

# THE ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN RURAL MARKET WITH REFERENCE TO BIHAR

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## ABSTRACT

*This paper attempts to draw attention towards the significance and role of Information and Communication Technology (ICT) in rural market. The present article highlights some of the basic issues, challenges and benefits of ICT in rural market with special reference to Bihar. The paper examines how the rural consumer and the rural market will be benefited by the use of ICT. The development of ICT is broad reaching and has soaring visibility. In spite of this, rural consumers have not been able to get advantage to the extent that urban areas have. ICT has remarkable possibility to increase the flow of information thereby empowering rural consumers. Assessing the information needs of the rural consumers is an essential factor in the milieu of ICT for rural market. To make ICT work for the growth of rural market it needs reasonable, market-driven infrastructure and dedicated efforts at all levels to help deprived and marginalized consumers use the whole range of ICT according to their requirement and demand. The benefits of ICT in rural market should be calculated not only from the economic and financial point of view, but also in terms of the actual benefits it provides to the rural consumers.*

**Keywords:** Applications, Connectivity, Education, Information, Rural Consumer

## INTRODUCTION

Information and Communication Technology (ICT) is defined as any computing and telecommunications hardware, applications software and services in the relevant policy area, specifically telephone, internet or other computer – mediated tools or services. In easy terms ICT is defined as technologies that facilitate communication, processing and transmission of information in the electronic format. The progress of any market mainly depends on the access to information. The Information and Communication Technologies (ICTs) greatly facilitate the flow of information and knowledge by presenting the rural consumers extraordinary opportunities to attain their own entitlements. Institutional advocates of ICTs for development such as the World Bank, suggest that effortlessly available and affluent supplies of information encourage knowledge creation that can stimulate empowerment for

the rural consumers..ICT's are the delivery medium for such information supplier. There is a comprehensible relationship between ICTs and the rural consumer empowerment. Despite ICT's massive potential, the current global information explosion has had surprisingly little impact on development activities and access to practical information for the rural market, rural population and frontline development workers in less developed states. Bihar is one such state rolling within the vicious circle of scarcity and hindrance. Bihar has now started the process of moving from a chiefly agrarian economy to an industrial and service economy. The population of Bihar remains primarily rural where poverty is well-known. In recent years the rural consumer of the state has been empowered considerably to demand a transformed expression of the strategies that they could employ to trim down poverty and get better comfort. The contribution of agriculture in the economy of Bihar is very high and with the use of ICT it can straightforwardly contribute in commercialization and increasing value added services within the sector which ultimately tends to empower the rural market. Access to information is of essential for any development process. The flow of information from and to the rural consumers is a critical prerequisite for the development of the rural market in Bihar. The current development of ICT is contributing in the flow of information and knowledge, beyond the boundary of social and economic status. Earlier farmers living in the rural areas of Bihar had no access to market information and they were always dispossessed by the local middlemen who use to manipulate the prices of agricultural products. However the recent growth of telecommunication service bridged the information gap at a limited scale as the farmers now collect market information from different adjacent areas and get better price of his crops. Bihar is experiencing a very successful model of connecting with the rural consumer through mobile phone service. The early connectivity had so far been established for communication and now the need is to expand services towards dissemination of relevant market based information and thus in turn lead to growth in the business. The ICT revolution is extensive and has high visibility. Despite this, rural consumers have not been able to get benefited to the extent their urban counterparts have. However it has reached certain segment of rural areas. Its use in those segments has added to the phenomenal development in the various domains such as rural markets, creation of employment, growth of small business, improving health care amenities, providing fast transaction and information to the rural farmers and the rural businessmen who have been benefited from it. In Bihar, ICT has begun to make its presence felt in various sectors of the rural areas. It is believed that if rural masses are connected and empowered with information and communication technology, the rural economy would progress with a superior pace. With the opportunities made available by ICT, the days are not far when all the villages in Bihar will have computers and connectivity. These villages will reap the benefits of e governance, e-commerce, tele-medicine, tele-education etc. Each and every office has a specific set of rules, regulations and procedures for its normal functioning. The rules, regulations and procedures determine the effectiveness of the performance of the organisations. Implementation of different ICT project is dependent on the efficiency of the organisation responsible for implementation. In keeping pace with the changing environment, it is desirable that the rules, regulations and procedures of ICT are re-looked and re-engineered at regular intervals. Implementation of many schemes vitally depends on having smoother interface between government and the people. Department of rural development has taken initiatives to re-engineer the business processes from the block level to the state level, particularly for the schemes of rural development. There are certain

significant statistical databases and information, which help the organisation in better strategic planning and market strategy development. In some departments statistical databases have been created which have helped in intensifying the systems of project delivery, particularly in flagship programs. The District Information System on Education (DISE), Health Management Information System (HMIS), etc. is an example of such practices. There is a need to categorize the requirements of such statistical databases in all sectors. Some of these may be accessible through collection of routine statistical data either at state or national level. Collection of supplementary databases needs to be made as a part of the marketing planning exercise.

