The advent of Information Technology (IT) as a highly leveraged enabling tool for delivery of services in the public and the private sector has by now been universally accepted. This has redefined the fundamentals of delivery systems, which has the potential to change the institutions as well as the mechanisms of delivery of services forever. It is in this context that e-governance or Smart Governance has emerged on the scene. The objective of achieving e-governance goes far beyond mere computerisation of stand alone back office operations in the government departments. It essentially means to change the management processes of Government operations. This implies a new set of responsibilities for the executive, legislature and the citizen. The effort should aim to bring about a social catharsis that needs to be orchestrated in a comprehensive, concerted and planned fashion.

E-governance

The definition of e-governance goes beyond the application of IT in government functioning. It implies a completely new definition and concept of public governance. E-governance is defined as digitisation of government information and online transaction of public services. In other words, it implies electronic delivery of public services between government and its citizens. Others use the term e-governance as an extension of e-commerce to government procurement and see it as Business-to-Government (B2G) transactions. Application of Electronic Data Interchange (EDI) in trade facilitation agencies, like Customs, has been promoted as e-governance by multilateral agencies like the United Nations Conference on Trade and Development (UNCTAD) and World Trade Organisation (WTO).

E-governance implies action and commitments of the State and its agencies at two levels, namely-

* Involves the promotion and adoption of Information and Communication Technologies (ICT) in the day to day government functioning; and
* Commitment to use ICTs for government business, citizen interaction, and most importantly for development.

INFOCID - a single window service for citizens in Portugal

* Single source of information for the citizens
* Optimising resources of multiple organisations
* Create economies of scale for information producers and distributors
* Inter-governmental participation
* Public networks
Good or smart governance although not clearly defined but implies transparency in government decision making, clear rules and procedures, and civic participation in the process. IT-enabled government processes embodies these principles, which significantly improves the possibility of empowering the citizens and promote development and strengthening of democracy.

In this regard, the Government of India defines e-governance as using IT to bring about Simple, Moral, Accountable Responsible and Transparent Governance or SMART Governance. Other international bodies observe e-governance as an opportunity to harness ICTs to- (a) improve the efficiency and effectiveness of the ‘executive functions’ of government including the delivery of public services; (b) enable governments to be transparent to citizens and businesses giving access to more of the information generated by the government; and (c) facilitate fundamental changes in the relationships between the citizen and the State, and between Central and State governments, with implications for the democratic process and structures of government.

Thus, e-governance encompasses wide variety of IT-enabled government services, both in terms of adoption of ICTs in government processes and use of e-commerce in government purchasing and delivery systems. Introduction of ICTs has made significant contribution in the achievement of good governance goals. E-governance makes governance more efficient and more effective, and brings about other benefits too. The three main contributions of e-governance are:

* Improving government processes (e-administration);
* Connecting citizens (e-citizens and e-services); and
* Building external interactions (e-society).

Most developing countries are confronting two challenges in establishing e-governance within their government operations. First, the strategic challenge of e-readiness, and second about the tactical challenge of closing design. Heeks (2001) among others have highlighted a vision for managing change in government processes. Although, computerisation in government is not a new phenomenon, the old model was based on IT automating the internal workings of government by processing data. But the new model is one of ICTs supporting and transforming the external workings of governance by processing and communicating data. Based on the new model, e-governance should be viewed to encompass all ICTs, but the key innovation is seamless flow of information through computer networks – from Intranets to the Internet – creating a wealth of new digital connections.

**E-governance: Digital Connections**

* Connections within government – permitting 'joined-up thinking'.
* Connections between government and NGOs/citizen groups– strengthening accountability.
* Connections between government and business/citizen groups – transforming service delivery.
* Connections within and between NGOs – supporting learning and concerted action.
* Connections within and between communities – building social and economic development.

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¹ As given by the Ministry of Information Technology, see at [http://mit.gov.in](http://mit.gov.in)
As a result, the focus grows from just parts of e-administration to also encompass e-citizens, e-services and e-society. The new systemic approach has experienced a paradigm shift from the past, the old models held IT isolated from the mainstream of reform, or held IT as the objective of reform. The new model brings information systems (IS) to the heart of reform. In real terms, the central role for ICTs is based on the premise that as governance becoming information-intensive, ICTs become an integral part of more and more governance initiatives. ICTs are also recognised as a fundamental lever of change. IT is no longer isolated on the sidelines.

A much broader definition of e-governance encompasses an integrated role for ICTs in governance, which means using ICTs as a strategic tool to good governance. ICTs are no longer seen as an end in themselves and they are seen to work only as part of a wider systemic ‘package’. Overall, e-governance is the ICT-enabled route to achieving good governance, which may also imply as ‘i-governance’ or integrated governance – since it integrates both the processing and the communication technologies. It integrates people, processes, information, and technology in the service of achieving governance objectives.

**E-governance: Development & Systemic Improvement in Processes**

Government costs too much, delivers too little, and is not sufficiently responsive or accountable to its people. Good governance reforms aim to address these shortcomings. E-Governance offers a way forward, helping improve government processes, connect citizens, and build interactions with and within civil society. At root, it has the power of ICTs, which provide three basic change potentials for good governance for development:

* **Automation**: replacing current human-executed processes, which involve accepting, storing, processing, outputting or transmitting information. For example, the automation of existing clerical functions in government offices.
* **Informatisation**: supporting current human-executed information processes. For example, supporting current processes of decision making, communication, and decision implementation.
* **Transformation**: creating new ICT-executed information processes or supporting new human-executed information processes. For example, creating new methods of public service delivery.

These change potentials bring in five fundamental benefits to governance for development. Gains from IT-enabled government usually comprise of efficiency gains and effectiveness gains.

**Benefits of E-governance**

* **Governance that is cheaper**: producing the same outputs at lower total cost.
* **Governance that does more**: producing more outputs at the same total cost.
* **Governance that is quicker**: producing the same outputs at the same total cost in less time.
* **Governance that works better**: producing the same outputs at the same total cost in the same time, but to a higher quality standard.
* **Governance that is innovative**: producing new outputs.
These are the direct and objective benefits. ICTs have the capabilities of bringing in many others benefits in indirect forms. For example, use of ICTs in government can bring benefits both internally and externally, for instance providing benefits such as better staff motivation or greater political control or an improved public image. On the other external front, by delivering cheaper, better services to those who critically depend on government services. Besides, indirect benefit of e-governance could also be demonstrated as catalysing the local IT industry, which can bolster foreign investment. On the contrary to the popular perception, e-governance does not cover e-commerce and e-business applications that focus solely or mainly on the private sector. Nitro (2000) highlights three main domains of e-governance, namely

* Improving government processes: e-Administration
* Connecting citizens: e-Citizens and e-Services
* Building interactions with and within civil society: e-Society

These focal domains particularly address the problems of the government, which suggests that government is too costly, too inefficient and too ineffective; too self-serving and too inconvenient; and too insular.

**Focal Domains for E-governance Initiatives**

**External Interactions**

Source: Heeks (2001)

**E-administration: Improving government processes**

Such initiatives deal particularly with improving the internal workings of the government. They include:
Cutting process costs\(^2\): improving the input/output ratio by cutting financial costs and time. Computerisation replaced higher human costs with lower ICT costs to support efficiency and productivity improvements. Informatisation also support decisions and implementation in downsizing or rightsizing exercises. The rationale is to address the large size of government expenditure and the inefficiency in many of its operational processes. For example, the Election Commission of India has computerised the complete voter list (all Indian citizens above the age of 18) and issued voter card, which is also treated as a proof of residence by other governmental agencies. Likewise, the Income Tax authorities have issued PAN Number for keeping a computerised record of income tax payees in the country (online income tax return filing is likely to commence in 2003).

Managing process performance\(^3\): planning, monitoring and controlling the performance of process resources (human, financial and other). Informatisation supports this by providing information about process performance and performance standards. The rationale is to make more efficient or effective use of process resources. For instance, the Government of India has recommended an allocation of 2-3 per cent of annual budget in computerisation in all Ministries and Departments. Likewise, the Government has directed each Department/Ministry should form a standing panel of IT consultants for seeking advice on various technical issues. Strengthening of the Department of Administrative Reforms and Public Grievances, the Government has identified specific areas of concerns at which the Department of Administrative Reforms and Public Grievances could look at- Redesigning the Manual of Office Procedures, Cyber laws and their implementation, and 'Content' Organisation.

Making strategic connections in government\(^4\): connecting arms, agencies, levels and data stores of government to strengthen capacity to investigate, develop and implement the strategy and policy that guides government processes. Examples of such connections are central-to-local, ministry-to-ministry, executive-to-legislature, and decision maker-to-data store. Automation and informatisation support this by digitising existing information channels. Transformation supports this by creating new digital channels. The rationale is to provide clearer direction for Central and State government processes and to provide for a more evidence-based approach to policy and process. For instance, there was a recognition of the issue in the Government of India that formulation and implementation of sustainable development strategies were hampered by lack of adequate information, and that much of the data underlying this information lay scattered in many different organisations. Therefore, Prime Minister constituted a Task force on IT to formulate an ICT-enabled National Agenda, particularly linking a set of key national government, local government and public sector research institutions. The recommendations helped in charting the basic framework of action for the government to connect leading decision-makers with valuable Web-based data resources on sustainable development. In addition to raising the profile of sustainable development with policy makers, the framework has also helped bring faster and more information to the process of strategic environmental decision making.

\(^2\) IDSC (2000)
\(^3\) NIRO (2000)
\(^4\) SDNP (2000a)
Creating empowerment\(^5\). Transferring power, authority and resources for processes from their existing locus to new locations. Typically, that transfer is to lower, more localised levels of the government and may be viewed as decentralisation. Transformation supports this by creating new information flows to decision-makers and process implementers in new locations. The rationale is to reduce the costs and increase the speed of processes and decision making and to create more flexible and responsive processes. There are various pilot projects launched by the State governments to bring information closer to the local decision-makers (details are given in State Government e-governance initiatives).

Traditionally, ICTs have been used within government in 'automation' mode, replacing clerical labour processes with their digital equivalent. These are essential building blocks for e-governance. In the North, replacing costly workforce with cheap ICTs may considerably cut operational costs, although there is evidence that productivity gains are somewhat limited. However, in developing countries, replacing low wage workforce with expensive ICTs is unlikely to be justified on financial cost grounds. As time replaces costs as a more critical global resource, ICTs' ability to increase process speed provides some justification for automation in the third world countries.

From this base of automation, there are three e-administration trends at work in developing countries, namely ICTs are spreading up the organisation, increasingly supporting the work of operational and tactical managers and recently, beginning to touch the working lives of legislators, politicians and other senior public officials. As the change potential of ICTs increases, they deliver ever-greater benefits and enable ever-greater changes in the process of government.

