

e-Governance Action Plan for India

This paper provides an insight into the action plan for e-governance that needs to be implemented in India. It talks about the policies, infrastructure, Human resources, Technology, awareness campaigns, infrastructure and various projects that will be required for success of e-Governance in India. This paper goes beyond the strategy and talks about the actions required for e-governance. What follows next is the implementation...

What is e-Readiness Assessment?

SAMEER SACHDEVA

December'2002



SAMEER SACHDEVA

CONTACT

E.Mail : sachdeva_sameer@yahoo.co.in

A. Core Policies

Constituents

1. Vision, Mission, Strategies, Policies, guidelines, frameworks, roadmaps
2. E-Governance Technology Architecture, framework, guidelines
3. Funding Strategy
4. Human Resources Strategy - for project leadership, implementation, operations
5. Security Policy, framework, guidelines
6. Policy on front ends (kiosks, integrated service centres, etc.- ownership, funding/subsidy, types of services, charges, etc.)
7. Policy on middleware (portals, VANs, datacentres, etc. - ownership, exclusivity, interconnect, charges, etc.)
8. Policy on backends (department automation - role of private sector, role of government, safeguards, right to information, privacy, etc.)
9. Policy on integrated services (ownership, responsibility, etc.)
10. Process Reengineering - policies, guidelines
11. Policy on GIS - guidelines
12. Policies and guidelines on electronic payment mechanisms
13. Policies on employment generation through EG
14. Prioritization policy
15. Policy on interoperability
16. Policy on spread of access
17. Policies, strategies and guidelines for outsourcing of EG projects
18. Policies and guidelines on managing content

1. Overall vision, mission, strategy

“ Think Big, Start Small, Scale Fast”

The above statement clearly gives the direction in which the e-Governance Vision of the country should be. The Vision is the starting point for e-Governance. This starting point in most cases has been filled with rhetorical flourish yet light on implementation detail. Therein lies the foundation for the gap between rhetoric and reality. Most Governments initially articulated a vision largely driven by political agenda, without much appreciation of the very real and very challenging hurdles involved in implementing these broad statements of intent. In short, a realistic achievable vision for e-Governance needs to be defined. Most e-Governance efforts define the current ambition of achieving a Simple, Moral, Accountable, Responsive and Transparent (SMART) Government.

The strategy document should define the broad framework for the following:

- Objectives of e-Governance Initiatives
- Approach to e-Governance
- Frameworks for E-Governance – Technology, Resource and Implementation
- Architecture for E-Governance
- Priority for E-Governance
- Identification of Core Applications, Projects

2. E-Governance Technology Architecture, framework, guidelines

The overall architecture for e-Governance needs to ensure that the architecture components are extensible and scalable to adapt to the changing environments. The e-Governance applications that are emerging as islands of successes have to be interoperable.

Government of United Kingdom has framed the e-Government Interoperability Framework (e-GIF). E-GIF is an essential component of e-Government Strategy and sets out the policy and standards for interoperability across the public sector. It sets the architecture for joined-up and web-enabled government, for the UK online portal and Gateway, and for Electronic Service Delivery.

In India the Government of Andhra Pradesh has come out with a PWC report for E-Governance Architecture.

There is an increasing need that architecture should exist at the national level so that the projects, which are happening in various States, should later become interoperable and scalable.

3. Funding Strategy

Generation of resources both in the Plan sector and outside it has always been a big issue for the e-Governance Champions. The sustainability of various e-Governance projects comes in only when there are revenue models attached to various initiatives.

The leveraging of ongoing projects can be made more cost and value effective with the use of IT in a modulated fashion without any critical incremental costs. The Private sector resources have to be also carefully dovetailed with their commercial interests and those of the Government to provide Value Added Services.

The concept of Public Private Partnership (PPP) essentially arises out of considerations like, the imperative to provide infrastructure of high quality, shortage of public funds and above all, the profit motive driving high efficiencies and quality in the privately managed areas.

The Public Private Partnership can assume a wide spectrum of shapes like, BOO, BOOT (Build-Own-Operate-Transfer), BOT for specified periods. Its otherwise called concession contracts, Joint Ventures, private finance initiative (PFI), partial privatization through partnering with strategic investor etc. The idea is to arrive at the right combination of public sector accountability with private sector efficiencies and also to share the risk correspondingly.

Experiences across the globe show that IT is one of the areas which is eminently suited for PPP - especially, in areas such as driving licenses, utility bill collections, management of land records etc. Investments in information technology by governments have an opportunity cost since there are limited resources of money, time and attention. Investing these in IT would explicitly deny such investments in other development areas like provision of water, sanitation, health, shelter, production technology and skills development.

Investments in information technology have therefore to be made very strategically by governments.

A revenue model for e-Governance projects therefore needs to be worked out.

4. Human Resources Strategy

Human Resource Development for e-Governance will not only include building training programs in e-Governance but should start up with building strategy for IT qualified Manpower. A complete framework with performance based promotion needs to be incorporated in Government Services.

Changing recruitment qualifications: Certain changes in the qualifications for recruitment of employees can be made so as to employ persons with keyboard skills combined with the required levels of computer training. A system of incentives would go a long way in ensuring that employees have the requisite skills for effectively using computers.

Changing Civil Services Subjects: IT as a subject should be introduced in civil services. It is a pity that the IAS curriculum does not have IT/E-Governance/Computer Science as a qualifying subject.

5. Security Policy

A security policy is a set of rules stating what is permitted and what is not permitted in a system during normal operation. It is written in general terms and describes the security requirements for a system. The task to define a proper security policy is often a political decision to be taken by corporate management.

The security policy regulates how entities can gain access to objects in a system. The security policy should describe the well-balanced cost-effective protection of the system, and should include all objects as well as all entities in the system.

A security policy not only for the whole National network but departmental intranet as well.

After the security policy has been defined, it can be used to decide what security mechanisms to select. Security mechanisms are the basic mechanisms used to implement security. In a system, for example an access control mechanism, which decides what entities, are allowed to access an object.

An information security policy document is essential for many reasons. Beyond the definition of roles and responsibilities for workers, a policy document sensitizes workers to the potential problems associated with modern information systems. This education and training helps minimize the cost of security incidents, helps accelerate the development of new application systems, and helps assure the consistent implementation of controls across an organization's information systems

6. Policy on Front Ends

Policy on front ends will include policies related to front end services like kiosks and integrated service centers. It will include the policies on the types of services that will be delivered through the Integrated Services Centers, the service/ additional charges that will be taken for providing the service. The mechanism for funding these kiosks which includes initiatives like subsidy.

The decision on front-ends range on several options like Citizen Service Centers, Internet Kiosks, Home PC's, Set-top-boxes etc. It should be planned how the services of an e-Government project are to reach the intended beneficiaries, in a cost-effective manner while conceptualizing the project itself.

7. Policy on middleware

Policy on middleware ends will include policies related to Portals, Virtual Private Networks, Data centers and more. It will basically comprise the various policies related to:

- Ownership of the VPN's, Data Centers etc
- The interconnection policies
- Policies regarding charges, if any for such services

Since in most cases the data will be shared across departments, therefore the issues like ownership, sharing mechanism and other details also need to be worked out. In certain cases even services will also cut across departments and in some cases even State Governments as well. The interconnection policies in those cases is a priority.

The charges to be leveled by one agency for providing services to other agency are another issue to be addressed.

8. Policy on Back Ends

Policy on Back ends will include policies related to the broad issues of service provision. Such issues include:

- Defining the role of various stake holders
 - Role of Government
 - Role of Private Sector
 - Role of NGO's
 - Role of Academia
- The Right to Information entrusted to citizens and mechanism to support it
- Policy for protection of Privacy of Citizens
- Safeguards
- Universal Access

The above policy details need to be worked out so as to ensure the secure mechanism at the back end.

9. Policy on integrated services

A policy on Integrated Services which are integration of services provided by the various Departments of the Government of India. Since these applications run across the departments a policy on ownership and responsibility of these services need to be defined. For example the E-BIZ Integrated Services, it will involve various Central Departments – Department of Revenue, Department of Industry, Department of Company Affairs which will cut across Ministries. Additionally it will involve participation of APEX Bodies like the RBI, TRAI, SEBI, IRDA etc.

It will also involve the participation of various State Government Departments like the Industry, Excise, local bodies like the Gram panchayat etc. Under such circumstances the services which run across the various Departments and Governments, the responsibility and ownership of such agencies services needs to be defined.

The various Integrated Services include:

- India Portal
- State Portals
- EDI
- eBiz
- eProcurement

10. Process Reengineering

Government Process Reengineering (GPR) is the fundamental rethinking and radical redesign of Government processes to achieve dramatic improvements in critical measures of performance, such as cost, quality, service and speed.

GPR requires looking at the fundamental processes of the government from a cross-functional perspective." This implies that by necessity for reengineering to work, the team assembled to reengineer the process should represent the functional units involved in the process. The reengineering effort must break away from conventional wisdom and organizational boundaries, be broad and cross-functional, and use *information technology not to automate existing processes but to enable new processes.*

A documentation of complete government processes needs to be worked out. These processes then need to be studied for their relevance.

A process re-engineering exercise needs to be carried out for phasing out old process.

The processes needs to be compared to the existing best practices in the industry and then recommended for transformation.

