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Application of ICT in Rural Development

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ABSTRACT

Rural Development which is concerned with economic growth and social justice, improvement in the living standard of the rural people by providing adequate and quality social services and minimum basic needs becomes essential. The present strategy of rural development mainly focuses on poverty alleviation, better livelihood opportunities, provision of basic amenities and infrastructure facilities through innovative programmes of wage and self-employment. ICT is the new tool for rural development. Information and Communication Technology, if used properly can be of great advantage for the development at grass root levels. At the same time challenge remains with the administration to capture the minds of the rural masses, mostly illiterate, to make them adapt the new technology which is completely alien to them. There are various rural development schemes run by the government of India and also organizations are present to look after the implementations of these programmes.

1. INTRODUCTION

ICT can be interpreted broadly as "technologies that facilitate communication and the processing and transmission of information by electronic means." ICT promises a fundamental change in all aspects of our lives, including knowledge dissemination, social interaction, economic and business practices, political engagement, media, education, health, leisure and entertainment.

In India ICT applications such as Warana, Dristee, Sari, Sks, E-Chaupal, Cybermohalla, Bhoomi, E-Mitra, Deesha, Star, Setu, Friends, E-Seva, Lokmitra, E-Post, Gramdoot, Dyandoot, Tarahaat, Dhan, Akshaya, Honeybee, Praja are in functioning for rural development.

ICT & GOVERNANCE

ICT is an integral part of development strategies of both developing and developed countries. It has great potential to bring in the desired social transformations by enhancing access to people, services, information and other technologies (Dutton et al., 2004). ICT applications can enhance poor people's opportunities by improving their access to markets, health, and education. Furthermore, ICT can empower the poor by expanding the use of government services, and reduce risks by widening access to micro finance (Cecchini and Scott, 2003). The uses of ICT for development are actively promoted, for economic development, job- creation, rural development and poverty-alleviation.

By adopting ICT in mid 1990s, public sector underwent a major transformation (Bellamy and

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Vol-22-Issue-10-November-2019

Taylor, 1998).

Application of ICT in processes of governance can be considered in two categories *viz.* for improving government processes and secondly for building interaction with and within civil society. The examples of the former category are: dissemination of public information grievance redressal mechanisms, utility payments and billing services (Mitra and Gupta, 2003). This intervention of ICT in public domain, managed by Government, is referred as e-Government. Secondly, ICT improves civil society participation in the governing process, which is also referred as e-Governance. e-Governance has a greater scope and connotation than e-Government, even though ordinarily the terms are used interchangeably (Andersen and Henriksen, 2006; Sahu, 2004). e-Governance permits new ways of participation of citizens and communities for debating (Taylor and Williams, 1994 ;Rogers and Shukla, 2001; Gupta et al., 2004; Heeks, 2004). Such interactions facilitate provision of accurate information about social problems and their possible solutions. It empowers communities to determine their own future by developing self-efficacy and collective efficacy. Indeed if Good Governance leading to Development is the goal of governance, then e- Governance serves as a means to attain this goal.

E-GOVERNANCE FOR RURAL DEVELOPMENT

Rural e-Governance can provide timely information to the citizens and have the potential to spawn innovative means of wealth generation in rural context (Singh, 2004, Malhotra et al., 2006). ICT can improve living standards in remote and rural areas by providing important commercial, social and educational benefits (Share, 1993; Madden et al., 1997). Electronic service centres have a pivotal role to play, especially in reaching out to the marginalized sections living in remote areas (Singh, 2000). A study by Wilson (2000) concludes that in a developing economy like India, ICT has development applications in education, governance, environmental monitoring, health, human rights promotion, economic growth and other areas. An earlier research confirms that transaction costs have substantially reduced by adopting automated supply chain management models for selling agriculture produce (Annamalai and Rao, 2003). Other studies show that e-government projects are successful in rural India as it acts as an intermediary between government and recipients, while pursuing commercially sustainable objectives (see for instance, Kaushik and Singh, 2004).

