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Research Article

ANTICIPATING ALTERNATIVE DEVELOPMENT THROUGH MULTIMEDIA TECHNOLOGIES: PERSPECTIVES FROM RURAL INDIA

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ABSTRACT

Alternative models of development have tended to opt for the antithesis of the orthodox development approach, and globalization has become the new word for mainstream development. Paper emphasizes how quality information through multimedia source can play a key role in de-alienating of people, empowering of people through participatory democracy and thus transforming rural India and ultimately in enhancing the equitable development of India at large. Though infrastructural and allied limitations in rural India are key challenges, but believing in the strengths of 'New Rural Paradigm' one can derive the ways in which multimedia technologies can also play a crucial role in integrating the various sectoral policies at regional and local levels and to improve co-ordination of sectoral policies at the central government level in India. Thus, there is a need to enhance the effectiveness of ICT in rural development and in overcoming the myth about inaccessibility of rural population to planning and governance.

INTRODUCTION

Background

It is true that technological innovation is essential for human progress. People all over the world have high hopes that the new technologies will lead to better quality of life in terms of greater social freedom, increased knowledge and livelihoods that are more productive. Today's technological transformations are thus interwined with globalization and creating a new paradigm: the network age. These transformations expand opportunities and increase the social and economic rewards of creating and using technology. They are also altering how-and by whom- technology is created and owned, and how it is made accessible and used. Thus, technological innovations are affecting human development by enhancing human capabilities for better living standards and political participation in the social, economic and political life of community. According to Human Development Report (2001), this new terrain requires shift in public policy to harness today's technological transformations as a tool for human development.

However there is, at the same time, a great fear of the unknown. Many people fear that these technologies may be of little use to the developing world- or that they might actually widen the already savage inequality between North and South, rich and poor. Without innovative public policy, these technologies could become a source of exclusion, not a tool of progress. Within this framework, the ultimate significance of the network age is that it can empower people by enabling them to use and contribute to the world's collective knowledge. Moreover, the great challenge of the new century is to ensure that the entire human race is so empowered - not just a lucky few.

Although we are emphasizing upon technological innovation but we cannot negate the relevance of quality information. It is a bedrock pillar of nation's development and its effective use can make progress qualitative. At this juncture, the multimedia source (the sign of technology and information) like - Traditional Channels (News paper, Radio, Telephone, Rural Libraries, Agriculture extension activities), Application Software packages (Database Applications, Web-based Applications, GIS Applications, Videoconferencing System), Local Area Network and Wide Area Network (Internet) plays a vital role in spreading quality information. Thus, intervention through 'multimedia to the doorstep of rural masses can bridge the digital gaps in the developing and developed societies or rural and urban societies and facilitate growth and prosperity of any nation, region and community (V. M. Rao; 2004).

Putting the above discussion in the framework of developing country like India, we find that transforming rural India is a challenge that should focus the best of Indian minds - it is perhaps the single biggest barrier to making India a developed

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country. Initially the government efforts for rural development could not make a revolutionary change in rural India therefore the Indian villages need disruptive innovations to make the giant leap forward. Limitations in basic infrastructure especially, quality information in India's rural areas are a key challenge for a number of community projects. On the contrary, India is also emerging as a testing ground for new technologies and business models, which aim to narrow the digital divide between urban and rural people in developing economies. Regarding the figures of 'Technological Achievement', Human Development Report - 2001 ranks India at 63 and falls in the category of "dynamic adopters" (against leaders, potential leaders, marginalized). In the field of "Diffusion of technology (Agriculture and manufacturing)" its HDI rank is 115 (Ist Norway) and is located in 'Medium Human Development' category. Regarding Diffusion of Technology (information and communication) it ranks 115 and in 'Medium Human Development category' (UNDP-2001; 48).Unfortunately, the constraints regarding the efficacy of multimedia (information technology) in Indian scenario are far from satisfactory level. PC penetration is 0.58 per cent (Asia is at 3.31 per cent and world average is at 8.42 per cent). Despite the ongoing deregulation of India's telecommunications sector, its national tele-density is one of the lowest in the world, improving slowly from 0.06 per cent in 1990 to almost 3 per cent today. India's new telecom policy seeks to increase telephone penetration to 7 per cent by 2005 and 15 per cent by the year 2010. It encourages development of telecom in rural areas to increase tele-density from the current level of 0.4 per cent to 4 per cent by the year 2010 (http://www.trai.gov.2004). Thus, in terms of technological adaptability, rural India is construed as an example of the worst performer in development. Resources and technologies in it remain confined to the selective State and prosperous regions leaving the less endowed unharnessed. Prosperity lacks horizontal dispersal and downward percolation. Uneven growth in rural India is also due to distinctive social stratification, production relations and power structure.

