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**ELECTRONIC GOVERNANCE  
AND SERVICE DELIVERY  
IN INDIA:  
THEORY AND PRACTICE**

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# ELECTRONIC GOVERNANCE AND SERVICE DELIVERY IN INDIA: THEORY AND PRACTICE

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## ***Abstract***

*Interest in e-governance is growing with the increasing use of information and communication technology (ICT) by government to improve the quality of governance and service delivery. Governments all over the world have been using ICTs such as internet, websites, computers and mobile phones to provide various government services in an efficient, equitable and transparent manner with less corruption (good governance). Notwithstanding these advantages, there are certain problems like poor coverage of the e-governance infrastructure, inadequate human resources, mismanagement, technical inexperience and inequitable access (digital divide), lack of public awareness and ineffective civil society participation. This paper mainly reviews the experiences of e-governance reforms in improving the quality of governance and service delivery in India. The first section deals with the conceptual framework of e-governance. The second section focuses on e-governance initiatives in India. The third section reviews the implications of e-governance on service delivery in terms of efficiency, accountability, participation and equity on the basis of the secondary resources. The fourth section deals with the enabling conditions in promoting e-governance in India. Finally, the paper comes with the policy perspectives.*

Interest in e-governance is growing with the increasing use of information and communication technology (ICT) by government to improve the quality of governance and service delivery. Governments all over the world have been using ICTs such as internet, websites, computers and mobile phones to deliver services to the people. e-governance activities such as display of information relating to government service provisions, citizen feedback (complaints, and criticisms) about government policies and performance, payment of taxes, renewal of license with the help of ICT is on the increase. Electronic governance has the potential to address effectively the service delivery issues like accessibility, equity, adequacy, responsiveness, transparency, people's participation and corruption etc. (indicators of good governance) in service delivery process. Many developed countries have accorded e-governance a prominent place

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in public sector reform and in public policies and have allotted a significant amount of funding to e-governance projects. E-governance is also accorded a prominent place in the development agenda of developing countries as a promising tool for achieving good governance, which is usually regarded as essential for economic and political development. India is fast catching up with other countries to promote e-governance in a big way to improve the quality of governance and service delivery.

This paper mainly reviews the experiences of e-governance reforms in improving the quality of governance and service delivery in India. The first section deals with the conceptual framework of e-governance. The second section focuses on e-governance initiatives in India. The third section reviews the implications of e-governance on service delivery in terms of efficiency (speedy delivery, cost reduction and accessibility of service), accountability (transparency and simplification of procedures and actions, reduction of corruption), participation (empowerment with information in formulation, implementation, and monitoring of policies) and equity (benefits for disadvantaged groups and areas/regions) on the basis of secondary resources. The fourth section deals with enabling conditions in promoting e-governance in India. Finally, the paper elucidates the policy perspectives.

### **E-governance: Conceptual Framework**

Electronic governance or e-governance has been defined in a variety of ways. E-governance is about a process of reform in the way governments work, share information, and deliver services to internal and external clients. E-governance refers to the use of information and communication technologies (ICT), such as the E-governance, wide area networks, mobile phones etc. to deliver services to citizens that have the ability to transform relations with clients, businesses, and other arms of government. Christopher Baum defines e-government as the "transformation of public sector's internal and external relationship through net-enabled operations, information technology and communications to optimize government service delivery, constituency participation and governance" (cited in Kumar 2004). E-governance is defined as the application of electronic means in (1) the interaction between government and citizens, and government and businesses, as well as (2) internal government operations to simplify and improve democratic, government and business aspects of governance (Backus 2003). Rogers W'O Okot-Uma opines "e-governance seeks to realize process and structures for harnessing the potentialities

of information and communication technologies at various levels of government and public sector and beyond for the purpose of enhancing good governance" (cited in Kumar 2004). The term 'e-government' refers to the use of ICT by government agencies to transform relations with citizens and businesses (Venkatesh 2003; cited in Barthwal 2003:288). E-governance has different interpretations. It implies a smoother interface between the government and the citizens governance is nothing but good governance. The 'e' is only a tool. E-governance is to enhance the use of the information technology and to help enhance lives of the citizens. E-governance enables active citizen involvement by informing the citizens, representing the citizens, encouraging them to vote consulting them as required and encouraging their participation (Patel 2001).

E-governance can be classified under a variety of models depending upon the nature of interaction and agencies involved in the interaction. These are government to citizen (G2C), citizen to government (C2G), government to government (G2G), government to business (G2B), government to NGO (G2N) (Sachdeva 2003). In G2C model, the government interacts with the citizen to provide information and various services. Information about government services is published on the web sites and citizen can have access to information regarding procedures for getting jobs. Citizens can download a number of application forms for a variety of services, such as filling of tax returns, and renewal of licenses. A large number of government departments also offer a number of facilities and services at one place through internet portals. Citizens can also submit applications and make online payments. Important examples in this regard are: e-education, e-medicine, e-registration, e-transport and so on.

In the C2G model, citizens provide information regarding themselves (e-census), their preferences/ suggestions/ complaints to the government through electronic devices (e-democracy, e-voting). For instance, citizens can lodge complaints and seek redressal of their grievances. In the G2G model, different departments are connected through networks within the government, and networking of government offices so as to bring about synergy among them for speedy movement of communication and thereby reducing the cost. (e-administration, e-secretariat, e-police, e-court, and statewide networks). Computerization of office management (personnel, accounting, office manuals and procedures) facilitates faster and more accurate processing of tasks

with lesser manpower, and lower information and compliance-handling costs with savings accruing from reduced labour costs. In G2B and G2N models, government interacts with private and civil society actors to provide information and services (e-taxation). E-governance aims to make interaction between government and NGOs (G2C), government and business enterprises (G2B) more friendly, convenient, transparent and inexpensive (Sharma 2002: 607).

E-governance also can be classified under two groups on the basis of policy formulation and implementation, viz. e-administration and e-democracy. E-administration aims at harnessing ICTs to streamline administrative procedures and enhance public service delivery. This vision of e-governance is greatly influenced by the ideals and objectives of new public management, which mainly focuses on lean government (downsizing, less bureaucracy and few rules) for provision of customer friendly services at lower cost, such as renewal of driving license or declaration of income and payment of taxes online. E-democracy seeks to harness the internet for more direct empowerment of the individual. The various plebiscite uses of the internet put on the map by advocates of direct democracy and now featured in many official e-government strategies. Projects that directly concern the workings of the government include online voting, online polls, online deliberations or the use of e-mail, comment forms or other interactive internet features to contact administration officials or legislators directly.

The above review on electronic governance gives us two different kinds of impressions: one in a very limited sense i.e., e-governance refers to the use of ICT in delivering services to the people, and the other is broader in sense, i.e., e-governance not only refers to the application of ICT in delivering services to the people, but also represents a paradigm shift of the nature of the government citizen relationship, of the nature of the citizenship by providing them easy and greater opportunities of comprehensive participation in the governance process and of the nature of the interaction of the market, civil society and government organisations. It also represents a change in the structure of bureaucracy heralding an era of paperless government and demystifying the bureaucracy.

