

ROLE OF NEW MEDIA COMMUNICATION TECHNOLOGIES EN ROUTE INFORMATION SOCIETY – CHALLENGES AND PROSPECTS

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Abstract: *Today we are living in the age of information, and communication where the information societies are rapidly transforming themselves from information society to knowledge society. Information society or rather its Japanese term "Johoka Shokai", was perceived by the Japanese writer Yoneji Masuda, "as a society, which would eventually move to a point at which the production of information values became the formative force for the development of the society." In India the significance of communication in various development programmes and activities has been well known and has been time and again emphasized in the country's blueprint policy, the five year plans. A country's growth and its inner strength along with its competitive edge all depend greatly on communication power. In the past decade the country witnessed an array of communication technologies baffling and confusing the generations alike. Presently the country is riding high on new media which has ushered with new range of opportunities and with its immense potentiality is expected to bridge the gap created by the traditional media. Communication has knit the whole world together and with the constraints of time and distance disappearing, it has been a bane for humanity at large to be integrated at intellectual, economic, cultural and emotional levels, by exchanging and sharing a global wealth of information resources. The present paper takes a look at the different challenges and prospects on the role of new media communication technologies enroute information society to knowledge society in India.*

Keywords- *new media, communication, technologies, information, theories, society.*

Introduction

The concept of global village by Marshall McLuhan is soon becoming a reality with new media defining the way we look at the world. The Gutenberg era is over. A new digital communication technology has emerged with an E-Superhighway beginning to girdle the globe as voice, video and data converge. New technologies are gaining wide acceptance due to several advantages like--

- Interactivity & Immediacy
- Demassification & narrowcasting (customization, segmentation, and individualization leading to narrowcasting).
- Asynchronicity (the exchange of data, figures, and conversation takes place on a real time basis, without the presence of all the participants. Example videoconferencing).
- User friendly and Ease of updating
- Time saving and Cost Effective

Convergence is today a reality and India is fast waking up to the digital era, re-shaping the way the individuals and organizations produce, process, market, collaborate and share information.

Literature review

A global phenomenon in today's society is the unlimited access to and the massive use of information and communication technology services, which together comprise the new media. As Len Manovich in his book- *The New Media Theory Reader* says that this new media revolution can be likened to the printing press revolution in the fourteenth century and the photography revolution in the nineteenth century; which prompted all forms of culture to computer mediated forms of production, distribution, and communication. He also remarks that the previous revolutions had impacted only one form of culture, for example the printing revolution has affected only the distribution of media, and the photography revolution has affected the culture of still images; but in contrast, the computer media revolution affects all stages of communication, including acquisition, manipulation, storage, and distribution; it also affects all types of media – texts, still images, moving images, sound, and spatial constructions. As these services are created, distributed, integrated, used and manipulated, it has become a significant economic, political and cultural activity all over the world, thus entering into a new era of information society. Len Manovich feels that that this phenomenal rise of new media as information technology can be attributed to two separate historical trajectories: computing and media technologies both of which began in the 1830s with Babbage's Analytical Engine and Daguerre's daguerreotype. The convergence of these two histories are the translation of all existing media into numerical data, accessible through computers' the final result being the new media – graphics, moving images, sounds, shapes, spaces, and texts getting transformed into another set of computer data. While looking into the key consequences of the new media he reduces all principles of new media to five – numerical representation, modularity, automation, variability, and cultural transcoding. The importance of new media and their role in creating information societies through different forms of Information, Communication and Technology; has been discussed in many works such as the post-industrial society (Bell, 1973), knowledge industry (Machlup, 1962) or network society (Castells, 1996; van Dijk, 1999). ICT's are regarded as having effects or "impacts" on individual users, groups or society. The book by Wilbur Schramm, *Big.Media, Little.Media* (Schramm 1977) in which new media technologies are classified according to their technological attributes, features or channel characteristics (e.g., Durlak 1987; Pool 1983; Steuer 1995), with the assumption that those features or characteristics affect user behavior. Geoff Walsham (2010) grouped the role of ICT's in four broad development categories. Better lives for the poor, improved Government services, enhanced internal economic activity, and improved civil society. According to a United Nations report (1999) ICTs cover Internet service provision, telecommunications equipment and services, information technology equipment and services, media and broadcasting, libraries and documentation centers, commercial information providers, network-based information services, and other related information and communication activities. According to UNESCO (2002) information and communication technology (ICT) may be regarded as the combination of 'Informatics technology' with other related technology, specifically communication technology. There is a growing literature on ICTs in developing countries (Walsham and Sahay (2006), Avgerou (2008) but a number of researchers (e.g. Heeks 2006, Thompson 2008) have argued that much of this literature does not address the question of what is meant by development. The methodological approach adopted in this paper was

