

eLearning, eHealth and eBusiness in India

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Abstract. The advancements in Information and Communication Technology have brought a revolution which has touched almost every aspect related to human life. The new researches have opened opportunities for new ideas to convert it into new inventions. Such fields which have been influenced by ICT are the education system, the healthcare system, and the business system. The successful implementation of these e-systems depend upon a number of factors some of which have been discussed here in this paper along with the problems and threats to eLearning system in the developing systems like India.

Keywords: eHealth, eLearning, eBusiness, Healthcare, Telemedicine

1. Introduction

The role of information technology and communication technology is changing. The applications of information technology and communication technology are not limited only to their defined meanings but also these have touched about every aspect of the human life. The main purpose of all these applications is to make human life more comfortable and easy. The application of these technologies to healthcare, education and business is on the rise and more and more research is being done by the researchers to implement these for making some improvements in these services. To improve the healthcare facilities in accordance with these technologies will not only provide a better way to live a healthy life but also provide an opportunity to the investors in this area. The developing countries like India are in bad need of actual implementation of these technologies so that a major portion of population can take benefits it. eHealth and Telemedicine are the terms which have changed the definitions and meanings of healthcare. eLearning is a new way to overpower traditional way of learning. eCommerce and eBusiness are the new definitions to business systems.

2. eLearning

eLearning is learning by electronic means. eLearning is delivery of information, communication, education, and training via some communication means online. The purpose of eLearning is not to replace the traditional way of formal learning but to provide a new horizon that can add value to all the traditional way of learning, textbook study, CD-ROM, and traditional computer based training.

Different researchers have defined eLearning in different ways. Banc of America Securities defines e-Learning is the convergence of learning and the Internet. Elliott Masie, The Masie Center defines eLearning as e-Learning is the use of network technology to design, deliver, select, administer, and extend learning. Robert Peterson, Piper Jaffray define e-Learning companies as those that leverage various Internet and Web technologies to create, enable, deliver, and/or facilitate lifelong learning. As per Cisco Systems, e-Learning is Internet- enabled learning. Components can include content delivery in multiple formats, management of the learning experience, and networked community of learners, content developers and experts. In general, eLearning or electronic learning is the learning through the use

of electronic media, that is, by the use of internet, or intranet. eLearning can make use of a wide range of technologies and media. eLearning can include training, the delivery of just-in-time information and guidance from experts. These technologies can be categorized by delivery media or interaction tools. It is also important to realize that each learner will often learn best with certain technologies.

Through eLearning system the learner need not to keep pace with instructor as the speed of understanding varies from individual to individual. Also the learner has option to access the eLearning system at the time and the place convenient to him. This will help a learner not only to save precious time and cost but also encourages the learners to take responsibility of their own learning which in turn enhances the self confidence and self knowledge updations. It is not only the learner who is going to be benefitted from eLearning system but also the teacher or instructor is beneficiary who can communicate with students, give instructions, make updations from the remote locations.

3. eHealth

In the broader sense, eHealth is Information Technology and Communication Technology applied to improve delivery of healthcare. It is the use of communication technologies to interact with patients for making the decisions with help of decision support system. There is no agreed definition of eHealth, however different researchers have defined eHealth in different ways. WHO defines "eHealth is the cost-effective and secure use of information and communications technologies in support of health and health-related fields, including health-care services, health surveillance, health literature, and health education, knowledge and research". Claudia Pagliari and colleagues, offer a wider definition, "e-health is an emerging field of medical informatics, referring to the organization and delivery of health services and information using the Internet and related technologies. In a broader sense, the term characterizes not only a technical development, but also a new way of working, an attitude, and a commitment for networked, global thinking, to improve health care locally, regionally, and worldwide by using information and communication technology". Dr. Pretlon says, "E-health is the process of providing health care via electronic means, in particular over the Internet. It can include teaching, monitoring (e.g. physiologic data), and interaction with health care providers, as well as interaction with other patients afflicted with the same conditions". [8,9]

4. eBusiness

Electronic business, commonly referred to as "eBusiness" or "e-business", or an internet business, may be defined as the application of information and communication technologies in support of all the activities of business. Commerce constitutes the exchange of products and services between businesses, groups and individuals and can be seen as one of the essential activities of any business. Electronic commerce focuses on the use of ICT to enable the external activities and relationships of the business with individuals, groups and other businesses.[15]eCommerce is trading for the products or services through the use of Computer Networks. E-business involves business processes that are electronic purchasing, processing orders electronically, handling customer service, and cooperating with business partners. Special technical standards for e-business facilitate the exchange of data between companies. E-business software solutions allow the integration of intra and inter firm business processes. E-business can be conducted using the web, the Internet, intranets or some combination of these. The main issues for any eBusiness system are the security, access control, and confidentiality issues.

5. The Problems

The main problems which are major bottlenecks in the successful implementation of eLearning, eHealth or eBusiness systems in India are:

Population size: India accounts for 2.4% of world surface area, and it has 16.7% of world population. Indian population was about 1028 million as per 2001 census with 532.1 million males and 496.4 million females. The population growth is not even for all the states and union territories. It was recorded minimum 9.43 in Kerala, and maximum as 64.53 in Nagaland.

