in fax and newspapers, images in video, television broadcasting, and data in computers . All information can be digitized, transported, stored, retrieved, modified and then distributed. Emerging digital techniques, new network alternatives including intelligent networks, high bandwidth communication technology & state of art software for network functions & services are the new technology trends evident in the development of electronic communication systems. Emergence of a global information society is changing the way of people life's style, learn, work and related activities. The free flow of information and ideas has brought knowledge and its an infinitely great number of applications to many millions of people, creating new choices and opportunities of a field of activity or interest to achieve something by human. This paper discussion mainly focuses the need of used in ICT'S for the Indian Rural Communities to empower them to access information, knowledge and poverty alleviation. To analyses the factors to prevent rural communities by using the ICT'S, to overcome the factors facing ways like poverty alleviation , sustainable development; and identifies the Problems and solutions etc.

### **1. INTRODUCTION**

India has got Independence, even though it's still facing many problems to deals it's rural poor and how to increase their income level. The rural-urban distribution of population in India and select states is provided at table 1 (Census of India, 2001). Out of 1027 million (102.7 crore) population, 742 million (72.2%) live in rural areas and 285 million (27.8%) in urban areas. The rural populace are living in 600,000 villages spread over 27.60 lakh sq km, across India with very poor or no infrastructure like roads, transport, power supply, clean drinking water, healthcare, education system, communication network, etc., further pushing them to poverty.

According to India's first Social Development Report a large proportion of Indians are still below the poverty line: 26% or about 260 million (193 million in rural and 67 million in urban areas). The poverty is increasingly concentrated in a few geographical locations and among specific social groups. The incidence of poverty as per 1999-2000 figures, Punjab state has the lowest of

6.16%, followed by Haryana at 8.74% and Kerala at 12.72%. Orissa state has the highest incidence of poverty of 47.15%, followed by Bihar at 42.60% and Assam at 36.09%. Though, poverty levels have shown a decline, there is huge disparity among social classes with percentage of the poor among Scheduled Tribes being 43.8, Scheduled Castes 36.2 and Other Backward Classes 21 (Dhar, 2006).

Mass poverty is affecting India's ability to compete against countries with better physical infrastructure for connectivity, informed citizenry and more educated population for foreign direct investment that India needs to face a fiscal deficit. With its current rate of growth, existing work culture and policies, it would be difficult to keep pace for poverty eradication, until government redefine its policies and strategies dramatically, apply ICTs innovations with application and active participation from private sector, Community Based Organizations and Non-Governmental Organizations. When India tries to push its growth to 8-10% in the next ten years, lives of the poor would remain visibly unchanged. Even in the best-case scenario, per capita income in India would rise from the current US \$ 300 per year to all of US \$ 500 per year a decade from now (Jaggi, 2003).

## **2. ICTs ROLE IN RURAL COMMUNITIES**

ICTs play a major role in a nation's politics, economy, social and cultural development. These fuel the global economy and relate to human rights, helping at best, to support freedom of expression and right to information according to Article 19 of the Universal Declaration of Human Rights. About 1.2 billion people are experiencing extreme poverty that is considered by many to be the worst human rights violation in the world. Consequently, the global development community has endorsed in the United Nations' Millennium Development Goals its commitment to halving the number of people living under one dollar a day by 2015; accessed January 30, 2006). To achieve this, how far ICTs will help in decision-support systems? Do ICTs have any role in improving services to citizens? Do ICTs aid in empowering citizens to access information and knowledge? Do ICTs create new divisions between rich and poor or reduce existing socio-economic divides? Do they have any direct role in poverty alleviation or just a luxury that the poor can ill afford? The paper presents that ICTs, if supported with right policies, crosscutting and holistic approaches, will complement and strengthen other multi-sector efforts that are required for poverty alleviation. It is essential to define ICTs, before discussing the issues further.