The US postal department for example re-engineered its processes after studying the FedEx.

An agenda for Re-engineering needs to be set and achieved in the X plan.

11. Policy on GIS

The GIS policies are a combination of technology, policies, criteria, standards and people necessary to promote geospatial data sharing throughout all levels of government, the private and non-profit sectors, and academia.

It provides a base or structure of practices and relationships among data producers and users that facilitates data sharing and use. It is a set of actions and new ways of accessing, sharing and using geographic data that enables far more comprehensive analysis of data to help decision-makers chose the best course(s) of action.

12. Policies and guidelines on electronic payment mechanisms

The Reserve Bank of India has constituted a Payment Systems Group in its Department of Information Technology to design, conceptualize and assist in the implementation of an integrated payment system in India.

As a first step, the Payment Systems group has brought out a publication titled 'Payment Systems in India'. The publication details the various facets of the payment systems in vogue within the country. The first chapter of this publication provides an overview of payments system in general. A brief account of the evolution of the payments system in India is discussed in the second chapter. The various paper-based instruments in existence in India are elucidated in the third chapter. The complexities of the existing paper based payments and settlement systems, remittance facilities, currency chests form the content of the fourth chapter. The computerisation of clearing and settlement operations are the main themes of focus of the fifth chapter. Introduction of Electronic Payment facilities such as Electronic Clearing Service (Credit and Debit) and Electronic Funds Transfer are highlighted in the sixth chapter. The final chapter provides a vision for the consolidation and development of the existing systems, designing new payment systems and finally evolving an Integrated Payment System over the medium term. It also refers to the challenges that are to be faced in setting up a modern Payments and Settlements infrastructure at par with various developed countries of the world.

The above document will be one of the draft document which will become the basis of a policy framework for electronic payment mechanism. Department of IT needs to work closely with RBI to evolve such a framework.

13. Policies on employment generation through EG

An important development goal in the context of the developing countries is the creation of adequate employment opportunities, particularly for the youth. This is an area of global concern. ICT has tremendous potential for improving the employment generation aspects in the services sector, particularly in tourism and hospitality. Significant improvements in productivity and marketability can be brought about by use of ICT in agricultural marketing and in the manufacturing industry.

A potential area for generation of employment is the Information Kiosk network where local youth are finding opportunities for work and employment.

14. Prioritization policy

The prioritization framework for e-Governance studies needs to be worked out. A key imperative is the areas where the Government will invest first.

The Government needs to define the amount of investment and the area of investment in each of the following:

- Core Policies
- Core Infrastructure
- Human resource Development in IT

- Organization Structures
- Support Infrastructure
- Awareness Programs
- Assessment and Evaluation

In certain cases priority for investment also needs to be worked out within the specific projects. Like a citizen portal or a E-Biz portal is the priority for investment.

15. Policy on interoperability

The e-governance architecture needs to ensure that the components are scalable and adaptable to the future requirements.

It has also to ensure that the Local architecture fits into the State level and the same into National and Global architecture. Interoperability is a major criterion while defining the architecture.

16. Policy on spread of access

The gross disparity in the spread of Internet access may result in an uneven distribution of the economic and social benefits derived from technology. People who will not be able to access Internet in the new economy are the equivalent of those who can't read and write in the old.

People may be prevented from going online by the expense or absence of telecommunications, web connections, and computers as well. A policy for Universal Access needs to be worked out. Another hindrance that may emerge is the perception that the technology is complicated. A policy to may Indian citizens adapt to the technology also needs to be worked out.

Like wealth and mobility, access to information is becoming critical factor by which states, regions, sectors, and socioeconomic groups are judged by society as either haves or have-nots – information rich or information poor.

The Government of India in these circumstances needs to work out a clear policy on the spread of access of e-governance services.

17. Policies, strategies and guidelines for outsourcing of EG projects

The experience of various State Governments in implementation of a few major IT projects, coupled with the international experiences gathered, indicates that it is possible to make a big leap forward by designing a suitable framework for Public Private Partnership (PPP) for e-Governance. The Department of IT needs to prepare a detailed policy framework on the subject.

A variety of solutions in the generic name of Public Private Partnerships are being employed today to bridge the gap between the expected levels of speed, efficiency and spread of public projects especially in the areas of creation of infrastructure and provision of services.

The concept of Public Private Partnership (PPP) essentially arises out of considerations like, the imperative to provide infrastructure of high quality, shortage of public funds and

above all, the profit motive driving high efficiencies and quality in the privately managed areas.

The Public Private Partnership can assume a wide spectrum of shapes like, BOO, BOOT (Build-Own-Operate-Transfer), BOT for specified periods -otherwise called concession contracts, Joint Ventures, private finance initiative (PFI), partial privatization through partnering with strategic investor etc.

The idea is to arrive at the right combination of public sector accountability with private sector efficiencies and to also to share the risk correspondingly.

18. Policies and guidelines on managing content

Content is the 'heart' of any IT project. The department has to keep in mind some of the important technical guidelines, while developing the software and computerization, to facilitate the future integration. The department also needs to address the security of transactions and messages.

The process of content development encompasses a whole range of activities starting with a comprehensive study of the system and identification of the objectives. It ends up with delivery of the intended benefits to the citizens or other users of the IT System

B. Core Infrastructure

Constituents

National e-Government Intranet (NICNET, ERNET, other service providers)

State-wide Intranets

National e-Government Data Center

State Data Centers

Security Infrastructure & Resource Centre for E-Governance (PKI, etc.)

GIS - National Spatial Data Infrastructure

Language Resource Centre

1. National e-Government Intranet (NICNET, ERNET, other service providers)

The term “National Information Infrastructure” has emerged to describe the infrastructure - the complex of technologies and services – needed to transport the vast array of databases, images, conversations, multimedia files, and other electronic signals which will carry our economy forward into the information age. It may be defined as network of networks.

The concept of a "network of networks" includes the full interconnection and interoperability of existing and planned public networks (including cable, broadband and narrow band telephone networks, satellite and wireless networks) as well as value-added computer and communications networks.

The backbone infrastructure will constitute infrastructure for communication, networking, data servers etc. It will include infrastructure for linking of blocks with districts, districts with state capitals and state capitals with National Capital.

A wide range and ever-expanding range of equipment including cameras, scanners, keyboards, telephones, fax machines, computers, switches, compact disks, video and audio tape, cable, wire, satellites, optical fiber transmission lines, microwave nets, switches, televisions, monitors, printers, and much more. The NII will integrate and interconnect these physical components in a technologically neutral manner so that no one industry will be favored over any other. Most importantly, the NII requires building foundations for living in the Information Age and for making these technological advances useful to the public, business, libraries, and other nongovernmental entities.

Information is another major component of NII.

2. State-wide Intranets

Statewide area networks act as a delivery platform for the e-governance applications, as well as provide a mechanism for fast internal communication among the states.

The SWANs could be implemented through a variety of options ranging from captive networks to virtual private networks, to the Internet. Earlier applications were implemented over leased/dial-up lines.

The States of Rajasthan, Andhra Pradesh and Gujarat have been building the respective networks. Under NEGI such networks should be built in all states. The SWANs are required across states in order to increase access, multiply usage, and carry more data and applications.

The State Wide Area Network should ensure that the state capital is linked to the districts and blocks for voice, data and videoconferencing applications.

There is also a felt need for National Wide Area Network which will uplink all the state capitals and UT's with the National Capital of Delhi and thus providing link to the high data.

3. National e-Government Data Center

A national level policy for data systems needs to be drawn. E-Governance will require four major databases:

The databases for Human beings

The databases for artificial entities like the Companies

Geo-spatial Database

E-Governance projects will rely to a significant degree on existing data, existing systems and existing processes. Where these are already in a mess, addition of ICTs just creates a faster, more expensive mess. Alongside – or even preceding – introduction of ICTs for the e-governance Pilot Projects, there may therefore need to be moves to reconstruct and renew the underlying data systems.

The new application areas need to be connected to the old systems and databases to develop comprehensive information systems. These databases should integrate into a data warehouse for analytical data mining to support decision-making. Given the fact that different applications may work with different languages, a coherent data integration policy need to be developed.

Further a national level attributes should be set for various databases and thee future data should be collected accordingly.

NEGI plans to identify these databases at the national level and recommend to the state governments the parameters according to which they should use the same.

4. State Data Centers

On lines of the National Database a state data center also need to be created. Infact the state data centers should be built in such a way that the same becomes building blocks for the National Data Centers.

The Data Centers of various states should be interconnected and the sharing of information should take place nationally. The states should built databases that are specific to the requirement but care should be taken that there is no duplication of efforts by state and center. A few databases that come under scope of state Governments are:

- The databases for Land / Immovable property
- The databases for movable property (like vehicles)
- Database for Criminals
- Database for employees

5. Security Infrastructure & Resource Centre for E-Governance (PKI, etc.)

Security infrastructure is one of the most important aspects in E-Governance. There is a need to built up a resource Center for the security of the networks. Such a center can cater to the following aspects:

- Network Security
- Biometrics
- Firewalls, Intrusion Detection System
- Digital Signature and PKI Implementation
- Virus and virus Protection
- Cryptography
- Web Security
- Infrastructure protection

6. GIS - National Spatial Data Infrastructure

A NSDI enables the establishment of a national repository of a digital “ware-house” of the national map data holdings. It will facilitate Sharing and access to the digital spatial information.