## **E-governance Initiatives in India**

Central and State governments have initiated many strategies to promote ICT in all walks of life. The Central Government announced

the IT policy in 1998 to make IT available to all Indians by 2008. The policy aims to make India an IT super-power and make it the generator and exporter of software within the next 10 years. A high power national task force on IT and software development was set-up in 1998. The policy envisages the creation of a government-wide information infrastructure, which would simplify service delivery, reduce duplication and improve the level and speed of services to the public. This would provide the public with the opportunity to send and receive information through electronic terminals instead of by writing or paper communication. Efforts are taken to increase ICT accessibility through computers and internet to reach wider sections of society with the help of civil society organizations (CSOs). Government processes and procedures would be reengineered to bring about several benefits, such as transparency at work, reduced constraints, increased efficiency and productivity and reduced cost of service delivery. Projects are integrated across departments to provide a single point of electronic delivery of services to citizens. Maximum transparency in government has been ensured through citizen charters available over the internet, for every government department. The government has already passed the Information Act, 2002 within the scope of Article 19 - a fundamental right – in our constitution enabling the citizens to get the information from the government. A number of projects are in operation in different states for promoting electronic governance in India. The significant ones among them have been discussed below.

***Andhra Pradesh:*** The principal objective of the IT policy in Andhra Pradesh is to extensively use IT in government for enhancing efficiency, transparency, accountability in Government departments and agencies, and providing better services to citizen. AP is one of the few states, which has introduced ICT in a big way to make a good impact on the quality of life of the citizens. Implementation of about 1,500 applications across 160 departments at about 10,000 sites, involving huge financial, technical and managerial resources reflects this trend. The policy document has mentioned, “e-governance is one of the crucial components in realization of the concepts of SMART government and good government” ([www.ap-it.com/egovernancego/go23\\_governance.pdf](http://www.ap-it.com/egovernancego/go23_governance.pdf)).

The major e-governance projects in the state are: Andhra Pradesh State Wide Area Network (APSWAN), Computer-aided Administration of Registration Department (CARD), the Andhra Pradesh Development Monitoring System (APDMS), the Fully Automated

Services of Transport (FAST) and Secretariat Knowledge and Information Management System (SKIMS) and Twin Cities Network Services (TWINS).

The TWINS project in AP provides a variety of services at one spot to the citizens of Secunderabad, Hyderabad and Ranga Reddy districts. Department functionaries interact with citizens through 39 e-seva centres and 350 service centres to deliver services. The services include the payment of electricity, telephone bills, water and sewerage, property and sales tax, registration and issue of births/ deaths, caste and nativity certificates, sale and receipt of applications for passport and telephone connections, driving license. Information regarding government departments like tourism, education, health, revenue, and rural development etc. can be obtained from these centers. Citizen can also avail online service facilities such as, e-Forms, e-Filing, e-payments, e-reservations and so on. (<http://www.e-sevaonline.com/>).

The centre handles 3,000 transactions a day, of which 80 per cent involves the payment of utility bills. The investment on the pilot project was \$ 2 million, including hardware, software, networking, and training and site preparation. The project has been renamed e-Seva and has been extended to eighteen other locations with private participation (Bhatnagar 2003: 260). The centres are partnerships between the government and private firms, which provide the hardware in return for transaction fees. The government supplies the staff for running the project (<http://www.iimahd.ernet.in/egov/india.htm>).

The Fully Automated System for Transport (FAST) project is aimed at providing services like issuance of learner's licenses, driving licenses and registration of vehicles in all thirty-seven regional transport offices in the State. All of these offices are computerized and networked (<http://www.iimahd.ernet.in/egov/india.htm>).

The Andhra Pradesh State Wide Area Network (APSWAN) was commissioned in 1999 to provide connectivity between the State Secretariat and each of the twenty-three district collectorates for data, voice and video communication. Now, officials and ministers interact through video conferencing, thereby saving on travel time and related expenses.

CARD - enables digital registration of property in 214 sub-registrars' offices across the State, leading to faster, easier and transparent property registration process and also provides accurate calculation of

stamp duty across the counter (<http://www.iimahd.ernet.in/egov/india.htm>).

The Multi-Purpose Household Survey (MPHS) is a comprehensive household database covering the entire population of the State. The data include the date of birth, religion, land-holding status, type of shelter, occupation and annual income of each citizen. A data warehouse, using a supercomputer, has been set-up in the Secretariat. Also all the geographical and infrastructure data in the state have been captured under the GIS (Geographic Information System) (<http://www.iimahd.ernet.in/egov/india.htm>).

Secretariat Knowledge and Information Management System (SKIMS) project was launched in 2000 by networking the entire Secretariat. This project is aimed at facilitating and extending the concept of a paperless office among the heads of all government departments and districts. It is also aimed at storing and managing secretariat data, information and knowledge efficiently (<http://www.iimahd.ernet.in/egov/india.htm>).

**Karnataka:** The important projects undertaken by the Govt. of Karnataka are *Bhoomi*, *Khajane* and *Kaveri*.

**Bhoomi:** Twenty million rural land records belonging to over 6.7 million farmers have been computerized in Karnataka. Citizens can obtain land records with ownership and crop details to obtain loans from banks through 177 government kiosks. This facility has helped farmers to not only secure land records speedily without speed money and middlemen, but also save the time and money earlier spent on visiting government offices where they were harassed by corrupt officials. Now, farmers can obtain all RTC (record of rights, tenancy and crops) copy of their land records within 30 minutes by paying Rs.15.00. Copies can be obtained for any land parcel in the taluka by providing the name of the owner or the plot number (<http://www.bangaloreit.com/html/egovern/Bhoomifrm.html>).

**Kaveri:** Computerization of land registration in Karnataka known as *Kaveri* intends to facilitate speedy registration without intermediaries and speed money. Indeed, the registration of sale and mortgage deeds earlier required much manual labour and time for registration, which has been reduced with the introduction of this project.

**Khajane:** Treasuries all over Karnataka have been computerized under a project known as *Khajane* to facilitate transparency and speedy delivery of services. Treasuries have been directly connected to rural local bodies accounting around for 4,500 zilla panchayats, taluka panchayats and gram panchayats. As a result of this network, Rs.20,000 crores are handled in 225 treasuries serving 4.7 lakh clients in the State.

## Kerala

**FRIENDS:** The fast reliable, instant, efficient network for disbursement of services (FRIENDS) project in Kerala aims at facilitating the provision of services within a corporation or municipality at a single centre. Fourteen centres have been established in all the district headquarters to provide smooth and transparent fast, reliable, instant, efficient services to citizens. It is a “single window scheme” in which the consumer is given the option of paying for common services rendered to him under a single roof. The major feature of the project is that this software is specifically programmed to accept payments due to different agencies by incorporating specific rules and regulations regarding remittances pertaining to each agency.

Individual citizens have historically been expected to pay for services used at the office of department or the agency concerned. This means that every citizen has to personally visit several offices and stand in queue for hours together to pay taxes and other payments due to Government. It was against this background that the FRIENDS project was conceived, enabling citizens to visit a single location to avail all the services. The counters handle around 1,000 types of payments such as electricity and water, revenue taxes, licence fees, motor vehicle taxes, university fees, and so on. Local bodies and seven Government departments/agencies such as Kerala State Electricity, Kerala Water Authority, BSNL, Revenue, Civil Supplies and Motor Vehicles Department and Universities have collaborated to provide these services.

