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The Roles of Information and Communication Technology on Rural Development

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THEROLESOFINFORMATIONANDCOMMUNICATIONTECHNOLOGYONRURALDEVELOPMENT

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The Roles of Information and Communication Technology on Rural Development

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I. Introduction

Information technology is considered the most important strategic tool for the proper management of present day societies, and it is also developing at a remarkable speed. Development and application of information technology in rural areas, aiming at facilitating services and improving welfare indexes, initiates a new phase of rural development management which has formerly been considered by theorists and agents of rural development in many countries since the very last years of the 2nd millennium. This trend has accelerated at the beginning of the third millennium which is known as the age of information and the cyber and network world.

Many countries in the world today have made an attempt to provide the public with access to information technology in rural areas, and each has employed some strategies to achieve it. However, the common strategy to achieve public access to information and electronic services in rural areas has been in the form of telecommunications centers or information technology centers.

An electronic village is the one whose image is thoroughly changed by the wave of information technology and telecommunications, and the electronic applications play an obvious role in the life of the village people. People living in this village have access to different applications such as the electronic government, electronic trade, electronic learning and electronic hygiene and handle their daily tasks in agriculture, animal husbandry and trade through electronic systems. The electronic village serves as the point of access of the villagers to the outside world.

Definition of Information Technology and Telecommunications

Information Technology Association of America, "ITAA", has defined information technology as "the study, design, development, application, implementation, support or management of computer-based information systems". In other words, Information Technology is the application of computers and telecommunications equipment to safely store, retrieve, transmit and manipulate data.

Also, the network connection between the computers makes it possible for the users to have access to a wide range of software and data and provides easy access to the internet and the electronic mail for the organizations.

II. Features of the Information Technology and Telecommunications

1- *Widespread Presence:* This quality roots in the fact that the impacts of the above mentioned technologies are now observed all over the world, even in the remotest regions, due to the range and diversity of telecommunications technologies. So, the isolated local cultures are now capable of moving beyond the limitations of time and space, and it has also enabled all forces around the world to come up and directly connect with the rest of the world. Therefore, information and telecommunication technologies have now covered the entire planet earth in the boundless space disregarding the time and space limitations. (Fat'hian 2006)

2- *Diversification:* These represent the extremes of a spectrum such that the more diversified one gets the less condensed it becomes. Through development and expansion, information technology enables different people, groups and organizations to have access to it.

3- *Delocalization:* Considering the range of spread of information and telecommunications technology, data is carried out in the cyber space. Therefore, information exists within this space and due to its dominance in the entire planet it is where information actually flows. It is such that under the present conditions information moves from one

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corner of the world to another by just pressing a button (Rajib M 2006).

4- *Decentralization:* Due to the multidimensional nature of information, different people, organizations and groups may have access to it. In other words, the multitude of sources and the content of messages, connection routes, various senders and receivers of information lead to decentralization in supplying and distributing information technology and consequently information flows at an extensive and complex level (Rajib M 2006).

5- *Flexibility:* This quality enables data to be present around the world and accessible by all in different forms and numbers. Thanks to science, data is transmitted rapidly, and due to its mobility, activeness and adaptability, it is more flexible under different conditions (Rajib M 2006).

6- *Speed:* Rapid growth of information technology and telecommunications, on the one hand, increases the speed of processing and computing in telecommunication systems such as computers and, on the other, immensely increases the speed of transmitting data.

7- *Openness and Clarity:* This quality with its diversity and ever presence has indeed drawn the attention of all to itself and managed to reveal the hidden points to the public (Fat'hian, 2006).

III. The Role Played by the ICT in the Village Management

The impact of such a role is more pronounced when the management is based on the ICT as one of the main factors and objectives of development. Information and telecommunications are just one of the requirements of rural development and accelerate the process of development just like a catalyst. We have to bear in mind that although the ICT influences the productivity and efficiency of the rural managers, its impact brings about other advantages for the villages as well. The following cases are mentioned below based on expert views and the findings of the study:

1- Villages with managers benefitting from the ICT are generally more flexible with regard to changes in the market and can better adjust themselves.

2- The higher the rate and the level of the ICT, the greater the village manager's efficiency to respond to new means of production and the latest technologies, and he will advance in pace with the rapid changes of the industry.

3- The impact of the ICT on village managers has positive side effects as well to the extent that it will also influence the other groups from the village and consequently improve their productivity.

4- ICT enables the village managers to make the most of the available resources.

5- ICT improves the level of knowledge and skill of the managers and makes possible the better use of the available capacities in the village.