Current and accurate spatial data must be readily available to contribute to local, state and national development and contribute to economic growth, environmental quality and stability, and social progress. This would be best achieved by making accurate and timely spatial data readily available to support sound decisions over a geographic area and to do so with minimum duplication of effort and at a reasonable cost. Establishment of a NSDI to support efficient production, easy access to and shared use of accurate, high quality spatial data to meet national needs is an urgent national requirement. As a national infrastructure, NSDI will have the potential to serve as a “one-stop” source of spatial information and the “mining” of these GIS layers from the NSDI would be the major source for all GIS activities in support of sustainable development and economic growth.

NSDI will support to planning and development activities – specially the management of natural resources, disaster management, watershed management/development, district planning, state planning, resources monitoring, rural development, Land capability Analysis; Optimal landuse Planning; Water Resources Development; Agricultural Development; Irrigation planning; Watershed Development; Wasteland Development settlement hierarchy, facilities planning etc. Government would find use of NSDI to prepare spatial plans for the whole country - annual plans, five-year plans, perspective plans; inventory of natural resources and changes; for quick assessment of damages during natural calamities and disasters and monitoring and evaluating the various governmental policies and programs.

Information bases for infrastructure development in the country – specially the road, telecom, water distribution, sewerage management and so on. The NSDI would provide the base information for addressing issues related to landuse, environment, land acquisition, visibility and line of sight, costs of projects etc.

7. Language Resource Centre

India is a large multilingual society with as many as eighteen constitutionally recognised languages including English and the National language is Hindi. There are multiple scripts for these languages. With increase in trade and development across the country it becomes necessary for the people to communicate in more than one language. In such circumstances, Information Technology (IT) appears to be a promising tool for the development of ILP systems, which aim at overcoming the language barrier. These ILP tools could be designed using many approaches such as:

- Natural Language Interface/Environment for Data Input/Output support
- Operating System level support at the native level for the Indian languages
- Indian Language shell over the existing operating systems and applications
- Localising existing applications
- Developing specific applications
- Designing language compilers in natural languages

The society at large can benefit from the Information Technology effectively if people can communicate with computers in their own languages. The discipline of research, which addresses these issues, is Natural Language Processing (NLP). NLP is concerned with the computational modeling, design and development of a wide varieties of systems that lead to Human Computer Communication. Since most of the communication is in written or spoken form of language, the very first aspect of NLP is the ability to recognize written or spoken utterances. This constitutes development of systems that can understand the above form of language. Thus NLP leads to providing Natural language interfaces to databases, computers; providing tools for linguistic research; machine translation, optical character recognition, speech to text and text to speech conversion etc. A language resource center will provide a central repository of various languages and technologies related to them. This will facilitate the development of each language.

C. Human Resource Development

Constituents

1. Training for EG Policy Makers
2. Training for CIOs
3. Training for specific projects
4. General IT skills
5. Special training programmes for specialists: Security, Languages etc
6. Advanced courses on HLD, architecture, language technologies, etc.
7. Equipping National/State Institutions of Public Administration for EG trg

1. Training for EG Policy Makers

A training program for policy makers in E-Governance (Senior IAS officials) needs to be drafted. This training program needs to be focused according to the requirements of the policy makers at the top. This may include communication of the following:

- Vision, Mission, Strategies, Policies, guidelines, frameworks, roadmaps
- E-Governance Technology Architecture, framework, guidelines
- Funding Strategy
- Human Resources Strategy - for project leadership, implementation, operations
- Security Policy, framework, guidelines
- Policy on integrated services (ownership, responsibility, etc.)
- Process Reengineering
- Policies on employment generation through EG
- Prioritization policy
- Policy on interoperability
- Policy on spread of access
- Policies, strategies and guidelines for outsourcing of EG projects
- Policies and guidelines on managing content

2. Training for CIOs

A training program for CIO's (IT Directors) is another issue to be addressed. This training program needs to be focused according to the requirements of the CIO's and may include the following :

- Defining the System Architecture
- Software and Hardware Policies
- Protecting Information and Resources
- Employee Privacy
- Policy for E-Mail
- Copyright Issues
- Computer and Network Security
- Policies for Encryption
- Content for E-Governance
- Optimum Utilization of Computer Resources
- Communicating the e-Policy
- IT Act 2000
- Telecommunication and business Laws
- Funding: Generation of funds
- Infrastructure
- Awareness: spreading the information about the Government Initiatives
- Technology Issues

- Marketing and Distribution of Services
- E-Governance initiatives in various Central Ministries
- E-Governance initiatives in various States
- Global E-Governance Developments

3. Training for specific projects

There may be specific requirements for training in certain specific projects for the same IT module-training programs needs to be worked out. Such programs can be need based and outsourced when required. A few suggestive programs include:

- Decision Support and Expert Systems
- Knowledge Management and Dataware housing
- GIS
- System Analysis , Design and Development
- Evaluation of IT Projects
- DBMS and OLTP
- Project Management
- Strategic Management
- Organizational Behavior & Management of Change
- Technology Management
- Creativity and Innovation
- Quality Management and Government

The above project specific trainings may even include language specific trainings that may be required.

4. General IT skills

There may be specific requirements for training in certain specific projects for the same IT module-training programs needs to be worked out. Such programs can be need based and outsourced when required. A few suggestive programs include:

- Office Automation
 - Text Processors, Spread Sheets etc, Multilingual Support
- Software
 - Operating System, NOS, Introduction to RDBMS
 - Application Software : Java, CGI , Perl etc
- Networking
 - Basic Components, Topologies
 - LAN, WAN, MAN, Network Security and Protocols
 - Internet, Intranet and Extranet

- Dialup, OFC, ISDN, XDSL, CDMA, WLL, Cordec, VSAT
- Wireless Transmission, Mobile and Radio Communication
- Broadcast Systems , Satellite Communication.
- Hardware
 - Basic Hardware
 - Clients, Nodes and Servers
 - Routers, Bridges etc

5. Special training programmes for specialists:

A high level of expertise may be required in certain programs depending upon requirements. Such programs can be need based and outsourced when required. These generally include the taraining of specialists in certain areas. A few suggestive programs where such expert trainings may be required include:

- Security
- Languages
- Quality
- Project Management
- System Analysis
- ERP & BPR
- Legal Aspects
- PKI
- Payment Mechanism
- Decision Support System
- Data warehousing
- GIS & GPS
- Networking

6. Advanced courses on HLD, architecture, language technologies, etc.

A need for advanced level training exists in certain areas for Government officials. This includes:

High Level Designs
 Architecture
 Payment Mechanism
 PKI
 Language Technologies
 Smart Card Technologies etc

7. Equipping National/State Institutions of Public Administration for EG trg

The various institutions in Public Administration in the country need to be equipped with various impart of training in above programs. A few such institutions where such capacity building will be stressed is:

Lal Bhadur Shastri National Academy for Administration , Mussourie
IIPA, New Delhi
HCM Rajasthan State Institute of Public Administration, Jaipur
MP Academy of Administration, Bhopal
Mahatma Gandhi State Institute of Public Administration, Chandigarh
Anna Institute of Management, Chennai
Yeshwantrao Chavan Academy of Development Administration, Pune
Dr MCR HRD Institute of A.P., Hyderabad
Assam Administrative Staff College, Gauhati
Administrative Training institute and Srikrishna Institute of Public Administration,
Ranchi
Sardar Patel Institute of Public Administration., Ahmedabad
Haryana Institute of Public Administration., Gurgaon
Himachal Pradesh Institute of Public Administration, Simla
J & K Institute of Management & Public Administration, Srinagar
Administrative Training Institute, Mysore
Institute of Manegement in Govt., Trivandrum
Manipur State Academy of Training, Imphal
Gopbandhu Academy of Administration, Orissa, Bhubaneswar
U P Academy of Administration, Nainital
Administrative Training Institute, Calcutta
Administrative Training Institute Mizoram, Aizawi
Accounts & Administrative Training Institute, Gangtok

D. Technical Assistance

Under this technical assistance to the states will be given to the states for various areas where the DIT or one of its agency has developed expertise and can support the development of same in the states.

E. Research and Development

Constituents

Architecture
Integration strategies
Electronic payment systems
Other areas related to EG

1. Architecture

A comprehensive research is required in various areas of E-Governance in the country. The E-Governance architecture is one of them. GoAP has evolved a comprehensive architecture with the help of PWC, which may become a reference point for such research.

Technology Architecture: will include areas like open source technology / propriety software which can be used for E-Governance.

Infrastructure Architecture: architecture of networks and other infrastructure

Security Architecture: will research technologies like PKI, encryption, etc and define security architecture for National Information Infrastructure.

Functional Architecture: will mainly require research on the functional aspects of Governance.

The architecture domains as identified by a GoAP study includes:

- Application
- Information
- Group ware
- Component ware
- Data
- Applications Middle ware
- Integration
- Network
- Platform
- Security and Directory Services
- Systems Management

F. Service Delivery

Constituents

1. Service Delivery Infrastructure at State, District , Block & Village levels
2. E-Post

1. Service Delivery Infrastructure at State, District , Block & Village levels

The last mile connectivity or the delivery infrastructure is one most important aspect of e-governance. The effort of government should be to e the services to the masses and for the same, Internet kiosks should be established.