Population Density: The average population density, indices for population concentration, was 324

per sq km. Delhi is high population density area with about 9340 per sq km, Chandigarh having density of 7900 per sq km against thinly populated area of Arunachal Pradesh with 13 as population density.

Population Distribution: A major portion of Indian population is living in the villages. Around 743 million population is living in rural areas, that is, 72.2% Indian population is living in the rural areas and 7.8% is living in the urban areas. Spreading these facilities to low density areas or in rural areas and to extend these facilities to the population is a very cumbersome process.

Illiteracy rate: For the purpose of census 2001, a person aged seven and above, who can both read and write with understanding in any language, is treated as literate. A person, who can only read but cannot write, is not literate. In the censuses prior to 1991, children below five years of age were necessarily treated as illiterates. The results of 2001 census reveal that there has been an increase in literacy in the country. The literacy rate in the country is 64.84 per cent, 75.26 for males and 53.67 for females. Kerala is the state having highest literacy rate around 90.86%. Low literacy rate is a bottleneck in the success of eLearning, eHealth or eBusiness system.

Awareness: The population in the rural areas is not much aware as compared to that of the urban areas, the reasons may be the literacy rate, poverty rate or some other factor. Even the studies show that behavior of the citizens of about same income group but of two different urban areas or metros vary widely in terms of the awareness towards their needs.

Connectivity Problems: What to talk of the electronic connectivity or communication media, there are still some areas which are not properly connected by rail or road. Many of the villages have not even telephone lines. The others are facing the issue of electricity.

Language Problem: Different areas have different languages and this is a major problem as eLearning contents which are in English and to convert these into different languages is a major task.

Cultural Issue: It is human nature to resist the change. The type and nature of resistance depends upon some factors, like society culture, age etc. Classroom learning is treated as actual learning and any type of eLearning is looked at it as second grade of learning. People prefer to get treatment by presenting themselves before the doctor rather than getting treatment through telemedicine, telecare technologies. A good number of population is not confident in using ebanking services rather they get these services by visiting the concerned offices/banks.

Poverty Rate: In spite of impressive economic growth indicators, the poverty state of the population is very bad. Approximately 250 million people are below the poverty line. 75% of the population below the poverty line is residing in the rural areas. The major causes of poverty in India are dependency on agriculture, population growth rate, and regional inequalities etc. It becomes difficult to afford any equipment required for these services.

6. Scope in India

Information and Communication Technology has touched every aspect of human life and it is the major driving force for change. ICT services export has increased from 31.9% to 41.6% for year 2000 to 2007[3]. IT industry in India accounts more than 3% Indian GDP. There are about 813000 people in IT industry, the second highest workforce after US. 15 million personal computers by 2005, the figure is expected to be 75millions. There were more than 50 million internet users by 2006, the figure is expected to be triple by the end of 2011. About 7.2% of Indian population was using internet facility in 2007.

Although the communication technology is being extended to most of the rural areas but still a large section of population is left out and cannot take advantages of advancements. Approximately about 25000 villages are not connected with any rail or road and about 50000 villages do not have power connections, the other have very erratic. About 2 lacs villages do not even have analog connections.

There are some factors like connectivity problem, electricity issue and communication problems which indicate that it will not be possible to start eServices initiatives in all rural areas. Although there are advanced levels of communication systems and operating environments which make it convenient to use such system but still there is a requirement of some minimum level of literacy and minimum understanding of such systems. Apart from this another problem is the language and diversity of culture problem. There are nearly 15 official languages and due to lack of some common language there is a need to take up the tough task of translating into different languages.

The requirement of specialized manpower is another bottleneck in successful implementation of eLearning services. Although over 813000 people are employed in IT industry, there is still a shortage of more than 2 million professionals.

7. Conclusions

There exists a huge scope to implement these technologies in the developing countries as the scenario is not good in these countries as compared to the developed countries. Geographic and sociodemographic reasons, poor connectivity, economic conditions of population are the common reasons in the developing countries. However there exists a huge scope to implement these technologies in developing countries and is an opportunity to grab for investors. Initiatives are also required from the government agencies. Also there is a need to bring the awareness in the people to make use of these technologies. There requires a proper planning for these implementations, which is a collaboration of information technology professionals, communication technology experts, and healthcare, eLearning, business professionals. There is a need to bridge the gap among these professionals at all the levels. Social, cultural and economical factors are some of the factors that require proper attention before planning to implement the associated new technologies to be adopted into day to day life or day to day business. The other concerns which are still to be solved successfully are confidentiality of the data, the payment procedures, the reimbursement procedures, legal and ethical implications in implementing eHealth, eLearning and eBusiness solutions. There exists a wide gap between theoretical benefits and empirically demonstrated benefits. All the applications related to eServices cannot fit everywhere. The conditions, the restrictions, the data, the nature of requirements, the approach adopted, the availability of technology, the adoptability to change, aptitude of target application are some of the factors which decide about the efficiency of any application or technology. Before that there needs to bring a transitional change in the minds of the target population to accept the change. There exists some of the eService applications though these are limited in number but population is not deriving the benefits of it, like the people in the rural areas have internet facility but only to check the mails or just for some basic searching facilities, people use mobile phones but just to attend to calls or to send the message, banks have spread netbanking facilities but percentage of users is very low.

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