**E-citizens and E-services: Connecting Citizens**

Connecting citizens’ initiatives deal particularly with the relationship between government and citizens, either as stakeholders from where the government derives its legitimacy, or as customers who consume public services. These initiatives may well incorporate the process improvements as identified in e-administration. However, they also include a broader scope, such as:

*Talking to citizens\(^6\)*: providing citizens with details of government activities. It relates to certain types of accountability, making public servants more accountable for their decisions and actions. Informatisation and transformation support this by providing the new information flows from government to citizens on which accountability depends. The rationale is to increase the pressure on staff to perform well and to improve public understanding of government. One of the initiatives is the Government of India’s website, which is operated and maintained by the National Informatics Centre- [http://goidirectory.nic.in/](http://goidirectory.nic.in/) It provides a wide variety of information at various Ministries and Department levels. The NIC network has connected all the district centres in India for seamless flow of information from districts to regional and national headquarters.

\(^5\) Benjamin (2001)

\(^6\) World Bank (2000a)
Listening to citizens\textsuperscript{7}: increasing the input of citizens into government decisions and actions. This could be flagged as either democratisation or participation. The main potential is for informatisation and transformation to support this by providing new information flows from citizens to government. The rationale is to make public decisions more responsive to citizens' view or needs. Various government web sites under the NIC seeks public opinion on variety of strategic issues. For instance, the Indian Parliament web site (http://parliamentofindia.nic.in) puts all the pending bills on their web sites for greater transparency and at the same time seeks suggestions from the general public and members of the civil society to file their views on the pending bills.

Improving public services\textsuperscript{8}: improving the services delivered to members of the public along dimensions such as quality, convenience and cost. This uses all the potentials of ICTs to deliver the informational components of public services to citizens in digital form. The direct rationale is clear from the definition, but there is also an indirect rationale of saving opportunity cost for citizens in terms of time and money that would otherwise be captured by inefficient service delivery. For instance, Causelists (http://causelists.nic.in) are scheduling of cases to be heard by the courts on the following day. The Causelists of Supreme Court and many other High Courts are available on NIC Web Servers. As the Supreme Court of India and all the 18 High Courts and their 10 Benches are fully computerised, all these courts generate Daily and Weekly Causelists from the computer servers installed by NIC. The Causelist application is the backbone application of all courts as no court can function with out that day’s Causelist. Hence this has become near time critical application in all the Courts. Immediately after generation of the Causelist most of the courts cyclostyle the stencils cut from the printers attached to the servers for generating thousands of copies running into a few lakhs of pages every day. Due to this reason the courts take a lot of time for generation and supply of the Causelists to the advocates at their offices or residences. Usually the advocates receive the cyclostyled copies of a day’s Cause List not before 8 PM. Some High Courts send the Causelists data on floppy to the Printers for printing thousands of copies. This process costs each High Courts lakhs of Rupees every year. By making the Causelists available on Internet, no High Court is incurring any expenditure as they are using the already available infrastructure and the Software of NIC. Likewise, e-seva, Gyandoot, Aapki Sarcar- Aapke Dwar, etc. are variety of government initiatives launched at State Government level for improving public access to government services. All such initiatives are at pilot level, which needs to be expanded to national level.

All such initiatives rely on the new connectivity via computer networks offered by ICTs, they are all relatively new inclusions within e-governance. They are representatives of the new possibilities offered by e-governance for development. They also represent something of a further agenda of ICT-enabled governance, besides e-administration. The chronology starts with publishing (delivering data to citizens), then moves to interaction (delivering data to citizens and receiving data from citizens), then moves to transaction (undertaking other government processes online).

Although such initiatives are rare in developing economies, yet even very basic publishing activities can have significant effects on the quality of life of common man. Lack of information

\textsuperscript{7} Microsoft (2000)
\textsuperscript{8} World Bank (2000b)
to citizens often leads to corruption and rent seeking. Putting such information on the Web directly attacks information monopolies and its effects. Putting government forms can also have a strong disintermediating effect – cutting out the middlemen and public servants, who may illegally charge citizens for access to such forms. But middlemen cannot be completely eliminated in the new paradigm for governance because in the new medium certain intermediaries act as catalyst in the operational processes. Realistic e-governance for development projects will have to identify and nurture such intermediaries. They may be existing professionals (e.g. accountants for online tax systems; notaries for online registration systems); or public servants (e.g. in call centres or in one-stop-shop government offices); or NGOs and community-based organisations (e.g. staffed community telecentres); or private sector organisations (e.g. cybercafes or info-kiosks), or other public institutions. The Gyandoot case provides an example – the entrepreneur running the online kiosk frequently goes online on behalf of his/her clients, helping cross the cognitive gap between cyberspace and life in an Indian village.

**E-society: Building Interactions**

Such initiatives deal particularly with the relationship between public agencies and other institutions (public agencies, private sector service providers, non-profit and community organisations) and with the relationship between civil society institutions. As with citizen connections, these initiatives may well incorporate the process improvements in government day to day functioning. However, building interactions between civil society and public institutions also include a broader remit:

*Working better with business*: improving the interaction between government and business. This includes digitising procurement from and services to business to improve their quality, convenience and cost. This uses all the potentials of ICTs to deliver the informational components of public services to business in digital form. It also includes digital support for opening up government to business through outsourcing and other public—private partnerships. The direct rationale is to drive costs down and quality up within government, but there is also an indirect rationale of improving the efficiency and responsiveness of local business. For instance, both business and Government in India were concerned about the delays and corruption associated with customs and importation. An ICT-based system (http://dgft.nic.in8100/iec) was introduced to address these concerns. Importers create a single electronic declaration, which is processed to calculate payments due and to undertake risk analysis, which identifies shipments that may require physical inspection. The online system has allowed a move to cashless procedures in which verification of duty/tax payment is sent electronically from authorised banks to Customs. The verification is automatically reconciled against processed declarations and a release order is then issued. The release order is sent electronically to the Customs warehouses that hold shipments. The result is a much faster service for business.

*Developing communities*: building the social and economic capacities and capital of local communities. This uses the potential of ICTs to strengthen current information connections and to build new information connections within communities and between communities and other

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9 Bhatnagar (2001)  
10 Bhatnagar & Vyas (2001)
institutions. The rationale is to improve the wealth-creation potential and quality of life of community members. For instance, the Gyandoot project [www.gyandoot.com] in Madhya Pradesh set up 31 Internet-connected kiosks in villages in a district of central India where 60 percent of the population live below the poverty line (earning less than US$1 per day). The local government committee initially funded each kiosk. It is run by a local young entrepreneur along business lines, fees are charged for the services provided. Government-related services include online application for government certificates; online filing of complaints; printing of land records (which are held online and which all farmers need every season to obtain bank loans); and access to information on government welfare and related schemes. Other community development services include: access to agricultural produce prices, an auction site for sale/purchase of land, equipment and animals, online discussion forums, and e-mail. In the first year of operation, the kiosks were used on tens of thousands of occasions. Proven benefits include better prices for agricultural produce; easier sales of other items; faster reactions to complaints or problems (e.g. an outbreak of cattle disease); and improved knowledge and skills within the communities served.

Building partnerships\[11\] strengthening institutional relationships has two strategic issues. First, building government partnerships, strengthening relations between government and other institutions such as NGOs or international organisations. Second, building civil society partnerships focussing on strengthening relations between the institutions of civil society, such as between NGOs. This uses the potential of ICTs to strengthen current information connections and to build new information connections between institutions. The rationale is to create a strong economic, social and political 'fabric' within society. For instance, Civil society in India has networked with government in establishing public-private partnership at local level. Drishtee (www.drishtee.com) and TARAhaat (www.tarahaat.com) are two successful examples of civil society networks tying up with government to set up public private partnerships in rural India.

E-society, at least relating to communities or to other non-governmental institutions, has been a focus for recent donor-funded 'e-development' initiatives because such initiatives operate at the institutional rather than individual level, and because they operate somewhat independently of the red tape of government. There has also been a strong e-development interest in government-disintermediating service delivery initiatives. These seek to deliver education and health advisory and other information-intensive services direct without state intervention. Other components of e-society – typically those relating to government links – have been rather more neglected. Thus, as with citizen-focus projects, the opportunity has yet to be fully grasped to use the new connectivity to help refocus the state from an internal, self-serving view to an external, nation-serving view.

\[11\] SDNP (2000b)
Overview of E-governance Initiatives in India

The first and foremost example of e-governance initiative in India with wide ramifications, especially on the life of common man, was the computerised railway reservation system in the Indian Railways. As discussed above highlighting the wide scope of e-governance, the Government of India has launched variety of initiatives at various levels of governance, of which some are related to e-administration especially observed at the Ministerial level and some at State level. Nevertheless, there are scores of other forms of e-governance initiatives launched under private-public partnership, especially seen in connecting citizens and building interactions within society.

National Level

Five Year Perspective Plan:

- The Government has already approved the policy of allocation of 2-3 per cent of Budget for IT. A system of monitoring the allocation, which each Ministry/Departments has made in their Annual Plan, should be introduced.
- Due to limitation of resources the whole exercise of computerisation has, necessarily, to be phased, to cover various areas of Government operations. In order to have an impact of use of IT in Government for citizen service, those services which have a direct interface with the public should be taken up for computerisation on a priority basis.
- Five years from now, majority of the transactional services will be provided by way of Internet. Net-based banking comes at only 10 percent of the operating costs of conventional banking practices and services. As banks are going to play a key role in IT enabled public services involving electronic money transactions we feel that cooperative banks should consider NET-Banking in a big way.

Intranet/Internet:

- Government should have an Intranet for ensuring smoother flows of data, communications and access to information by different Ministries and Departments. It should be made mandatory for all Ministries and other Departments to put as much information as possible on to the Intranet but in a manner in which searches can be made easily.
- Transactions between various departments of the government of India and other Government organisations should be networked so that a substantial part of transfer of files and paper can be replaced by an intranet within the Government.
- All departments & agencies to ensure that they operate web sites that provide up to date information, forms, leaflets, etc.
- E-mail to be incorporated into the normal range of contact methods and departments & agencies will implement arrangement for rapid response to e-mail queries.
- Service-wide guidelines and practices to be adopted regarding content format and presentation for web sites and inter-departmental group to be established to deal with these issues.
• Ministry of Information Technology (MIT) should bring out periodic bulletins on the Pilot project implementation in order to facilitate dissemination exchange of information.
• There should be a single web based front-end for all government services to the public.
• To use Internet and WWW based applications, Domain Name standardisation of various states must be done as it is available for various countries.

**Leasing of Computers:**

The introduction of computers in every Department/Ministry of Central and State Governments and their sub-ordinate organisations would require huge investments for the purchase of hardware and software. One way to possibly reduce the cost would be for the Government to enter into arrangements for leasing of computers. This would reduce the initial heavy capital investments. If it were combined with provisions for upgradation by periodic replacement, it would have the added benefit of keeping up with the changes in technology. The Finance Ministry can substantially bring down the lease charges by extending the concession under the Income Tax Act, so that any investment made in IT systems would be eligible for 100 per cent depreciation in the first year itself. The leasing companies can be persuaded to provide these systems at an interest rate of 12 per cent (if not less) which would be an attractive rate of interest. Once this is done the departments could proceed with the leasing of computers in a big way.