Information Kiosks need to be established in Public Places such as shopping centers, post office, railway station, libraries. PCOs.

Not only the far-flung blocks need to be wired up but also wireless connectivity needs to be built where there is no copper for last mile connectivity.

Unless the application reaches the masses it is of no big use. There are various benchmark studies in various States like the e-Seva in AP and FRIENDS in Kerala. Such successes needs to be documented and replicated.

2. E-Post

The Post offices have a perfect network and ready infrastructure for being converted into internet access kiosks. Ministry of Communication can utilize these offices for centres which become a point for common man to communicate. The centres will have facilities of a Post Office, PCO, Internet Kiosk , Small Savings centres as well the Information Centres of Government. Post Offices are the only department that are widely spread and close to the people as well.

The Department of Post can start of with an Open Mail facility wherein all the post office across the country get connected through an intranet. It will be like a telegram except that there will be no costs of writing long letters. Such emails will be delivered from post office to post offices instantly – the receiving post office will later send it to the destined location under its jurisdiction.

Another value added service will be the Parcel tracking System wherein the GPS will be used for the tracking of the Parcel and thus a better services will be offered to the consumer.

Another opportunity for the Posts exists in the fleet management system. The Department can Benchmark themselves with Couriers like FedEx and improve their services. Infact after achieving a breakthrough in proper management of its fleet, the Department of

Posts can leverage its services to provide services of transportation to the corporates or even the Courier services.

The department has already started a few services like delivery of Money Orders through Extended Satellite Money Order (ESMO) stations on test basis. These services are being provided with the help of 75 satellite based Very Small Aperture Terminals (VSATs) . It is proposing to offer services like Hybrid Mail, Express Money Order and Corporate Money Order through these networks.

G. Awareness and Assessments

Constituents

1. E-Readiness Assessment of various States / Departments
2. Virtual E-Governance Forum
3. Assessment of E- Projects
4. Best Practices for E-Governance
5. E-Governance National Resource Database
6. Newsletters on E-Governance
7. Workshops /seminars/ Conferences
8. Competitions and Awards
9. EG forum for NGOs, Pvt. Sector, Academic, Trg Institutions
- 10. Publicity & Awareness (media, films, etc.)**

1. E-Readiness Assessment of various States / Departments

There is a varying degree of development of e-governance among the different states. A few States have leapfrogged into a digital era whereas a few are yet to start with any initiative. There is a tremendous divergence in the extent of implementation of the concept of e-Governance. It is, therefore, not possible to come up with a framework for implementation of e-Governance which is straightaway applicable to all states and the Central Government. Therefore an e-readiness exercise should be carried out in all states, government departments to understand their level of acceptability of the e-governance.

Readiness is the degree to which a State / Community / Government Department is prepared for the coming digital era. The level of ICT adoption by the State can gauge the e-readiness of a particular State. There are states in India, which have leapfrogged from the emerging E-governed states to the states where e-governance is embedded in the system. But the states, which are high on e-governance, may not remain there forever and the states that are low will come forward and achieve.

2. Virtual e-Governance Forum

An e-forum will help sharing of ideas and getting feedback on e-Governance. The forum as already exists on various websites can provide a link for sharing of ideas in e-Governance across boundaries. One such forum already exists at:

<http://www.mit.gov.in/discussionforum/forum.asp?ForumID=5>

But the effort should be to popularize the forum and take feedback over the issues of National importance. To make forum more interactive the Government officials may post their views in reply to queries by people. There may be chat sessions organized where people concerned with ICT for Development may participate.

A few specific forums can also be started for sharing of views, which may include:

- Forum on Legal Aspects for EG
- Forum on Broad Policy Making
- Forum for Benchmark studies
- Forum for Accessibility
- Forum for Infrastructure Building

3. Assessment of E- Projects

The pilot projects taken in various states should be assessed for their achievement levels. They should be classified as success or failure according to the desired output written down before implementation of the projects. The study should be carried out by an independent agency for the donor agency or the implementation agency will never classify its project as a failure and broadcast the same. The study should be carried out at each stage of implementation. Bottlenecks and causes of delays should be documented, even though they are removed later.

The successful projects should be replicated over the nation with members drawn from the implementing team.

The projects, which could not achieve the desired outcome, should be documented for possible causes of failure. Various bottlenecks and causes of delay should be identified.

The assessment will help in following ways:

Replicating the successful projects

The successful projects should be replicated over the nation with members drawn from the implementing team.

Bridging the gaps for failure

The projects, which could not achieve the desired outcome, should be documented for possible causes of failure. Various bottlenecks and causes of delay should be identified.

Timely feedback

The status report help identify the pitfalls in time.

4. Best Practices for E-Governance

The study of Best Practices will bring forward the best practices being followed nationally and internationally.

The national and international Best Practices study will give a great momentum to the process of E-Governance. The State Governments will not have to re-invent wheel every time and they can learn from the developments already made.

The Best Practices will lead to the following:

- It will help State Governments to implement the success stories of other states
- It will try to bring standards in the implementation of various projects
- It will identify the projects for priority for a state Government
- It will promote national networks for various areas like Education, Medicine etc

5. E-Governance National Resource Database

The e-Governance National Resource has already started with the launch of <http://www.egovdatabase.gov.in>

The process will have following advantages:

Any organization planning an IT project would be able to instantly ascertain whether any such project has already been implemented anywhere in the country.

Intending implementers would know who the key people in similar projects are and how to reach them. It is well known that it is much easier to replicate a solution than to evolve it the first time around. So the lead-time to implement projects can be reduced substantially.

If a project is already in operation in a similar environment somewhere in the country, acceptance by all concerned is much faster and smoother elsewhere. So change

management becomes much easier and the time and effort involved in such implementations.

Due recognition would accrue to the pioneers who created the successes. It would enable others to learn from them if they wish.

For implementing agencies, be they Government owned organizations like NIC, CDAC and State PSUs or private IT companies, it offers a unique opportunity to derive the full return and reward, both domestically and internationally, from their successes and the IPRs/ products that they have created.

It would help create an archive of e-governance applications in the country.

It would help build a database of key players and resource persons in the national e-governance programme. This will also help build an open community of experts/ vendors/ facilitators and provide a forum for collective identification of e-governance initiatives and activities in the country

6. Newsletters on E-Governance

The newsletter in Print form will help to reach Government offices where internet has still not reached. It will bring forth the news and carry the e-Governance message where it has not reached yet.

The newsletter will include the following:

Brief of news related to E-Governance for the two months as reported in National Dailies

Draft policies, regulations, and guidelines as announced by Ministry of Information Technology, Central Government and State Government

Proposals and expression of ideas for innovation in Governance

Guidelines for E-Governance Implementation

National and International Success stories in E-Governance

Views and interviews of leadership in E-Governance

7. Workshops /seminars/ Conferences

A mass awareness program for Information Technology should be organized, so that the awareness should reach the people at the lowest level.

These include workshops, seminars and conferences. Further a repository needs to be build for the discussions/ proceedings of such workshops. In rural India IT YATRAS needs to be organized. As proposed in the previous programs like IT for Masses, IT Yatras should be carried out to raise awareness among the masses. The yatras can be carried through mobile vans to facilitate the use of IT in various sectors.

Advertising campaign for IT awareness should also make extensive use of posters, banners, displays, mailers, etc. to take the message to common man.IT 'Melas' should be organized in different parts of the country particularly in small towns to demonstrate the benefits of IT to the people across the country. Special arrangements should be made to

establish IT facilities at these melas for people to have first hand experience with regard to the benefits and utility of IT to the common man.

8. Competitions and Awards

Schools and colleges across the country must be encouraged to start competitions with respect to application of IT in various areas. Special prizes / awards must be instituted by schools / colleges.

Corporate and industry houses in the country should come forward to sponsor these prizes / award. A special scheme for National IT Talent Search should be launched at senior secondary level to identify and groom the students for their career development in IT sector.

There can be further policies for development for sponsorship of IT education program for the financially weaker section.

9. EG forum for NGOs, Pvt. Sector, Academic, Trg Institutions

There is a felt need for an institution that can coordinate between various stakeholders in EG sector.

A platform for interaction with NGO's, Government Institutions is necessary for promoting collaboration across states for delivery of electronic services to the public. The forum will facilitate transfer of expertise and technology between state governments and will co-ordinate pilot projects. The forum could also set up a web site for disseminating information among state governments.

National Association for SMART Governance or NASSgov can become one such platform.

The forum will help replicate the successes of the various states and become a repository of all e-governance initiatives in the country. It will help and assist the state governments in various IT project implementations

It will bring a synergy of efforts amongst various NGO's and Sharing of knowledge amongst various Academic Institutions.

10. Publicity & Awareness

Publicity and awareness are a key issue to success of e-Governance initiatives. The Awareness for EG has to be carried out through innovative means. A few of them are:

- Films
- Multimedia
- Printed Documents
- Websites

Publicity campaigns need to be started to educate masses about the EG programs. The award winning Gyandoot project organized Healthy Child Competition to bring the women to the kiosks and thus made them aware of the new face of Governance.