## Madhya Pradesh

**Gyandoot:** This is a rural intranet network started in 2001 in Dhar, a remote district in MP, to benefit nearly a million people across 311 gram panchayats covering 600 villages. The project provides 15 types of services through a network of 35 information centres. Citizen can avail of various benefits, such as information about crop prices,

copies of land records, government applications assistance, obtaining of income, domicile, and caste certificates, redress of grievances, and so on. Trained local people manage it and the gram panchayat meets the entire cost. This project has received worldwide recognition and received the Stockholm Challenge IT award 2000 and the Computer Society of India IT award 2000 for best IT usage in India (<http://www.gyandoot.nic.in/>). The local bodies, in collaboration with government officials have started ICT kiosks operated by unemployed youth who were selected and have been trained to run these kiosks. It caters to the ICT requirements of a wide section of rural consumers.

## **Maharashtra**

In Maharashtra, the “Wired Village” project in Warana, a rural area, gives information in the local language to the people of 70 villages about crop prices, farmer’s payment dates, employment and educational opportunities through 54 kiosks. It has helped the Warana Group of Cooperatives (WGC) and the farmers who supply sugarcane to the cooperatives to achieve better productivity. Before the implementation of the project, there were communication problems between the farmers and the WGC leading to inefficiency and lower productivity ([www.mah.nic.in/warana/](http://www.mah.nic.in/warana/)).

***Computerization of PDS in Akola District:*** In order to detect bogus ration cards and black marketing in the Akola District of Maharashtra, all ration cards were computerized by the public distribution system after a household survey in 2000 at the district as well as the tehsil level. All the cardholders were then directed to be present for verification. Genuine cardholders were retained and bogus cardholders were separated out. After a month, 37,000 bogus cards and 9,000 duplicate cards were detected. One million litres of kerosene could be saved in the first six months, and sugar, wheat and other ration items worth Rs.56 - 60 million were saved annually in the district. Computerization of the data, thus, helped to check corruption in the PDS in Akola District (Barthwal 2003:296).

## **Rajasthan**

The e-governance projects in the state are: *Rajnidhi*, *Rajswift*, *Lokmitra* Electronic service and *Vikas Darpan*. *Rajnidhi* Information Kiosks (*Rajnidhi*) is an e-governance project in Rajasthan developed and

designed to enable the citizen to access a number of services. A citizen can obtain information relating to investment opportunities, tourism (tourist places, fairs and festivals, forts, sanctuaries), health (family planning and immunization of children), employment, transportation, distance education, and agriculture. Information regarding procedures (forms, rates, places and persons) for obtaining ration cards, licenses, birth/death, and caste certificates, and water and electricity connections. This website also contains electronic versions of State Government publications, statistical data, details of Government departments and PSUs. The kiosk provides an opportunity for the citizen to send complaints and suggestions to the Chief Minister and senior officers directly ([www.ap-it.com/egovernancego23governance.pdf](http://www.ap-it.com/egovernancego23governance.pdf)).

**Lokmitra:** Project provides access to Government transactions through the internet and e-kiosks. It is equipped with five e-counters, connected to a central server. Any citizen can avail multiple services of different departments at these counters ([www.lokmitra.gov.in](http://www.lokmitra.gov.in)).

**Rajswift:** is a system, which uses the internet to facilitate online data, text and email communication between the Office of the Chief Minister and the 32 District collectors. *Vikas Darpan* – GIS - based Planning & Decision Support System covers 40,000 tehsils on about 200 demographic and socio-economic indicators.

## Gujarat

**Computerized Inter-State Check Posts of Gujarat Government (CICP):** The prominent e-governance project in Gujarat is the computerized inter-state check post (CICP) system in which all the check posts of Gujarat have been computerized. This helps government officials to check all the heavy vehicles passing through the State to and control the transport of commodities to conform to specified standards to avoid loss to life and property. Besides, the project also protects drivers of transport vehicles from the alleged harassment of officials and checks unaccounted money transactions. Reducing the time checking the utilization of these techniques has been the other objective. The PPP model (Private Public Participation) has been applied to design and run the project.

A team comprising an enlightened political executive and a technology-savvy administrator was able to implement an online system in which each truck is weighed on an electronic weighbridge. The base data are retrieved from a database, and fines and taxes due to Government are automatically calculated and printed out ([www.egov4dev.org](http://www.egov4dev.org)).

### **E-governance and Service Delivery**

This section examines the implications of e-governance on service delivery in terms of efficiency (speedy delivery, cost reduction and accessibility of service), accountability (transparency and simplification of procedures and actions, reduction of corruption), participation (empowerment with information in formulation, implementation, and monitoring of policies) and equity (benefits for disadvantaged groups and areas/regions) on the basis of the secondary resources.

**Table 1: Governance Projects and Service Delivery (efficiency, accountability and equity) in India**

Nature of e-governance project	Type of government application	Efficiency (time/effort/money for getting the job)		Accountability(transparency/ speed money/ wastage/harassment)		Empowerment (participation/ accessibility/equity)	
		Before	After	Before	After	Before	After
CARD, AP/Kaveri in Karnataka	Valuation of property	Few days	Few minutes	Middlemen, harassment Rs.50 to 500	Reduced	Secrecy/ discretion	Information access
CARD, AP/ Kaveri in Karnataka	Land registration	7-15 days	2-3 hours	2-5% of the value	Minimised	Ambiguity	Display
Bhoomi, Karnataka	Obtaining land title certificates	3-30 days	5-30 minutes	Rs.50-500	Rs.15	Secrecy	Transparency
Inter-state check posts, Gujarat	Collect fines for over loading	30 minutes	2 minutes	Harassment, corruption	Minimised	Discretion	Penalties are displayed
Mandal computers, AP	Issue of caste certificates	20-30 days	15 minutes	Rs.50-100	Rs.10	Discretion	Transparency/ Citizen Charter
FAST in AP	Issue of licences/ vehicle registration	delays	Stipulated time	Rs.50-300	Reduction of speed money	Discretion	Transparency/ Citizen Charter
SKIMS in AP	Net working of Secretariat, departments	Red tapism/ delays/ tedious procedures	Speedy communication/ reduction of cost, staff/time/paper	Absence of accountability/	Transparency accountability/ accessibility of information for quick monitoring & actions	Complexity/ secrecy	Transparency/ access to information for quick action

Nature of e-governance project	Type of government application	Efficiency (time/effort/money for getting the job)		Accountability (transparency/ speed money/ wastage/harassment)		Empowerment (participation/ accessibility/equity)	
		Before	After	Before	After	Before	After
APSWAN in AP/ Rajswift and Rajnidhi in Rajasthan	Net-working of State departments & districts	Red-tape/delays/ tedious procedures	Effective communication & Monitoring/ Reduction of cost/travel	Absence of accountability/	Transparency accountability/ accessibility of information for quick monitoring & actions	Complexity /secrecy	Transparency/ access to information for quick action
Khajane in Karnataka	Net-working of treasuries local bodies	Red-tape/ delays/ Tedious procedures	Speedy/ transactions/ reduction of cost/time/ Staff	Absence of accountability/	Transparency /less corruption	Delays	Speedy Payment of bills
CET, Karnataka	Computerisation of admissions	Manual processing of applications	Computerized dealings	Absence of accountability/	Transparency/no manipulation	Irregularities	Admissions based on ranking
PDS Maharashtra	Computerisation of ration cards	Bogus card holders	Elimination of ineligible	Black marketing & corruption	No black market of corruption	Elite capture	Empowerment of needy /equity
E-seva in AP FRIENDS in Kerala, Lokmitra in Rajasthan, Gyandoot in MP, Wani Project Maharashtra	Several services at one place	Several depts./ queue/long waiting periods	Eliminate queue & avoid waiting time	Absence of accountability/	Little scope for corruption	Complex process	Transparency

Source: compiled from different sources

## Speedy and Cost Effective Service Delivery

Many studies have found that the services provided by governments are inadequate, unreliable and expensive. Citizens have to expend much effort and time to obtain these services. Service delivery processes have problems such as inadequate and irregular access to and supply of public services, lack of responsibility, neglect of consumers and their needs, delayed response and prevalence of bribery (Public Affairs Centre 2001). E-governance can promote efficiency in administration in four ways as below.

