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ROLE OF INFORMATION TECHNOLOGY IN THE PROGRESS OF RURAL INDIA

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ABSTRACT: Information is power and power is information. Without information there can be no growth. Now information is penetrating into rural India as well, because without its presence there, we cannot think about development of the entire country. Information Technology is today becoming as important as 'roti, kapra aur makan'(bread cloth and house). In 40s people used to believe in secrecy of information. But in this new millennium, the concept is totally reserved. Now we like to share the information .Information is thus emerging as more and more power. This study examines the evolution of technology which is responsible for wide spread penetration of computer technology in to the social fabric. Primarily the need of efficiency in complex organizations led to greater to greater demand for availability of accurate and timely information. Information technology responds to this challenge. In this paper the analysis highlights, how can information technology (IT) contribute to rural development? What are the channels through which impacts can be realized, and what are the practical means for realizing potential benefits?

KEYWORDS: Information technology, Internet, Information, Rural development.

INTRODUCTION

Well known communication scientist Marshal McLuhan predicted in his pioneering book ***"Medium is the Message"*** that due to information revolution the world would become very small. So small that it will be described as ***"Global Village"***. His prediction is now turning out to be quite true. For the development of our country, we will have to propagate Information Technology (IT) in rural India, because 70 per cent of India's people still reside in the rural areas. Thus, technological advancement is necessary for every part of India.

Rural people are less knowledgeable rather than their city counterparts. This is the ground and due to this they do not have an adequate amount of wherewithal to access information and accommodate their particular needs. The following issues need to be looked into for **Development of rural India:**

- First of all, there is a great need to make a national policy for promoting IT in rural India. National policy may be cooperative in making a strong infrastructure for IT.
- Rural youths are not in a position to learn and get higher education, pre-dominantly computer education.
- Lack of knowledge of English is also a big obstacle.
- Broadband facility is still non-existent for rural people.
- Licensed software is not cost effective. Without heavy funding, we cannot provide facilities of IT to rural India. Even maintenance of hardware and software is not easy and cost effective.

ROLE AND APPLICATION OF INFORMATION TECHNOLOGY IN RURAL DEVELOPMENT

Information technology raises productivity, quality and efficiency. Hence forth it provides competitive advantages in domestic market as well as in the international market. It has the capacity to transform the international social structure. It's also changes the complexion of existing Employment opportunities by substituting the unskilled and skilled work force with skilled and trained IT professionals. The real benefits of IT lie in its rapid diffusion in the government organizations, in different sectors which are discussed here one by one.

IN RURAL FINANCE

The role and application of Information Technology has expanded tremendously during the last decade in rural finance. It has contributed to faster cheque clearance in the banking systems, better book keeping and improved customer services. Increased automation transaction through ATMs in even small cities and villages. The fund movement has been made much faster through the setting up BANKNET in smaller cities and villages of India. As through further connectivity of banks with SWIFT Networks for international fund transfer. Such connections are critical for international banking and trade and hence adversely affect the balance of payments The latest entry is introduction of Electronic Data

Interchange (EDI) in the country for keeping the Indian trade competitive and at par with the international trade direction of paperless document. Appropriate gateways have been provided to connect with international networks for facilitating EDI on an international basis.

IN LIC

The Life Insurance Corporation and general Insurance Corporation even at rural level have both been benefited tremendously through the use of IT. Bombay Stock Exchange and National Stock Exchange have already been computerized and other smaller exchanges are also at various stages of mechanization.

IN AGRO-BUSINESS

Computer and other information technologies can be used to a greatextent in proper distribution of seeds, grains form and to the markets, price monitoring and fertilizer distribution throughout the country aresome of the areas where computer based information systems have beenfully implemented. These systems are fairly complex in nature usingoptimization techniques and takingadvantage of nationwide computercommunication networks.Large irrigation projects which are critical todevelopment in agriculture sector are being closely monitored on anonline basis through the use of IT.