ICTs broadly cover the set of activities that facilitates capturing, storage, processing, transmission and display of information by electronic means. The Organization for Economic Co-operation and Development (OECD) (2002) defines ICTs sector as a combination of manufacturing and services industries that capture, transmit, display, data and information electronically. This definition makes a useful distinction between manufacturing and service dimensions of ICTs and paves way for understanding multi-dimensionality of ICTs and its applicability to help reduce poverty across various sectors. The service role of ICTs can enhance rural communities opportunities by improving their access to market information and lower transaction costs (for poor farmers and

traders); increase efficiency, competitiveness and market access for developing country firms; enhance ability of developing countries to participate in the global economy and to exploit their comparative advantage in factor costs (particularly skilled labors); health and education. Furthermore, ICTs can promote greater transparency, speed-up decision-making process of governments and thus empower rural communities by expanding use of government services, and reduce risks by widening access to microfinance. However, barriers to access, high costs and minimal human resources often prevent those living in poverty in reaping the benefits. When private and civil sectors work together as partners, benefits of ICTs can be greatly enhanced, returns to the community improved and profits increased.

## **FACTORS PREVENTING RURAL COMMUNITIES TO REAP BENEFITS FROM ICTs**

### **(i) LACK OF AWARENESS ABOUT BENEFITS OF ICTs**

Growing pop people who own a computer and have Internet access, most people in developing countries have little opportunity to connect to the Internet. They are unaware of socio-economic benefits and stimulus to good governance that ICTs can bring. The quasi-absence of demonstration projects in some countries, very limited information is available to assess and to advocate the impact of ICTs for development.

### **(ii) LACK OF ACCESS FACILITIES**

The access facilities mainly comprise computers and connectivity in rural areas. The Internet and computer are expensive to be accessible to ordinary citizens. It is often available only in urban centers, where most Internet Service Providers (ISPs) have their market.

### **(iii) LANGUAGE BARRIERS IN USING THE INTERNET**

These prevent people from familiarizing themselves with benefits of Internet based information resources that invariably require an ability to understand international languages, especially English. As a result, most people in developing countries cannot read and understand most of the Internet content. Another factor is high illiteracy rate among rural people. In India, adult literacy rate is about 58.8% and female literacy rate is about 47.3%. There are 18 languages officially recognized, each having a different character set. About 66% of Indians speak Hindi and less than 5% of Indian population understands English. Realizing the need to overcome language barrier and offer IT to the masses in their own language, the government initiated a Language Technology Mission to make available these software tools and fonts in the public domain.

### **(iv) LACK OF LOCAL LANGUAGE INFORMATION PRODUCTS**

Lack of suitable information products tailored to the needs and assimilation capacities of rural people in developing countries. In order to better adjust their investment decisions people need updated information on market prices, new agricultural technologies and methods to raise quality of their products, adapt to changing climatic conditions or demands of agricultural markets.

## **(v) NON-AVAILABILITY OF GOVERNMENT INFORMATION THROUGH ONLINE**

Most countries do not have pro-poor ICT policies (e-governance and rural commerce) and plans to reorient relevant government institutes as electronic service providers to boost rural development.

## **(vi) LACK OF MOTIVATION TO USE INFORMATION OVER THE INTERNET**

In spite of connectivity, people will not use ICTs unless they are motivated to do so. Community ownership of access facilities and availability of facilitator are key factors to induce motivation.

## **INDIA IN THE CONTEXT**

India is emerging as a testing ground for new technologies and business models that aim to narrow the digital divide. Limitations in electricity, telephony, Internet connectivity and other kinds of basic infrastructure in India's rural areas are a key challenge for a number of development organizations (Rao, 2002). The corporate sector too is discovering that bridging this digital divide could translate into new market opportunities (Ribeiro, 2002). A number of innovative experiments already under way indicate that achieving global digital access and jump starting development may not be as difficult as many think. There are more than fifty grassroots projects in India that are using modern ICTs for the benefit of urban and rural citizens. In the long run, rural ICTs projects could prove to be the most effective means of driving changes in rural areas: (i) *Socially*: by ensuring equal access for less privileged groups; (ii) *Economically*: by creating new kinds of work and financial transactions; and (iii) *Politically*: by improving the quality, speed and sensitivity of state apparatus to the needs of local citizens. The success of a rural networking initiative depends on how far it progresses down the stages of IT and information diffusion: initiation, adoption, adaptation, acceptance, regulation and infusion.

