Information and Communication Technology in the Globalization Era: The Socio-economic Concerns

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Abstract

The most conspicuous development in the globalization context has been the Information and Communication Technology (ICT) influx. It seems to have turned the world into a global village. Endless connectivity, interactive organizations, information sharing and infinite access have all become the new ICT buzz words. Good governance and a vibrant democracy are critical for human development. ICT has emerged as a key instrument for influencing the process of governance in various ways and in varying degrees from improving the current service delivery strategies to bringing about innovations in the mechanisms and nature of service. Hence, the developing world is gradually catching up with the technological advancement to solve its socio-economic problems. Even though the benefits of ICT come with the tag of a number of constraints, it is being considered as a panacea for all ills.

The streak of success stories in India and elsewhere point towards ICT’s growing potential but we must remember that development comes with a price. The legal, physical, financial and human resources framework of each country must create conditions favourable for ICT. It has to be ensured that the advantages of ICT do not get outweighed by the costs. ICT must address the requirement of the downtrodden and the disadvantaged by erecting paperless, corruptionless and borderless world of governance. The issues such as whether ICT will be able to meet the needs of the weaker sections, or whether it will be able to bring the government, non-government and private sectors closer, or whether it will be able to establish equal and fair access to information on goods and services have become predominant in the third world context.

This paper attempts to highlight the significance of ICT against backdrop of globalization, discuss some of the prominent ICT initiatives in India, examine the impact of ICT efforts on the society; and bring out certain key socio-economic concerns that need to be considered by a developing country such as India in making ICT applications favourable for sustained all-round development.

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Introduction

The new trends in the world market economy have brought to the fore the debate on the impact of the Liberalization, Privatization and Globalization wave. The impact is most visible in the context of developing economies, as it astutely plays down its drawbacks and accentuates its advantages. One of the highlighted positives being the influx of Information and Communication Technology (ICT). If, on the one hand, globalization has precipitated the onward march of ICT, the growing success in ICT initiatives have also brought the global community closer. ICT, in the globalization context, is all about global knowledge, access, participation and governance in the information age. It has radically changed our views about boundaries between organizations and the boundaries within the organizations.

As we gradually move from the first generation automated data processing to the second generation automated decision making, and still further on to the third generation mobile telecom age, the countries across the globe find themselves enveloped by the purportedly new-paperless, borderless, corruptionless and interactive world of electronic governance or e-governance for short. In fact, a developing economy such as India is one of the top ten in the list of ICT leadership and initiatives.

Since the 1980s, a considerable number of ICT applications at various levels of government, especially at the grass roots, have been initiated. Documented evidence so far indicates that these are being well-implemented and are reaping the needed results. In developing countries, the application of ICT is intended basically to attain certain key objectives outlining the increased responsiveness of the government towards the citizens. It enables the citizens to use information as a key resource for betterment of their lives and strive towards socio-economic development. ICT revolution because of its pervasiveness throughout the whole realm of human activity, has become an essential ingredient of effective governance or what has come to be called ‘good governance’.

The World Bank Report (1997) has epitomized the phrase ‘good governance’. The ODA, World Bank and UNDP Reports have laid down the following features of good governance:

- Participation that envisages involvement of the entire society in governance
- Legitimacy that emphasizes on the need for a system of governance
- Accountability that involves the existence of a mechanism, which ensures that those working for the citizens are answerable for their actions
- Openness and transparency that highlight the need for public access to quality information
- Competence that demonstrates the capacity to create effective policy and decision - making processes.

The major objectives of ICT as a part of good governance are to bring about participation, accountability, transparency, reduction of corruption and efficiency. The crucial questions in the present globalization scenario relate to the ICT initiatives: Is ICT re-orienting the citizen-government relationship in the true sense of the term? Is it making a dent in evolving a transparent, accessible, efficient, accountable and cost-effective way of governance, or is it merely perpetuating a digital divide? These and many more questions
need to be earnestly addressed to assess the actual impact of ICT on the socio-economic development of country.

**ICT: Relevance and Goals**

In common parlance, ICT denotes computing and telecommunication technologies that provide automatic means of handling information with the object of improving government's or any other organization's methods of operation. The concept of Information Systems underlying it is defined as a system of human and technical components that accept, store, process, output and transmit information. The role of ICT in fostering development needs to be looked at from a broader perspective that showcases its place in Information Systems.