to start with the case examples of ICT-based initiatives in India reported in the surveyed literature and then draw on the limitations, challenges and prospects of new media in creating an information society leading to knowledge based society.

Objective:

1. To analyze the different challenges and prospects on the role of the new media in the formation of an information society.
2. To discuss on what can be the probable solution in overcoming these challenges.

Methodology:

Review of pertinent literature related to the topic has been traced, analyzed and discussed. Certain case studies have also been discussed in detail along with a comparative approach to new media application in other countries.

Communications Scenario: *Then and Now*

Coming to the access of these new technologies, no wonder it can be safely said that the Indian middle class have moved at a much faster pace than expected. Telephone and desktop computers are passé. Innovation is happening at a disruptive speed, uprooting the previous technology and embracing the new, with an array of services and opportunities. Currently an Indian citizen owns his own mobile phone, many having a smart phone, and personal computer, with many possessing a laptop even. These technologies satisfy the strong emotional need of the pan Indian to keep constantly in touch with the family members, friends and peers. Introduction of mobile phones in India has brought about a tremendous change in fisheries sector. One result was a dramatic improvement in the efficiency and profitability of the fishing industry. As mobile phone service spread, it allowed fishermen to land their catches where there were wholesalers ready to purchase them. Many mobile users access mobiles for listening to FM, capturing images and videos and simultaneously transfer them via Bluetooth to other mobile users, use multimedia through 3G (Third Generation) and 4G, send SMS and MMS, play games and various other purposes. The Department of Agriculture & Cooperation (DAC), Ministry of Agriculture, Govt of India launched Kisan Call Centres across the country to deliver extension services to the farming community. A Kisan Call Centres consists of a complex of telecommunication infrastructure, computer support and human resources organized to respond the queries raised by farmers in their local languages. Subject Matter Specialists (SMS) using telephone and computers, interact with farmers directly to understand the problems and answer the queries at the call centres. There are call centres for every state that are expected to handle traffic from any part of the country. Today mobile phones with key boards are almost obsolete in the market. Competition in the mobile segment has brought touch screen along with varied applications, at an affordable range.

Apart from these, the internet has ushered into a new kind of revolution. The organizing and the uniting power of the Internet emerged during the Mumbai attacks, when individuals set up blogs to provide vital information, about which hospitals needed blood donations, and to help relatives search for each other. Twenty-nine-year-old blogger

Harish Iyer published his mobile phone number and e-mail address on a blog he set up soon after the attacks began. According to the statistics, in the following 20 hours, he received around 60 phone calls and 100 e-mails from people desperate to find loved ones (Whiteman, 2008). It was Twitter, however, that was the preferred medium of the "citizen journalists" who provided instant and constant news feeds and updates about the crisis. A CNN article estimated that 80 tweets were being sent to Twitter.com via SMS every five seconds (Busari, 2008) CNN argued that through the attacks, "social media appeared to come of age and signaled itself as a news-gathering force to be reckoned with" (Busari,2008).

Further the Internet gave rise to an era of e-business-which is cost-effective, time saving and also endures transparency cutting through the age old bureaucracy and red tapism prevalent in India system of working. Metal Junction Services limited, e-bay, Amazon.com, Aditya Birla, IFB, Dell, etc are some of the companies that have embraced e-business. Today the Internet is accessed via various other means like cable TV, mobile phones, apart from the conventional computers. The Internet has ushered into a new era where it is concerned with the creation of wealth not only through production, processing and transportation of goods but also through information- networks using technological know how, management practices and remote processing, like customer help, medical transcription, data and research processing etc. Some of the projects of ICT'S where new media communication technologies have been successfully utilized can be considered as a case in point.