IN INDUSTRIES

Industries in India have highly from the use of InformationTechnology through Appropriate Automation Programmes. Prominentamong these industries are steel, heavy electrical, locomotives, Textiles,Paper and Pulp, Process, Control etc.The application have gone far beyondinventory management and control.Complete production planningand control systems have been implemented in large number ofindustries.The systems have been integrated within particular industry aswell connected across diverse geographic locations throughout the countryusing computercommunication networks.Computer Aided Design techniqueshave been used along with graphics and other modelling tools inmany of the industries concerns. The requirements of process controltools are used alongwith appropriate computer communication networksnumerous industries in at the areas of miming, control and instrumentation, machine tools now have been embedded IT systems without which the industries cannot function. IT has thus directly contributed to increasedindustrial production.

For both government and private provision, one of its main direct benefits is in increasing efficiency by economizing on resource use in the operations of firms as well as in market transactions. Information that would otherwise be conveyed through face-tofacecontact, post, courier, print delivery, telegraph or telephone may instead be communicated in digital electronic form via the Internet. Efficiency gains from Internet use are not automatic: the telephone, in particular, is an efficient means of communication for many types of information. IT also requires new investment, so thebenefits of trips, time and paper saved must be weighed against the costs of installing andmaintaining the new infrastructure. Efficiency benefits of IT are not restricted to thecommunication itself. IT can improve the efficiency of the telephone network, and it canmake it possible to track and analyse communications. Word processing, maintainingaccounts, inventory management, and other such activities that may not require long distancecommunications are also made more efficient by IT.

Various Rural-IT initiativeshelp in rural development

Drishtee

Drishtee.com had its origins in **Gyandoot**, a government project in Dhar rural (backward) district ofMadhya Pradesh, in central India. Gyandoot provided an intranet for 33 village'sinformation kiosks, offering a range of mainly e-governance-related services. The mostprominent of these, is land record certificates, which are needed by landowners fortransactions such as sale or leasing of land. While Gyandoot was a specific localinitiative, involving heavy support from the District Collector, Drishtee has attempted to take that model and rapidly replicate it across the country. Currently, Drishtee has over100 rural Internet kiosks in several states, run by franchisees according to a revenuesharing arrangement. In Drishtee's case, a kiosk has, at least initially; just one computer. The set-up cost is in the range of Rs. 50,000.

Drishtee is a commercial organization, with specific social objectives of targetingbenefits to the rural poor built into its vision and strategy. This tension betweencommercial success and meeting social objectives is a general challenge for all the ruralIT initiatives examined here. Despite some challenges, Drishtee appears to have built acapable but lean organization, with learning having been systematized in a manner thatmakes it transferable across locations, permitting more effective scaling up.

Drishtee has emerged as a typical start-up. Without very substantial financial resources, it has still managed to expand, and it has built an organization with strong competencies in what may be broadly termed '**rural IT-based service delivery**.'

Aksh
Aksh is essentially a fiber optic cable company, with its core competence in layingand maintaining cable. Its revenue model is driven by the content and data that can bedelivered over this cable. Therefore it has an interest in increasing such content delivery.While urban areas in India have seen substantial penetration of cable TV, through amodel (now in transition) of largely unregulated local operators, the rural market remains largely unserved. The bottleneck has been the lack of last mile infrastructure, since thereis a significant percentage of rural households (especially in richer districts) that canafford cable TV. Aksh, along with other companies such as Reliance, has receivedlicenses for laying a new fibre optic network in rural areas.

n-Logue
The main impetus for n-Logue came from the IITChennai research group headed by Professor Ashok Jhunjhunwala. This group has beenresponsible for a stream of hardware and software innovations that enable rural IT-basedservice delivery, through connectivity and applications.

Furthermore, n-Logue hasprogressed well beyond being simply a connectivity provider, to delivering a range ofservices – these can be adapted to different connectivity technologies. N-Logue is thesecond largest organization in this field, supporting over 500 rural-IT kiosks.