***Provision of information and services:*** Governance can improve interactions with citizens and provide services at lesser cost and time, and greater convenience. Many government departments provide information about activities and schemes to the public through their websites. They also provide facilities to download information and forms to obtain various services without visiting the concerned offices. Online facilities are also provided to obtain licences, certificates, reservations, admissions, and allotments, which saves time and cost. For instance, after computerisation of land records, farmers in Karnataka can obtain RTC (record of rights) within 30 minutes by paying Rs.15.00. They can obtain a copy of land records in the taluk office by providing the owner's name or plot number. Similarly, after computerization, land registration requirements in AP can be completed within an hour instead of the several days needed earlier. The time for registration of land sales has been reduced from a week to less than an hour.

***Multiple services:*** Governments are also providing multiple services at single points to facilitate speedy delivery of services to citizens to help save their money, effort and time, where earlier they had to visit several offices for obtaining different services.

***Lokmitra:*** Project in Rajasthan provides multiple services from different government departments through e-counters connected to a central server ([www.lokmitra.gov.in](http://www.lokmitra.gov.in)). In the Panchmahal District of Gujarat, the district administration publishes information about developmental projects/ programmes and performance of key departments. Its portal even provides the facility to download various forms and accepts a few of these online. Similarly, under Gyandoot in MP, citizens can access information regarding prices of cereals agricultural machinery and equipment in local and outside markets. Citizens can seek advice, opinions and solutions to their problems from

agricultural, animal husbandry, health and legal experts. They can obtain income, domicile, and caste certificates. Students can obtain examination result and question banks from the internet.

In AP, the e-Seva project provides many services at one place. Similarly, FRIENDS single-window model project in Kerala provides public services under a single roof at all district headquarters. These centres handle around 1,000 types of payments such as electricity and water, revenue taxes, license fees, motor vehicle taxes and university fees. This facility has saved citizens much effort and time. People had to visit several offices and stand in long queues waiting for their turn to pay taxes or other payments (Madon and Kiran 2003).

***Administrative efficiency for effective communication:*** E-governance can improve the efficiency of government by streamlining administrative procedures (simplification and transparent) for effective communication within and outside government departments. Rationalization and simplification of the vast number of regulations and procedures through computerization, cut-short delays and enhance the quality of service-delivery. E-governance not only reduces paper work, but also facilitates speedy communication and effective coordination. This ultimately reduces red tape and corruption and helps in providing more and better service at lesser cost (NASSCOM 2003).

For instance, the connectivity between the State Secretariat and twenty-three district collectorates in AP for data, voice and video communication has helped officials and ministers to interact through video conferencing and thereby save on travel time and related expenses (<http://www.iimahd.ernet.in/egov/india.htm>).

Rajswift is a system in Rajasthan, which uses the internet to facilitate online data, text and email communication between the Office of the Chief Minister and the 32 District collectors. The networking of the entire secretariat in AP connecting government departments and the districts has not only extended the concept of a paperless office but also facilitated effective communication and management and storage of secretariat data, information and knowledge (<http://www.iimahd.ernet.in/egov/india.htm>). The computerisation and networking of 225 treasuries in Karnataka have facilitated transparency and speedy delivery of services. The network handles around Rs.20,000 crores, serving 4.7 lakh clients and 4,500 local governments (Zilla, Taluk, Gram panchayats and municipal bodies). In AP, CARD enables

digital registration of property in 214 sub-registrars' offices across the state leading to faster, easier and transparent property registration process and also provides accurate calculation of stamp duty across the counter. ICT can also promote efficiency in government management by staff and cost reduction. It facilitates outsourcing and reduces transaction costs. It increases efficiency and ensures responsive and transparent administrative environment. For instance, the application of ICT in administration in the USA has resulted in the reduction of staff and expenditure. ICT based e-governance initiatives brings about the reinvention of government in terms of providing utilities and services to citizens to a point of direct contact and the lateral integration of official records, making them available to users. It also involves redesign of governmental institutions.

However, several studies express reservations about the efficiency of computerised service delivery. For instance, the performance of e-centres in Kerala is not encouraging. In most of the centres, the collection levels have stagnated and collections are extremely erratic at a few centres. Collection in most cases has stayed within the range of 10 to 40 lakhs in many districts. Lack of coordination between centers and participating departments, the apathy of participating departments and obstinate and indifferent attitudes of office staff are major constraints in this regard (Sreekumar 2002).

### **Transparency, Accountability and Corruption**

Dissemination of information provides transparency and empowers citizens to ensure accountability and prevent the administration from indulging in corrupt practices. In many developing countries, including India, regulations are often complex and at times inconsistent. They tend to be numerous and difficult to comprehend not only to the public but also to the employees responsible for implementing them. Weak implementation of laws and regulations results in the flouting of rules and corrupt practices. Such violations are more where administrators enjoy vast discretionary powers. In fact, administrative delays and corruption are due to complex and non-transparent administrative procedures (Sangita 1995a). Lack of openness in transactions is largely responsible for corruption in official dealings. Information on income and expenditure enables people to hold civil servants accountable, reducing inefficiency and corruption. The bureaucracy - the instrument of state action - assuming enormous power has come to be associated with inefficiency and corruption

(Hussain 1990; Sangita1995b; Maheswari 2000; Ghuman 2001:711; Klitgaard 2000; Jain 2003;).

Service delivery system in most of the sectors has not been satisfactory (Punyaratabandhu-Bhakdi et. al. 1986; Paul 1995; Paul and Sekhar 2000). The phenomenon of speed money and corruption has become one of the major issues in administration (Hussain 1990; Sangita, 1995a; Maheshwari 2000; Jain, 2000). It is believed that 20 to 30 per cent of illicitly money is siphoned off from government contracts and purchases due to lack of transparency and excess of discretionary powers. Corruption at the grass roots has become a way of life. In rural areas, nothing moves without speed money in public offices. People are compelled to pay bribes to get government services and facilities (certificates, licences, katha transfers, building plan approvals, registration of properties and admission to schools or hospitals). Approval of substandard works (roads, buildings and hospitals) and procurement of poor quality of goods (medicines, materials, agricultural inputs and implements) is very common. Stealing of power, water (through unauthorized connections) and essential items (from the public distribution system) and encroachment and misuse of government properties are very frequent. Misappropriation of funds meant for rural development and weaker sections is reported widely (Sangita 2000). With this state of affairs, ICT can be a better instrument in dealing with the problems related to service delivery. The pertinent question here is to what extent ICT has controlled corruption. Many studies point out that e-governance holds much promise to address the problem of corruption.