Thus there is a need for harnessing the tools of the Space Age for Rural Transformation and here the Information and Communication Technology (ICT) has started opening new opportunities for communication between groups and individuals within villages. "The concept of 'Virtual Academy' has started acting as a bridge between experts and the rural communities by providing four kinds of linkages: - Lab to Lab which involve organizing a consortium of scientific institutions and data providers; Lab to Land involves symbiotic linkages between the providers of information and the users, so that the information disseminated is relevant to the life and work of rural families; Land to Lab i.e. the technical experts should not only provide but also learn traditional knowledge and experiences and take steps to conserve dying wisdom; and Land to Land i.e. lateral learning among rural families; such learning has high credibility because the knowledge coming from a fellow farm woman or man would have been subjected to an impact analysis from the point of view of its economic and social relevance to the population" (idrinfo.idrc.ca/ 2004).

Present Work

Since we know that the conditions for effective technological change and knowledge flow are complex involving not only engineering factors but economic and socio-political factors well. Therefore, with the above insights, we should not lose hopes about technological advances in rural India. The paper revolves around the broader issue of shifting accessibility of technology from elite centric to people centric and further to enhance the government-citizen interface through multi-media techniques. In all the paper is a modest attempt: -

1. To advocate 'self-reliant' form of developments including 'bottom-up development' and 'complex decentralization strategies' in a sociological framework. In corollary to the same, the applicability of the dialectical transformational model in the Indian context has been projected as most appropriate model due to its emphasis on inclusion of both tradition and modernity. It is believed that traditional society can in fact be very dynamic, heterogeneous and capable of surviving under modernization process.
2. To emphasize successful experiences through multimedia source in transforming rural India and ultimately in enhancing the equitable development of India at large.
3. The article also attempts to assess the viability and constraints of different multimedia technologies and community projects in terms of their effectiveness, utilization and coverage in rural India. It is hypothesized that enhancing information system will propagate the right to information legislation and it may prove to be a most significant of leverage to hold the government accountable and make rural democracy and development more effective.

Alternative Developmental Approach for transforming rural India

With the growth of post-colonial studies and the indigenization of knowledge, and with reference also to post-structuralist and post-modern social theory, the field of development studies has undergone a significant critique and rethinking. To Toye (1987; 8) the interventionist approach was challenged by the rise of neo-liberalism in the 1980's, a theoretical shift associated with a deepening of internationalization (globalization) and referred to as the 'counter revolution' in development economics. The globalists consider 'too much government' as a systemic fault. Good governance is thus defined as less government (Desai & R.B.Potter, 2000; 113). Thus, there is a strong body of thought, which points to alternative forms of development being necessary if inequality is seriously to be confronted. Uneven development is claimed in part to be a by-product of an orthodox capitalist development process, which places emphasis on rapid and efficient economic growth, privileges the industrial sector and urban areas, and tend to support the foremost left behind. Now calls were made for 'development from below'. Voluntary groups or NGO's were seen as having greater diversity, credibility and creativity than official agencies (like the World Bank, U.N) in producing a 'just development' characterized by equity, democracy and social justice as well as by economic growth (Clark; 1991).

Since, the prospect for a reduction in inequality within orthodox capitalist development would appear to be quiet weak so contemporarily alternative models of development have tended to opt for the antithesis of the orthodox approach. Thus an urban and industrial bias is replaced with an