Even the publicity and awareness can be outsourced to professional agencies who have expertise in the area. Companies which have been successful in penetrating the rural market are good example of such success stories.

H Organization Structure

Constituents

1. NEGC
2. NISG
3. State EGCs
4. EG Standards Institution

1. NEGC

National E-Governance Council is one organ which will become think tank for E-Governance at the National level. The various objectives of such a body will be:

- To assist Central and State Governments in standardization of Codes, Forms and Formats at National levels to provide uniform interaction with in and outside the States.
- To assist Central and State Governments in Government Process Reengineering and define User Specifications for E-projects.
- To assist Central and State Governments in defining policies, regulations on IT and E-Governance.
- To protect basic human rights such as rights to privacy, freedom of speech and freedom from excessive regulation, the interests of Indian citizens and Netizens using Internet and other Convergent Technology services from unfair exploitation through Commercial or Regulatory practices that violate.

2. NISG

The Department of Information Technology has proposed the National Institute of SMART Governance, a company to provide EG consultancy. There are a lot of areas where the institute needs to prove that it is the best in the country. These areas include:

- Content
- Consultants
- Showcase of Best Practices
- Labs and the novel delivery mechanism
- Curriculum
- Infrastructure

The content that needs to be developed not only will require a lot of research but there are no existing textbooks on the subject. Therefore authors and content providers should be contacted to start with the process of building the same.

The company which is proposed to be established in Hyderabad needs to have a branch in each state capital and thus cover maximum part of the country.

3. State EGCs

State E-Governance Council will become think tank for E-Governance at the State level. The various objectives of such a body will be:

- To assist the State and local Governments in standardization of Codes, Forms and Formats

- To assist State Governments and the local Governments in Government Process Reengineering and define User Specifications for E-projects.
- To communicate with the local and public Government authorities, other trade associations, Companies, Chambers of Trade and Commerce in India / abroad and individuals on subjects related to Information Technology.
- To protect the interests of citizens in general and Netizens of India in particular to enable allocation of resources in the Governing systems using convergent technologies including allocation of IP address, Domain Names and Frequency/ bandwidth for Internet, Telecommunications and Broadcasting.
- To reduce “Digital Divide” by appropriate development and promotional programmes that will help bring benefits of new economy to common citizens.
- To educate the Public, the Administrators, the Regulators, the Law Enforcement personnel and Judiciary in the private and the public sector or the Government sector.
- To promote use local languages for promotion and implementation of IT and reducing Digital Divide in the country.

4. EG Standards Institution

e-Governance as part of Information Technology is a dynamic technology that has sparked the development of many new products and new services.

The EG standards institute will work with industry, research, and government organizations to make this technology more usable, more secure, more scalable, and more interoperable than it is today.

It will develop the tests and test methods that both the developers and the users of the technology need to objectively measure, compare and improve their systems.

The EG standards institute will develop

Ensure standards for various EG projects

Ensure interoperability in the projects.

I. Core E-Projects

Constituents

1. Land Records
2. Transport departments (Vehicle Registration/ Road Tax / DL)
3. Registration
4. Courts, Courtnet
5. Municipalities
6. Gram Panchayats
7. Civil Supplies Distribution System
8. Citizen Data Bases
9. Commercial/Sales Tax/ VAT
10. Excise
11. Income Tax
12. Company Affairs
13. DGFT
14. Passports
15. E-Tourism
16. Industries dept., approvals, registration
17. Treasuries, Integrated Financial Management System
18. Govt. managed Financial Services (Insurance, PF, EGIS etc.)
19. PoliceNet
20. Edu-net
21. E-Employment
22. Agrinet
23. Healthnet
24. Socialnet
25. HRMS
26. Public Grievance Redressal System
27. Chief Minister Information System
28. Secretariat Knowledge Information System(Computerization of Secretariat)
29. Disaster Management
- 30. e-Democracy (Use of ICT in Electoral Process)**

1. Land Records

The collection of land revenue and the existence of the institutions of the State have been co-terminus. A historical analysis of ancient Indian policy suggests that tax on land played a pivotal part in the evolution and maintenance of the systems of governance.

India's independence ushered in the era of the Welfare state and accordingly ' land revenue ' or the tax on the agricultural land also witnessed a reduction. However, the importance of land records cannot be undermined due to the fall in the importance of land revenue. The entire structure of land records management that was associated with revenue collection now had to sustain its relevance suo moto. The shrinkage in the relevance of land revenue collection does not undermine the importance of the land records in the governance paradigm.

Land records form the basis for assignment and settlement of land titles. These records must stand the test of legal scrutiny. Land is a very precious source and the land Records system must safeguard the rights of the legal owner of the land.

As all type of data related to land, as explained earlier, is available in these land records, they are used for various planning processes although the manual maintenance of this land record does hinder in effective collation and analysis of the data contained in them. The need for a sound and efficient land records information data base is beyond debate.

The question is how is the State going to ensure the maintenance of a accurate and genuine land records system to further its policy objectives of land reforms, protection of legal rights over land and efficiency in maintenance and updation of these records.

This problem has now been addressed with computerization of land records. There are various projects that have already started in various states such as the Trivairur and the Bhoomi. These projects need to be replicated so that the various states can take advantage of these projects.

2. Transport departments (Vehicle Registration/ Road Tax / DL)

With a view to induct information technology in the road transport sector, common standardized software specifications in respect of driving license and registration certificate of vehicles have been framed by Ministry of Road Transport and Highways. The working document for Command Set Operating System, has also been standardized along with the application software to be operated on terminal and hand held readers. The back-end software is being provided free of cost to all states and Uts by the Ministry. This would ensure inter-operability of the system throughout the country.

Action has been initiated to introduce a new system for high security registration plates for motor vehicles. Such plates would help the authorities to detect any irregularities, tampering, tax evasion and help in tackling crime. The implementation of the same in various states need to be geared up under this project

3. Registration

The age-old manual system of registering legal deeds like sale deeds, mortgage deeds, gift deeds and 44 other instruments – can be replaced by a simple, transparent and convenient system of Computerized Registration.

The Government of AP has already implemented one project on the line called CARD, which stands for Computer Aided Administration of Registration Department.

The various services that can be incorporated are:

Registration of Documents

- Valuation of immovable Properties
- Collection of Revenue Stamp Duty
- Transfer Duty and Registration Fee
- Preservation of Copies of Documents
- Issue of Certified copies of Documents
- Issue of Encumbrance certificates
- Registration Societies, Firms, Chit Funds, Non-Trading Companies, Marriages

4. Courts, Coourtnet

The National Informatics Centre (NIC) has been closely associated with the Indian Judiciary for the past eleven years. NIC's role in serving the legal community through Information Technology (IT) began as early as 1990 when the COURTIS (Court Information System) Project was conceptualized and commissioned for streamlining registries of various courts.

All High Courts have been computerised and interconnected though NIC's satellite-based computer-communication network NICNET.

NIC took up computerisation of all 18 High Courts and 10 Benches on the lines of Apex Court's Computerisation. NIC has also implemented the List of Business Information (LOBIS) in all High Court Courts. All High Courts' Cause List are also available on Internet. Most of the High Courts have opened query counters along with Filing Counters for providing Case-status information to the litigants and advocates.

Further in 1997 NIC took up the computerisation of all 430 District Courts in the country on the lines of High Courts Computerisation Project to provide judicial and legal databases to the District Judges

The project can be further extended to have Technology Courts formed in the country.

5. Municipalities

The main responsibility of the municipal tax department is to assess and collect property tax. Tax collectors collect house and water tax directly from property owners at site, assist in processing transfer of ownership applications and other related matters.

A GIS based solution for administration at the municipality level is one of the area where e-Governance can play a vital role. Mirzapur in UP and Bidnapur in WB are one of few such municipality which has implemented e-Governance. Such a system will help in

- Bringing transparency and increase in properties listed for municipal tax
- Systematic property valuation
- Landscaping (by becoming aware of the existing land use)
- Computerization of various bills like water bills

The municipality can computerize the following functions additionally:

- Online Payment of Municipal Dues.
- City Civic Center One-stop Civic Shop
- Online Filing and Settlement Of Complaints & Grievances .
- Online Tracking of Building plan Status
- Online Registration of Births and Deaths
- Instant Issuance of Birth and Death Certificates
- Online Tracking of Garbage Lifting
- Infrastructural Works Online
- Online Citizen Forum Furthering Democracy

6. Gram Panchayats

e-Governance at the village level is catching up with the Award winning gyandoot project. The various services which can be included (currently being enabled by gyandoot model) are :

- Rate of Agricultural Commodities (Mandi Bhav)
- Online Registration of Application (Avedan Patra)
- Online Grievance Redressal(Samasyain)
- Land records (Bhu Abhilekh)
- Net Supported Health Services (Swasthya Sewa)
- Rural E-mail (Gram Daak)
- Rural E-auction (Gram Haat)
- Matrimonial Alliances (Vaivahiki)
- Information Regarding Government Programmes (Suvidha)
- Ask Savaliram (Savaliram se Puchhiye)
- Ask the Experts (Salahkar)
- Intimation on Social Issues (Samaj Seva)
- Online Employment Exchange (Rozgardoot)
- Application Forms (Avedan)
- Local weather Report (Meghdoot)

- Transparency in Government Functioning(Pardarshita)
- Emergency Services (Teevradoot)
- Timetables (Samay Sarini)
- E-agenda (e-Prajatantra)
- E-newspaper (e-Samachar)
- Rural Innovators (Avishkarak)
- E-education (Gyanmitra)

7. Civil Supplies Distribution System

The Public Distribution System(PDS), that attempts to reach subsidized food items and related goods to poorer families, is the biggest social security effort in India. But the leakages from this system and its poor target are legendary.