There are already a number of agencies such as Infrastructure Leasing and Financial Services (ILFS) and Infrastructure Development Finance Corporation (IDFC) and other financial institutions which would be in a position to fund the leasing to the departments.

**Use of local languages:**

The access of information must be permitted in the language most comfortable to the public user, generally the local language. There are already existing technologies such as GIST and language software by which transliteration from English into other languages can be made.

**Spreading Awareness:**

Perhaps the most important aspect of computerisation and spreading of IT is bringing a change in the mindset of the government servants who have been accustomed to work only in the manual mode. It is necessary to train all employees in basic computer usage. The government is actively organising workshops and seminars for spreading computer literacy at all levels.

**Issuing indicative Guidelines:**

An Inter-departmental group under the Department of Administrative reforms can be formed to prepare common guidelines on different aspects of acquiring IT items, evaluating execution of such contracts etc.
**Infrastructure for IT:**

The Government of India is aiming at creation of the infrastructure for Information Technology in the entire country by building National Information Infrastructure (NII), State Information Infrastructure (SII) and Local Information Infrastructure (LII).

**Information Kiosks:**

Communication of data to public i.e. accessibility and retrieval of data by public through citizen I.T. interface (Information Kiosks) in Public Places such as shopping centers, post office, railway station, libraries. PCOs (Upgraded to manned public access terminals) selected STD/ISD booths at prominent places can be converted into information Kiosks.

**Cyberlaws:**

Cyberlaws should be made available to the public as early as possible so that the IT systems and information documents stored in the systems will have the same legal validity as the documents stored today on paper. The Government of India has enacted the IT Act 2001 in this regard and it is the government’s first step towards making cyber laws for the country.

**Identification of Government Certification Authorities:**

Certification Authorities provide digital certificates that help create an online identification and security system for the Internet allowing individuals, corporations and government organisations to conduct transactions and communications with full security and confidence. Some of the Certificate-enabled applications are online banking, cyber-shopping, electronic data interchange (EDI), secure Electronic mail, government applications and services, online health services etc. Hence steps have been taken to identify such Certification Authorities.

**Standardisation:**

E-Governance demands standards in all areas. Some of the key areas are:

- Data encoding (ISCII or UNICODE)
- Application logic for common horizontal applications
- User interfaces
- Data dictionaries

Many a times, different user groups develop similar applications and there is no possibility of interaction between these functions within the organization or with outside agencies. It is possible to develop these functions as sharable across systems, languages, platforms and operating systems by developing them as reusable Components. The Government of India has constituted an expert group in the MIT to look into the issues of standardisation, independent of the User interfaces.
While initiatives have been emanating from various directions, they are often at cross-purposes and so repetitive and wasteful. The National Task Force has also made several recommendations in this regard. Considerable progress has been done in making e-governance a reality in India.

E-governance: An Overview of Ministries and Department

The fundamental responsibility of government is to introduce computerisation at Ministry and department level in order to imbibe a culture of e-governance in the country. Considerable work has been carried out at various Ministries/Departments level. Almost all Ministries and Department have their web pages on the NIC web site displaying objectives, responsibility, contact person, etc. Besides, all the major Ministries/Departments display their policy and other decisions on their web sites. Few ministries/departments have launched their electronic newsletter for widespread awareness of their operations. Following is an update on e-governance at various Ministry and Department levels.

Ministry of Chemicals & Fertilizers ([http://chemicals.nic.in](http://chemicals.nic.in) & [http://fertilisers.nic.in](http://fertilisers.nic.in))

The IT Plan for the Department was prepared about two years ago and the implementation has been phased over a period of five years. The hardware required for the Sections and the Senior Officers was procured in 1999 itself. All officers up to the level of Section Officers have been connected to LAN. In-house Training Courses were organised by NIC for all the officials on Windows 98, Office 97, Internet browsing and E-mail. A web site of the Department has also been launched, which was inaugurated in January, 2000. The information required for updating the site is collected on the 5th of every month and passed on to NIC’s main server machine. The Department is also operating a Facilitation Centre for providing information required by general public. The Department is maintaining database on production Monitoring for the Chemicals and
Petrochemicals on the Server machine installed at the NIC-C&PC Monitoring cell. To implement the paperless office concept, the Office Procedure Automation (OPA) package has been put into use and its implementation is reviewed periodically. All the officers of the Ministry have been provided e-mail accounts for effective communication. It is also proposed that the PSU’s/Organisation/Attached Office of this department should have a VSAT connectivity for online communication both ways. The Department's IT plan is periodically reviewed by Secretary to ensure speedy implementation and to finally achieve the objective of integrating itself with the other Ministries/Departments through e-governance

**Ministry of Civil Aviation** ([http://civilaviation.nic.in](http://civilaviation.nic.in))

Ministry of Civil Aviation is using IT extensively in their office and necessary infrastructure has been set up with the help of National Informatics Centre. Connectivity with various Government Departments is available including Internet connectivity, E-mail, video conferencing etc. They have some packages like Office Procedure Automation (OPA), Parliament assurances, Monitoring System, Parliament Questions and Pay roll, etc. Through OPA, they have computerized the files & receipts handling and monitoring system since 1993. They have set up a Facilitation Counter where information required by public is disseminated.

**Ministry of Defence** ([http://mod.nic.in](http://mod.nic.in))

The department of Defence deals with three Services and with Inter-Services organisations. It is responsible for the Defence Budget, establishment matters, Defence policy, matters relating to Parliament, Defence cooperation, and coordination. With the usual computerisation of the Ministry and launching of the web site, the Ministry has put on its web site defence tender notifications for incorporating greater transparency. Besides, computer education and training has become an integral part of resettlement and welfare scheme for defence forces personnel.

**Ministry of Disinvestment** ([www.divest.nic.in](http://www.divest.nic.in))

The Ministry has a bi-lingual web site, putting all the guidelines on disinvestment, list of PSUs approved for disinvestment, procedures, etc. on its web site for making the process of disinvestment transparent. It has also commenced with the rapid computerisation programme in order to improve its functioning.

**Ministry of Environment & Forests** ([http://envfor.nic.in](http://envfor.nic.in))

Ministry of Environment & Forests has launched their web site where information/status on important matters e.g. environment and forest clearance is also available online. The Ministry is also in the process of setting up a LAN in the Ministry and also drawn up IT Plan for the Ministry.

**Ministry of External Affairs** ([http://meadev.nic.in](http://meadev.nic.in))

The Ministry has put on government online international project of G-8 countries, Visa regulations of major countries (15). It has implemented back office automation activities, which
have Citizen Interface, RPO & E-mail project. Eight regional passport offices have been fully
computerized and networking between them is complete. The Ministry has launched its own web
site with the assistance from NIC displaying necessary rules and regulations for passport and
other outside travel formalities. The electronic passport application form and passport application
online query system is also operational now.

Ministry of Finance  [http://finmin.nic.in]

In the Department of Economic Affairs, Ministry of Finance, following steps have been taken to
accelerate the usage of Information Technology. Besides, usual computerisation and LAN and
WAN connectivity to all officers, a Facilitation Centre had been setup for the department for
dissemination of the information to general public. The status on the “Electronic Governance for
the usage of Information Technology” in respect of Aid Accounts and Audit Division, under
various aspects in as under- Identification of functional areas of immediate concern with respect
to Electronic Governance. All the work activities of this office, namely maintenance of loan-wise
accounting, draw down of external assistance committed by various donors, debt service
payment, budget preparation with regard to external assistance, amenable to complete
computerisation. Web site for Ministry of Finance has been created three years ago and is being
updated regularly. Computerisation activities in the Ministry of Finance started nearly 12 years
back with installation of the Commonwealth Secretariat Debt Record Management System (CS-
DRMS) package. Subsequently, some more standalone application packages were developed
both in-house and by NIC. It has since been decided to develop an Integrated Computerised
System (ICS) by setting up a Common Data Base (CDB). For this purpose, A.F.Ferguson & Co.
has been appointed as Consultants. The work is being done in 2 phases. Phase I, which
comprised setting up of various masters, screens for capture of various transactions etc. has been
completed. Phase II of the system which will provide solution to various other work activities
like ACA releases, Budget preparation, finalisation of External Assistance Brochure etc. will be
taken up. Besides, the monthly utilisation statement of External Assistance and quarterly status
of External Debt (on Government account) have been put on the Internet through NIC. Some
excerpts of External Assistance Brochure 1997-98 have also been disseminated for DEA users
and also for public domain.

This Ministry has consistently taken initiatives in the use of information technology for
delivering end results in terms of approval to the company, maintenance of approval records,
compilation of ECB debt statistics etc. The ECB Division is using PCs right from the level of
dealing assistants for processing the proposal and for correspondence with corporates. It is also
maintaining an in-house database where the details of ECB proposals from the date of receipt of
application up to the final disposal of the proposal are properly maintained. Under the existing
arrangement, this Division is maintaining a data bank where year-wise details of ECB approval,
taken on record of loan agreement out of current year of approval as well as the total taken of
record are being maintained for the last three financial years(including the current one) at any
point of time. The details are available for an individual corporate and sector-wise consolidated
details are also being maintained.

While interacting with the major international rating agencies, E-mail facility is the main source
of communication. Through this facility, this Department as a nodal agency is continuously
interacting with rating agencies like M/s.Moody’s Investor Service, M/s. Standard & Poor’s etc. on a day to day basis. This has ensured the smooth transfer of message/information without any substantial time lag. This has also helped in developing a better understanding with the rating agencies, which is one of the factors influencing the rating decisions for the Sovereign.

**Ministry of Health** ([http://mohfw.nic.in](http://mohfw.nic.in))

Besides, the usual computerisation and launching of its web site informing about key policies and programmes of the Ministry, it has also commenced an information education and communication scheme. The department of ISM & H has evolved IEC Scheme with the objective to create awareness among the general masses about the various pathies, their cost effectiveness and the availability of the herbs used for prevention and treatment of common ailments by using various media channels, including networks.

**Ministry of Home Affairs** ([http://mha.nic.in](http://mha.nic.in))

Ministry of Home Affairs has successfully completed the ongoing Ministry computerisation project. It has also set up its web site and put up the controversial POTO legislation for greater transparency and wide spread awareness. Besides, its web site also informs about various rules and procedures for foreigners and tourists. Even to keep up pace with development in e-commerce, its web site displays various tender notifications issued by subordinate police organisations, etc.