## **Significance of ICT in the Rural Market**

In Bihar, more than eighty percent of the population lives in villages and they are mostly dependent on the agriculture and agrarian based handicrafts for survival. They do not have access to relevant information because the IT infrastructure has not spread into the villages. A rural consumer need diverse kinds of information such as government rules, regulations, policies and subsidies, daily news, updated information's on pesticides, crops selection, prices of commodities, health and economy etc. With ICT the rural consumer would be able to get rapid access to information about different things such as health, education, business, employment etc. Some of the importance of ICT for rural consumers of Bihar across varied areas is as follows:

### **Market information**

The use of ICT increases access to market information resulting in lower transaction costs for rural consumers and businessmen. ICT can play a vital role in making information available to the farming community at a reasonable price. In Bihar, around eight thousand Primary Agriculture Cooperative Societies (PACS) at Panchayat level, five hundred thirty Vyapar Mandal Sahyog Samiti (VMSS) at block level and the apex level Bihar State Cooperative Union (BISCOMAUN) are supporting the marketing needs of agriculture and allied sectors; twenty District Central Cooperative Banks (DCCBs) and apex level State Cooperative Bank (SCB) with wide network of branches (SCB and DCCBs) are catering to the needs of short term credit requirement of the members. Together they offer immense opportunities for effectively meeting the dual objectives of pre/post- harvest marketing management and credit requirements in the state. At present the cooperative sector has advantages of the huge network, large membership base and capable management structure. An e-Kisan Bhawan has been established in various blocks that functions as single window delivery system for promotion of agriculture technologies and inputs. Thrust is given for strengthening of the existing networks. Farmer Advisory Committees at the state/district/block/Panchayat level, effective Kisan Call Centers and Kisan Pathsala has been set up. With the help of ICT the rural consumers also get information about the going rates in the market, the prevailing minimum support price for his produce and the places where he can get the better return for the same. Thus it bridges the gap between the urban and the rural market by developing urban analog markets which act as vital linkage between the urban and the rural population.

## **Empowering the rural consumers**

ICT can be used as an effective tool for rural consumer empowerment. The rural consumer acting solely will be unable to obtain the information they require once they have access to the internet. The knowledge obtained is sufficient to begin the process of identifying and mobilizing proper information resources. It can be used to create the demand that will generate the detailed information requirements necessary for the construction of useful information system. ICT will help them to make informed selection with regard to their own development and thus the rural consumer would be able to influence decisions that are taken by others but which have an effect on their future. E -Procurement has been introduced in Bihar for rural sanitation projects. To effectively utilize the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) biometric Smart Card based attendance system known as e-Shakti has been introduced for all NREGS beneficiaries. It helps to control the fake muster roll preparation at NREGS site and it also ensures the full payment to laborers as per work completion. The correct and timely wage payments is made automatically by e-Shakti application and directly credited into the beneficiary bank account. To help NREGS beneficiaries and officials a dedicated call center has been established. All has been made possible due to ICT.

## **Decision support to administration**

Local government can also function effectively if they have access to information about the needs of rural consumer's thereby enabling them to communicate their needs to senior levels of government. For instance in Bihar the government has set up electronics governance and citizen facilitation to provide better services and improved quality of governance and citizen facilitation. BSWAN (Bihar State Wide-Area Network) under NeGP (*National e-Governance Plan*) core infrastructure initiative aims to provide 4 Mbps vertical connectivity between the state headquarter and district headquarter and 2 Mbps between district headquarter & block headquarter. DIT (Department of IT) is also taking steps to connect all the departmental offices across Bihar to the nearest BSWAN centre through horizontal connectivity. BSWAN will become a useful tool to ensure the participation of panchayat level official machinery for MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Scheme), IAY (Indra Aawas Yojna) and other high impact schemes. District e-Governance Society has been constituted in each district under the chairmanship of the district magistrate with representation of various departments including NIC (National Information Center) to formulate, monitor and implement IT schemes/ program at the district level.