The most conspicuous of all the technological advances is the Internet, which is believed to have the capacity to redefine the possible. The Internet is fundamentally altering the economic landscape. The real power of ICT lies in the fact that a whole office can practically be recreated on the Internet. It provides a great opportunity for real time processes and activities. The historic monopoly of institutions – private and public – over information is being shattered by the Web. The metamorphosis in communication is taking place in the form of increased interactivity and seamless connectivity.

Since in the developing countries, major emphasis is on enhancing socio-economic development, we have to focus more on the government's role in the provision of goods and services through the use of ICT. The other stakeholders such as the private sector, Non-Governmental Organizations, Civil Society Organizations and citizens' groups also have an equally important role to perform. A novel feature of ICT is its accent on public-private partnerships in facilitating governance. ICT promotes the acquisition and absorption of knowledge, offering the government and other non-government agencies unprecedented opportunities to improve policy formulation and its implementation, enhance educational systems, empower the downtrodden, create new economic institutions, widen job opportunities, reduce poverty, re-engineer organizations and institutionalize innovations.

**ICT applications in their goals of fostering a country’s development, basically aim at:**

- Providing decision support to administration for improved planning, implementation and monitoring of development programmes
- Improving citizen-administration interface and public service delivery
- Empowering citizens to access information and knowledge
- Bringing in transparency in service delivery and information sharing
- Highlighting key issues such as project justification, multiple service centres, and sustained training in planning and implementing ICT applications.
- Enhancing the accountability of governance mechanisms; and
- Sustaining the development of human resources towards the use of ICT

**Major ICT Initiatives: The Indian Context**

One of the most important initiatives undertaken by the Central Government in India is the Information Technology Act 2000 with provisions to regulate cyberspace and define offences and penalties related to IT. The IT Act has major provisions relating to:
Legal validity of electronic contracts
Legal recognition of digital signatures
Security procedures for electronic records
Penalties against various types of computer crimes

The Government of India has introduced a National Task Force on IT and Software Development, a Committee on Improving Efficiency in Government through IT, a Ministry of IT and a Centre for e-governance in the country. The New Telecommunication Policy, 1999 has stipulated targets in terms of establishing a telecom network with a view to achieving tele-density of 7 per cent by 2005 and 15 per cent by 2010.

The state-wise experience with ICT throughout the country is also noteworthy. Whether it is Warna Wired Village Project (Maharashtra), or Gyandoot Programme (Madhya Pradesh), or Gramsat Pilot endeavour (Odisha), or FRIENDS Project (Kerala), or TWINS and APSWAN (Andhra Pradesh), or Raj Nidhi Information Kiosks (Rajasthan); each success story shows that ICT provides ample opportunities for a consistent and continuous control by the people and other stakeholders over the governance processes and output.

Warna Wired Village Project

The primary objective of this project is to demonstrate the use of ICT infrastructure in the accelerated socio-economic development of villages around Warna Nagar in the Kolhapur and Sangli districts of the state of Maharashtra. The project area has a cluster of 70 villages, consisting of 46 villages from Kolhapur and 24 villages from Sangli district. It has been jointly implemented by the Government of India through the National Informatics Centre (NIC), the Government of Maharashtra and Warna Cooperative Society.

This project was initiated to serve the information needs of the farmers for different crop cultivation practices of major crops such as sugarcane, pest and disease control; marketing and processing information etc., right up to the village level through networked facilitation booths in the villages. The existing cooperative structure has been used along with the state of the art infrastructure to allow Internet access to the existing cooperative societies.

Gyandoot Programme

A quite revolution is apparently taking place in Dhar district of Madhya Pradesh, where Gyandoot programme, a community-owned, self-sustainable and low-cost rural Intranet Model, has been eminently successful and has also attracted worldwide attention. Computers in 31 village centres have been used through an Intranet network. Local rural youth act as entrepreneurs for running cyber-cafe-cum-cyber offices on commercial lines without salary or stipend. The computers (information kiosks) have been established in the gram-panchayat building, and these provide user-charge-based services to the rural people. The service extends to various types such as information on government programmes, agricultural produce, auction centre rates, copies of land records, and online public grievance redressal. This experiment is considered a bold initiative in bringing government agencies at the level of single interface with the villages.
Gramsat Pilot Project

In Orissa, the state government has launched the Gramsat project to address the different aspects of governance such as issues of transparency, accountability, responsiveness, reduction of corruption, training and skill development, project planning and monitoring, as well as people’s participation. The Gramsat project aims at creating a database that will include spatial data on land information, water geology, village and forest boundaries, river and drainage network and power distribution network. This project is showing signs of a potential success story.