**Ministry of Labour** ([http://labour.nic.in](http://labour.nic.in))

Besides, usual computerisation, the Ministry has set up an IT Committee to formulate and recommend the computerisation proposals in consultation with users. The committee also monitors the implementation of approved projects and helps in removing the bottlenecks, if any. Keeping the rapidly changing nature of IT in mind, the Ministry is formulating a conceptual plan for implementing Integrated Labour Information System consisting of interrelated segments like, Social Security, Industrial Relations, Employment and Manpower, Industrial Safety and Health. Recruiting Agents Database is being maintained on the Ministry of Labour web site with query facilities for public access regarding emigration. An Industrial Relation System integrated with chief Labour Commissioner (Central) and central Government Industrial Tribunals (CGITs) will be the next area providing FOC database access to public and data capture at the point of origin. Other areas for web enabled systems are to be identified and prioritized in consolation with MOL Organisation Heads and Bureau Heads. The other initiatives of IT in some of Ministry of Labour Offices and Organisation are as follows: The Employees' Provident Fund organisation has already computerised and its field offices and the Employees' PF and Pension Schemes are operated on computerised systems with on-line subscribers' database. It is planning restructuring and IT driven functioning with the help of MIT and NIC, EPFO plans. The Employees' State Insurance Corporation has been successfully running Computerised System in its Headquarters Dispensaries, Medical Stores and Regional Offices in coordination with NIC. It is in the process of creating data based of Insured Persons in its field offices.
The Labour Bureau is maintaining its own web site on NICNET with regular updation of Labour Statistics like Customer Price Index Numbers that is accessible to the public. This web site is linked to the Ministry’s web site. It is upgrading its Infrastructure regularly with higher level of computerisation. The V.V Giri National Labour Institute is also maintaining its own web site with linkage of the Ministry of Labour web site. The chief Labour Commissioner (Central) office has also created the computer infrastructure in its head offices and field offices. The trade union membership verification system is at present operational in CLC(C) Hqrs. It is planned to decentralised processing at Hqrs. The Directorate General of Factory Advisor Service & Labour Institutes and Directorate General of Mines Safety and Health, have computer infrastructure and are operating on computerised system. They are augmenting their IT resources. Further to improve the quality of IT services from this Ministry, individuals Bureau Heads have been instructed to submit revised IT plans based on working group on IT.

**Ministry of Law**

Ever since NIC took up computerization of courts, many applications have been computerized which have impact on masses i.e. litigants. Following are some of the applications which have been successfully implemented at Supreme Court and 18 High Courts and these applications have either direct or indirect impact on the masses.

*List of Business Information System (LOBIS)*: It is about scheduling of cases to be heard by the courts on the following day. It enabled the Registries of Supreme Court and High Courts in eliminating manual process of Cause List generation thus any manipulation by vested interests. These databases contain details of fresh cases, disposed and pending cases. It is the backbone application of every Court.

*Filing Counter Computerization*: In the Supreme Court of India and all High Courts fresh cases are filed only before the computerized Filing Counters. As the advocates stand in queue for filing cases before the counters, the data entry Operator enters preliminary details required for Registration such as Party names, advocate details, etc. The computer terminal at the query counter is used to attend to the quarries of the litigants on the spot. The defects, if any, are listed out and handed over to the litigants/advocates for rectification. Time limitation is also checked by the system automatically.

*COURTNIC*: This is about providing Supreme Courts’ pending case status information to litigants/advocates on any node of NICNET. COURTNIC answers about two hundred queries of litigants/advocates per day all over the country on the status of there pending cases. It is available on nominal charges. Primarily COURTNIC information is available in all NIC-High Court Computer Cells and in some District Court. It has been in use since 1993.

*JUDIS*: NIC has brought out Judgement Information System (JUDIS) consisting of complete text of all reported judgement of Supreme Court of India from 1950 to 1998. The Judgements of 1999 onwards are available on Internet. JUDIS-CD is available on a Membership basis for Rs. 6000/-. It is marketed by NICSI. ([http://judisi.nic.in](http://judisi.nic.in))
Supreme Court's pending Cases on IVR: Interested litigants and advocates can find out the status of their cases pending in Supreme Court on telephone by making use of Interactive Voice Response System (IVR) free of charge. For accessing this, the phone nos. are: 011-4362062, 4360112.

NIC took up computerisation of all 18 High Courts and 9 Benches on the lines of Apex Court’s Computerisation. NIC implemented the List of Business Information (LOBIS) in all High Court Courts. Some of the High Courts’ Cause List are also available on Internet. Many possible applications in all High Courts have been computerised. Most of the High Courts have opened query counters along with Filing Counters for providing pending cases information to the litigants and advocates. Lately NIC took up the computerisation of all 430 District Courts in the country on the lines of High Courts Computerisation Project.

Ministry of Parliamentary Affairs (http://mpa.nic.in)

Ministry of Parliamentary Affairs has put in considerable efforts in the e-governance. They are in the process of computerisation the working of the Ministry. They will seek the expert advice of the department in application of IT in efficient Governance after completion of computerisation in the Ministry.

Ministry of Power (http://powermin.nic.in)

Ministry of Power has taken the some initiatives in relation to IT Governance and delivery of services/schemes through use of Information Technology. A new plan scheme involving a budget of Rs. 1 crore for remaining years of the 9th plan has been introduced from this year. The details of the scheme have been finalised which envisages procurement of hardware/software providing training to the officers/staff of the Ministry etc. The Ministry of Power also has a web site, which has been functioning since 1996. All policy initiatives taken by the Ministry are available on the web site. Separately, the web site also has detailed information on the organisational structure of the Ministry, important notifications issued, especially those related to private power projects, status of reforms/restructuring programmes in various states etc.

Ministry of Surface Transport

Besides, the computerisation in the Ministry, the ministry has launched Project on Development of Automatic Vehicle Counting, Classification and Axle Load Weighing System for Highway Applications, Project on Intelligent Transportations System for Indian Conditions, etc. It has also constituted a Committee for implementation of the scheme for Ancillary Development related to shipbuilding and ship repair. It has also initiated Networking of the Lighthouses for DGLL and Introduction of Vessel Traffic Management System (VTMS) service in the Gulf of Kutch.

Ministry of Textiles (http://texmin.nic.in)

The Ministry of Textiles has set up a Task Force on IT to formulate the methodology of introducing IT in different aspects of textile sector. They have taken initiative to set up a computer communication network for all its offices at state levels. As part of recommendations of IT Task Force, all related offices are taking up initiatives to establish e-mail facility for
communication. Web site on Internet is being installed in the Ministry as well as its attached/subordinate offices. Economic Research and Market Intelligence Unit (ERMIU) has been set up at Office of Textiles Commissioner, Mumbai for collection and dissemination of information on production, designs, fashion etc. As recommended by IT Task Force, all offices and subordinate organizations are directed to take up in house computerization for implementation of MIS in routine working.

**Ministry of Tourism** [www.tourismofindia.com](http://www.tourismofindia.com)

The Ministry has created a thematic CD-ROM on important monuments. It has also installed Data base driven visitor query system at all the Tourist Offices. It has put up computer based tourist information kiosks at airports, railway stations, bus depots, tourist offices etc. One type of kiosk shall have a multimedia content providing information in an entertaining way and the other on Geographical Information System (GIS). It is also developing MIS packages for various Divisions and subordinate offices.

**Department of Agriculture**

The Department of Agriculture and Cooperation under Ministry of Agriculture has initiated specific programmes for strengthening of Information Technology in the Agriculture Sector. For instance, the Ministry has created an IT Division and its web site is operational since 1999 at the following address [http://www.nic.in/agricoop](http://www.nic.in/agricoop). DAC HQs and most of its attached and subordinate offices have been declared Y2K compliant. A central sector scheme for strengthening IT apparatus in the DAC HQs. has been approved. Under the scheme, IT tools are being provided to all the offices in DAC; Under the aforesaid scheme, an Early Warning System is being established to monitor agriculture on real time basis directly from the fields by use of IT applications. Video Conferencing facilities have been established in the DAC HQs. with the help of NIC. Officers are now using e-mail in their day-to-day working and the DAC has also been given the centralised e-mail address: agrindia@krishi.delhi.nic.in Software programs are being developed keeping in view the functional needs of various divisions. An independent computer training room has been set up where training is available on all working days during working hours to all officers and staff as per their needs and convenience. A central sector scheme for strengthening Information Technology and their horizontal and vertical networking with the DAC HQs is under consideration and the proposal has been referred to Planning Commission. A centrally sponsored scheme for strengthening and promoting informatics in agriculture in the States is also separately under consideration.

**Department of Commerce** [http://commin.nic.in](http://commin.nic.in)

It is a part of Ministry of Commerce and Industry. Department of Commerce has been quite active in computerisation of key departments, especially in terms of government-to-business contact area. As discussed earlier, computerisation of Director General Foreign Trade Office has brought relief to number of exporters and importers nad has been instrumental in trade facilitation. Besides, its official web site has emerged as a great resource for all WTO matters. It has also come up with an electronic newsletter, name WTO Focus for researchers and policy makers, as part of infusing greater transparency in government decision making.
The Department of Posts has undergone a sea change in terms of computerisation, for instance computerisation in Post Office, front offices, Money order services, postal life insurance, etc. It also proposes to connect Postal Directorate at Delhi, the N.E. postal circle and the Assam postal, circle with internet as the link network, and computerisation of international mail and airlines accounts.

The IT initiatives in the Ministry has been limited to merely computerisation of Ministry and subordinate offices. Besides, some Ministries and Departments have launched their web sites for greater transparency. However, as part of the government drive towards e-governance, the Central Government has to cover lot of areas for building an adequate platform for seamless interface between government-to-citizen contact. As discussed earlier in e-governance for development, in many strategic areas like connectivity (connecting remote markets), standardisation, cyberlaws, etc. The major limitation that the Ministries and other Government Departments are likely to face is the changes in management processes in decision making. For instance, the departments identified by the Task Force on IT for better government-to-citizen contact have yet be fully computerised to take up the next phase of higher platform catering to complex computerised back-end activity via online requests. Without appropriate computerisation and policy intervention in strategic areas, G2C will remain an elusive dream for quite some time.

State Level

During the last few years there has been major initiatives by different State Governments towards ushering in IT and its tools in the functioning of Government. The emphasis has been on providing better services to citizens and in improving the internal productivity. It has been widely accepted that IT implementation in State Government is the most difficult process and hence requires careful planning and formulation of strategies for effective implementation. The experiences of individual States in this regard need to be understood and shared to evolve meaningful strategies.

The first point to be noted is the need to use local languages in the IT implementation process. It is imperative to note that, particularly because of the work done by C-DAC (MIT) and various Indian Institute of Information Technology (IIIT), the technology is now very much locally available. This by itself could give a major boost to IT implementation efforts in the States. Here, a focused effort would have to be made in improving the technologies for transliteration. Similarly, efforts are on for perfecting the OCR technology for local languages. This is critical as an effective OCR technology is required to convert the data that is scanned and stored in local languages into meaningful and workable databases. This could also help in substantially simplifying the efforts at content generation and data warehousing.