***Transparency and Accountability:*** Studies point out that ICT could make civil servants responsive and accountable with free flow of information regarding administration and policy (Mukhopadhyaya 2002). Display of information a the internet reduces manipulative capacity as well as prevents officials from misusing resources, and thus enhances peoples' trust in government. Transparency or openness in dealings with the free flow of information to the stakeholders concerned is easy through ICT. Officials are bound to be accountable when they deal with people or people deal with officials electronically because all interactions are open to all concerned. The operations are transparent and known to all the actors involved. For example, when an aggrieved citizen appealed to which authority/official and how many days /months that particular authority took to redress the grievance can be viewed on the screen by anyone. This transparent transaction

makes officials responsive as their manipulative power is crippled owing to the openness. Similarly, the display of information regarding the beneficiaries selected for various government schemes can prevent wrong selection. Citizens can have all the information regarding how many people have applied, their socio-economic status, the criterion for selection etc.

Accessibility to information regarding land records, land registration, government policies, schemes and procedures, and so on empowers citizens to ensure accountability of administrators. The online complaint registration process, which has been innovatively introduced by an NGO in Mumbai, gives us a good example of how officials are made accountable to the people. If a complaint that is filed is not responded to within the stipulated time, it is automatically passed on to the next higher officer and this goes on till it is addressed. This process, therefore, makes officials accountable and as a result they do not dare to neglect their responsibility ([www.prajafoundation.org](http://www.prajafoundation.org)).

***Reduction of corruption:*** Some studies have found that corruption has drastically come down after the introduction of e-governance (javascriptvoid (0)). E-governance, according to scholars, checks corruption and improves service delivery. ICT promotes transparency and empowers contestability of public functions and ensures responsiveness. It reduces discretionary powers of administrators and transaction costs. For instance, increasing use of smart cards allows the citizen to have access to a number of government services and thereby prevents fraud and misuse of public services resulting in increased public confidence in welfare and taxation services (Wescott 2003:99).

For instance, land registration requirements in AP after computerisation can now be completed within an hour without official harassment or bribes. Lack of transparency in property valuation in the earlier system resulted in a flourishing business for brokers and middlemen, leading to corruption. Antiquated procedures, such as manual copying and indexing of documents, and storage in paper forms in ill-maintained backrooms, have all been replaced with the application of e-governance (Bhatnagar 2003: 259). Similarly, in a study carried out in five major cities (Delhi, Hyderabad, Kolkata, Chennai and Mumbai), it is found that corruption in tasks such as supply of electricity services provided by municipal corporations, urban development, transport (driving licenses), civil supplies, hospitals, water supply, railways (ticket

reservation) and land registration has declined after computerization ([www.indiatimes.com](http://www.indiatimes.com)). Studies on the '*Bhoomi*' project in Karnataka found that payment of speed money for obtaining land records has stopped after computerization. Generation of hundreds of crores of black money, which was transacted in the form of bribes, has been stopped after computerization of land records under the Bhoomi project. The farmer can have his/her land record on payment of Rs 15.00 from the village kiosk. This saves farmers' time and money, and also saves them from harassment. They have easy access to tenancy land records (Chawla 2003). E-governance projects like Bhoomi and Khajane have made governance more transparent and citizen-friendly. The common entrance test (CET) for admission to professional courses in Karnataka is very transparent and efficient (Krishna 2003). Thirty-seven year-old farmer Sivanna Dasiah, who bought a certificate to get a bank loan, told Reuters, "The village accountant used to demand 50 to 100 or even 500 rupees sometimes for one copy," (Yahoo News 31st May 2001). This is the case with the sub registrar's office after computerisation of land records. Corruption and harassment of the common man has declined in registration deeds after the introduction of Kaveri software. It has ensured speedy delivery of documents and better access to information to the citizen through kiosks (Murthy 2003). Corruption has come down after computerization of land registration in AP citizens can complete registration requirements within an hour, instead of the several days needed earlier. Similarly, the e-seva project in Hyderabad has made service delivery satisfactory in terms of time, cost and corruption (Pardhasaradhi 2003). Similarly, corruption has declined and revenue in the form of fines from overloaded trucks has tripled after the computerization of 10 interstate check-posts in Gujarat. These fines and taxes due to the government are automatically calculated and printed out. Departmental inspectors at these check posts were notoriously corrupt, leading to the harassment of truck drivers and loss of revenue to the State.

Corruption and black marketing in the Public Distribution System (PDS) in Akola District of Maharashtra was checked after computerization. In 2000, nearly 37,000 bogus cards and 9,000 duplicate cards were detected after proper survey and verification. This ultimately helped save one million litres of kerosene in the first six months and Rs.56 - 60 million worth of sugar, wheat and other ration items annually (Barthwal 2003:296).

Corruption and irregularities in the issue of learners licences, driving licences and registration of vehicles in AP have declined after computerization (<http://www.iimahd.ernet.in/egov/india.htm>). Corruption has declined, while revenue has increased after computerization of check posts in Gujarat (Bhatnagar 2003: 259). The farmers of Karnataka have paid more than Rs.19 crores in terms of user fees for obtaining their land records (Chawla 2004). By improving government processes (e-administration) connecting citizens (e-citizens and building external interactions (e-society), ICT can make a significant contribution to achieving good governance that is efficient and effective (Heeks 2001)

However, some studies point out that e-governance projects have failed to promote accountability and prevent corruption. Officials still collect speed money for land registration in AP. Everything happens inside the office where officials manually calculate the registration monetary transactions and the customer waits outside the office. The study reveals that a lot of unaccounted money goes to the official's pocket (Caseley 2004). This is also the situation in the check posts in Gujarat. Though corruption has declined to some extent with the application of e-governance, it was found in a study in Delhi, Hyderabad, Kolkata, Chennai and Mumbai that bodies like municipal corporations, transport, railways and hospitals in Delhi still topped the list in terms of corruption. Middlemen's role had not come down and their help is sought in getting services like railway ticket reservations, driving licences, and municipal services (<http://economictimes.indiatimes.com>).

**Participation:** Participation of the stakeholders in policy formulation and implementation is very important for achieving good governance. ICT has significantly changed the nature and extent of citizen participation, which fundamentally differs from the traditional kind of participation, as shown below.

**Table 2: A Comparison of the conventional governance and digital governance models.**

Participation indicators	Conventional governance model	Digital governance model
Mode of participation	Representative	Individual collective
Domain of participation	In-situ	Ex-situ
Approach to participation	Passive/reactive	Pro-active interactive
Impact of participation	Indirect/delayed	Direct/ immediate

(<http://65.110.68.184/artman/publish/concept.shtml>)

E-governance enhances citizen participation in shaping the policies and improving service delivery (Meena 2002; Budhiraj 2002). E-governance can facilitate better participatory process in governance. People can debate and discuss public policies before enacting any Acts or rules. It can expand policy debates beyond the confines of dominant individuals and groups. Greater transparency can be ensured in actions and decisions through people's participation in such debates.

Citizens' opinions, needs, and preferences can be communicated to the concerned authorities to provide relevant services and goods. This feedback helps in making service delivery more qualitative and cost effective. The online facility of complaining and suggestions helps the citizens effectively participate in the delivery of services. E-governance projects like 'Bhoomi', Gyandoot, 'FRIENDS', e-seva etc. and most of the government websites, have a feedback section helping stakeholders to participate directly with the delivery system bypassing the intermediaries. Anyone citizen can monitor the quality of many services.