However, given the high incidence of poverty in rural India, e-Governance implementation to cover 135 million rural poor is an increasingly complex process. Jhunjhunwala, et al. (2006) states that success stories of e-Governance in rural India are isolated cases, and says that "sum total of the Indian experience in terms of two important parameters *viz.* villages connected and lives transformed are yet too minimal". Although there are more than fifty grassroots' projects currently using modern ICT for development in India, Keniston (2002) despairingly notes that since no systematic study or evaluation has been conducted on ICT based projects so "opportunities to learn the diverse creative Indian experience so far remain almost entirely wasted". Investigation undertaken by Cecchini (2004) of an e-Governance initiative Gyandoot*, shows that though it is supposedly popular, its usage is still low and that it is not effective for the poorest of poor in the rural regions. With reference to villages of south- India, Kanungo (2004a) points out issues like "how do we build effective Information Systems that are premised on emancipation in a rural setting (of southern villages of India)…" Existing e-Governance models are more technology centric, which have been aped from west (Jauhari,

ISSN:0971-1260

Vol-22-Issue-10-November-2019

2004) and thus do not completely assure rural development in context of developing countries like India (Bhatnagar and Schware, 2000).

Such observations for ICT interventions in the rural context are generally true for other developing countries too. Emerging studies show that many of the claims that are being made about the potential of ICT for development are not supported, and point to the possible counter-productive effects of the use of ICT (Gomez et al., 1999). The study by Wilson (2000) underscores that a purely technology centric some of the good governance initiatives for poverty alleviation have not translated into social good due to slack institutional mechanisms. Wolfram (2004) suggests that to resolve the rampant "institutional disequilibria" there is a need to supply globally competitive products emerging from traditional knowledge of the region. Annamalai and Rao (2003) bring out that there are several gaps associated with deployment of the information village projects where the larger goals of empowerment, dignity and "preservation of traditional technologies" are not considered. In view of such limitations, it is important to propose some alternative approaches to rural e-Governance projects.

ICT AVAILABILITY FOR RURAL APPLICATIONS

Computers have become more powerful, user friendly and less expensive. ThePC revolution has brought them closer to the users to the extent that in number cases users have designed and developed their own applications. However, till recently, it has not become easy to create local content and regional language interfaces, to facilitate their use in villages. In addition, although the hardware costs are coming down, the total cost of ownership for rural applications is quite high. The costs of the minimum required gadgets like PC, Modem, Power stabilizer, and Printer along with the license costs of software (OS, Database, and Application as applicable) does not justify their use for offering government related information services, just on the basis of return-on-investment criterion. These equipments become obsolete too soon, and have high maintenance costs in the rural areas. At the current cost levels, to breakeven, the kiosk operators will have to find alternative revenue generation activities utilizing these equipments. We notice that in many cases such business potential does not exist and even if it existed, the kiosk owners / operators are not trained to develop new solutions.

Several entrepreneurs are attempting to offer inexpensive hardware and software solutions for rural applications. The CorDECT technology by nLogueCommunications12 and the Simputer by PicoPetaSimputers Pvt.Ltd.13 are good examples of such initiatives. These organizations developed the computer and wireless connectivity solutions with indigenous components, software, and open source systems. It is hoped that large scale production of these systems would bring in appropriate cost effective technologies for rural applications. MSSRF based at Chennai is doing pioneering work in designing appropriate technologies for the rural poor14 .

OPPORTUNITIES: THE ACCELERATION OF INFORMATION AND COMMUNICATION TECHNOLOGY

The explosion of information and communication technology (ICT), especially mobile phones, has transformed the development landscape of rural sub-Saharan Africa. By integrating once-

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Vol-22-Issue-10-November-2019

isolated people into economies and polities, mobile phones and their brethren are improving life for rural populations, sometimes dramatically.

The spread of ICTs is broadly associated with economic growth and poverty reduction. One study, based on data from 113 countries over 20 years, found that a one-percent increase in ICT resulted ingrowth in GDP of .03%. For mobile networks, the relationship appears more marked, with one percent growth in mobile networks correlated with a five percent increase in per capita GDP. Conversely, other studies have described a negative correlation between the use of ICTs and the human poverty index; that is, the more pervasive ICT use within a demographic, the lower the poverty rate. While these studies show correlation, not causation, ICTs can be a powerful tool for income generation and empowerment.

ICTs have long fostered rural development, of course, and radio, television, telephone mainlines, and computers and telecentres will continue to play an important role in the future. [Table 1.] These traditional ICTs have not made great gains in sub-Saharan Africa— usage has grown around 3 to 5 percent per year, compared to 60 to 80 percent for internet and mobile phone usage.But some of the traditional ICTs, especially radio and television, have a much deeper penetration than the new ICT technologies. And the virtues of traditional ICTs extend beyond their wide reach: By dint of their their familiarity, ease of use, and accessibility to non-literate populations, they will remain vital to rural African development.