FRIENDS

A single-window delivery of government services, called FRIENDS (Fast, Reliable, Instant, Efficient, Network for Disbursement of Services) is operational in Kerala with the involvement of poor women’s groups. FRIENDS delivers easy and efficient services through a single point interface. It promotes improved coordination between government departments and simplifies interaction between the citizens and the departments in paying bills, obtaining applications, remitting registration fees, and so on. Such activities are done through a single window.

The key learning issues vis-à-vis FRIENDS project are:

- quality of service
- motivated manpower
- virtues of starting small
- relevance of public-private partnerships

TWINS

The Andhra Pradesh Government has a Twin Cities Network Services (TWINS) project, which is a pilot project to provide one-stop services to citizens. Launched in 1999, it provides an initial set of 18 services to the citizens of Hyderabad. These include payment of utility bills, issue of certificates, licenses and provision of information useful to citizens. This has now been extended to many areas in the city through setting up of ’e seva centres’.

APSWAN

The Andhra Pradesh State Wide Area Network (APSWAN) aims to link the state government secretariat with 23 district headquarters, serving as the backbone for 'multimedia services' that would be used for improved coordination between state headquarters and district offices in managing various regulatory, developmental and hazard mitigation programmes of the state government.

Raj Nidhi Kiosks

Raj Nidhi in Rajasthan’s Nyala village is a web-enabled information kiosk system, designed and developed by the Department of Information Technology, Government of Rajasthan. These kiosks are meant to provide the citizens access to information related to health, family planning, immunization schedules for children, employment, transportation,
distance education, agriculture, water and electricity connection, birth and death registration, approved housing societies and rates of land and building taxes.

**ICT Applications in Fostering Development: An Appraisal**

Every ICT application has a different objective, needs a different type of technology to build and hence has different sets of critical success factors. Most of the erstwhile socio-economic measures have been concerned with micro-level planning, poverty alleviation programmes and improved basic services such as health, education etc. But in the changing scenario, reform initiatives aim more at improved efficiency, marketization, increased accountability and enhanced resource management. ICT is significantly being used as a strategy to realize these goals. In actual practice, though, it appears that ICT is diluting the intent of the basic objective that it had set out to achieve. The process of e-governance will lead to more effective governance only when its key resource of information is shared, amongst all the stakeholders.

Thus, no amount of technological innovation can help, if there is no willingness on the part of the administration to share the information. For instance, the reluctance on part of government functionaries, in a district in Rajasthan, to provide information to the villagers regarding allocation of resources for local schemes defeats the whole purpose of information sharing that ICT aims at. Fortunately, this has led to the famed ‘Jan Sunwai’ movement by Aruna Roy that has recently culminated in the execution of Right to Information Bill. But such micro-efforts are few and far between. There are studies which indicate that information technologies do not necessarily support beneficial change, they rather precipitate disparities between the haves and the have-nots, the governors and the governed.

It is debated that the disadvantaged sections have been living on the wrong side of ICT. Peasant farmers in the India who constitute a significant component of the country’s population continue to live in the same impoverished conditions ever since independence. Andhra Prades, the most ICT friendly state in India has a track record of farmers committing suicides at a regular periodicity. There are many poignant questions involved: Has the ICT made those engaged in agriculture production increase their output? Has it helped the poor to get rid of their debt trap? Has it helped them appreciate the utilities of surfing the Net? Is the change process through e-governance uneven, or is it creating inequalities? Also in many cases, the specific e-processes initiated are not as per the people’s expectations. These are largely executed at the governments’ convenience.