ICT empowers the citizens to have access to information related to government activities and programmes to monitor and judge government's performance. Accessibility of information regarding land records, land registration, government policies, schemes and procedures, business, politics and so on empowers the citizen very much. E-governance enhances public participation by giving them the opportunity to share information, to suggest bettering the administration (Budhiraja and Sachdeva 2003).

Lodging complaints electronically against erring officials and so on not only can save time and cost but also ensures accountability. For instance, under 'Gyandoot' in MP, citizens can file complaints to the District Administration through e-mail with assurance of reply within a maximum period of seven days. The complaint includes delays in sanction and disbursement of scholarship, quality seeds, and fertilizer, malfunctioning of drinking water and public distribution systems and so on.

### **Accessibility and Equity Issue**

Accessibility means that the process is the same for all the stakeholders with multiple and reciprocal pathways for information flow. This may require actively soliciting inputs from significant stakeholders, not from lobby groups and institutions, but through creating structures to foster communication (Kakabadse et.al. 2004). Discussing the digital divide issue, some scholars have expressed their view that information-age direct democracy poses a new social segregation challenge for those who are information-rich and information-poor on an individual and societal basis (see Kakabadse et al 2004). It is held that fewer people have accessibility to ICT. Therefore, promotion of e-governance would benefit the "technology-haves". The practical application of e-governance, however, has disproved this idea. What is happening to the beneficiaries of 'Bhoomi' project? How is the 'Gyandoot' project operating? The kiosks installed for running these projects serve the demands of beneficiaries. It is immaterial whether the beneficiaries have the knowledge to use computers or not. The 'Soochakas' or informers in charge of the local kiosks in case of 'Gyandoot' or officials in the case of the 'Bhoomi' project serve the needs of the common people. The poor have less voice on account of their inferior social position. This has been revealed by many studies on the Panchayati Raj system and peoples' participation. In grama sabha meetings, these people cannot express independent views either due to lack of awareness or due to fear of influential leadership in the area. In this regard, e-governance promises to be of great help to them. It is easier for people to lodge complaints, against erring local political and administrative officials by these means.

**Empowerment:** In Maharashtra, the "Wired Village" project in Warana, a rural area, gives information in the local language to the people of 70 villages, about crop prices, farmers' payment dates, employment and educational opportunities, through 54 kiosks. It has

helped farmers who supply sugarcane to the Warren Group of Cooperatives (WGCs) to achieve productivity. Before project implementation, there was wide communication gap between the farmers and the WGCs, leading to inefficiency and lower productivity ([www.mah.nic.in/warana/](http://www.mah.nic.in/warana/)). E-governance makes public institutions more responsive and accountable. ICT has the capacity to challenge the monopoly of the existing political class over the means of communication and to revitalize citizen-based democracy. In addition, these measures empower grass-root groups to collect information, organize citizens' initiatives, change public opinion and influence national and local policies (Finquelievich et al. 2001: 148).

The Rajnidhi project in Rajasthan provides information related to investment opportunities, tourism (tourist places, fairs and festivals, forts, sanctuaries), health (family planning and immunization of children), employment, transportation, distance education, agriculture, information regarding procedures (forms, rates, places and persons) for obtaining ration cards, licences, birth, death and caste certificates, and water and electricity connections. These kiosks provide an opportunity for citizens to lodge complaints and make suggestions to the Chief Minister and senior officers directly ([www.ap-it.com/egovernancego23governance.pdf](http://www.ap-it.com/egovernancego23governance.pdf)).

**Equity:** To what extent has the ICT found solutions to the problems faced by citizens? Has it really improved the lives of people? Attempts are on to find solutions to common problems faced by citizens. Much effort has been made to provide access to information through the internets. Efforts are on using ICT to provide medical facilities (tele-medicine) and distance education to rural and backward regions. For instance, in the Gyandoot project, information about the prices of various agricultural commodities and expertise regarding agricultural extension is provided to the rural people.

Equity means taking explicit care to balance the potential costs and the benefits among all stakeholders and presupposes openness with regard to differing or conflicting perspectives and assumptions (see Kakabadse et al. 2004). By delivering services at the doorstep of citizens, both poor and rich, and providing equal opportunity to all, most of the e-governance projects bring equity. The Warana project in Maharashtra, Gyandoot in MP and Bhoomi in Karnataka clearly demonstrate that the poor and disadvantaged are potential beneficiaries of the services delivered through these projects. They just need to go to the nearest kiosk and tell the operator about the service they require. Then they

can get whatever needed by paying a minimal user fee. It is not essential that they must own a computer system or those they know how to operate this in order to access the service. Therefore, it can be said that e-governance can address equity concerns by providing services at the doorsteps of the poor, who are otherwise unable to access either ICT technology or information, or do not have the capacity to raise their voice against injustice due to their low socio-economic status. The poor can pay or collect whatever is required in their nearest kiosk instead of going to distant places expending time and money, which they would have to do in case of government-departmental dealing. Generally, urban areas are more developed with adequate infrastructure whereas the rural areas do not have much access to these. Therefore, people of the rural areas suffer a lot with regard to their interaction with government, thereby causing an equity issue. However, the Warana case illustrates how this equity issue can be addressed and how ICT can be used for rural development.

Notwithstanding the promising and positive potential of e-governance, many studies reveal the gloomy side of its application in India. The application of ICT has brought maximum benefits to the elite, has increased wealth inequalities and has had a negative impact on the poor (Madon 1998; Heeks 1999; Ramchandraiah 2003; NASSCOM 2003). IT-led growth has shown an overemphasis in urban areas and certain other regions in the absence of a more equitable regional development. There is apprehension that IT-led economic growth may contribute to widening of the rural urban disparity as shown by evidence both within and outside (Wackerman 1997; Bajpai and Navi 2000).

Application of ICT is biased towards the urban and the rich. For instance, half the population in developing countries has not used a phone even once in their lifetime. Only less than one per cent of the population has access to computer facilities. In addition, most of the facilities are available only in urban areas. The use of these facilities in rural areas is very low, as many people have no knowledge of operating them. The lower incidence of usage is also attributed to frequent failure of kiosks and the absence of relevant data (very little attention to the information needs of communities). It is reported that many websites have not been updated and the old manuals have been transferred without carrying out the corrections. Most of the government websites are not properly maintained in terms of updating of the content and/or design. Relevant information needed by citizens

should kept on the web page. Simple design is essential for the benefit of the common people. Once put-up these web pages have to be properly maintained to help in the delivery of better services.

### **Critical Conditions for Success of E-governance**

***Adequate Infrastructure:*** By using detailed analysis of 2,166 government websites of different nations, the Third Annual Update on Global e-Government Report gives India a very low rank in promoting e-governance in terms of information availability, citizen access, portal access, and service delivery. Singapore with 46.3 percent tops the list of 113 countries. United States (45.3 per cent), Canada (42.4 per cent), Australia (41.5 per cent), Taiwan (41.3 per cent), Turkey (38.3 per cent), Great Britain (37.7 per cent), Malaysia (36.7 per cent), the Vatican (36.5 per cent), and Austria (36.0 per cent) follow in order (<http://www.insidepolitics.org/egovt03int.pdf>).