Case Study – e-governance

A. In a country like India, health remains a challenge for the government. Accessibility, affordability and awareness on health are very low in India. But Maharashtra has achieved astounding success in routing information to the villagers on health. It's a dose of e-medicine for rural folks across the state. The doctors and experts together treat patients in the remote interiors of Maharashtra via satellite. Civic authorities ISRO (Indian Space Research Organization) and state officials have joined hands to make success their project. Here the patients in the rural areas get easy access to the modern facilities without having to travel long distance and spending big bucks. Thus the patients and the physicians in distant areas remain in constant touch via telecom network. P. D. Hinduja National Hospital & Medical Research Center bagged the "Best Information & Communication Technology (ICT) enabled hospital in Maharashtra" award at the e-Maharashtra awards & Healthcare Conference on 10th May, 2013, held at Taj Vivanta, President Mumbai. The award in Healthcare segment was introduced for the first time to recognize and award organizations for their initiatives taken in Maharashtra through innovative use of ICT's. The award was presented by Mr Rajesh Aggarwal, Secretary IT, Government of Maharashtra.

B. Education in India is still a huge problem. ICT promises to bond the effort of the students and the government. The Bridges to the Future Initiative –India (BFI) seeks to improve the basic skills, literacy and entry in vocational skills of out-of-school youth and young adults in poor communities in several Indian states. The Bridges to the Future Initiative (BFI) program is designed to bridge the digital divide between the ICT-haves and ICT-have-nots by extending literacy opportunities to those most in need. The BFI has built educational and learning programs that will enable the least-advantaged learners (illiterate or low-literate children, youth and adults) to employ and utilize ICTs in their own mother tongue, to both acquire knowledge and to improve their lives through better economic opportunities. At the official level, the BFI is situated under the patronage of MHRD and state education agencies (initially Andhra Pradesh and Karnataka, where formal MOU's are signed in May 2001.).

C. Food security in the villages of Pondicherry empowers the rural women, men and children with information relating to ecological agriculture, economic access and utilization as its goal. Such a knowledge system is being managed by the local youth at the village knowledge centre from where the computer aided information system is operated. Farmers who are becoming the knowledge workers are also being trained to maintain a "soil health card

"to monitor the impact of farming systems on the physical, chemical and microbiological components of soil fertility. In this context, Kisan Sanchar Limited (KSL) is an instance of a joint venture between telecom network operator Airtel and public sector giant Indian Farmers and Fertilisers Cooperative that provides relevant advice to smallholders on animal husbandry, rural health initiatives and the availability of products like fertilisers. KSL's information arrives successfully via voice to 40,000 cooperative societies in 98% of India's villages. Also the e-Choupal, which is India's largest rural ICT initiative, leverages information technology and the Internet to improve efficiency in the rural Indian agricultural sector, promoting greater information exchange and the creation of an alternative market structure.

Enlightened citizens empowered with knowledge will be able to see the crucial link between the 5 E's namely environment, ecology, economics, equity and ethics.

Case Study- Spoken Web

The Indian Government's goal is to have 500 million skilled workers by 2022. In pursuance of this goal both IBM and the Indian government have launched an effort to help millions of citizens find work via their mobile devices, an experiment which they are calling as spoken web, also known as world wide telecom web. The system uses speech technology to allow people to create voice sites with their phones. The user gets a unique phone number---just like a URL---and other users can access the site. Thus the Spoken Web is the Web via voice. IBM and Karnataka Vocational Training and Skill Development Corporation (KVTSDC) aims to make mobile devices better job hunting tools, as Karnataka is India's fastest growing state. In India, only 7 percent of the population has Web access, according to McKinsey. However, nearly everyone in India has a cell phone.

The key details of their performance are:

- IBM and KVTSDC create a cloud computing platform to allow job hunters and companies to connect, train and certify workers in local languages.
- Candidates are then ranked and referred to jobs via mobile crowd sourcing.
- IBM plays matchmaker via skill analytics and employers can monitor supply and demand trend.