## **Dissemination of knowledge**

A major problem faced by rural areas of Bihar is the low level of literacy rate. It is the main cause of all evils in rural market. The youth of the village is not aware of the latest developments that can be of any use to them. They can very easily be misled by anti social elements because of their lack of education and alertness about their rights and welfare. The whole scenario can change with the spread of education in the villages of Bihar. Students can be exposed to the new training materials and the higher form of knowledge through ICT. In Bihar under the tutelage of ICT@School, all government aided secondary and higher secondary schools provide basic computer literacy courses through a computer lab with broadband internet connectivity. The government has a plan to cover all government and government aided secondary and higher secondary schools through ICT @School project by

2013. Under National Program on Technology Enhanced Learning [NPTEL], about four hundred e-courses can be accessed in form of virtual classroom for interactive lectures & learning for students at University level through internet connectivity under National Mission on Education through Information & Communication Technology [NME-ICT].

### **Generating and disbursing microfinance**

Microfinance brought prosperity to the rural consumers with the help of ITC. A number of financial activities are done by the government because of full computerization of rural bank branches. For example, the ICICI Bank has more than ten thousand SHGs (Self Help Group) using its microfinance facilities. The State Bank of India has issued the highest number of kisan credit card. These facilities help the farmers avail the benefits of microfinance in a much easier way.

### **Generating Employment opportunities**

ITC provides information on new employment opportunities to the rural consumers also. A large number of rural youth are attracted towards various multilevel marketing companies where they can earn money by selling the products from their own place. ICT has increased their employment opportunities as they can get information about happenings in other parts of their state and various means of earning money. Rural entrepreneurship development program is another source of employment for the rural consumers.

### **Beneficial for the farmers**

One of the benefits of ICT lies in providing timely and accurate information. Now the rural consumer can get information about the weather, including monsoon and threat of floods and other natural calamities. It reduces the farmer's dependence on uncontrollable natural factors and also allows them to plan their crops accordingly. It acts as a warning signal and helps the farmers to avoid risks.

### **Challenges in Implementing ICT for Rural Market**

ICT has remarkable potential to make the information available at the right time thereby empowering the rural consumer. It is considered as the lifeline of economic and social development of the rural consumers. However there are many impediments in implementing ICT in the rural areas of Bihar. Some of these challenges are lack of proper records and monitoring system, economies of scale, lack of basic social amenities and land and property rights. As there are many villages in Bihar where the population is as minimum as five hundred, in such a case all villages cannot be covered as it is practically not feasible to implement ICT as economies of scale does not allow the development progress as there are constraints for implementing ICT. Some of the challenges in implementing ICT in rural development are as follows:

- Due to lack of awareness about information technology and illiteracy it can be a hindrance in implementing ICT in rural areas.
- Inadequate, inconsistent and unpredictable power supply in the rural areas poses a serious threat to efficiency of ICT.

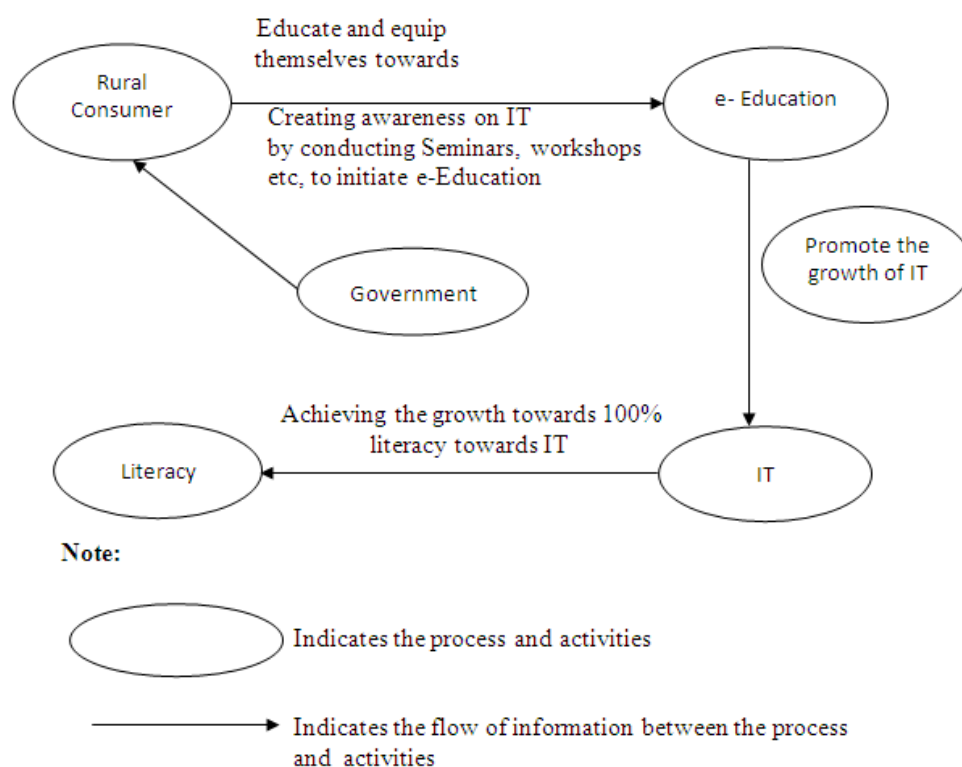
- Non accessibility of secure, robust and economical broadband connectivity in rural market continues to hamper the growth of ICT.
- Poor people and disadvantaged group like women may have restraint in the use of ICT for their specific purpose.
- Software packages and content not in local language is another hindrance for rural consumers as most of the rural consumer are not comfortable in English language.
- Short lifecycle of IT assets due to high rate of depreciation and obsolescence is another factor acting as a threat to the viability of ICTs.
- Some parts of rural Bihar are infected with serious and chronic problems of recurring natural calamities and there are many district affected by extremist activities.

