The e-Office Framework:
A Way Forward for the Government

Workshop on e-Office Mission Mode Project

2nd December, 2011

New Delhi

Department of Administrative Reforms & Public Grievances
Ministry of Personnel, Public Grievances and Pensions
Government of India

सत्यमेव जयते

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A Way Forward for the Government

राष्ट्रीय इ-गवर्नेंस योजना
National e-Governance Plan

Public services closer home

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FOREWORD

1. Role of e-governance as an instrument of speeding up reforms is now an acknowledged fact. Challenge before us is to use the four pillars of e-governance people, processes, technology and resources- for India's growth.

2. Government transactions, be they with citizens, business, other governments or internal, have one core element - decision-making. The e-Office Mission Mode Project, under the National e-Governance Plan, takes an important step towards strengthening the governmental decision-making machinery by extending the use of modern information and communication technology to the government processes. It attempts to help decision makers in easy retrieval of data and provides an environment friendly data storage facility.

3. Attempting to introduce change in deep-rooted processes requires caution and planning. This hand-book, 'The e-Office Framework- A Way Forward for the Government', released by the Department of Administrative Reforms and Public Grievances, takes a holistic look at e-governance and e-Office. It outlines a framework for e-governance and analyzes global trends, discusses how e-governance fits into the reform agenda of the government, examines the concept of an electronic office and how it evolved over the years, presents the e-Office MMP implementation model and finally presents a framework for change and process re-engineering.

4. The implementation of e-Office will represent a major milestone in the Government's e-governance programme. I am sure that this hand-book would benefit everyone involved in this monumental effort.

Dated : 28-11-2011

Ramesh C. Misra
Secretary (AR&P)

Table of Contents

1 The Concept of e-Governance

1.1 The e-governance framework

At its core, e-governance is both an end-state and an approach - an end-state representing some of the goals of good governance, and an approach towards achieving those goals. However, it is more than just a set of objectives or a path towards those objectives. It is a comprehensive framework - a framework of goals, approaches, challenges, and a management mechanism. This article discusses this framework in some detail.

The following components constitute the e-governance framework:

i. Strategic intent
ii. Challenges
iii. Approaches
iv. Management mechanism

Figure 1: e-governance framework

1.2 Strategic intent

e-governance is a public initiative that derives its mandate from the emancipatory concerns of the government. The core concern is inclusive growth-growth that touches all sections of society and the country as a whole. Annexure I outlines dimensions of international concerns in this regard.

The e-governance initiative is founded on the premise that it can help achieve the goal of inclusive development in two ways: e-services and e-participation.

e-services: The e-governance initiative aims to bring government services closer to the common person. Technology has increased the feasibility of introducing services that were not possible earlier. It has created new and better avenues that make public services more accessible to ordinary individuals. Technology has also opened the doors to fresh administrative reform and process re-engineering in government establishments.

e-participation: The other aim of e-governance is to increase citizen participation in government functioning. The assumption is that involving stakeholders during the early stages of policy formulation and decision-making can improve the quality of the decisions, and make the decisions more representative.

1.3 Issues and challenges

Demographic, socio-economic and technological challenges must be tackled in order to translate this strategic intent into results. These challenges can be grouped into four categories:

i. Access to services
ii. Availability and quality of services
iii. Awareness of (the existence of) services
iv. Organization of services (such as the degree of integration of services, collaboration between public authorities, standardization, and interoperability)

1.3.1 Access to services

While modern technology helps create new possibilities for service delivery, these possibilities do not fructify unless the technology platform is accessible to all. To gain access to services, users must have access to a basic ICT infrastructure such as electronic networks, computers, and relevant software. Where delivery infrastructure does not exist, service delivery is not web-based, and customers might have to spend considerable time in accessing services.

1.3.2 Service availability and quality

Despite enabling technology and the potential to create new and more accessible services, such services are not developed for a variety of reasons. These reasons could range from the non-availability of basic hosting infrastructure to commercialization issues. The absence of enabling platforms, affects both service availability as well service quality.

1.3.3 Awareness of services

Citizens are often not aware of the existence of useful services and their availability through accessible channels. This ignorance could stem from a mere lack of communication or from deeper social or psychological issues, such as illiteracy or a natural inhibition towards change.

1.3.4 Organization of services

Services might duplicate information requirements from citizens. They might not have common interfaces and may not talk to each other, which make it difficult for people to use them. In such situations, potential consumers can turn wary of using these services because of their inherent conflicts or additional burden of extra data-entry that duplicate services impose.

1.4 Approaches

The challenges mentioned above are inherent in any major social transformation. An effective e-governance framework must address them through a holistic approach that considers their underlying root causes. This approach must recognize that the path to change must touch people

not just with technology (which is of course the driving force) but also make contact with them on more sensitive and deeply embedded social and economic fronts.