Case Study- Hole in the wall experiment

There have also been efforts to provide children with access to computers outside the formal school setting, such as the Hole in the Wall project established by Dr. Sugata Mitra. In 1999, as a research scientist at NIIT, Mitra installed a computer in the wall separating NIIT's headquarters from the adjacent slum of Kalkaji in New Delhi, in order to observe how children taught themselves how to use the computer (Mitra, 2005; Mitra & Rana, 2001; Mitra et al., 2005). In one of the interview Mitra says that these children might not be aware about the technological jargons of the computer but once exposed to the basic system they can operate it on their own and develop their own terminologies for their daily usage. Thus the pointer of the mouse becomes 'sui' for them and the hourglass that appears when something is happening becomes 'damru' for them. He feels that this can be called a functional literacy where the children might not be interested in the nitty gritty of the technologies but might be interested in its application, which he feels that India can utilize in order to make the country computer literate. The project was scaled across India with the help of the International Monetary Fund, and has been emulated in other countries, for example through the Digital Doorway program in South Africa.

Case Study- Same Language Sub-titling

Same Language Subtitling (SLS) an experiment by Brij Kothari of IIM Ahmedabad uses the concept of functional displacement in case of traditional medium to reach out to the masses. It refers to the idea of subtitling video media programs in the same language and script associated with the audio track, in certain popular cultural programming contexts on television and cinema, especially, film songs like Chitrahaar and Rangoli. This experiment brought forth the promise for literacy skill improvement among neo-literate and in generating interest for literacy on a national scale. This experiment received immense support from the Gujarat government. Same Language Subtitling (SLS) refers to the verbatim replication of audio and text, in the “same” language. From the viewers’ perspective, the text they see and the sound they hear reinforce each other in perfect synchronization. For instance, in SLS the audio track in Hindi would find its reflection in Hindi text on the screen—no translation, no transliteration, just plain and simple, word for word copy of audio and text. Subtitling has almost always been trapped in a translation mindset or used for providing additional information, but this experiment breaks the mindset.

Case Study-- SMAC Code

SMAC- Social Media, Mobility, Analytics and Cloud Computing. A combination of social media, smart mobile devices, managing and analyzing Big Data and the undeniable power of cloud computing to foster innovations and improve productivity is becoming the buzz word for enterprises to operate in the market. The disruptive technologies of today – Social media, mobility, analytics and cloud computing³ – will act as enablers to the next generation of technological trends, which will surpass today’s technology in scale, complexity and impact on the world around us.

The possibilities

Shivaji Chatterjee, senior director, sales and marketing, Hughes Escorts Communication, says “IT has a vital role to play in all transaction that the Government undertakes. It helps the Government cut red-tapism, avoid corruption, and reach citizens directly.” Adds Rajiv Kaul, MD Microsoft, India –“ a strong technology infrastructure can help central and state Governments deliver a comprehensive set of services to citizens.” The Karnataka's Government’s ‘Bhoomi’ project has led to the computerization of the countries old system of hand written rural land records. Through it the revenue Department has done away with the corruption ridden system that involved bribing at every step. ITC's E-Choupal unique web based initiative offers farmers the information, products and services they need to enhance productivity, improve farm-gate price realization and cut transaction costs. Farmers can access the latest local and global inform on weather , scientific farming practices, as well as market prices at the village itself through this web portal all in Hindi

Again if the example of Mizoram , then it can be seen that ever since its inception in 1989, the continuous and tireless efforts of NIC Mizoram have resulted in spreading of ICT culture in the state. NIC along with the government of Mizoram has taken up many initiatives in facilitating and promoting e-governance in various sectors such as transport, land record, public health engineering, accounts and treasuries etc. –

For example in transport communication ‘ Sarathi’ and ‘Vahan’ provide a complete solution for district transport office (DTO) computerization including registration , licensing, permit and enforcement, tax and fee collection etc. a vehicle statistics information systems has been developed that helps in collection of various reports required annually by state transport authority of Mizoram.