## **Developing ICT for Rural Consumers-Planning and Implementation**

Assessing the information needs are very essential elements in the context of ICT for rural consumers. The marketers and software developers should keep in mind wide range of resources and applications of ICT that are of potential use to the consumers. Actually it is the information that has direct impact on the demands of the rural market so it is of paramount importance that any applications should be developed only after an accurate assessment of the needs and wants of the rural consumers. The organisations have to use rapid and participatory rural appraisals and other survey instruments to ensure timely and accurate information about the rural market. These tools could be used in the context of ICT initiatives. Once the information needs of the consumers are assessed, marketing plan and software applications should be developed with continuous involvement and feedback from rural consumers. For effective utilization of information about the rural consumers, the information has to be divided into different information networks and organized accordingly. The working group of the ministry of IT recommended computer education at the block level by establishing computer education amenities in rural areas. This is a segment where investment is required incessantly in order to improve the educational standards of the rural consumer.

The development of the economic status of the rural consumer is a critical issue in Bihar today. Initiatives for rural consumers need to be approached with a measure of carefulness. The challenge is to help build the capacity of market intermediaries or assist in the establishment and promotion of consumer information centers .To achieve sustainability marketing strategy must deal with the real needs of the rural consumers. The rural youth has to be given a major place in the whole plan .Training the youth to broaden the concept of ICT successfully is very essential. It should be made mandatory for the sarpanch to be computer literate. Software packages in local languages need to be developed to have a wider usage of ICT by rural consumers. Incentive should be provided to encourage the rural consumer to adopt the program. The Panchayat can propose the names of few persons to get training in information technology. There is also a gender dimension to the information needed. For instance, quite often women require specific health related information. The position of women has to be dominant one in the villages. Rural women have proved their mettle in many endeavors like in the development of cooperatives and SHGs (Self Help

Group). The women have to assume larger responsibility as they are the promoters of tomorrow's citizens. The rural consumers should have a sense of ownership of the knowledge management centers; otherwise it will be difficult to sustain them. In Bihar Vasudha Kendra (Common Service Centre) has been established in eight thousand panchayats across the state in order to take the governance to the grass-root level. Vasudha Kendras provides easy access to services like Government to Citizen (G2C), Government to Business (G2B) and Business to Citizens (B2C) services. The ICT network should include information on preventive health issues, to prevent any possible spread of epidemics and other diseases. Ministry of Information technology (MIT) has also initiated a development project on tele-medicine in association with leading medical institutes. Community radio and the All India Radio can be of immense help in communicating up to date information to those who will benefit from it. In order to reach to the bottom of the pyramid level an integrated ICT system is of supreme value. It is very important that the content be made available to the rural consumer in their local language so that they decipher the content easily. Mobile phones can be also used as a potential source of growth. Mobiles allow communication to bridge the digital divide by leapfrogging and breaking the hierarchical pattern of technology diffusion (Waverman,L.,Meschi,M.,Fuss,M.2005).Short message Service(SMS) can be used to deliver a wide range of information to rural consumers like crop prices, weather patterns, utility services etc. Panchayats are the movers of rural economy. To promote ICT in rural market, the best way is to make panchyats IT savvy. Since they are the prime body for rural development, IT can be an important vehicle to accelerate the economic development of rural Bihar. The development of online panchayat will lead to efficient selling and distribution of crops. With the availability of the internet in rural market, the procurement process can be reorganized. The requirement of the middlemen will be reduced to a great extent. Farmers can deal with the end users like the industrial buyer and consumers directly. It will bring about synergy of farmers and manufacturers and equally benefit them. Farmers will receive more value and the industrial buyer will enjoy less cost and better quality of agricultural products. This will make panchayat hub of distribution and selling in the rural market and thus can protect the farmers from exploitation.