The second point to be noted is on the scope of IT implementation within Government. Most States have focused on computerisation of individual activities per se. This leads to mere automation of the existing manual work and could lead to a situation where an activity done by
20 persons would get done by 20 computers and 20 persons on implementing IT. Of late, the fallacy of such an approach is being realised. The emphasis currently is on conducting system studies to understand the work flows involved in each of the activities and attempt computerisation of such work flows. This results in certain levels of simplification & rationalisation and even an improvement in productivity. However, here also the basic issues involved in delay and red tapism within Government are not adequately addressed. Even in computerisation of work flows, there will be a need to update the data periodically. In the event of each individual completing the work assigned to him, even in the present system delays would not have occurred. In this context, it is clear that *substantive administrative reforms would have to precede attempts at e-governance*. In other words, the emphasis will have to be on simplifying procedures, rationalising processes, restructuring Government and then use IT to institutionalise such changes. It is in these circumstances that attempts at e-governance based on *creative and effective uses of relational databases* needs to be attempted.

**E-governance Initiatives in States**

The first element of such initiative will be to define a uniform citizen code at the national level. Once this is done each state may be asked to arrange its databases with one field earmarked for this code. This would facilitate easy retrieval of data and integration of databases at any point of time. The second element of such initiative would be to ensure that the databases that are going to get generated as part of the census operations may also be digitised and made available for building up citizen databases. This would possibly require amendments to the census act and it is suggested that a thorough study may be made to identify the uses of such data in building up comprehensive databases immediately. Another element that needs to be effectively addressed is the issue pertaining to dissemination of information gathered through our investments in science and technology. A case in point is the information collected by remote sensing which could be of immense use in estimating the availability of resources and qualitatively alter the planning process. An effort to identify similar repositories of data and information relevant for providing better services to citizens through e-governance and a strategy for the desegregation of such data and its dissemination needs to be urgently formulated.

**Andaman & Nicobar** ([http://andaman.nic.in](http://andaman.nic.in))

It is a remotely located state in Bay of Bengal. The State Government has commenced computerisation of key departments. It web site attempts to promote the state as a tourist destination to the outside world. The official web site lists out rules and procedures of obtaining permissions for water sports like scuba diving, foreign yachts, etc. The schedules of charter flights and ferry service timings are also put on the official web site. Most government forms are put online as part of the citizen’s charter. The official web site also allows online booking of rooms at various hotels in the Andamans.

**Telemedicine**

*Telemedicine consists of customised medical software integrated with computer hardware, along with medical diagnostic instruments connected to the commercial VSAT (very Small Aperture Terminal) at each location. Generally the medical record/history of the patient is sent to the Specialist Doctors, who will in turn study and provide diagnosis and treatment during video-conferencing with patient’s end.*
Recently, the State Government has launched a telemedicine project in the Andamans by connecting the G. B. Pant Hospital in Port Blair with a super-speciality hospital and medical college, Sri Ramachandra Medical College & Research Institute Chennai.

**Andhra Pradesh** [www.andhrapradesh.com](http://www.andhrapradesh.com)

The Andhra Pradesh government's e-governance initiative is best known for APSWAN (Andhra Pradesh State Wide Area Network), a state-wide network for voice, data and video communication, which is the basic information highway for improving government-citizen and government-industry interface. In subsequent phases, APSWAN would be extended to all 'mandal' headquarters, other towns and eventually, to all villages. Prior to this, one of the first projects effectively taken up towards the implementation of e-governance was by the state's Department of Registration. It provides an easy and transparent process for registering and documenting immovable property.

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**e-Seva : E-governance initiative of AP Govt**

*e-Seva provides a one-stop venue for services of various state and central government departments through an easy access through a chain of computerised Integrated Citizen Service Centres (ICSCs) and through the Internet i.e. [www.esevaonline.com](http://www.esevaonline.com) e-Seva covers various departments of both State Government and Central Government.*

* ICSCs operates from 9-AM to 7-PM on all working days and is open on Sundays and Second Saturdays also 9.00 A.M to 3-00 PM.
* Electronic queuing system and efficient transaction of business reduces waiting time
* Any service at any counter in the centre
* Any service at any centre at any place in the city
* Distribution of centres in all major areas surrounding the city and likely to expand to other parts of the state
* At present there are 18 e-Seva centres spread across Hyderabad and Secunderabad

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Perhaps the most daunting task for the Andhra Pradesh government was the compilation of the socio-economic classification of the state's residents and the preparation of a database of land records. These are the first stepping stones towards the issuance of multipurpose identity cards that would ensure better targeting for poverty alleviation programmes. Popularly known as the 'IT project focussed on the common man', **TWINS** enables the citizens of Hyderabad and Secunderabad to access select services and information on Departments of the State and Central Governments. This is done by accessing integrated citizen service centres (ICSCs). The ICSC is a one-stop shop for key citizen services - such as payment of electricity, water and sewage bills, property tax, registration and issuing of birth and death certificates and many more. The government has also initiated the Secretariat Knowledge Information Management System with a view to exploit the power of computer networks, automate workflow in the Secretariat and provide effective tools for performance evaluation. The Andhra Pradesh Planning Department has put together a sophisticated Geographical Information System (GIS) which captures inputs from remote sensing satellites to create thematic data on road networks and community infrastructure.
**Bihar** ([http://bihar.nic.in](http://bihar.nic.in))

Bihar Government is keen to promote IT culture throughout the State in order to benefit the mass through this technology. Some of the major computerization activities carried out by the State government with the technical support from National Informatics Centre, includes computerisation of statewide transport, treasury, GPF Office, commercial tax system, Bihar State Electricity Board, etc. Besides all these, Bihar State Unit has successfully computerised the elementary education under HRD Department. Created an MIS of 2 lacs of school teachers including Primary and Middle. Completed the 6th All India Census in the record time. There are many other state Govt. projects such as Land Records, Health, Commercial Tax, Science & Technology, Bihar State Electricity Board etc. as well as central Govt. Projects such as Central Excise, ROC, Provident Fund Organisation etc. which as been accepted, maintained and computerisation plan are initiated. National Informatics Centre has also developed a computerised system to keep track of distribution of food grains, sugar, kerosine oil etc. in the state of Bihar. The system also takes care of district level requirement of allotment of such commodities dealer wise on the basis of rationing units.

**Chandigarh** ([http://chandigarh.nic.in](http://chandigarh.nic.in))

Project Telemedicine interconnecting three premier medical institutes i.e. PG1-Chandigarh, AIIMS-Delhi and SGPG, Lucknow using ISDN for tele-diagnosis, tele-consultation and tele-education, each of which in turn will be connected with one medical college, has been initiated.

**Chattisgarh** ([http://chhattisgarh.nic.in](http://chhattisgarh.nic.in))

The government plans for State-wide Geographical Information System. GIS is to be set up through ISRO which brings the state’s entire 20,000 villages into digital domain. All villages and towns will be connected through wireless solutions, connecting them with CHOICE centres (Chattisgarh Online Information System for Citizen Empowerment).

**Dadra Nagar Haveli**

Ongoing project in the Union Territory is computerisation of government offices. It has yet to launch its official web site.

**Delhi** ([http://delhigovt.nic.in](http://delhigovt.nic.in))

The Delhi Government is playing an active role in (a) Promoting IT for masses (b) Ushering E-Governance (c) Creating an atmosphere conducive for the growth of IT Industry & IT Infrastructure. Besides, the usual computerisation of government offices and departments, Delhi Government has launched its official web site. All important government forms are available online. With a view to bring in a culture of openness and transparency, the Government of Delhi has enacted the **Delhi Right to Information Act, 2001**. It would help the citizens in getting the required information as a matter of right barring certain areas. The government also plans to start a "Teach the Teachers" programme for upgrading the IT knowledge and skills of teachers on a regular basis. A Special Cell will be set up in State Council for Education, Research and Training.
to work out details of this programme. The government intends to take up training of at least 10 per cent of teachers in Higher Secondary Schools during 2000-01. There shall be an incentive scheme to attract teachers to this programme and to encourage them to complete it successfully.

**Goa** [http://goagovt.nic.in](http://goagovt.nic.in)

The Sate Government has issued a notice to all its departments to computerise the activities of their departments by using various operating systems, software programmes to ensure compatibility, seamless transfer of data and information, etc. It has also directed government departments to send in proposals for e-governance for better government to citizen contact.

**Gujarat** [http://gujarat.nic.in](http://gujarat.nic.in)

Gujarat was in the limelight when it introduced the smart card-based driving license project. Each of the 22 Regional Transport Offices (RTOs) of Gujarat was equipped with state-of-the-art enrolment and issuance centres. The government has also implemented a state-wide WAN (Wide Area Network) project that connects its various office complexes and corporations and supports services like voice, data and video traffic. The network provides a backbone for connectivity to any LAN establishment throughout the state.

Gujarat's State Road Transport Department's 'computerised check posts' project has reduced corruption at the 10 octroi posts to zero and has enhanced revenue earnings. The Government has also used IT to handle its recurring problem of natural disasters creatively. The communication systems are being so designed as to remain unaffected during emergency situations. The Vadodara Model District Project put in place at a cost of just Rs 1.22 crores set its own benchmark. The project involved software development and training for the entire staff, and connected 64 nodes in the Collectorate with 13 nodes in as many block towns in the state. The Government has already launched a comprehensive information technology policy and a new corporation viz. Gujarat Information Technology Ltd. has been launched. Mega infocity project is coming up near Gandhinagar and will boost the software industry and generate vast employment opportunities. An ambitious project of Info-tower, set up by the GNFC in Ahmedabad is having all infra structural facilities including connectivity to the entrepreneurs in the field of information technology. Gradually all the district headquarters will be linked up with the secretariat in Gandhinagar with E-governance Network. So far 1,00,000 government employees have been imparted the computer training. As per the plan chalked out by the information technology department over 2,00,000 educated young persons will be given training and employment opportunities in this sector.

**Haryana** [http://haryana.nic.in](http://haryana.nic.in)

The State Government has instituted an Information Technology initiative fund with an initial corpus of Rs 10 crore for e-governance and to promote the IT in the State. It would also be utilised for developing replicable and reusable models of e-governance, IT innovations in administration, re-engineering and IT supported resource optimisation.

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12 Vide notification no. 1 (40)/DOIT/Order/2001/485
**Public-Private Partnership: Drishtee at Sirsa**

Drishtee offers e-governance, education and health services through a software package, which facilitates communication and information, interchange within a localised Intranet between villages and a district centre. The objective of the project has been to establish community-owned, innovative and sustainable IT projects in the most poverty-stricken and tribal dominated rural areas throughout India. The projects seek to use IT for rural people causing a shift in the government’s delivery apparatus – to serving villagers directly rather than through civil servants.

The objective of Drishtee is to create a sustainable model of rural distribution and promotion of consumer goods and basic services, and then replicate this information islands and interconnects them. The services it enables include access to government programs and benefits, market related information, and private information exchanges and transactions. Using a tiered franchise and partnership model, Drishtee is capable of enabling the creation of approximately 50,000 Information Kiosks all over India within a span of six years. These kiosks would potentially serve a market of 500 million people, with aggregate discretionary purchasing power of Rs. 100 billion (Rs. 10,000 crores). In less than two years, Drishtee has successfully demonstrated its concept in over 90 kiosks across five Indian states, namely Madhya Pradesh, Rajasthan, Punjab, Haryana, and Uttar Pradesh.