The optimists believe that we are headed in the right direction, as the myriad socio-economic problems hindering the country's development require systematic technological solutions. ICT is almost projected as a panacea for catapulting the country into a developed and stable economy. This, however, still remains a far-stretched reality as there are pessimists who believe that the use of ICT in governance may worsen the situation of unequal access to government services. This could be due to lack of adequate infrastructure, unequal ownership of computers, language barriers, rigid mindset of government officials, lack of capacity building exercises, absence of effective grievance mechanisms, non-availability of right to information; and differences in utilization of information. In a bid to access a common knowledge pool, the society could get divided on the lines of knowledge itself.

It is believed that ICT may have created a new class of untouchables living in information poverty at one extreme and a new cadre of high technology entrepreneurs at the
other. A Report released by World Economic Forum (WEF) in February 2002, concluded that India had the widest digital divide. According to the Report, while the Internet was increasingly popular, there were only 4.5 million Internet users and 43 Internet Service Providers. Urban areas mainly shared the cake of ICT access. New Delhi amounted for more than 70 per cent of India’s Internet connections.

It is argued that ICT may have compromised equal information sharing of its benefits and eroded individual privacy. There is also a concern that e-governance may ‘clientize’ the citizens by individualizing them, and taking away their common bonds in sharp contrast to the team spirit it aspires to enthuse. The government and the non-government sectors are not promoting an atmosphere of information sharing. The essential backdrop of new model is of new enhanced knowledge processes within and among ‘local communities’. This certainly seems to be a remote possibility at the moment.

Unfortunately, the least attention is being paid to the area of social application of ICT, reducing it to be just a tactical and not a strategic innovation. There is a widespread apprehension that the overemphasis on ICT in the country may displace the whole idea of 'appropriate technology' and marginalize the significance of traditional low-cost technological devices still used by the majority of the poor for their livelihoods. No attempts are being made to promote the use of wireless communication technologies in rural areas or combine modern ICT with traditional means of communication. Over enthusiasm about ICT, it is feared, could lead to loss of traditional human resources.

Another aspect which is overlooked, especially in the context of developing countries, is whether ICT revolution can empower rural communities in the real sense of the term, without a minimum 'real' infrastructure. Certain key areas such as telecommunications infrastructure has not attracted sufficient investment. We are all aware that in many parts of India, electricity and telephone connectivity remain distant realities. The issues of need-based prioritization of scarce resources for infrastructural development and technical feasibility of projects are not being given enough serious thought.

ICT in government is generally looked upon as a governance technique, no doubt this is what it is, but its ultimate objective is to ensure accountability to the citizens. ICT is said to foster the process of accountability by ensuring political, economic and social accountability. Mere launching of interactive Websites with all the necessary information about Ministries and Departments is no boon in the absence of a systematic monitoring mechanism to assess the nature of grievances, queries and suggestions and also the frequency at which the people’s representatives and public officials genuinely respond to them.

Furthermore, certain e-governance initiatives in India such as creation of district level information centres by National Informatics Centre, computerization of Income Tax Department Tax System, adoption of computerized decision support system in Narmada Irrigation Project Authority and the implementation of the Rural Information Systems are now being considered as near failures of the government by a strong section of critics. This view point has been outlined by the fact that successful implementation of ICT is mistakenly seen as being dependent solely on the technological aspects, underlaying the issues related to change management and process re-engineering.

Does it mean that the ICT success saga is somewhat overrated? Is it not bringing the government, the private sector and the citizens closer? Is it not generating consciousness
towards improved governance? These and many more questions need to be earnestly addressed if the actual impact of ICT on socio-economic development of the country is to be gauged.

The information era has the potential to influence every aspect of our lives at the individual and societal levels. It permits, everything, as it is stated, ‘from the way we learn to the way we earn’. It redefines the manner in which the common citizens evaluate the delivery of public services and also their role in a democratic society. The concept of ‘Global Village’ has shed its mythical form and is fast emerging as a reality. Although network convergence is more visible than convergence of consumer divides, it is all too obvious that hitherto independent group of services meant for customers are increasingly merging into one another, substantially barring the obstructions between them to a great extent.

The situation is not as bleak as it has been made out to be. A system of checks and balances in the form of generating awareness on Citizens’ Charters, creating Information and Facilitation Counters in government departments, setting up of National Focal Coordination Points, providing for Rural Tele-centres, developing Research, Extension and Training Cells in ICT; and facilitating systematic Monitoring and Evaluation Mechanisms can undoubtedly arrest the unguarded advancement of ICT.