emphasis on the rural and the agricultural; the top-down directionality and centralized character of development policy is challenged by decentralized, devolved and bottom-up initiatives; small-scale and particularistic development is seen as preferably to large-scale and universalistic approaches; and so on. Initial efforts of 'growth center strategies' were the successful case of the same. Hence it was argued that a self-reliant form of development may ensue which could deliver basic needs, social equality and a solid foundation for future growth and progress. The strategy centered around seemingly contradictory concept such as 'rural urbanization' and 'rural industrialization' with absolute priority being given to agriculture and small scale artisanal activities, rural settlement, labour intensive activities and appropriate technology, local democracy and popular participation in the decision-making process. In corollary to this the notion of 'bottom-up development' goes a stage further by fundamentally challenging the directionality of development decision-making. It argues that, what is required is another antithetical development, which is localized, and contextually rooted, small in scale, flexible, culturally sensitive, democratic and participatory, and which centers on the empowerment of the poor (Michael J.G.Parmwell; 2000,115). According to John Martinussen (1997; 216) the more complex decentralization strategies include the notion about pluralism, competition and choice in the whole set-up for service provision and development work. The basic idea is to let line ministries, local authorities, foreign aid agencies, private companies, trade unions and NGO's work side by side, instead of organizing them all within the framework of a single hierarchy. Citizens should have a multitude of channels through which they can access resources and seek support and favours. They should have a choice. As a corollary, provider of public services and local infrastructure would have to compete with each other.

Rural India, which happens to be a traditional set-up, the above discussed decentralized, devolved and bottom-up initiatives and specifically the complex 'dialectical transformation' fits in the development process. This theory is based on the premise that tradition need not be development impeding or in opposition to development at all. Furthermore, the approach emphasized that traditional societies can in fact be very dynamic, heterogeneous and capable of surviving under a modernization process. To Rudolph & Rudolph (1967) the dialectical transformation model led to the central idea of the traditional and the modern as social phenomena in a dialectical relationship where both the phenomena change in the process and where the result, of necessity, is a hybrid. Thus, the dialectical modernization theory advocates that some traditional institutions may even promote political development by ensuring a smooth transition from old practices to new ones. The theories further emphasize that traditional societies are not necessarily stagnant, but may be very dynamic, heterogeneous and vigorous. Traditional institutions and practices may even be revitalized when confronted with attempts to modernize society. To John Martinussen (1997; 172) the politicization of the Indian caste system- and conversely the castes critical importance for the formal political processes- is often cited in the literature as an example of the so-called dialectical interaction.

Multimedia Aspects and its efficacy in India's rural development: An assessment

We find that global aspects characterize the post-traditional society, by new forms of interdependence. Individuals are linked in local societies to change at the global level and actions are done without personal contacts via the global net of mass media, phone, computer etc. The structure of local communities is thus constructed no longer at the local places, but is constructed organization far away. Thus, today the community networking is an idea that has caught the global imagination. Communities worldwide are creating tele-village, tele-cottages, tele-service centers, community technology skills centers and more. Community networking in the past has involved face-to-face meetings, chance encounters, and various technologies that aided our sharing the newspaper, radio, TV and the telephone. Today, additional means of sharing, in the form of modern telecommunications technology, help us continue to build our communities in even more powerful ways. One of the Castell's (1996) core thesis is that networks, which have shared information at their core, and which result in new social and economic relations, increasingly dominate the world. We thus find that multimedia can play a significant role in managing the local information. It can make it more effective, speedy and extensive.

It is said that technology innovation, technology diffusion and technology acceptance are the pillars of technical promotion and enhancement. In the Indian context the technologies do not reach every villager, not every villager can access technologies, and hence there is limited flow of information among rural community. To make information technologies and electronic communication network more accessible to rural population, to collect and disseminate information beyond national boundaries, more emphasis should be given in the development of information technologies, especially in the remote rural areas. The main rationale for establishing multimedia tele-centre is to enable rural people to have information access for rural development. It includes determining information needs of different communities and designing systems for linking the groups to relevant information and training resources. The approach taken to achieve this broad objective is a modular concept using Multi-media to develop and disseminate Multi-disciplinary information and knowledge from Multiple-sources to Multiple-users with built in user needs assessment and feedback mechanisms. This modular approach may support an evolving; pluralistic knowledge based rural extension system consisting of the following elements:

1. Accelerates the transition process - recognizing the importance of diverse information and knowledge user needs
2. Increasing importance of non-farm activities to supplement farm incomes especially for the emerging small private farmer
3. Evolution of diversified service providers consisting of contractual arrangements, public-private sector partnerships involving NGO's, producer organizations, association of private farmers, water user associations, etc.
4. Creation of a decentralized and localized extension program management and delivery where all forms of media - from traditional to modern will play a role

5. Creation of strong linkages between education, research, and various forms of farming systems and works in coordination with other providers of rural information and knowledge - such as health, education, micro and small enterprise credit, environment, eco-tourism, etc.