A corpus fund of Rs 5 crore for the setting up of an Indian Institute of Information Technology (IIIT) at Gurgaon. An ultra-modern cyber city in Gurgaon near Indira Gandhi International Airport is being setup to provide employment opportunities to five lakh persons and make an impact of Rs. 15,000 crores on the economy of the State.

**Himachal Pradesh** [http://himachal.nic.in](http://himachal.nic.in)

NIC established State as well as District Centers, by installing Computer Systems and providing Satellite-based Computer Communication Network (NICNET). The 11 District Centres have been provided with IP-Advantage (IPA) VSAT for NICNET connectivity, by installing a 1.2m Dish antenna for the purpose, for Internet and Email services through the DNS). These 11 district centres are also provided with a telephone line each, for extending the NICNET connectivity further to outside users on Dial-up Line. The Himachal Pradesh Govt. has also launched its official web site, giving details about tourist destinations, policy programmes, etc. It has been also instrumental in putting up exclusive web pages for each district. It is in the process of implementing wide-scale computerisation programme in all the government departments, for instance tourism, excise and taxation, industries, law and justice, rural development and panchayati raj, police, health, revenue and finance, etc.

**Jammu & Kashmir** [http://jammukashmir.nic.in](http://jammukashmir.nic.in)

This state has been strife with insurgency and terrorism for the last two decades. The IT initiatives of the state government are still in infancy. Only few government departments have been able to implement the computerisation programme of the Central Government. However, the State Government has launched it official web site giving all the necessary details about the State, for instance fact sheet, who’s who, tourist destinations, etc. There is also and added facility for the people to get in touch via e-mail with the Chief Minister.
The State Government plans to promote IT in a more aggressive manner in the state by implementing wide-scale computerisation in the government departments at the district level. It also plans to use IT-enabled services for government-to-citizen contact. Some private initiatives in education have been launched by NGOs by using multimedia techniques, but it is still in experimental stages.

**Jharkhand** ([http://jharkhand.nic.in](http://jharkhand.nic.in))

It is a new state carved out Bihar. The State Government has commenced with the computerisation of government departments. It has also launched its official web site to add greater transparency in the government operations. Government policies, who’s who in the state and other wide variety of information are put on the official web site.

**Karnataka** ([http://karnataka.nic.in](http://karnataka.nic.in))

The Karnataka Government has embarked upon an ambitious e-governance programme to make its citizen interface (especially in revenue, land registration and civic utilities) more transparent and friendly. Within the government, the most commendable work has been done by the Department of Treasuries, which completed the installation of 250 VSATs to capture every single transaction at all district and taluk treasuries. The government also proposes to have an optic fibre running across the state, linking all the 70-plus engineering colleges, ITI's and other technical institutions. It has computerised the Education Department to enable monthly reviews, recruitment, posting of teachers, and online counseling.

**Bhoomi: Computerisation of Land Records**

All 17 million land records of 67 lakhs land owners in 177 taluks of Karnataka will be computerised. As on ow 125 taluks in the state has been computerised & working on-line. This system works with the software called "BHOMI" built fully in-house by NIC, Bangalore. Computerisation of Land Records in entire Karnataka will be completed by March 2002. This scheme is largely funded by Government of India, some components in this scheme are funded by State Government. Once this scheme has been operationalised in the taluks the manual RTCs will be considered as illegal. Bhoomi software authenticates users on their fingerprint. This ensures that no body can hack the system by imitating other users. This software also has the provision of scanning of original mutation orders of revenue inspectors (who is the authorised person to pass orders in the mutations in the field) and notices served on interested parties. Bhoomi directly impacts 6.7 million farmers across Karnataka. The programme, in simple terms, is the computerisation of 20 million records of land ownership in Karnataka's farming community. Any farmer in the state can today get a copy of the Record of Rights, Tenancy and Crops (RTC), a critical document of ownership required to avail bank loans, for a user charge of Rs.15.

All the farmer has to do is go to the Bhoomi centre at the sub-district office and obtain the required document, be it the RTC, a mutation extract for a piece of land that has been sold or a title deed. Before Bhoomi, the process took weeks and was riddled with corruption. Farmers claimed they had to pay anywhere between Rs. 100 and Rs. 2,000 in bribes to officials. What’s more, the project has already started earning large revenue for the state – as much as 7-7.5 million Rupees every month. The software also includes the biometrics aspect, which records and identifies the fingerprint of the official who would be entering the change of ownership or sale of any piece of land in the state.
The Department of Information Technology and Rural Development & Panchayat Raj Department have conceived an IT training scheme called “Yuva.com”. This scheme is for the rural youth. Under this scheme, training centres will be established in each of the 225 assembly constituencies over the next twelve months. These centres will train about one lakh educated unemployed youth in IT related services. The private sector will participate in setting up and running these centres.

Kerala

The Government of Kerala is making an impact in the public life with a series of e-governance initiatives aimed at bringing the most transparent and efficient governance to each citizen's doorstep. A series of departmental workshops with service organisations initiated to assess the employee's perceptions and apprehensions about IT implementation in Government and also in identifying the preparatory work to be carried out for a smooth transition to e-governance. Two to three nodal officers identified by each Department who would champion the cause of IT within the department provided with a two-phased orientation programme in collaboration with major IT companies. Individual Government departments empowered with flexibility to outsource hardware procurement, systems study, software development and training to reputed total solution providers (TSPs), without going through complicated procurement procedures.

The CARD project of Andhra Pradesh has been adapted in the registration department. Five sub-registrar's offices in the Thiruvanthapuram district are being computerised under the direct supervision of the IT Department. A successful computerisation model evolved in the Office of the Controller of Entrance Examinations, which is fully computerised and equipped with software developed to facilitate the on-line admission to almost 25 different professional colleges and around 100 courses, matching the individual's choices with the availability of seats. Besides, a unique networked project for the establishment of a computer information network covering all the sub districts/ blocks, as part of the larger objective of inter connectivity of all tiers of Government, connecting 152 development blocks in the state has been completed. This project will help in developing an effective information dissemination system at the block level and would facilitate monitoring of development projects undertaken at the block level. The government network was planned for the State with a view to provide transparent and effective administration at the block level. The first phase of the project for networking all the sub-treasuries in the State has been completed with five sub-treasuries and the extension counters in Thiruvananthapuram district being linked online. The second phase would test the capability of the VSAT architecture for networking. Even on completion of the first phase, the implications on proper resource planning at the Government level are fairly obvious. The project for linking the sub-offices, checkposts and other main nodes of commercial taxes department has completed the stages of systems study, techno-economic clearance and final tendering.

The Computer Server of the FRIENDS Centre will be linked to the server of the concerned departments for updation of data on a real time, once the computerization of the departments are completed. Until then, FRIENDS Centre shall work on the principle of "Collect and Remit" and "Receive and Forward" methods to offer public services like KSEB Bill Payments, KWA Bill Payments, Property Tax, Professional tax, Traders License Fee, Building Tax, Basic Tax, Revenue Recovery, Fee for new ration card, time vehicle tax, etc. Various other services that
work on "Check and Confirm" mode - such as KSRTC Express Reservation service, booking/reconfirmation of Indian Airlines/Air India, KTDC hotel reservation etc, can be added in future.

_Lakshwadeep_ [http://goidirectory.nic.in/lakshwadeep.htm](http://goidirectory.nic.in/lakshwadeep.htm)

The State Government has embarked on ambitious plan of training of Officers and staff in basic concepts of computer and applications. Besides, the government has computerised selected departments for providing better access to citizens, especially services like ship ticketing, accounting system contingent bills, Electricity Billing System, Voucher Compilation for PAO, Entry permit Holder Information System, etc.

_Madhya Pradesh_ [http://mpgovt.nic.in](http://mpgovt.nic.in)

The State government is one of the first states to use IT for connecting the government with local masses. Government has identified Gwalior, Indore, Jabalpur and Raipur to come up as IT cities in the State. The State Government had launched a unique Government to Citizen initiative, popularly known as Gyandoot. It plans to build on this experiment to other districts of Madhya Pradesh.
Towards G2C: Gyandoot

The Gyandoot project was launched on January 1, 2000 with the installation of low cost rural Intranet covering 31 village information kiosks (Soochanalayas). Each kiosk caters to about 25 to 30 villages. The entire network of 31 kiosks covers 311 Panchayats (village committees), over 600 villages and a population of around half a million (nearly 50% of the entire district). Kiosks have been established in the village Panchayat buildings. They have dial-up connectivity through local exchanges on optical fibre or UHF links. The server hub is a Remote Access Server housed in the computer room in the District Panchayat. User fees are charged at the kiosks for the services provided. Local rural youth act as entrepreneurs, running these information kiosks along commercial lines. At the inception of the project it was decided that further expansion of kiosk centres would take place only when local youth come forward to start new centres as private enterprises.

Services offered:

Prevailing rates of prominent crops at the local and other recognised auction centres around the country are available on-line for a nominal charge of Rs. 5. The volume of incoming agricultural produce, previous rates, etc., is also provided on demand. Copies of Land Records: Documents relating to land records including khasra (record of rights) are provided on the spot at a charge of Rs. 15. All of the banks in the district have agreed to accept these kiosk documents. Approximately 0.2 million farmers require these extracts at every cropping season to obtain loans from banks for purchasing seeds and fertilisers. On-line Registration of Applications: Villagers had to make several visits to the local revenue court to file applications for obtaining income/ caste/ domicile certificates. Now, they may send the application from a kiosk at a cost of only Rs. 10. Within 10 days, notification about the readiness of the certificate is sent via e-mail to the relevant kiosk. Only one trip is needed -- to collect the certificate. On-line Public Grievance Redress: A complaint can be filed and a reply received within 7 days for a cost of Rs 10. These can include complaints regarding drinking water, quality of seed/fertiliser, scholarship sanction/disbursement, employee establishment matters, functioning of schools or village committees, etc. Village auction site: This facility began in July 2000. It makes auction facilities available to farmers and villagers for land, agricultural machinery, equipment, and other durable commodities. One can put one's commodity on sale for a charge of Rs. 25/- for three months. The list of saleable commodities can be browsed for Rs. 10/-. Transparency in government: Updated information regarding beneficiaries of social security pension, beneficiaries of rural development schemes, information regarding government grants given to village committees, public distributions, data on families below the poverty line, etc. are all available on the Intranet, which makes the government functioning more transparent.

On-line matrimonial advertisements, information regarding government programs, a forum for school children to ask questions, ask an expert, e-mail (free for information on child labour, child marriage, illegal possession of land belonging to Scheduled Tribes, etc.) Some kiosks also have added photocopy machines, STD PCO, and horoscope services. In January 2000, the first month of operation, the kiosk network was accessed 1,200 times for a variety of services. That number reached nearly 9,000 in July. During the first 11 months, the 31 Gyandoot kiosks were used nearly 55,000 times.