Table 3 gives an idea of India's position compared to some nations of the world in e-governance in terms of select indicators. It clearly shows that use of ICT in developing countries in terms of personal computers (PC), use of ICT in public education per capita computer use, ICT expenditure, number of internet users, government online service availability, government prioritization of ICT use and laws relating to ICT are very low compared to some of the other developing countries. Though India ranks better in terms of prioritizing online service availability, it lags behind in some aspects as in ICT investment, internet use, and ICT use in education and per capita expenditure in the ICT sector with respect to the burgeoning need. Thus adequate infrastructure is highly essential for the progress of e-governance in India.

**Table 3: India's position in the world in terms of ICT infrastructure**

Country	No. of PCs (per 1000 people)		Public education purpose (in thousands)		Internet users (thousands)		ICT expenditure (in million US dollars)		ICT per capita expenditure (in US \$)		Govt. online service availability (Rating:1-7, 7 being best)		Govt. prioritization of ICT use (Rating:1-7, 7 being best)		Laws relating to ICT use (Rating:1-7, 7 being best)	
	1995	2001	1995	2001	1995	2001	1995	2001	1995	2001	1995	2001	1995	2001	1995	2001
UK	201.3	366.2	989.2	1,824.0	1,100.0	24,000.0	85,484.0	1,460.4	1,460.0	2,318.6	-	5.6	-	5.2	-	5.5
US	328.1	625.0	5,900.0	16,322.0	200,000.0	142,820.0	557,252.0	812,635.0	2,118.0	2,923.0	-	5.4	-	5.3	-	5.4
Russia	17.6	49.7	176.8	471.3	220.0	4,300.0	6,188.0	9,908.0	41.8	68.2	-	2.6	-	3.7	-	3.0
Australia	275.5	515.8	187.6	706.8	500.0	7,200.0	27,545.0	37,673.0	1,524.2	1,938.8	-	3.5	-	4.5	-	5.3
Germany	178.4	382.2	466.8	1,054.9	1,500.0	30,800.0	125,825.0	154,645.0	1,537.9	1,880.4	-	4.0	-	5.0	-	5.0
Japan	120.3	348.8	182.2	2,172.0	2,000.0	55,930.0	279,798.0	413,712.0	22,282.2	3,256.2	-	3.2	-	5.5	-	4.2
China	2.3	19.0	315.4	2,092.1	60.0	3,3700.0	20,401.0	66,612.0	16.6	52.7	-	3.5	-	5.3	-	3.5
Bangla-desh	-	1.9	-	-	-	250.0	-	-	-	-	-	1.5	-	4.4	-	2.1
Nepal	1.2	3.5	-	-	0.2	60.0	-	-	-	-	-	-	-	-	-	-
India	1.3	5.8	23.6	238.7	250.0	7,000.0	7,250.0	19,662.0	7.8	19.0	-	3.9	-	5.6	-	4.3

Source : compiled from the data taken from [www.worldbank.org](http://www.worldbank.org)

For reaching the benefits of e-governance to all citizens, more e-governance projects have to be implemented by building adequate e-infrastructure particularly in rural areas and backward regions. Dependence on ICT has increased compared to other instruments of service delivery (Mitra 2001 in Singh and Mitra 2003) for obvious reasons of cost effectiveness, equity, participation and increased responsiveness and accountability of service providers. As dependence has increased, we need to have 'e-readiness' for promoting effective e-governance. World Economic Forum Consultation Report on e-readiness defines e-readiness as the ability of the ICT networks to effectively adapt them to social and economic advancement (Budhiraja and Sachdeva 2003). Simply put, e-readiness refers to a process of preparation for effective adoption and use of ICT for socio-economic development or for the fulfillment of whatever objective is stipulated. This e-readiness can be achieved through building adequate e-infrastructure, bringing about awareness among the leaders of government, civil society and market organizations. By building adequate e-infrastructure and initiating more rural-centric e-governance projects, keeping in mind the requirements of the larger section of the population, e-governance can be promoted more effectively in India.

### **Sound Policy and legal Framework**

New regulations and laws are essential with regard to the application of ICT in promoting governance to ensure accountability and supply of quality goods and services by private and public sectors without harming the larger society. Removal of obsolete laws and discretionary powers, simplification of procedures to avoid administrative bottlenecks and constitution of single windows, ensure speedy disposal of cases. For the successful application of electronic governance, a range of legislative regulations is required covering the aspects of electronic signatures, electronic archiving, data matching, freedom of information, data protection, computer crime and intellectual property rights. Already, the Government of India has the IT Act and Convergence Bill. The following policy and legal initiatives have to be taken for strengthening e-governance in India.

- Accountability law for making public servants accountable and responsive for non-performance and malfunctioning of their departments
- Law for privacy, ensuring that any information about the citizens is not misused

- A law in line with the US Government Paper Elimination Act (GPEA) to promote use of electronic media
- Amendments to Consumers Protection Law, Tariffs and Taxation Laws, Intellectual Property Regulations etc., are required
- Preparing guidelines for Content, technological standards, Electronic payments
- Setting standards for electronic publishing, archiving, e-mails etc, (Sachdeva 2003).

### **Socially relevant technologies and integrated management**

Lack of peoples' participation, fractured relationships between government agencies and citizens, lack of availability of local resources, limited integration with local CSOs and exogenous social and economic environment are the reasons why ICT has failed to deliver the full range of services in governance matters (Sreekumar 2002).

Updating of data in local languages, standardization in all areas like encoding, application logic for common uses, user interfaces, preparing data dictionaries, making appropriate cyber laws, procedural and legal changes in the decision and delivery-making processes as well as in the institutions, encouraging private public partnerships can facilitate successful application of the e-governance projects in India (Misra 2002).

Efforts are needed to incorporate local languages and local content in the internet in a massive way. Accessing the internet using keyboards may limit the use of the internet. Hence, there is need to develop voice-enabled internet service with Indian languages, and applications should emerge out of the Indian way of life (Jhunjhunwawala 2002).

### **Public and private partnership**

It is a fact that India needs huge amounts of funds for implementation of e-governance projects. Governments do not have such large amounts of funds. In this regard, encouraging private investment seems to be a possible answer. Public private partnership (PPP) can be encouraged to initiate projects in order to meet the needs of the rising population. The Gujarat Check-Post Project is an example of the PPP model for promoting e-governance in India.