Many billions of rupees will be saved with an efficient targeted delivery, besides the proper fulfillment of the government's basic responsibility.

The PDS can be made online with information relating to the ration received and distributed by the owners of PDS outlets being put on internet on a real time basis. The officials / minister can monitor the distribution from anywhere in the country. The villagers will also know precisely what goods have been picked up by their fair price shop and on what date. They will have a online list of disbursements – what, how much and to whom – made for the proceeding month, and can easily keep track of the system's functioning.

8. Citizen Data Bases

Ministry of home has already announced this prestigious project. The scope of the smart card / Citizen card project needs to be defined at earliest. The project needs to be undertaken at the earliest to avoid various duplication of cards. The citizen card has the potential to replace the following cards:

The Ration Card

The Election card

The Work Place Identity Card

The Driving License

The Bank Pass Book

The ATM/Credit/Debit card

The Medical card

The Income Tax Card (PAN)

The Other Government Cards – like the Old Age / Backward Caste / Schedule caste etc

9. Commercial/Sales Tax/ VAT

The computerization of collection of various taxes like the commercial tax, Sales tax, value added taxes falls under the purview.

10. Excise

The role of IT in collection of excise and other taxes is of great help. The computerized process not only makes the process fast but also introduces transparency in the system.

One such success story is the Gujarat Road Transport Department's 'computerised check-post project' which has eliminated corruption at 10 octroi posts on the state's borders, and increased the revenue from Rs. 60 crore in 1998-99 to Rs. 250 crore in 1999-2000. Under the project the moment a truck enters the state its weight is recorded and the vehicle is videographed, and the data is instantly accessible in Ahmedabad. This allows little room for local officials to take bribe. Compared to the additional revenue earned, the heavy capital investment of Rs. 18 crore is nothing.

Such projects can benchmark and replicated over the states.

11. Income Tax

The computerization of Income Tax Department is an initiative that is already going on. The introduction of Permanent Account Number and linking various Income Tax offices is the step further.

The Apex body of the Income Tax Department is the Central Board of Direct Taxes (CBDT), which is manned by the officers of the Indian Revenue Service. CBDT is the administrative head of the Income Tax Department and functions as the part of the Finance Ministry of Government of India.

The Income Tax interacts with the citizens for collection of following

- Income Tax
- Interest Tax
- Expenditure Tax

The IT Department needs to computerize the following:

Filing of Returns

- Issue of PAN numbers
- Refund of excess tax
- Grievances
- Connecting various IT Divisions

12. Company Affairs

Deployment of Information Technology (IT) for enhancing the efficiency & effectiveness of the Department of Company Affairs has been an ongoing process with the support of National Informatics Centre. (NIC) It commenced with collection of data and processing thereof for publication of Quinquennial Directory of Joint stock Companies, 1980. IT deployment was extended to the other branches which included R&S Division, IGC Branch, Cost Audit Branch, Monopolies Research Unit and Registrar of Companies, Delhi & Haryana

With implementation of the first phase of IT project, functioning of ROCs has gained through substantial in name application processing time (2-3 days from a few months), setting-up of Computerisation receipt counters, creation of database on registration details, inward diary, document registration which has facilitated useful analysis and easy information retrieval with significant gains in fee collection during initial years of project implementation. Software on name approval, receipt and online diarising (cash counter), database on company registration, registered documents and pay rolls are operational at all ROCs apart from additional software operational in selective ROCs.

A logical follow up of the gains of Phase I stage, a business process reengineering (BPR) study was conducted at ROC Offices in 1997 by an NIC study team with a view to address and suggest feasible solution to the key issues /problems of other offices such as lack of adequate office space delayed document registration, rapidly growing backlogs, poor record management, virtual non existent public inspection, non filing of documents, inefficient working procedures, human resource constraint in order to enhance efficiency of these offices. The study report formed the basis for Phase II stage for modernisation of ROC offices and reengineering of their work functions covering seven major ROCs viz., Delhi, Mumbai, Kolkata, Chennai, Ahmedabad, Hyderabad and Bungler.

The project is under implementation at these ROCs.

13. DGFT

Computerization in DGFT was started way back in 1987. Since 1998 onward DGFT has taken up computerization on a large scale. In the first phase, the internal computerization of all four Zonal Offices was performed. After successful implementation of the software the systems were replicated in all other port offices. Now a days, 31 out of 32 DGFT Offices have been computerized. All the licensing Schemes have been computerized i.e. Duty Entitlement Passbook Schemes (DEPB), Advance Licensing (DES), Duty free replenishment Certificate (DFRC), Gem and Jewellery Replenishment (GEMREP), Export Promotion Capital Goods Scheme (EPCG) and Negative List Licensing. In addition to above, various supporting schemes have also been computerized such as Importer Exporter profile, Black Listing, Export Obligation Monitoring and Administrative Systems. Entire Organization barring Panipat has been Networked using high speed V S AT including SCPC VSAT S. The Electronic Commerce activity of DGFT includes online as well as offline filling of license applications by Exporter/Importer on the W E B. The processing is also automated through web. To extend this facility further, connectivity with Custom has been established and data transfer between

DGFT and Custom has already been automated. Electronic data Interchange with Banks is also tested. The online application filling reduced the number of visits by an exporter to the DGFT office for license. It can be accessed through a browser from anywhere with internet connectivity. Any Office/Unit of Exporter can monitor the status of his application. 30 out of 32 Port Offices have been covered with E-Com filling. 50% applications of total volume are being filed electronically .

A facility has been introduced wherein the interview of an Exporter/Importer is held through Video Conferencing facility at DGFT end and NIC facility at Regional level. Due to this facility, an Exporter need not travel to Delhi, saving on time and money.

The project needs to be extended to computerize all services offered by DGFT and to all offices.

14. Passports

As a part of its endeavor to effectively implement Information Technology in all areas of Government functioning, NIC through its MEA Informatics Division, has been providing active IT support to the Ministry of External Affairs. One of the most important Projects in this regard has been the computerization of Passport Offices located all over India. Presently all the 28 passport offices all over India have been computerized.

The computerization of the individual passport office may be divided into various phases including basic computerization, Index card image capturing, Online Index checking and passport printing.

In addition, the computerization of passport application collection centres, provision for authenticated e-mail services, communication between the passport offices and district offices through authenticated e-mail, electronic storage and retrieval of documents furnished by the applicants are in full swing.

Apart from this, public facilitation services such as web enquiry, tele-enquiry, touch screen kiosks, SMS services, online registration are also in progress.

15. E-Tourism

Tourism a major source of foreign exchange in India. It not only gives employment to many Indians but is also a source of national integration and international understanding. It also supports the local handicrafts and cultural activities. The tourism industry in India is divided as domestic tourism and international tourism.

Technology will play a vital role in the tourism industry especially in the following areas: Exploring new markets and spreading awareness around the globe through a central website on tourism giving a link to sites all over the nation. A web site for each tourist spot in the country describing the specialty of that place, the approachability to that place, the updated weather conditions there, the language spoken and other details that will help the tourist decide the place he wants to visit.

Further a network can be created of the existing 325 tour operators, 220 travel agents and 165 transport operators in India (1997 data of registered operators) . Such a step will help to streamline the industry and will help provide complete packages to the tourists. The Travel Agents Association of India, Indian Association of Tour Operators and the

Tourist Transport Operators Association exist at present will be of great help in building net communities and tourism portals for various states.

Further the linking of services provided by the Indian Tourism Development Corporation and making them online will be another step towards E-Governance. The website on tourism will also provide details about the events organized by National Institute of Water Sports, Indian Institute of Skiing and Mountering.

A direct link of Indian tourist office abroad and the tourist offices in India at the backend of this site will streamline the flow of tourist into the country. Such offices will handle the tourist inquiries, disseminate information and promote the trade. The local offices will help in collection of information on a real time basis and help in maintenance of the live database.

Further an expert system can also be developed by studying the past data of tourist flow over the years and then help the local authorities gear up accordingly.

16. Industries dept., approvals, registration

SIA has been set up by Government of India in the Department of Industrial Policy & Promotion in the Ministry of Industry to provide a single window for entrepreneurial assistance, investor facilitation, processing all applications which require Government approval, assisting entrepreneurs and investors in setting up projects (including liaison with other organisations and State Governments) and in monitoring the implementation of projects.

SIA is responsible for issue of license

- for 14 specified items
- for items reserved for Small Scale Industries (SSI) sector
- for units located within 25 Kms of cities having population of 1 Million.

The computerization and facilitation of various services by the Department will facilitate the G2B transactions.

17. Treasuries, Integrated Financial Management System

The treasuries of the Government are situated in almost all districts. These treasuries handle all the financial transactions of the Government.

The system serves the pensioners of Government service, art and culture, sportsmen, journalists, freedom fighters, etc.