The WLL technology does provide several strengths. It overcomes lack of dial-upconnectivity, and provides an extra revenue stream for kiosk operators, through voicecalls. Furthermore, it has greater bandwidth than traditional fixed line dial-up, whichallows a wide range of applications to be delivered. In particular, the IIT Chennai grouphas been able to develop video applications that are sufficiently compressed to workwithin the constraints of the WLL.

ITC
ITC stands out as a large Indian corporation serving global markets. Its kiosks arecalled ***e-choupals***, and they have several differentiating features. The key distinguishingfactor is that the e-choupals are totally designed to support ITC's agricultural productssupply chain. In addition, the e-choupals are totally owned and set up by ITC, with theoperators not having any investment or risk of their own. Furthermore, e-choupal operators are, because of the focus, always substantial farmers, and therefore alwaysmale. These entire features make the e-choupals different from the previous three initiatives. There are four kinds of e-choupals, tailored very specifically for four different products shrimp, coffee, wheat and soybeans. The first two of these involve large commercialfarmers, and the focus is on creating Internet access to global market information to guideproduction and supply decisions. There are a few dozen of these e-choupals. In the case ofwheat and soybeans, there are many small farmers of rural india, and over 2,000 e-choupals have beenset up, in several states of India.

TARAhaat
TARAhaat has evolved in a somewhat unusual manner. It achieved wellpublicizedsuccess with Internet kiosks in **Bundelkhand, the dry (under developed) area** in India. These kioskswere very much along the lines of those implemented by Drishtee and n-Logue, with amix of e-governance services, market price information, and so on. TARAhaat's longrangeplans include a comprehensive portal for rural information services and anextended vision of its **'TARAkendras'** as community centres.

There were also problems with establishing effective partnerships with local and state government, and TARAhaat has mostly gone it alone. TARAhaat does have an educational content partner, called TARAgyan. Inassociation with various partners, TARAgyan is developing local language content andsoftware for use in TARAkendras. Basic IT education is an important part of TARAgyan's actual and potential offerings, but it is not the exclusive focus. In fact, there has been a substantial diversification into developing materials for English languageinstruction, rural marketing, personality development, and so on. This development wasinitially very slow, though it may be picking up steam.

Other than these, many states of India have implemented **E-governance projects**. Decentralisation of power through IT is a common phenomenon there. Computerisation and installation of knowledge kiosks are in full swing. People, as well as local leaders are aware about the importance of IT and are using its tools.
In addition **computerisation of rural information system projects (CRISP)** in Gujrat was launched by the government of India to test the feasibility of computerization of DRDA's for an effective implementation of IRDP. A case study conducted by Sshirin Mdon on CRISP shows that the introduction of microcomputers resulted in more empowerments among rural administrations. On the other hand ICAR has proposed a plan to modernize its agricultural research information systems (ARIS) with the help of NITs. For example, the VSATs, LAN, WAN are being installed and linked to its research institutions At the same time Karnataka state agricultural Marketing Board (KSAMB) has initiated activities to build a marketing information

system, "AGRI MARET" by using INTERNET for providing domestic and global market information and agricultural commodities to farmers.

POSITION OF INTERNET USER AND IT'S SPEED IN DIFFERENT COUNTRIES TABLE'S REGARDING INTERNET USERS AND SPEED IN THE BEST POSITION OF EUROPIAN COUNTRIES FOUND ARE AS FOLLOWS-

TABLE-1

TOP FIVE COUNTRIES IN WORLD		
S.NO.	**COUNTRY**	**INTERNET USERS (IN CR'S)**
1	CHINA	45.62
2	AMERICA	24.35
3	JAPAN	10.2
4	INDIA	6.52
5	BRAZIL	4.32

SOURCE- PENDO NETWORKS AMERICA JAN-JUN 2011

TABLE- 2

HIGHEST SPEED COUNTRY (TOP TEN)		
S.NO.	**COUNTRY**	**DOWNLOAD SPEED**
1	SOUTH KORIA	2202
2	ROMANIA	1909
3	BULGARIA	1611
4	LITHUANIA	1483
5	LATBIA	1377
6	JAPAN	1348
7	SWEDAN	1234
8	UKREN	1190
9	DENMARK	1020
10	HONGKONG	992