## Political and Administrative Leadership

State governments with committed political and administrative leadership are mainly responsible for promoting e-governance in some states in spite of poor communication infrastructural facilities. State governments like AP and Karnataka under the leadership of Chandrababu Naidu and S.M.Krishna respectively, have taken major initiatives in popularising e-governance for improving the quality of administration. They were able to overcome many barriers in implementation of e-governance projects through a focused and strategic approach aimed at specified targets, and allowing reasonable time frames for attaining them. Specialised agencies have also come up within government to initiate innovative experiments. These initiatives got major support from dedicated officers. Mr.Rajiv Chawla is an example. He can be called the true architect of the Bhoomi project in Karnataka. It is only the visionary and managerial capacity of Mr. Rajiv Chawla, that made the Bhoomi project successful. Less progress in the promotion of e-governance in other states can be attributed to the lack of committed leadership. By promoting services through ICT, governments can reach the masses. The size of bureaucracy can be reduced, cutting heavy expenditure incurred on payment of salaries to employees. Government can earn enormous revenue by implementing e-governance projects. 1.26 crore farmers of Karnataka have paid more than Rs.19 crores in terms of user fees for obtaining their land records (Chawla 2004). The Gujarat Check-Post Computerization project has shown that government can increase its revenue by implementing projects like this. Similar models can be followed elsewhere. Many state governments have responded to the possibilities of improving administrative functions by introducing e-governance at different levels of administration. Specialized agencies have also come up within government to initiate innovative experiments. It is sometimes argued that given the low level of development of communication infrastructure in most Indian states, the prospects of e-governance is bleak. Nevertheless, the experience of various state governments has clearly shown that barriers to the implementation of e-governance can be overcome through a focused and strategic approach, aimed at specified targets, and allowing a reasonable time frame for attaining them. Even in situations where the initial conditions for trying out e-governance appear to be non-existent in terms of inadequate skilled personnel or weak infrastructure, a gradual, flexible and reflective approach can bring about significant positive changes.

## Role of Civil Society

Civil society bodies like citizens' groups, associations and social activists are playing an active role in extending ICT for the empowerment of citizens and promotion of effective delivery. In a project of Cyber Grameen, a non-profit organisation set up by Krishna Prasad Tripuraneni, a telecom entrepreneur in Chennai, wireless technology is used to offer digital entertainment, distance learning, tele-medicine and government services. NGOs are also making officials responsible and accountable through e-governance projects. The Online Complaint Monitoring System (OCMS) in the Mumbai Municipal Corporation (BMC) set up with the active involvement of an NGO named Praja Foundation to redress citizens grievances can be mentioned in this regard. It enables a citizen to register complaints and receive information on the complaint status quickly and easily, without the need to visit or call the ward offices during restricted working hours ([www.prjafoundation](http://www.prjafoundation)).

Scholars attribute the ineffective utilization of installed ITC potential to the absence of links with civil society. Its participation in the e-governance projects initiated by the governments is, moreover, not encouraging. Civil Society and its representatives have been kept out in most of the programmes. Even in cases where such participation is sought, the linkages are either weak or notional (Sreekumar 2002). The CARD experience of AP suggests that until and unless civil society bodies are active in the delivery of services, the situation will not improve (Caseley 2004). Equitable distribution of knowledge and the full exercise of citizenship is feasible in an environment of internet use as a language and as a tool, if civil society organizations involve themselves in developing and defending social policies (education, health, human rights etc.). Besides this, promotion of strategic alliances for building political culture and the notion of citizenship based on exercise of right to communication and culture, including internet rights, is essential for the effective application of ICT for e-governance (Bonilla and Cliche 2004). ICT provides greater chance to people to participate in the governance process, expands citizens rights and creates spaces for social integration. In order to derive these benefits, equality of access to and integration of these technologies are prerequisites; otherwise, it will procreate exclusion and thereby inequality, and, consequently, will fail to achieve real linkage between Government and citizens (Silva 2004).

## **Human Resources Development and Capacity Building**

Non-availability of proper human resources and lack of appropriate strategy are some of the roadblocks in the path of using ICT for governance (Long 1987). The fragmented approach in implementing e-governance programmes and computerization has led to excessive expenditure without delivering the desired results (Gahlot 2003). ICT has failed to obtain the desired results in facilitating governance owing to organizational, technical and human reasons (Biscon and Gutek 1984; NASSCOM 2003; Sachdeva 2003). Information systems are not technical systems, but rather are social systems and there is a need to emphasize the operational level in their social perspective (Curely and Gremillion 1983; Land and Hirscheim 1983). Some studies point out that official mismanagement, lack of favorable attitudes and orientation on the part of the officials involved hinder the progress of the application of e-governance in India. Some projects were not effectively managed due to lack of skills and motivation among the administrative staff (Joshi 2001). The study on Gujarat has found that truck drivers are still subjected to harassment at the hands of the officials at the check-posts in spite of transparency through computerization. The attitude of the officials who fear the loss of their jobs with office automation is one of the hindering factors for promoting electronic governance. Another problem is that of viruses, which is intentionally created to stall the progress of ICT applications in the governance process (Joshi 2003).

Training for imparting skills (computer operation and content assessment) and inculcating motivation among the officials is very essential for the effective utilization of ICT in governance. For instance, senior officers in AP were trained at the Indian Institute of Management, Ahmedabad, for four months in hardware, software and special problems related to implementation of IT in government departments with practical orientation. The government has been investing more than Rs.2,50,000 to train each functionary. It spent Rs.70 million on a four-and-a-half-month training programme designed by the Indian Institute of Management, Ahmedabad, to train twenty officers to function as chief information officers. The programme covered a wide array of interdisciplinary topics, such as technology assessment, process re-engineering, change management, information analysis, and project

management. The programme was offered as a sandwich of classroom training alternating with hands-on project work (Bhatnagar 2003: 263). Similar training programmes should be undertaken for capacity building of bureaucrats for better application of ICT in service delivery.

Lack of peoples' participation and fractured relationships between government agencies and citizens are some of the reasons for the failures of the application of the ICT in service delivery in India (Sreekumar 2002). Studies on Gyandoot have found that people were unaware of the project and many did not avail of any service from the project citizens must have access to technological tools, both in physical terms (e.g., through telecentre networks) and through educational campaigns for using these instruments. They must be able to access electronic government services from whatever terminal they are using. Again, to get the intended benefits of e-governance, beneficiaries, particularly the service recipients, need to be empowered through effective capacity building. People should be aware of the potential benefit of electronic governance. There is need to create awareness in the masses for them to reap the fruits of e-governance.

### **Conclusion and Policy Perspectives**

It can be said that the preceding discussion on electronic governance reiterates the fact that this has immense potentiality to promote efficient, effective, responsive and citizen-friendly services to the people. It has the potential to go to citizens' doors and serve them. It is cost-effective and it can provide speedy services. Corruption can be minimized to a large extent. Most importantly, can solve the accessibility issue, on which there has been a basic debate as to whether it can serve the poor and the people who do not have access to computers and do not have the requisite knowledge of Information Communication Technology. Official harassment and inconveniences faced in obtaining services from different departments can be eliminated with the application of electronic governance. Online registration of complaints, online filling of forms and applications saves time, cost and brings about accountability and responsiveness on the part of service providers. These form the bright side of electronic governance. Electronic governance provides greater opportunity to the people to participate effectively in the governance process.

However, it is not free from problems, such as inadequate skilled manpower, lack of proper attitudinal orientation on the part of officials and people, inadequate e-infrastructure, instances of people misusing the technology, lack of proper awareness on the part of the general public, lack of adequate funding etc., which hinder the progress of electronic governance in India. Public private partnership for removing fund constraints, proper orientation training of officials, creation of mass awareness through seminars, conferences, and workshops etc., adequate budget allocation for building the requisite e-infrastructure, proper legislation regarding electronic governance, maintaining the required e-readiness, encouraging civil society participation in running target-oriented e-governance projects etc. could be the solution for the progress of electronic governance on expected lines to deliver services. Sound policy and a legal framework, adequate infrastructure, trained manpower, collaborative corporate sector, active civil society, and people's participation are essential for the promotion of e-governance in improving the quality of service delivery.

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