It also supports the old age pensioners, the physically handicapped and destitute widows. The treasuries act as bankers to zilla panchayats, taluk panchayats, grama panchayats, municipal corporations and other funds.

Therefore the monitoring of these funds, their collection and disbursement is an important task. A few states like Karnataka (the Khazane Project) have planned a comprehensive computerization of the 225 treasuries using the V-sat terminals. Under the project there will be a main data base center at Bangalore and a disaster recovery center at Dharwad.

18. Govt. managed Financial Services (Insurance, PF, EGIS etc.)

An interface with various banks and funding agencies needs to be worked out. Such an interface will facilitate the G2B transactions. A suggestive list of such institutions where such interface can be worked out is:

1. Various Nationalized, foreign and private Banks
2. Industrial Development Bank of India
3. Industrial Investment Bank of India Ltd.(IIBI)
4. Life Insurance Corporation of India (LIC)
5. National Bank for Agriculture and Rural Development (NABARD)
6. National Insurance Company Limited (NICL)
7. North Eastern Development Finance Corporation (NEDFI)
8. Oriental Insurance Company Limited (OICL)
9. Small Industries Development Bank of India
10. Unit Trust of India
11. Employee provident Fund Organization etc

An interface needs to be worked out for integrated approach towards managing funds.

19. PoliceNet

With increase in crime and global threats on head a secure police network should be worked out by the government.

A Police network will have a database of Police Personnel which will have the records of their current and previous postings. This will help to track policemen specialized in certain geographical region and skills.

The second database will be of criminals . This database has to be upgraded to national database for its total utility . By just typing the name of criminal a police officer will acquire details of his past activities, including his modus operandi and the area of operation.

Other areas where a police network can be helpful are

- Database for Missing persons
- Database for Dead Bodies
- Database for Lost & Found Vehicles
- FIR Registration
- Traffic Rules
- Crime News
- Controlling Cyber Crime
- Dissemination of Information

Further a secure network with various agencies will help better corporation. The agencies that will gain are:

- Ministry of Home , under which the Police Department fall
- Ministry of Law , which has to be assisted by the Police force
- The Police Academy , which look into the training needs of Personnel
- The Intelligence Agencies , which will give in inputs to the Police Force for maintaining peace.

- The Defence Forces
- The Para-Military Forces like the Border Security Force

20 Edu-net

The Edunet is an extension of the ERNET. It will enable the best university, professors, and curriculum available to all students, without regard to geography, distance, resources, or caste. A student studying at a small Engineering college in a remote village gets access to the best curriculum that is being taught at IIT. One can interact with professors at IIM's for his queries or refer to AIIMS or PGI for medicine studies. Connecting all students and teachers to information-sharing networks would provide them immediate access to a wealth of educational resources, whether in urban or rural areas or at school or home. Computer-based instruction can allow students to make progress at their own pace and free teachers to devote more individual attention to each of their students.

Thus Edunet is making a closed network of all education institutions imparting education in a particular area. The Edunet can be started on pilot basis for the Engineering colleges with IIT's as the nodal agency.

This network initially can link all the IITs in the country followed by REC and later all other Engineering colleges.

On the basis of results the network can be extended for other networks like the Medical network, the Management network, the law studies network, the architecture network and later to all subject areas.

21. E-Employment

The network for employment will be a network for broadcasting the employment opportunities in the country. It will be a one-stop job opportunity in Government sector and the private companies can participate to make it more beneficial to them. It will have a database of citizens according to their skills and areas of specialization.

It will be used for management of Government manpower for recruitment, transfer and promotion. The UPSC will become a main source of information to this network. The network will help the commission to announce, conduct, accept forms and announce results for various examinations. This network will facilitate the all India examination for medical, engineering, defence, civil services and forest services.

The citizens will be able to access the information at all stages of examination exams like

- Announcement of dates
- Forms for Exams
- Online submission of forms
- Center Allocation – Online Status of Exams
- Online Exam (long term target)
- Result Announcements

The secure network will facilitate flow from the central place to the examination centers.

An employment network will help the youth and facilitate services to them. It will bring the maximum government returns.

22. Agrinet

The agrinet project aims at:

To establish a nation-wide information network for speedy collection and dissemination of market information for its efficient utilisation.

To computerise data on market fee, market charges, total arrivals, arrivals by agencies, prices (variety wise / quality wise), storage, despatches with destination, mode of transportation, costs, sold and unsold stocks, sources of supply with destination, method of sale, payment, weighment, grading facilities, quantities graded, market personnel (trained/ untrained), market functionaries, market finance, development programmes, infrastructure facilities, constitution/composition of Market Committee, income and expenditure and other activities of the Agriculture Produce Market Committees, State Marketing Boards and Departments.

To ensure flow of regular. and reliable data to producers, traders and consumers to derive maximum benefit of their. sales and purchases.

To increase the efficiency in marketing by effecting improvement in the existing market information system

The improved communication system will enable the producers to know about probable markets where they can dispose of their produce more profitably. The traders and consumers can also derive maximum advantage out of their purchases at low communication cost. With the modernisation of existing market intelligence system, it is hoped that the efficiency of the markets and farmers participation in the markets will be increased. This will increase the income of the farmers which in turn will activate them to increase the agricultural production.

Among other benefits the agrinet will lead to development in Agricultural Research, Agro-meteorology, Agricultural Marketing, Agricultural Engineering & Food Processing, Agricultural Extension & Transfer of Technology, Credit & Co-operation, Crop Production and Protection, Environment and Forest, Fertilisers and Manure, Fisheries, Irrigation & Drainage System, Live Stock, Dairy Development & Animal Husbandary, Rural Development & Planning, Soil & Water Management, Watershed Development, Waste Land Development

23. Healthnet

Health services are the services that affect the masses and hence they should be taken at a priority. Computer-based patient records might improve the availability of individual medical histories for decision-making by authorized health care providers and reduce costs. The areas where telemedicine can play a vital role are:

- Remote Surgery
- Augmented -- or Enhanced Surgery
- Planning and Simulation of Procedures Before Surgery
- Medical Therapy

- Patient Education
- Medical Training
- Visualization of Massive Medical Databases

Further a network of various health institutions should be worked out, which will help to achieve real- time consultations with doctors and experts.

24 Socialnet

The concept of Social Security is still evolving in India. In the developed countries, like Australia replaced counters with open access bays in 400 offices countrywide, so that the families, students, the elderly, the disabled, farmers and job seekers could receive more personalized services. The state of Arizona transformed more than 150 social welfare programs from five agencies into one service, so that the people can receive assistance no matter which agency they approach.

The social security network in India also needs to be formalized. There are various schemes under the preview of central and state government. Some of them are:

- Widow Pension
- Old Age Pension
- Unemployment Allowance
- Medical Benefits
- Schemes for SC/ ST

The use of IT can evolve a mechanism where the benefits reach the real people.

25. HRMS

HRMS constitutes all services that the Government provides to its employees. In broad terms it can be categorized under the framework of Government to employee (G2E) system. Apart from having extensive features for management of all HR processes, the HRMS system should offer a comprehensive employee self-service, payroll and learning management systems. This system would also help in management of deployment of valuable esources across the state in payroll and employee benefits through several institutions and schemes set up for the purpose.

It will also lead to creation of an all India Government employee database. This database will enlist skill set of all Central Government Employees, State Government Employees, employees of PSU's etc and help in deputation and transfer of the employees. It can also track the Non Government Institution so that the right person can be allocated to the right job. Further the geographical constraints with this backbone infrastructure will be taken care, as whenever there is requirement of a particular person he can be contacted through the network.

26. Public Grievances Redressal System

Grievance handling is a very important and sensitive area of the Government's work profile. It is, nonetheless, an area that is, at best, taken for granted and, at worst, grossly neglected by the service providers, as it does not fall into the category of "urgent" matters. Its importance is very often not appreciated by those who ought to recognise the value of grievances in order to develop a diagnosis of what ails a Government Ministry/department/agency. There is, perhaps, reasonable justification for this perception of the grievance handling mechanism among the citizens at large. Every grievance points to a missed pulse beat somewhere in the organisation, and when grievance prone areas are identified and analysed, it can frequently prevent "cardiac arrest" or avoid a "moment of truth" for the organisation. One does not have to await Public Interest Litigations and contempt proceedings in a Court of Law before addressing grievances and grievance prone areas.

The mechanism for grievance handling and its redress in the Government of India attempts to cover all these parameters through a set of guidelines issued by the nodal agency for policy formulation on grievance handling, namely, the Department of Administrative Reforms and Public Grievances (DARPG).

The use of ICT in the process of grievance handling will make the process simple, quick, fair, officials accessible, responsive and accountable.