26 CIC (Community Information Centre) have been established since 2000 which are equipped with computers, VSAT, TV, web cameras, printers, ups etc. Two qualified operators manage these CIC’s, which provide the following services to the people in the far flung and remote areas of the state. E-mailing , web browsing and

document priority; imparting IT training to the villagers, students, etc, providing G2C (government to consumer) services such as support for BPL survey, village council elections, publications of tenders, notifications etc.

Problems en route -

Though from the above discussion it might seem that India has successfully become an information society and can be considered for future knowledge society, yet wait before coming to any conclusion .consider these:

Without effective communication no society can be apt enough to adopt dynamic models of development communication. Rural India faces a lot of problem. They are:-

1. Wide communication gap
2. Traditional mindset and values and attitudes
3. Heterogeneous population, rural-urban divide.
4. High cost and inaccessible of mass media
5. Illiteracy
6. Stereotypes and prejudices
7. Low motivation
8. Defective opinion leadership
9. Feedback difficulty
10. Lack of IT mindset.
11. Lack of customized tailor-made software's for each need and individual.

The solution-

Some of the important observations by CEG-IIMA based on its evaluations of some of these projects and the experiences on developing proof-of-concept projects were-

1. Design of citizen-centric services and dependable service delivery mechanisms. Lack of software, lack of local trainers capable of imparting various skills related to ICT, content development and media operations a challenge which makes it difficult to extend the information society beyond affluent citizens in the region

2. Selection of appropriate (dependable, maintainable and cost effective) technologies for rural connectivity and information processing solutions. e.g. Aqua choupal, the unique web based initiative of ITC Ltd. offers the farmers of the state of Andhra Pradesh all the information, products and services they need to enhance productivity, improve farm gate prize realization and cut transaction cost. Farmers can access information on weather, scientific farming practices and market prices through a web portal. Aqua choupal also facilitate the supply of high quality farm inputs as well as purchase of shrimps at their doorstep.
3. Design of cost-effective delivery stations (kiosks) to enable private entrepreneurs operate the services profitably and build new services for sustainability. Connectivity and access at an affordable cost in the region in particular, in rural and remote areas is still a problem. The word information a technology is overused with thrust on computers and internet. Some of the inventive uses of the IT can also involve radio, television and embedded chips, potentially useful satellite inventories etc. The classic e.g. is the use of automated butterfat assessment equipment in Gujarat , which has radically simplified the process of automating milk and paying dairy farmers. The project was implemented by the M.S. Swaminathan Research Foundation, for Pondicherry fishermen. Computers were placed in the village center which was then connected to the Internet, through which regular weather reports of the Indian astronomical office could be accessed and later on utilized. The weather report is broadcast by loudspeakers and through VHF radios which enabled fishermen to determine low and high tide before sailing off to the sea to fish.
4. Re-engineering of back-end processes and introduction of changes that take advantage of the storage, processing and distribution powers of the emerging ICTs. The most of the traditional systems have not been exploited fully. Lack of innovativeness and creativity is a major factor. Generally all the programmes are made with the bureaucratic mentality, such that if the programmes are educative, they are boring as they cannot sustain the interest of the viewers for long and if they are entertaining they are not educative. Consequently they lack the personal touch and hence lack credibility. More so with the failure of public service broadcasting, the meaning has lost somewhere in the bureaucratic tangles. The information people initially say they need, may not always be what they end up using. In the M.S. Swaminathan Pondicherry project, for e.g., male farmers originally said they needed information about agriculture. In fact, their largest single usage of village info. Kiosks were to get information about government programs.
5. Ensuring employee participation with well designed change management processes
6. Demonstration of transparency and efficiency to remove distrust and build confidence among the citizens on the functioning of service delivery mechanisms.
7. Inviting private participation to reduce the burden on the central servicing agency, bring in the expertise, enhance the speed of implementation, and offer better value proposition to the citizens.
8. Identifying and preparing project champions, ensuring appropriate tenures, facilitating smooth transition, and internalization of the changed procedures.

Conclusion

Though India can boast of an informatisation process which is successful in many aspects, but it should not get smudged off easily with its success. The problems which are seemingly appearing minuscule are only the tip of an iceberg, which requires effort on the part of the government, before it assumes gigantic proportion.

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