But mobile phones differ in two important respects from other ICTs. First, they are easier for the rural poor to access than many other technologies, which tend to be more expensive and require infrastructure. For instance: Landlines have existed for decades, but only 3% percent of Africans had access to one7 ; in contrast, in the space of five years, mobile telephone subscriptions on the continent shot up from 12 percent to 45 percent.8 It's a similar story throughout the developing world, where most mobile subscribers now live.9 Already, network coverage extends to 80 percent of the global rural population.

Second, mobile technology moves users into the realm of interaction. Once a one-way street for information, ICT today has created the continent's largest transaction channel, enabling users to buy, communicate, connect, organize and broadcast themselves. The more than 5.3 billion mobile subscriptions worldwide11 represent more than 5.3 billion points of contact-- throughout supply chains, between those who provide services and those who receive them, and between citizens and the state. They also imply platforms for entirely new networks.

Interconnectedness holds special promise for the rural poor, long isolated from information and neglected by service providers. With anticipated growth in smartphones and tablet computing, mobile technology itself is changing fast, and adding new dimensions to the ICT development landscape. ICT allows consumers and citizens to articulate their demands, and companies and states to respond with better-targeted services. This exponential growth in feedback will foster better data collection, more accountability on the part of service providers, and a smoother marketplace. From agriculture to education, banking to health, ICT has enormous potential to improve access and quality and to decrease costs.

SCOPE OF ICT IN RURAL DEVELOPMENT

ISSN:0971-1260

Vol-22-Issue-10-November-2019

Recent developments in Information and Communication Technology (ICT) have introduced a plethora of opportunities for development in every conceivable area. ICT as an enabler has broken all bounds of cost, distance and time. The fusion of computing and communications, especially

through the internet has reduced the world indeed into global village creating new actors and new environments. One of the major components and driving force of rural development is communication. Conventionally, communication includes electronic media, human communication & now information technology (IT). All forms of communications have dominated the development scene in which its persuasive role has been most dominant within the democratic political frame work of the country. Persuasive communication for rural development has been given highest priority for bringing about desirable social and behavioral change among the most vulnerable rural poor and women. Initially, the approach lacked gender sensitivity and empathy of the communicators and development agents who came from urban elite homes. Added to these constraints is political will that still influences the pace and progress of rural development. Technological changes further compounded the direction of rural development as information and communication technology (ICT) has been thought by communication and development workers as a panacea for other ills that obstructs the development process. It has lead to indiscriminate applications and use of ICT in every aspect of information dissemination, management & governance of development. While there are few shining examples of achievements of ICT in development, there are a large number of failures and unauthenticated claims. The closing decade of twentieth century was the opening of historic information and communication technology interventions for development. This period has witnessed enormous and unprecedented changes in every aspect of communications technologies policies, infrastructure development and services. The ICT boom in India has already started changing the lives of Indian masses. The role of ICT in Rural Development must be viewed in this changing scenario.

EXPECTED ROLE OF ICT IN RURAL DEVELOPMENT

Since the dawn of independence, concerted efforts have been made to ameliorate the living standard of rural masses. So, rural development is an integrated concept of growth, and poverty elimination has been of paramount concern in all the five year plans. Rural Development (RD) programmes comprise of following: Provision of basic infrastructure facilities in the rural areas e.g. schools, health facilities, roads, drinking water, electrification etc. Improving agricultural productivity in the rural areas. Provision of social services like health and education for socio-economic development. Implementing schemes for the promotion of rural industry increasing agriculture productivity, providing rural employment etc. Assistance to individual families and Self Help Groups (SHG) living below poverty line by providing productive resources through credit and subsidy. Communication has been seen by a large number of development planners as a panacea for solving major social evils and problems. Apart from development, the introduction of communication in the educational process for open and distance learning is seen as step towards improving the quality of education and bridging the social and educational gap. ICT can be used towards betterment of education, agriculture, social awareness and health and hygiene.

2. CONCLUSION

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Vol-22-Issue-10-November-2019

The use of ICT tools help in strengthening social networks, empowerment and participation, as well as fostering productive processes at the local level through the provision of employment and skills, as well as support services for micro-enterprise activities. In rural communities of developing countries, with limited capacities and resources to respond to the effects of extreme natural hazards, drought, landslides, floods, and to the impacts of these events on local social systems (e.g. health, infrastructure, transportation, migration), ICT tools (the potential of telecentres for disaster preparedness and response) are emerging as an area of increasing interest.

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