27. Chief Minister Information System

Chief Minister's Information System (CMIS) will enable the Chief Minister and other top-level officials to monitor implementation of development projects, VIP references and public grievances on real-time basis. The CMIS developed by the GoAP is a three tier architecture with Browser as front end, Pilot Internet Publisher 6.2 version as middle ware and Pilot Analysis Server 6.2 version as the backend. The Chief Minister's integrated information system is updated from every district head quarter, with regular periodicity on the following parameters:

- Power, Civil Supplies, Law and Order
- Public Sector Undertakings
- Housing, Family Welfare, Hospitals
- S.C. Finance
- APSRTC, Roads & Buildings
- Panchayati Raj, Drinking Water, Agriculture, Sericulture
- Janma Bhoomi, Rural Development, NABARD
- The information on all IAS & IPS officers
- Secondary School Education, Intermediate Board
- Land Revenue, Distribution of government land
- C.M's Announcements
- Representations to public representatives
- File Monitoring
- Secretariat Information System
- Forest

- Treasury, Commercial Taxes, Registration and Stamps
- Transport Department (STA)
- Mines and Minerals
- DW CRA – Development of Women and Child Development Authority
- Water sheds
- CMEY – Chief Minister’s Empowerment of youth programme

28. Secretariat Knowledge Information System(Computerization of Secretariat)

The State Secretariat plays a crucial role in the governance of the State. It is a repository of a wealth of information and knowledge. Public interest lies in the efficient management of this information and knowledge. Decision-making and policy formulation processes within the Secretariat involve receipt and dispatch of a large number of communications apart from holding, maintaining and processing large volumes of data. Effective use of Information Technology can bring about a significant improvement in these processes.

SKIMS seek to achieve increasing employee productivity, efficient management of data, information and knowledge within the secretariat, exploitation of the power of the network and advancement towards paperless and knowledge-led governance.

It will be based on a two-tier architecture consisting of the Central Information System (CIS) and the Departmental Information Systems (DIS). The creation, numbering and closure of files are proposed to be handled centrally for the entire secretariat. Certain aspects of security, access permissions etc can also be managed centrally.

Common applications useful to all the departments can be developed and implemented as part of the CIS. Examples are pay rolls, leave, audit, monitoring of plan schemes etc.

Further the classification of business in the secretariat into various subjects and each assigned with a code and a weightage in terms of its importance. The system is designed to regulate the file movement in such a manner that work is attended to on a priority basis in order to ensure that the important work gets precedence over routine work.

29. Disaster Management

Natural calamities, affect nations all over the world. Because of the large geographical size of the country, India often faces natural calamities like floods, cyclones and drought occurring fairly frequently in different parts of the country. At times, the same area is subjected to floods and drought situation in successive seasons or years. While not all natural calamities can be predicted and prevented, a state of preparedness and ability to respond quickly to a natural calamity can considerably mitigate loss of life and property and the human suffering and restore normalcy at the earliest. ICT can play an important role in the above process.

Calamities like earthquakes, hailstorms, avalanches, landslides, etc. occur quite suddenly but they are restricted in their impact in terms of time and space. Similarly, though floods and cyclones occur with some element of warning yet their occurrence is confined in duration. Drought, on the other hand, spans over a much longer time-frame and its

adverse impact on the economic activities and life of an area is of a more lasting nature. The measures required to meet the threats posed by different calamities, therefore, differ considerably in terms of disaster preparedness and amelioration of the economic and social life of the affected people.

The use of ICT will decrease the response time to such calamities. ICT played an important role in the process

30. e-Democracy (Use of ICT in Electoral Process)

E-Democracy is an effort to change the role of citizen from passive information giving to active citizen involvement. During the elections the e-democracy project can be used to inform the citizen, encourage the citizen to vote, have e-debates with the candidates and maintain a database of contestants for review by the citizens.

The project can also keep a track of the views of a particular candidate on various issues. The citizen can check through the Information Network the views of various contestants as expressed in the legislative assembly or in the parliament.

An Intranet over the network can also support the 300 odd election commission staff. It will help the planning and coordination of elections in the country. This network will further facilitate the registration of national or regional parties.

The network will enable on-line verification, updating of the electoral role. The electorate, which exceeds 600 million voting in 800,000 polling stations, spread across widely varying geographic and climatic zones.

The Polling stations, which are located in the snow-clad mountains in the Himalayas, the deserts of the Rajasthan and in sparsely, populated islands in the Indian Ocean. Under all these situations an Intranet over the National network will become a big advantage to these difficulties.

J. Integrated Services Projects

Constituents

1. India Portal
2. State Portals
3. EDI
4. eBiz
5. eProcurement
6. Country Gateway

Integrated Services Projects

1. India Portal

India portal will be one stop shop to all Government Business in India. There are various governments departments and ministries in the Centre and various agencies. The India portal will become a single link to all the departments and agencies and also the state governments. To some extent the same is being incorporated in the India Image portal of NIC. But the same can be extended to have more services and agencies incorporated.

Initially the services that can be incorporated started are:

- Forms (Downloading)
- Directory Services (For E-Mail, telephones, Addresses, Contact Personnel of all Government Offices)
- Government Schemes
- Links to all other Government sites
- Links to Education
- Health Services
- Survey Reports
- Parliamentary Discussions
- Trade related Queries
- Legal sub-portal
- Grievance Handling
- File Monitoring
- State Government Links
- Employment
- Who's who of Government
- News etc

2. State Portals

State portals are the single window Government entry points of various States. The various State portals have already been developed by NIC. The same can be extended to have a set of minimum information on the state portals. The state portal can further be incorporated as a point of reference for G2G, G2B and G2C services.

On lines of the National portal the State portals can incorporate the following initially,

- Forms (Downloading)
- Directory Services (For E-Mail, telephones, Addresses, Contact Personnel of all Government Offices)
- Government Schemes
- Links to all other Government sites
- Links to Education
- Health Services
- Survey Reports

- Parliamentary Discussions
- Trade related Queries
- Legal sub-portal
- Grievance Handling
- File Monitoring
- State Government Links
- Employment
- Who's who of Government
- News etc

3. EDI

Under the EDI system a Service Centre is provided in the Custom House wherein all documents can be presented by the CHA / Importer / Exporter / Steamer Agent which will be fed into the system. Once this is completed the system takes over and all further processing is effected through the system.

The system in the Custom House is under the control of one Systems Manager in the rank of Additional Commissioner, and two System Analysts, in the rank of Assistant Commissioners.

At the initial stage, Electronic Data Processing was introduced for Export, and later extended to Imports. IEC data registered at DGFT is transmitted on line from Delhi and automatically received and updated. Automatic DTR data transmission to Delhi Air Cargo System and Directorate of Valuation, Mumbai is also operational.

Plans are now underway to install an Electronic Commerce/EDI Gateway (ICEGATE) along with a dedicated network (ICENET), connecting all the automated Custom Stations. The concept is to provide single point connectivity to the Importers/Exporters/CHAs for filing of Bills of Entry/Shipping Bills from their premises and to provide an electronic interface between Customs and all other community partners. Once this is completed, it is envisaged that the members of the trade will be able to file their Import and Export declarations using any network provider of their choice or on the internet. The System has been envisaged to transact all Customs work directly through the electronic media without the requirement of visit to the Custom House, which is being introduced in stages.

4. e-Biz

The e-Biz project is a single window for all Government to Business services. The proposed E-BIZ can incorporate the following services:

- Information about laws, regulation, codes and procedures involved in running businesses in the country
- Filing of taxation, returns, claims and refunds
- The registration and start up of a Company/ Business/ SME or any form of Organization
- Issue of Licenses, permits & certification
- Renewal of Licenses, permits & certification

- To facilitate the FDI
- Filing of reports, compliance of statutory provisions
- Availability of facilities like telephone, water, electricity, transport, posts
- Window for all Procurement by the Government
- Interactions with the Stock Exchange, SEBI and other regulatory bodies
- Recruitment of skilled manpower
- Forms required for various services
- Feedback on various initiatives / Discussion forums thereof
- Source of funding (banking & FI's)
- Obtaining Land and building approvals
- Compliance of labor laws and interaction with trade unions
- Issues related to IPR
- Technology transfer from R& D institutions to industry
- Getting feedback on market trends (market research)
- To act as the interface to international agencies

5. e-Procurement

Each Government Department, Agency, State Government at time procures material. With the use of ICT in procurement process, the procurement overhead cost will go down. There had been examples in the west wherein Governments have reduced their costs by over 50% by choosing E-Procurement.

The government needs to standardize a policy for the procurement system and should try to implement the system in Government at the earliest.

Initially a secured intranet can be worked out with the government suppliers. Though the procurement of the future will be on the Internet. There will be different suppliers participating in the e-auction. But the participation by the suppliers will be from their offices only. The concept will be similar to online trading in a stock exchange. There will be a team of Government professionals, which will oversee the procurement from their office. The bids will be made in electronic form. The services will also become electronic for the supplier will get his account credited automatically with E-money as soon as his supplies reaches Government offices. In above again one of the key driver will be speed of delivery, apart from minimum cost and better quality.

This will be beneficial even to the suppliers for they will get their payments in real time.

The Government can learn from the international players in the area of E-procurement and the private companies to some extent.

Electronic procurement and settlement system to eliminate the need for duplicate departmental systems. Government-wide single system will take advantage of data once entered in buyer's system, as it is re-usable several times in the supply and settlement chain.

6. Country Gateway

The Country Gateway project is use of ICT for sustainable development of the country. It aims at development and facilitation of participation of local and professional communities in virtual discussions. Department of IT has already developed a prototype for the above project, which covers the key areas like Health, Primary Education, Rural Energy and Agriculture.

The project enables communities to share information on best practices and to help develop the Internet economy, where the problems of selling agricultural products by small and marginal farmers and accessing primary education and health services are solved through the excessive use of the Internet.