## **ICTs IN ECONOMIC INTERVENTIONS/ENTREPRENEURSHIP**

ICTs play an important role in direct poverty alleviation by enhancing activities of poor and increasing their productivity by way of new credit and financial services, new opportunities to design, manufacture and market products through the Internet or intranet systems, etc. These interventions can be successful only when accompanied with other supporting infrastructure consisting of access roads, storage facilities, competitive markets and opportunities to global market. The impact of select projects demonstrates various levels of reducing poverty. Farmers with expert knowledge by innovatively leveraging IT. It regards poverty, farming and rural livelihoods as interrelated issues. It provides farmers real time access to customized knowledge on specifically designed Web sites in their own languages and helping them align farm output to market demands and secure better quality, productivity and improved price recovery by eliminating middlemen. It has enabled over 3.5 million farmers to lift themselves out of poverty through 5,250 e-choupals in 31,000 villages in 6 states of India. The empirical analysis of the impact of e-choupal shows that income from farming and support services rose by over 38% since 2000 and from

farming alone rose by about 10% in 2004. Over the next decade, it plans cover 100,00 villages, representing 1/6 of India's villages to create more than 10 million e-farmers. The model has also generated various employment opportunities in central and northern India for rural educated youths (Ramachandran, 2005; Raturi & Shukla, 2005)

## **ICTs IN HEALTH PROGRAMMES**

There are many successful initiatives to demonstrate the role of ICTs to promote health of the poor and preventing poverty that originate from poor health by way of providing superior medical advice, diagnosis or knowledge in their locality. To enable Government-run Primary Health Centres (PHCs) that serve medical needs of the rural population, George Foundation in 2000 co-managed Bagalur PHC comprising of 80,000 people in Tamil Nadu by deploying a computer software Early Detection & Prevention System 2000 that consists of a database of disease characteristics and conditions, and the logic to diagnose symptoms. It facilitates early detection of diseases and nutritional deficiencies among rural population. The foundation started its own Baldev Medical & Community Centre, to demonstrate how healthcare, health education and many essential rural community services can be delivered in a cost-effective way within a private model, serving a rural population of over 15,000 in 17 villages.

## **BOTTLENECKS AND SOLUTIONS**

The basic requirements for successful implementation of rural ICTs initiatives are electricity, hardware, appropriate software, telephony, network connectivity and policy guidelines. The electrical supply in many rural areas will be restricted to only 6 or 8 hours with varying voltage and frequency that are far outside the acceptable limits of hardware. Often grounding is not available. For most rural ICTs projects, battery back-ups, universal power supplies, solar power panels, circuit breakers and voltage stabilizers are necessary. Several hardware innovations are emerging in the country to function for 4 hours and more without recharging. On the hardware front, PCs remain expensive, fragile, quickly obsolete, English-centric and complex in operation. Many villages lack landline telephones still. If they are available, they often go down for weeks at a time and may involve various kinds of incompatibilities that prevent data transfer. A wireless CB-radio-type system for relatively slow data transfers using fax protocols (used in Information Village Research), VSATs that connected directly to communications satellites (used in TARAhaat) and telephone access in proximity to optical-fiber cable routes (used in Gyandoot project) may be chosen as alternative means. The Internet subscriptions do not always cover rural areas and connectivity will be achieved by making long distance calls to nearby cities. This results in slow and unreliable access.

## **3. CONCLUSION**

Creating information-rich societies is a key element of poverty alleviation and sustainable development. To empower poor people and to reduce digital divide. ICTs projects should be developed in local language prioritizing local needs and content; It is a solution provides low cost to poor people .To support local and public access points as in rural areas where divide is the widest. A national agenda on a C-8 thrust towards: Connectivity provision, Content creation,

Capacity augmentation, Core technologies' creation and exploitation, Cost reduction, Competence building, Community participation and Commitment to deprived and disadvantaged would definitely help in meeting the socio-economic benefits of rural communities.

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