In India, a number of innovative experiments already under way indicate that achieving global digital access may not be as difficult as many think. More than fifty grass root projects in India are using modern ICTs for the benefit of urban and rural citizen consumers. To justify the utility of multimedia channels in rural development following initiatives are worth quoting; some of the database applications developed by NIC (Dhingra, Anjali; 2001) for the Ministry of Rural Development includes

1. Financial Release software for various poverty alleviation schemes, besides, Below Poverty Line (BPL) Survey Computerization has been done for various District Rural Development Agencies (DRDAs) in the country.
2. Management Information System (MIS) to process data related to poverty alleviation schemes known by the product name of RuralSoft2000, has also been designed, developed and distributed to all State RDs and NIC State Units
3. Web Sites for Ministry of Rural Development (www.rural.nic.in), Council for Advancement of People's Action and Rural Technology (CAPART) (http://capart.nic.in)
4. Web Sites have also been developed for Rural Development Departments of various States like Gujarat, Uttar Pradesh etc.
5. Programme Status Report (PSR) providing physical and financial status of rural development schemes have been designed and developed for MoRD.
6. *Daily* is a dynamic web based application focusing day-to-day activities and requirements of the Ministry of Rural Development (MoRD) officials like file monitoring, lodging infrastructure related complaints etc.
7. A Geographic Information System (GIS) based analysis has been carried out for some of the watersheds in East District & North District (Sikkim), Raipur, Etah, Udaipur, Salem, and Pune Districts.
8. A cadastral level spatial database has been developed for Tintek block, East District, Sikkim, which has been suitably integrated with attribute data to evolve a Management Information System.
9. Several multimedia applications have been developed to cater to the training and monitoring needs of Rural Development Institutes, which include; Ministry at a Glance, Convergence of Services and Hill Area Development with Specific Reference to Uttarakhand.

Few Successful Case Studies of Multimedia Usage in Rural India

Samadhan Kendras (Soochnalaya Gumtis)

In Madhya Pradesh, a regional network connects 21 rural cyber cafes called *Soochanalayas*. Each *Soochanalaya* provides services to about 10 to 15 Gram Panchayat, 20 to 30 villages, and aggregate population of between 20,000 to 30,000 people. The network covers 5 of 13 Blocks and 3 of 7 Tahsils in the district. *Soochnalayas* are located at Block headquarters, Haat bazaars, villages and bus depot centers.

Bhoomi Project

Bhoomi is the Karnataka government's one of the prestigious e-governance initiatives through which the entire agricultural land records in the State (20 million land records of 6.7 million land owners in 177 taluks of Karnataka) have been digitized. This has been developed with the comprehensive software called "Bhoomi" designed fully in-house by NIC, Bangalore. Either the name of the farmer or the assigned plot number can be used to access information (Tadasad, P G and S Mahesharappa, 2003).

Gyandoot

Gyandoot means 'messenger of information' and is the name of an intranet launched by the Government of India in January 2000 in the tribal dominated Dhar district of the state of Madhya Pradesh. It is a community owned, self-sustainable and a low cost rural project developed to bring the benefits of ICTs to the doorsteps of villagers who are dependent on farming and agricultural industries. It is a unique form of Government to Citizen (G2C) e-commerce activity, wherein the District Panchayat is enabling over half a million rural tribal citizens affordable access to various Government and market-related needs through IT (Asian Vendors, 2001).

Information Village experiment

Swaminathan Research Foundation (MSSRF) launched it in January 1998 in Pondicherry. It acts as a hub or Value Addition Centre (VAC) of a local area network set up over 10 villages, serving a population of about 21,500. The villages act as Village Knowledge Centres (VKC) or 'Information Shops' and are connected by a hybrid wired and wireless network (http://www.mssrf.org)

TARAhaat

TARAhaat means 'star market place'. It is a private sector initiative whose goal is to bring information and marketing services using e-business to rural North India. Development Alternatives in two rural regions launched it in September 2000: Bundelkhand (one of the poorest in Uttar Pradesh) and Bhatinda (one of the richest in Punjab). It acts as a gateway that connects the village user to information, social services, and healthy entertainment and to all kinds of markets, through a network of 20-odd franchised *TARAkendras* or cyber centres, customized in the language of their choice (English, Punjabi and Hindi) (Babu, 2002).