Maharashtra [http://goidirectory.nic.in/maharashtra.htm]

The Government of Maharashtra, recognising connectivity as an important tool for successful e-governance, took up the task of connecting 3,000 offices through a network. It aims to further the reach of the network to the 'sub-taluka' level. The government has gone for a district Wide Area Network (WAN) which links the 3,000 district offices. Further, the government's Stamps and
Registration Department has undertaken extensive computerisation and is supported by comprehensive training modules for its staff. The state, with the aid of Computer Maintenance Corporation (CMC), undertook the task of developing software for the State Excise Department and creating basic awareness amongst employees.

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**Warana Wired Villages Project**

By participating in a government project to plug 70 villages into the Internet, Warana’s sugar cane farmers are among the first in the country to embrace the high-tech wave. Before the advent of the Warana Wired Village Project, farmers had to travel several hours to the cane-crushing factory. Once there they would wait for hours as the crop was weighed and crushed, along with hundreds of tons of produce from other farmers. Only after this process was completed did farmers find out how much money their harvest had earned. In fact, all details about the sugar industry were available only at the factory. But now the farmers -- who all belong to a co-operative that buys their sugar cane and then gives them an equal profit share -- can get their information at a computer kiosk in his village. With computers in all the villages, the farmers are linked to a central network. Suddenly, connectivity is changing a centuries-old way of life.

The $600,000 network was funded by the central government, and provides 70 villages with computers. Through the network, farmers get a daily weather report, learn what fertiliser to use, and access the sale price of several other crops, which helps them decide what to plant next. *Soon, they will be able to use the network to diagnose crop diseases.* Besides, they have no desire to keep the advancements a secret; they want the 700 million Indians who live in the countryside to also have access to computers, believing it will help raise living standards across India as others discover the economic benefits of high-speed information.

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**Orissa** [http://orissa.nic.in](http://orissa.nic.in)

The Orissa Government deployed information technology towards the planning and development of land. The Bhubaneshwar Development Authority (BDA) has set up kiosks at its office that map the city using a GIS. This has made life easier for citizens as they can check on existing schemes for housing, commercial and industrial projects without depending on middlemen. Citizens can also get accurate information on rates, vacancies and administrative procedures. Satellite earth station is functional for giving data connectivity to IT companies, launching of Internet services introduced by DOT for general public, Orissa Centre of IBM Software imparting high-end software training, B.Sc (Hons), Computer Science courses introduced in six Govt. colleges, etc.

**Pondicherry** [http://pondicherry.nic.in](http://pondicherry.nic.in)

The State Government has initiated steps to impart IT training by educational institutions and to make the Govt. machinery citizen friendly by facilitating transparency and efficiency. Besides, computerisation of government offices, it also provides facilities in the outlying regions with Internet facilities. The Pondicherry Engineering College is identified to establish a city centre to provide a permanent training facility under which computers will be purchased and given by the Government. The Engineering College will undertake the maintenance and training of staff. It has also set up a separate police-net for networking of all Police Stations, VAST facility in the assembly building with provision for Internet and E-mail, etc. The State Government also plans to set up a Software Technology Park.
**Punjab** [http://punjab.nic.in](http://punjab.nic.in)

Punjab has announced its IT policy and plans to establish software technology parks in the state. Panchkula has emerged as a hub for IT industry. Punjab Government has also launched a widespread computerisation programme of government departments and other state bodies. So far the e-governance initiative focusing on G2C has been experimental stages in few districts.

**TARAhaat: Public-Private Initiative at Bathinda**

TARAhaat.Com, a project to provide online services to a large number of rural communities in north India, has been promoted by Development Alternatives (DA), a Delhi-based NGO. Pilot projects are in place at several locations in Bundelkhand, M.P., and Bhatinda, Punjab. While the project will provide a menu of services similar to other rural ICT projects, its current business model requires influx of capital before it becomes self-sufficient. One of the more innovative aspects of the project is its highly interactive and graphics-intensive interface system, which allows semi-literate and neo-literate users, enhanced access products and services. DA is an internationally acclaimed voluntary group working on the issues of development, environment, technology and governance. The group has an experience of over two decades of using modern science for the benefit of the economically backward sections of the Indian society. Its primary task is to design new ways to create jobs for people in villages and towns. It does so by designing better technology, better ways to revive our forests, rivers and soils, and better systems of governance in our communities.

TARAhaat.com is the website developed by DA, and is focussed on the theme of connecting the Indian villager to the rest of the world. The design of the site has been kept simple to be handled even by a young child or an illiterate person. For a few rupees, the citizen can use a computer at a TARAdhaba to find out the crop prices at a faraway mandi, print out a map of her land or find a bridegroom for his daughter. TARAhaat.com covers a wide range of services, which include: E-News, E-Commerce, E-Governance, E-Education, E-Health, E-Entertainment. The website uses vivid illustrations and minimal text. For example, a walking, talking postman on the site informs the user that this is the link from where an email can be sent or received. Similarly, illustrations mark the links for health (hospital), administration (local government office), transport (a moving bus) and other links.

**Rajasthan** [http://goidirectory.nic.in/rajasthan.htm](http://goidirectory.nic.in/rajasthan.htm)

The State Government has launched Vikas Darpan – GIS based Planning & Decision Support System covers 40000 Tehsils on about 200 demograph and socio-economic indicators. Rajasthan's Department of Information Technology has developed a state-wide Intranet called 'rajSWIFT. This system uses the Internet to facilitate online data, text and email communication between the Office of the Chief Minister and the 32 District Collectors. RajNIDHI, a web-enabled citizen-service information kiosk framework, is a modern, transparent and responsive system. The government aims to provide greater transparency in government-citizen interactions through projects such as 'Aarakshii' (which provides field officers with online information on criminals); computerisation of the Ajmer Collectorate (including grievance monitoring systems); computerisation of hospitals; computerisation of the Registration and Stamps Department; and networking of the Secretariat.
**Sikkim** ([http://goidirectory.nic.in/sikkim.htm](http://goidirectory.nic.in/sikkim.htm))

The Sikkim Government plans to provide connectivity in the state with help of Telstra V. Comm, which will provide VAST connectivity in Industrial Growth Centre/Technology Park. It also plans to set up a R&D unit in Sikkim House, New Delhi and a 128 kbps VAST link for global connectivity supplementing present ERNET VAST bandwidth.

**Tamil Nadu** ([http://goidirectory.nic.in/tamilnadu.htm](http://goidirectory.nic.in/tamilnadu.htm))

Tamil Nadu is now firmly established as a major player in India's IT scene. A NASSCOM study in 1998 has rated Chennai as the best possible location for investment in the software industry. As part of government’s commitment to the growth of the IT industry in the State, the Tamil Nadu Government was one of the first to announce a comprehensive Information Technology Policy in 1997. As a consequence of all these innovative efforts, software exports from the State have increased from just Rs. 37 crores in 1995-96 to nearly Rs. 1,900 crores in 1999-2000. As a major initiative for the development of IT infrastructure in Tamil Nadu, the Government of Tamil Nadu has promoted "TIDEL Park", the largest, most advanced facility of its kind in India through the joint efforts of two of its Public Sector Undertakings, namely TIDCO and ELCOT. The TIDEL Park has facilities specifically designed to meet the need of the IT Industry including international data connectivity, uninterrupted power, fully automated building maintenance system operation, maintenance of facilities by international experts and a world class working ambience.

The Government of Tamil Nadu, in order to restore the faith of citizens in the efficacy of the government, undertook projects like STAR (Simplified and Transparent Administration of Registrations across Tamil Nadu); SCHOOL (which aims to take computer literacy to 1300 high secondary schools); computerisation of land records (in order to eliminate corruption in the department); and computerisation of the Transport Department (which maintains an accurate historical data of over one crore vehicles and drivers). In addition, tele-medicine has met with tremendous success - it allows doctors in remote areas to consult experts on special cases. A Tamil Internet Research Centre has also been set up for funding projects promoting the use of Tamil on the internet to maximise access to citizens.
**G2C: Sustainable Access in Rural India (SARI)**

Pathinettangudi, 35 km from Madurai, which presents the look of just any another underprivileged village. However, a silent IT revolution is brewing in the tiny hamlet where the illiterate farm workers use webcams, voice mail and e-mail regularly. Similar is the communication technology spread in at least 30 other villages around Pathinettangudi, paving the way for the caste-conscious Melur to become the first **cyber taluk** in the country—courtesy the Sustainable Access in Rural Internet (SARI) project.

- They can download application forms for caste, birth and death certificates, and simply forward it through e-mail to the tahsildhar. The acknowledgement is received within hours and the certificate issued in a week.
- **Voice mail, chatting and e-mail.**
- A large number of youth in Melur taluk are employed in the Middle East. Their dear ones are no longer scared of ISD bills. It's just Rs. 25 an hour to see their wards live on screen through the interactive webcam.
- Online clarification of agricultural queries from the Madurai Agriculture College and the Research Institute of the Tamil Nadu Agricultural University which is providing **free counselling**.
- Villagers get close-up colour pictures of their eyes examined by specialists in the Aravind Eye Hospital in Madurai and fix up appointments for surgeries.
- They are planning to provide **online train, air and bus ticket booking**.
- **Free consultancy on veterinary sciences** is also on the anvil.

‘Public Access Internet Kiosks’ have been established in 30 villages under the SARI project in association with ‘n-logue’. This government-public-private-institution partnership programme also involves IIT Chennai, the Massachusetts Institute of Technology and the Harvard University. The technology provides highspeed Internet wireless access to more than 1,000 systems within a radius of 25 km radius. Individuals who took the risk of investing Rs. 50,000 in computer and multi-media and other accessories have established the kiosks. Now the owners, who have installed the user-friendly Tamil software ‘Padhami’, ‘Padhakkam’ and ‘Minnal’, make an average income of Rs. 2,500 a month and the patronage is growing steadily. As of now, a chunk of villagers in these 30 villages have e-mail identities, which they use for seeking assistance from the Government under various schemes. The SARI project has evoked excellent response from the Government and the public.

**Uttar Pradesh** ([http://up.nic.in](http://up.nic.in))

The government proposes to undertake “Project Allahabad” to make Allahabad a Smart District. In the first phase of IT initiatives, the government plans to provide IT enabled services in select departments like Land, Revenue, Sales Tax, Transport, Rural Development, etc. It also plans to establish a Hi-tech Habitat at Greater Noida.

**Uttaranchal** ([http://uttaranchalassembly.org](http://uttaranchalassembly.org))

It is newly carved state out of Uttar Pradesh. The State Government has taken adequate steps to computerise government departments and various State Bodies. It has launched its Vidhan Sabha web site for infusing greater transparency in legislative body functioning. The state is poised for implementing broader IT-enabled initiatives for wider reach. The State Government plans to replicate the Gyandoot project in the State. Some NGOs have shown interest in spreading IT for the masses, but it is still in proposal stage.
The Department of Information Technology has been set up recently in the State and IT has been identified as one of the thrust areas of development. The State government plans to introduce E-Governance in administration, ensure transparency and speed in providing information to the citizens through improved services, construct infrastructure and create an enabling atmosphere to set up IT industry, etc. In the present socio, economic and cultural environment it is not possible for IT to reach each citizen immediately. However, the elected Municipalities and the Panchayati Raj Institutions, which are essentially a part of the decentralised system, is likely to play a big role in taking IT to the masses in the future.