**Source:** Role of Information Technology in Rural Development towards E-Governance, 2005, N R Ananthanarayanan and S K Srivatsa

**Figure 1:** Process, Activities and Information Flow of IT in Rural areas

Figure 1 above elaborates how rural masses are benefited by government's initiatives. One of the important methods is by arranging seminars at the village level. Education is the moral fiber of any state. In this regard, exclusive programs and television channels are dedicated to direct the education chapter's. This has become possible in rural areas as they cannot leave the daily employment and come to nearby towns to avail education. In this regard, educational programs on television are a forward step. The government should take help of private organisation to further ICT development in rural Bihar. Some private companies have been extremely successfully in implementing ICT in villages. Take the example of ITC, one of India's leading private companies. ITC started e-Chaupals in villages to redesign the procurement process for soya, tobacco, wheat, and other such products for the villages. E-Chaupals with their internet facilities has created an extremely profitable distribution and product design channel for the company. It also serves as places for exchange of information. It has brought about exceptional transformation in the rural market which is helping to lessen the rural seclusion. It has lead to more transparency for farmers and improved their productivity and incomes. It demonstrates that a large corporation can play a major role in organizing markets and increasing the efficiency of an agricultural system in ways that benefit both farmers and stakeholders.



## CONCLUSION

The rapid expansion of Information and communication technology will significantly improve the living standards of the rural consumers. The need to carry out research on implementation of ICT in the rural market is of utmost importance. The application of ICT in various sectors of rural market such as education, health, agriculture, farming and rural economic development will definitely accelerate the rural growth. Despite the fact that ICT has significantly entered into all aspects of our lives, impact of ICT in rural areas is very limited. The answer therefore lies in effective transfer of funds from the urban areas to the rural areas to initiate the development in the rural areas. At the same time the attitude of rural consumers also needs to be changed as they think that developmental work is the task of government only. However they cannot be blamed solely as sometimes they are exploited in the name of development. It can be observed that at the village level, where the panchayats are given money for various projects and they get the work done by villagers by paying them meager amount. They are thus exploited because of illiteracy and general ignorance. Hence the slogan of consumer involvement works only when some tangible benefits are seen by villagers. Market development plan and appropriate information plan for community level project before defining the technology plan is necessary. The information requirements that have to be distilled from the consumer interviews encompass the opening of a significant provision. The knowledge obtained is sufficient to begin the process of marketing strategy development by identifying and mobilizing appropriate information sources. We can infer from our experience which suggests that a close and continuing association between information providers and consumers is essential for effective information delivery.

In a state like Bihar, where the rural market is a major concern for the overall development of the state, utilization of information and communication technology begins with access to the internet. Access to the internet can be improved by increasing the number of computers and internet hosts. Connectivity is another factor linked with bandwidth availability. Large amounts of bandwidth are necessary at the doorsteps of the rural consumer. Different strategies should be developed for the growth of rural market using ICT services. These strategies can be promotion of test marketing, support for internet service providers in rural areas and improvement of the delivery mechanism for which institutional support and initiation is required. The development of various networks provides information to the rural consumer in educational development, rural economic development and rural health development which in turn will accelerate rural growth. Localized content development is another mechanism suggested for rural consumers. In the context of Bihar, this development is to be initiated for all script based language. Information has to be provided in the local language. It is apparent that the information flows that transferred information to the farmers by way of the formal, government owned system, are being replaced by pluralistic information flows between the rural consumers and the facilitators of the product and services. These information flows can be improved through the use of ICT as different consumers have different kinds of information needs and communication issues and varying access to ICT. New outlook is needed to understand and manage these pluralistic information flows and effectively use ICT. It does not make sense to achieve a developed status without a major and continuous augmentation of all villages. ICT can be used to help rural market a lot in terms of lifestyle, agro inputs, electricity, health services and physical infrastructure. It can be a turning point in acquiring a super economic power.

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