Akashganga

Akashganga (meaning 'the milky way') was launched in 1996 at Anand, Gujarat and implemented by Shree Kamadhenu Electronics Pvt. Ltd, with the objective of using appropriate IT to facilitate the timely collection of milk and thereby generate higher profits for the rural milk producers. *Akashganga* is being used at the Dairy Cooperative Society (DCS) a farmer-owned, grass roots unit in the cooperative structure. The basic milk collection transaction comprises measuring weight of milk with electronic weighing scale; fat testing using Milko Tester; capture of unique member ID by the PC software; and printing of a pay slip with all this data and the amount to be paid.

E-Choupal

ITC's International Business Division, one of India's largest exporters of agricultural commodities, has launched 'e-Choupal', in June 2000 (http://www.itcportal). It serves more than 3.1 million farmers growing a range of crops in over 31,000 villages through 5050 kiosks across six states (Madhya Pradesh, Karnataka, Andhra Pradesh, Uttar Pradesh, Maharashtra and Rajasthan). And it enables the agricultural community access ready information in their local language on the weather & market prices, disseminate knowledge on scientific farm practices & risk management, facilitate the sale of farm inputs (now with embedded knowledge) and purchase farm produce from the farmers' doorsteps (decision making is now information-based).

Viswa Gram

The Viswa Gram project module "e-Gram Panchayat Monitoring System" is for maintaining record of village information of all families' data and issue of necessary certificates to citizens. This module is designed & developed by National Informatics Centre. In 32 villages of Bhavnagar District, the Viswa Gram project is implemented. The Viswa Gram is based on survey form of each individual family of the village, which contains the detailed information of each member of family. This is used to provide many certificates such as Income, Caste, Domicile, Character, and Farmer etc. to citizens. Also, the database of property of each family is maintained to provide necessary certificate and to use in panchayat tax collection property wise. Birth, Death & BPL Beneficiaries data is also maintained to provide respective certificates.

Barriers in implementation

Most of the Indian villages are deprived of communication facilities. Among numerous other problems are specified political conditions and rigid or ineffective bureaucracies, high rate of illiteracy, social discrimination and others. However, with the advent of global information society, new communication technologies are increasingly being adopted as effective tool for reaching rural audiences. Yet the benefits of the information revolution are still much debated, particularly, in the case of developing countries like India. There is serious concern that the gap between the information "have's and have not's" will continue to grow unless the developing countries acquire the infrastructure and resources to access these new technologies. The situation is more serious for remote rural communities where basic communication infrastructures such as newspaper, television, radio and telephone is lacking. If the benefits of new technologies are to reach rural areas in developing countries, it is essential to disseminate information in local languages with simplified version and ensure that it is relevant to local development needs. Thus, it appears that a complete system is required for technology transfer; this system must accommodate the movement from a physical transaction to indigenous technological endowment to technology adoption and development in a specific setting.

CONCLUSION

Attaining equitable and democratic development in developing nations is an urgent need and it should be envisaged people friendly with practical devolution strategy. For rural India specific there is a need of disruptive innovations to make the giant leap forward and in this context, harnessing the tools of the Space Age is needed for rural transformation through quality ICT/multimedia. The need of the hour is to embrace both 'lab to land' and 'land to lab' methods for indigenous knowledge management and which has been debated here as a strategy for making 'vibrant villages' in rural India. Here the intervention through multimedia can be made successful by retaining the taste of traditionality i.e. the hybrid of tradition and modernity in the development process. The successful database applications developed by NIC and other rural multimedia projects like E-choupal, Taarahat, Gyandoot, Akashganga, Viswa Gram, bhoomi project etc. are few attempts in this direction to boost up the future transformation of rural India. Ultimately, there is also an increasing need to create summative local resources accessible anytime via Internet to keep rural citizens current on the local status of surroundings and other threats to health, safety, economy, pursuit of life, liberty and happiness to bring improvement in quality of life of rural India in particular and rest of India in general. This may lead to changes in indigenous technological capabilities, change in socio-cultural lifestyle, change in one's economy and polity, change in 'intra' and 'inter' linkage with wider implications.

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