SOURCE- PENDO NETWORKS AMERICA JAN-JUN 2011

It is well known that 70% population of India live in villages. In the comparison of the countries India stands on 4th position in the internet users by which they aware about various domestic and global information. The average download speed of world is 580 kbps (kilo byte per second) where as in India, it is only 184kbps. European countries are in well positions as compare to the rest of the world on the basis of download speed. In the context of download speed South Korea and Sweden leads other countries where as in the context of internet user's countries like china, America and India continuously increasing the use of internet to get relevant and authentic information for rural and urban developments. Various levels of download speed has shown on Table -2.

Suggestions

Though many NGOs are working in rural India to minimise the present pathetic situation, complete accomplishment is still a dream. In this connection, one thing is positive that people are now realising the importance of spreading IT in rural India. As we know, IT is not confined to a definition. It incorporates many things in itself. Besides news, entertainment and personal communication, educational material and other kind of verbal and non-verbal electronic information also comes under its category.

If we are speaking about rural development of India, it cannot be comprehensive without development of agriculture. IT may be an effective tool for development of agricultural output. As we know, profit is the principal concern of rural people and maximisation of profit may be possible through the help of IT. Farmers can equip themselves with latest technology and better their profits. In present circumstances, there is an enormous need to know about pesticides, manures, and improved varieties of seeds. There is also a need to know about effective irrigation systems, so that wastage of water can be minimised. Through such type of efforts, rural people can plant and harvest crops successfully. IT may also lend a hand to farmers in purchasing fertilisers, seeds and irrigation equipment's at cheaper prices. They can also sell their products at a profit and get loans from the right places. Through these efforts they can save themselves from money lenders.

At block level an "Agricultural Information Centre" (AIC) should be established for location specific agricultural information to villages. In addition, setting up of small video production centre may be instrumental in training the farmers and extension workers. At the village level, the Information Shop (IS) may be very useful in collecting the location specific crop, soil, weather information from block centres through teleprinters, telephones audio and video cassettes, farm publications etc. it's mostly required to the reliability of information given by the AIC's and I.S. In other hand it's also promptly required that the farmers of the India may be able to take the correct and useful information. They must be made educated and skilled in their field.

Rural healthcare is a prime source of concern, because this is the thrust area through which we can bring revolution in the social structure of rural India. IT related tools are very successful in making linkages between rural hospitals and city hospitals.

Performances of different rural programmes are not as effective as they should be. Due to lack of successful participation at the grass root level, development programmes are not giving desired results. Bottom-up communication is either missing, or is very poor. In fact, there is a lack of participatory development in rural India. Rural people are not in a position to access developmental tools, because they have no computer knowledge. Though through ICT, some NGOs are helping self-help groups, yet some more hard work is also needed here. With the help of banks, these self-help groups are mounting their projects. But progress of self-help groups alone cannot lead to the development of rural areas.

- Development of effective websites to enable rural youths to learn everything at the click of a mouse.
- Regular workshops and multiplicity of training programmes may also support the use of IT as a device for employment.
- NGOs and government agencies should go hand in hand for development of computer literacy programmes. Colleges can adopt villages for their development.
- In the world of internet rural and urban India have needed to increase the download speed of internet for prompt development. GOI should provide the basic infrastructure facilities for increasing the download speed.
- Through Television, All India Radio and films the awareness about local language, computer literacy programs should be delivered to rural peoples. Farmer's problem should be discussed in different channels.
- If the above lacunae are removed by the concerned authorities and related persons in a proper way, then the destiny of rural India will shine brightly.

CONCLUSION

In a nut shell, the circumstances are very miserable. The government should set up information centres in every village with multimedia computers. There is also a need to educate rural youths on the subject of latest tools of information technology, so that they can run information centre in villages properly. These information centres can serve the rural people in multiple ways. Information about market rates, agricultural know-how, and e-marketing will unquestionably benefit the farmers.

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