6- Greater and better access of the rural managers to the ICT pronounces their greater participation in the society and accelerates the transmission from the traditional society to an industrial one (Amir Ahmadpoor, 2010)

a) The Role of the ICT on Village Tourism

Village tourism and its exploitation as an income-earning advantage has the same quality in all under-developed to developed countries of the world; however, its features are more or less different. Planning is one of the success factors along with the essential potentials for the development of this kind of tourism. A proper planning and an efficient management are called for the village ecotourism to flourish. It can be a source of high income for village communities and ultimately result in the increased income of the villagers and the village managers. However, reaching this goal and changing ecotourism into a culture is faced with a lot of problems in different societies, and it influences the rise or fall of the income of the villagers, directly or indirectly. Removing these problems can greatly assist the achievement of the objectives of the rural tourism, particularly the increase in the income of the villagers.

b) The Role of the ICT in the Village Farming and Animal Husbandry

Technology plays a significant role in flourishing and improving the economic and sociocultural conditions of the villagers. Promotion of agriculture, as a component part of the rural management, has its own special place here. Organizations promoting agriculture play a key role in mediating between the information technologies and the providers of technologies and services to their users. In doing so, they must pay attention to the suitability of different technologies, accessibility to technologies in villages and remote regions, adjusting the issues related to costs and benefits, assuring the access of different cultures to technologies, languages, social classes, age groups and sex-related issues (Richardson, D 2005).

c) The role of the ICT in the Development of the Electronic Government

Electronic government means providing the conditions under which the governments are able to offer their non-stop services to the citizens. This has been on top of the agenda of the states plans in the recent years and the intelligent statesmen have directed their goals towards realizing such conditions and tried to modify the socioeconomic and political issues with the aid of modern information technology and telecommunications and thus offer better services to the citizens. Good state management in the modern era means being accessible and the requirement of better

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governing is the fast and easy access of the citizens to information and qualitative services. Good state management means that the government offers its services at a greater speed with lower cost and more efficiency to a wide spectrum of its citizens.

Electronic government is a way for governments to apply new technologies which give necessary services to the individuals to have proper access to information and state services and improve their quality, and to offer them new opportunities for participation in democratic processes. Since the administrative offices cannot be set up all through the country, electronic state is most effective in accelerating and facilitating the administrative affairs and state services. To enable villages to have access to information, electronic government is planned on top of the agenda (Mal'ee 2012).

d) The Role of the ICT in the Development of Electronic Hygiene and Medicine in Villages

Words like Telemedicine, Telehealth, and the most recent term e-health, are more or less similar expressions used by communication tools to improve the uniform access of all users to medical care. Telemedicine ability to facilitate medical care online and in the absence of a caretaker on the spot is indeed vital and valuable. This phenomenon provides the best possible use of the limited manpower at the least cost and can decrease the rate of mortality in developing countries.

Telemedicine makes constant training of doctors, nurses and the medical staff in remote districts possible and provides the opportunity for consulting the expert on medical issues online (Seida'ee, 2012).

e) The Role of the ICT in the Development of Electronic learning in Villages

Electronic learning refers to a vast spectrum of applied software and the ways of technology-based education which includes training based on computer and internet as well as on online classes and colleges. In other words, electronic learning is the use of the ICT in education which can substantially improve the level of knowledge and science of deprived and inaccessible places or villages (Seida'ee, 2012).

f) The Role of the ICT in the Development of Electronic Insurance in Villages

The most significant reason for the close relation between electronic trade and the insurance industry: Considering the global and local presence of the electronic trade, insurance companies also make use of the IT and electronic trade for issuing their bills and paying for damages for the following reasons:

1- Increasing the speed and quality of services offered by the insurance companies to the insurers
2- Increasing the speed and precision of recording the insurers information for better and faster services to them
3- Processing the recorded information to decrease human errors and increase the speed of decision-making
4- Decreasing the rate of illegal cheating and fabricated information
5- Improving the capacity of insurance companies to make connections with the international insurers for the use of updated knowledge
6- Creation of new risks which have necessitated new insurance requirements .All these cases can lead to better productivity and facilities in villages (Chera'ee 2007)

g) *The Role of the ICT in the Social Welfare Services of the Village*

The welfare organization is one of the most significant state-supported organizations that assist the deprived and the handicapped people in the society through the general budget. Thanks to the electronic services available in this organization, these services are available in the villages through internet and different portals.

IV. Conclusion

The examinations revealed that information technology can have potential positive and negative impact on different dimensions of the economic, social, political and even environmental life of the societies. Based on this assumption, any step taken towards development, be it national or rural, is rendered impossible ignoring the information technology and its capabilities. The truth, however, is that access to development is not just possible through the physical expansion of this technology; complete development and information development as a new model is a far too complicated process to be realized just by the physical expansion of a technology.

In other words, information technology as the axis of information development acts and grows on a social, economic, political and technical ground. Therefore, the more efficient the grounds for better use of this technology, the higher the rate of success of the society in developing information and arriving at information society.

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