Towards Socio-economic Concerns: Road Ahead

In the contemporary scenario, the governments all over are acquiring economic competencies uniquely relevant to the new economy. Yet, to transform them into positive and responsive social institutions, we need to explore new governance opportunities. In this effort, there is a predominant role for non-government or non-state organizations, public as well as private, to participate as effective partners in ICT endeavours.

Information needs to be treated as a ‘key resource’, which facilitates sharing, exchanging, retaining as well as managing the knowledge input properly. The technological infrastructure is significant, but more important is the information and human systems that are critical to its success. The success of ICT initiatives depend on the government working with communities to define and meet their specific development needs. Also, there is need for an integrated approach based on the real information needs of the potential users, and not on a mere ‘technical fix’. Efforts need to be made to link isolated islands of information within a country to the information superhighway to enrich the availability and use of local content.

The control of ICT initiatives at local levels needs to be with the community based local organizations. The most difficult stage for any ICT initiative, is to sustain them, as at times, the initial interest and enthusiasm about new technology ventures wanes quickly. Social sustainability is very important, as it comes from serving real needs, usually through community control. The Government of India has taken various measures to promote Internet Services in rural and remote areas. These are:

- Providing Internet access facility to all district headquarters
- Extending Internet access to all users, on a local call charge basis, to the nearest Internet mode, whose numbers also has increased to well above 400
- Establishing ‘Internet Dhabas’ in rural blocks for the youth from the disadvantaged sections of the society
It is difficult to precisely point out the specific benefits of ICT projects. At times, risks may arise from the quantum of change involved, use of certain technologies, that have not had extended field use, complexity entailed in the application of software; and resistance to the application of ICT from certain vested interests. Hence, wherever possible, **indigenous technologies need to be harnessed**. There is an urgent need to apply ICT for promotion of non-farm activities such as training, marketing, storage and distribution. ICT applications that touch the lives of large number of citizens, are more likely to meet with success, as the benefits would outweigh the costs.

A Centralized Technology Push Approach may appear to offer the possibility of quick execution, but cannot sustain for long. Hence User Involvement gains currency for maximum results. Systematic and sustained efforts towards **training orientation** to the use of information by all the concerned is important.

We need to place ICT in a holistic perspective of Information Systems, as social systems are rooted in a context of people and social structure. Legal guidelines for ICT must have a pro-poor bias. ICT needs to look at a wider environment outside the organization comprising people's processes and information as well as their management and transformation. Provisions could be made to make ICT more **disadvantaged sections friendly**. Voice-enabled technology for the disabled could be one such step.

ICT can play a supportive role in ushering in a desired change. In increasing the effectiveness of development programmes, while there is a need for a commitment on part of administration, the community needs to be enabled to make collective demands on administrative system. There have been significant successes in transformation of communities through voluntary efforts, self-help and cooperation amongst communities, which has led to high productivity, increase in agriculture, basic health services and so on. A major stumbling block in the governance process can be overcome through **greater sharing of information** and better communication amongst the concerned stakeholders. ICT can definitely play a key role in this endeavour.

**Concluding Observations**

ICT can reorient the tenor of citizen-government relationship to a large extent if the pertinent socio-economic concerns are not shown the backseat. We must remember that globalization is irreversible and with it is the influx of ICT; what is reversible is only their negatives. All efforts should be to guide the ICT initiatives with a focus on the socially deprived and economically disadvantaged sections that have not received adequate attention so far. Information systems are made of people and social structures and hence should be rooted in them. The people’s dimension of ICT must get its due attention. The governments should recognize ICT as an instrument of poverty reduction. There is a need for establishment of a secure economic and legal framework with a pro-poor bias. Adequate investment in ICT infrastructure and integration of ICT into standard educational curricula will go a long way in creating a conducive technology culture in the country.

The private sector should also realize its social responsibility and target the rural poor. The communities on their part should come together to vociferously raise their concern on issues pertaining to impact of ICT on education, health and infrastructure. If all the stakeholders could understand their role in promoting conducive culture of information
sharing, the crucial role of ICT in empowering the downtrodden, creating new economic institutions, building capacity and re-engineering organizations could definitely bridge the conception - reality gap. The objective should be not to regard the government functions as merely tactical automation but utilize ICT as a strategic innovation to reach the rural poor and the disadvantaged sections of the society.

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