Seven Sisters of the North-East

The seven sisters comprise- Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura. Focus of the north-eastern states is on computerisation of government departments. But their respective web sites aims to present each state as a tourist destination. Few states have also launched IT-enabled initiatives to connect the government with people. For instance, Tripura Government has launched its official web site at [tripura.nic.in](http://tripura.nic.in). It is in the process of further improvement of the site. The Government has also taken up the programme of training its officers and staff in basics and slightly more advanced concepts of computing. Some of the major IT projects at the implementation stage are Computerisation of Taxes, Computerisation of Treasuries and an Intranet for the State in various departments. In addition to these projects, the system study is being done for the Transport MIS, Computerisation and Information System for Rural Infrastructure. The Government has also opened an Information-cum-Facilitation Centre (IFC) in the State Secretariat. This centre provides basic information on the activities of the various government departments of Tripura and uses a Database at the back-end to respond to all queries that may come up. This centre is also linked to the Internet so that information can also be got on national and global aspects.

Besides, the respective State governments are also attempting to promote local products from their cottage industry in the global market. Wood and wood products are commonly available on most of the official web sites. It will be some time before the respective State Governments initiate any specific G2C IT-enabled initiative in the region.

E-governance Initiatives in Bangladesh

Bangladesh Development Gateway

Project Bank (Bangladesh Development Gateway Project Bank) is a directory of information on development activities found on the web sites of development organizations. Participating organizations share information on planned, current and completed projects and programs that they fund, execute or implement. SDNP compiled the development projects from different donor organization’s website and documentation.
BTTB billing system

Bangladesh Telegraph and Telephone Board (BTTB) has recently computerised its billing system with the assistance of a leading IT integration house Computer Network Systems Ltd. (CNS Limited) for the processing and distribution of computerized telephone and telex billing. BTTB assigned CNS to process the telephone bills for the Chittagong region inclusive of Sylhet Division and Mirpur Exchange in the capital city Dhaka, CNS Limited was also awarded to process and prepare the telex bills for the BTTB.

Computerisation of Railway Reservation for Bangladesh Railways

Bangladesh Railways has completed its computerisation of railway reservation system with the aid from Asian Development Bank. In 1994 Bangladesh Railway (a century old state owned nationwide railway network) signed an agreement with Technohaven to computerise its ticketing and billing system on a BOT basis. This solution was commissioned during 1994-96. Technohaven Co Ltd owned, operated and maintained the massive ticketing and seat reservation system for Bangladesh Railway since then until April 2002 when the system was finally transferred to the Bangladesh Railway.

Dhaka Electric Supply Authority’s Client Database

DESA’s donor supported (technically and financially) to create a client database. It was an ADB funded project. This project aimed at ensuring proper metering system for all consumers, computerization of billing system, introduction pre-paid metering, transforming distribution division as strategic business unit to run as cost and profit centre and contracting out commercial activities in some areas where system loss and out standing are more. Computerisation of the client database resulted in almost 2 per cent reduction in the cost of operation of DESA.

Grameen Communications

Grameen Communications was established with a software system development need of Grameen Bank. Obviously, software development skill is GC’s key competence. It has developed Micro Banking software for Grameen Bank which is successfully automating all tasks for 800 branches. Software products has been developed for international clients like CFTS, India and ASHI, Philippines. **Grameen Banker** The database software is used to monitor micro-credit loans. The software consists of multi-user and multi-lingual capability, easy operation in Windows environment and multiple report generation options. This unique software increases the organizational efficiency and workload reduction for micro-credit service providers. This product is currently being used in 800 rural branches of Grameen Bank through the Data Management Center.

Tele health center

The objective of the project is to eliminate digital divide and provide different e-services with an emphasis on healthcare services in remote locations by using state-of-art Information and Communication Technology. Eliminating communication barrier and making information easily accessible by the rural people will play a major role to eliminate poverty from this country.
The project will be a partnership between Grameen Communications (GC) and Mondial Institute of Social Development. Grameen Communications will bear the overall responsibility of the project implementation and MONDIAL will finance the capital and operational expenses required for 2 years initially.

E-governance Initiatives in Nepal

'Indreni' - the Nepali Intranet for Information Sharing

The Nepali Intranet, popularly referred to as 'Indreni', meaning rainbow in Nepali, was established as a platform for online information sharing and publishing, as well as for indigenous R&D in Nepal. It offers a low-cost alternative to the Internet and has the potential to reach the masses. Small businesses, students, and individuals can benefit from the low cost. It also provides Nepali IT professionals with a platform through which new ideas can be researched and developed. The idea is to develop various centres of information throughout Nepal through the implementation of an Intranet in each district, to connect these centres to establish a nationwide network of information publishing, and ultimately to connect this information structure to the Internet. Thus information from the ground up would for once be published and shared. It will create an electronic provision for basic information as well. This means there will be a publicly accessible infrastructure; a knowledge base that can be used by all concerned in furthering the development of the country. Indreni covers different sectors like Development, Business, Entertainment, News and Current Affairs, Education, Culture, and Public information. The Indreni is managed by Nepal Internet Users Group (registered in April 1998) and funded by ICIMOD under IDRC-ENP project for piloting and testing of an Intranet service within Nepal. Currently there are 300 members of NIUG.

NepalNet:

In 1997, with the financial support from the International Development Research Center (IDRC) of Canada and technical support of the International Center for Integrated Mountain Development (ICIMOD), a group of about 30 Nepali institutions came together to form a Web based forum called NepalNet. The primary objective is to share available human, technical and information resources using the Internet, with the focus on the socioeconomic, agricultural, environmental, and sustainable development sectors of Nepal. NepalNet was launched on September 17, 1998. Now the NGO sector have gained access to the Internet, and started to contribute content through NepalNet.

HealthNet Nepal:

This is a network for global communication in health through email by HealthNet organization of SatelLife. Through a computer network called HealthNet, SatelLife delivers communication and information services to the health care workers primarily on clinical research/practice and public health for doctors, researchers and health professionals. HealthNet provides email services, electronic conference, electronic publications, access to medical databases. Currently there are about 500 users of HealthNet in Nepal.
Challenges to E-governance for Development

The success stories cited above are the exception rather than the rule for two reasons. First, most developing countries have only undertaken a limited number of e-governance initiatives. This mainly relates to a lack of e-readiness. Second, most e-governance initiatives that are begun currently fail. Surveys of e-governance initiatives in developed countries are rare, a shortcoming that needs to be addressed. Even donors, who should be committed to monitoring and evaluation, rarely seem to produce reports. From the material that is available, two main types of e-governance failure can be identified.

In some cases, there is the total failure of an initiative never implemented or in which a new system is implemented but immediately abandoned. For example, India's Indira Gandhi Conservation Monitoring Centre was intended to be a national information provider based on a set of core environmental information systems. Despite more than a year of planning, analysis and design work, these ICT-based systems never became operational, and the whole initiative collapsed shortly afterwards (Puri et al 2000).

Alternatively, there is the partial failure of an initiative in which major goals are unattained or in which there are significant undesirable outcomes. For example, the Tax Computerisation Project in Thailand's Revenue Department set out seven areas of taxation to be computerised. At the end of the project, only two areas had been partly computerised, and five others were not operational (Kitiyadisai 2000).

One type of partial failure that particularly seems to affect e-governance initiatives is the sustainability failure of an initiative that succeeds initially but then fails after a year or so. An example is the creation of a set of touch-screen kiosks for remote rural communities in South Africa's North-West Province. These were initially well received. However, the kiosks' lack of updated or local content and lack of interactivity led to disuse, and the kiosks were removed less than one year later (Benjamin 2001). Sustainability question marks also hang over some of the case studies cited above.

As noted, these are only glimpses of evidence about the prevalence of such failure. A few surveys have been conducted. Use of ICTs for health reform in South Africa's public sector: widespread partial failure of high cost systems with little use of data (Braa & Hedberg 2000). Use of ICTs in the Thai public sector: 'failure cases seem to be the norm in Thailand at all governmental levels' (Kitiyadisai 2000). Donor-funded public sector ICT projects in China, all were found to be partial failures (Baark & Heeks 1999). World Bank-funded public sector ICT projects in Africa: almost all were partial – often sustainability – failures (Moussa & Schware 1992). Likewise, independent reports on ICT use in the public sectors of individual developing countries find failure to be the dominant theme (World Bank 1993; Oyommo 1996). Lately, the two public-private initiatives in India, namely the TARAhaat and Drishtee, were closely studied and the study revealed strategic weakness in their business models and operational strategy (Kaushik & Singh, 2002). It is important to acknowledge that developing countries are not alone in suffering high levels of failure with e-governance initiatives. However, they do face a particular set of constraints that arise from two related challenges: lack of e-readiness and large design reality gaps.
Conclusion

Thus, in simple terms e-governance is giving citizens the choice of when and where they access government information and services. Putting the citizen at the centre of government means taking a delivery channel view. This would mean using more and more use of convergent technologies in many of the government functions. There is tremendous importance for rules and procedures in the government. Unless the records are kept properly, accessing information and tracing the precedents becomes time consuming and this is one of the reasons for the delays in government administration. Secondly, rules and procedures lead to enormous red tape and delay and this in turn leads to corruption. Today, we find that the present paper based system is very time consuming and inefficient. The rules, procedures can be made transparent to the citizens, information can be made freely available to the citizen, trace precedents faster and in short, improve the pace of effectiveness of governance by using Information Technology. A 'joined up' government-community-citizen infrastructure has its own significance. A strong and effective information chain, comprising a choice of practical, accessible and manageable channels of communication has a dual benefit. Citizens enjoy a fast and convenient 'service', whilst government not only becomes more integrated into the community itself, but can focus its resources where they are needed most. Moreover, a culture of self-service enables citizens to 'help themselves' wherever possible, saving time and money for all concerned.

In the ultimate analysis, the electronic governance wave has started worldwide. With the technologies to implement electronic governance already available, managerial issues are of key importance. Change in the mindset of the people particularly at the top levels in the bureaucracy and policy making is important because it is they who provide the leadership. Focused organization development interventions and training programmes can bring about this change in the mindset. Once this is done, there should be a corresponding trickle down effect right through the spectrum of government. The future is e-homes with e-services at the doorsteps.

For more information, following are selected web sites that can be useful to provide information on such initiatives.

http://www.mit.gov.in/
http://egov.mit.gov.in/
http://www.undp.org.in
http://www.developmentgateway.org/
http://www.digitalgovernance.org/
http://www.partners.panasia.org.sg/
Some Success Stories -

http://gyandoot.net
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