A four-pronged approach to tackle these issues is recommended:

i. Streamlining service delivery
ii. Participative and inclusive approach
iii. Awareness building
iv. Capacity building

1.4.1 Streamlining service delivery

This approach focuses on simplifying the organization of e-government services and making the services more transparent. The objective is to give the user a single window to access public services, and to ensure that services are functioning under a simple legal framework.

e-governance can contribute significantly to the transformation of government by:

- Working towards a leaner, more cost-effective government
- Facilitating communication and improving the coordination of authorities at different tiers of government, within organizations and even at the departmental level
- Enhancing the speed and efficiency of operations by streamlining processes, strengthening research capabilities, and improving documentation and record keeping

1.4.2 Participative and inclusive approach

A participative and inclusive approach focuses on engaging users in the planning and developmental stages of an e-government service. This approach utilizes a broad range of communication channels in order to establish a dialogue with targeted user segments. The increasing use of new Web 2.0 and other social media tools can help create a more interactive environment between governments and citizens. The approach often goes beyond traditional consultation, and reaches out to active potential users who want to proactively influence development and decisions.

1.4.3 Awareness building of e-services

Awareness and brand-building strategies are as important in a government setup as in any private context. This activity is often overlooked in e-governance projects, leaving services underused and short of expectations and promises made. Therefore, a government must realize the importance of promoting e-services and developing appropriate delivery channels. Awareness strategies involve educating users about the possibilities of a given e-service, as well as building a recognizable brand in users' minds.

1.4.4 Capacity building

A common constraint in the public sector is the need to change mind set and behavior, a process that can be enabled by appropriate skills development and institutional incentives to address some of the risk associated with implementing individual e-governance initiatives.

1.5 Management of e-governance projects

A robust mechanism for managing e-governance projects is the final element in the e-governance framework. Management includes the following:

- Institutional setup
- Financing mechanisms
- Results monitoring
- Change management

e-governance requires a national level mechanism to guide and monitor its planning and implementation. This mechanism must stretch down from an apex committee at the national level, through various levels of government down to the block and village level. Discussing a comprehensive management mechanism is not the subject of this article. Suffice it to say, here, that management machinery must include public-private models in appropriate situations, and should seek stakeholder participation early in any service introduction or policy formulation cycle.

Any holistic discussion of e-governance must view it as a conceptual framework of emancipation. Providing value-adding citizen-centric services to all through cheap and accessible mechanisms and ensuring that the government benefits from stakeholder participation at multiple-stages in policy and decision-making are the two core objectives of e-governance strategy. The challenges in the achievement of these objectives include non-availability of service infrastructure in remote and backward areas, ignorance about the availability of services or lack of confidence in their quality, and issues with integration of multiple services. The multi-pronged approach to tackle these issues includes increasing the number and kinds of services, integrating multiple and conflicting services, simplifying underlying processes, getting stakeholders to participate in service introduction processes, building capacity in government and public to manage and use e-services, and setting up the machinery required to effectively manage and monitor e-governance initiatives.

2 e-Governance: An Agenda for Administrative Reforms

2.1 Administrative reforms and public value

The value added by government is the difference between the benefits that the public eventually enjoys and the resources that citizens decide to give to their government. The legitimacy of government as a whole generally depends on how well it creates public value.

The aim of administrative reform is to implement initiatives that will ultimately enhance public value. The concept of enhancing value has three dimensions:

1. Defining value: Administrative reforms are driven by what citizens perceive as value.
2. Measuring value: Having a yardstick to measure value is essential to ascertain the efficacy of an initiative in increasing or decreasing citizen value.
3. Increasing value: This is at the heart of the reform process and where the value conceived is converted to reality through a well-defined course of action.

2.2 Adding 'value' through e-governance initiatives

e-governance applications are best embedded in areas that are closely related to the priority development needs of the society. This brings broad support and makes it easier to overcome inherent difficulties and sustain attention, commitment and funding. Through the innovative use of technology and other modern tools, e-governance initiatives present new avenues for administrative reform.

- e-governance increases efficiency and effectiveness, which are key to the success of administrative reform: The link between ICT applications, optimization of government operations and achievement of important social development goals is a convincing argument for strengthening the e-governance initiative.
- e-governance can increase investments but drop operating costs in the long-run: A prudent e-governance initiative should start with an understanding of the costs involved and a careful analysis of how the expected returns outweigh the costs.
- e-governance can help change culture and develop an aptitude for reform: ICT, supported by suitable change and project management skills helps create personnel development opportunities, including career advancement. These skills work cyclically to reinforce support for e-government and by the same token for administrative reform in general.
- Broad based administrative reform requires coordination between the arms of the government: Well-structured technology architecture can avoid duplication of efforts between arms of the government and increase inter-operability between similar reformist measures.
- e-governance can strengthen public participation and help administrators assess public sentiment and need more accurately and speedily: For a programme to succeed, the public should have a personal stake in it. This stake can be reinforced by actively soliciting people to participate in e-governance initiatives so that these initiatives are customized to the needs of society and other stakeholders.

- Technical infrastructure can build a platform for administrative reform: There should be a vision and plan for ensuring access of technology to all.
- Partnerships: The government should see business firms and other organizations as its partners in securing financial resources, skills improvement, better access and adequate capacity to service the ICT network.
- Monitoring and evaluation: Setting clear responsibilities and realistic benchmarks for e-government development, as well as for their transparent monitoring, is an important ingredient for eventual success and builds up the overall transparency and accountability framework in the public sector.
- Perception of added value: Administrative reform must incorporate a calculation of the added value that the application intends to bring to individual users. It is best if this calculation proves to be congruent with that of the users.

2.3 Recommendations of the 2nd Administrative Reforms Commission in India

The 2nd Administrative Reforms Commission was constituted to prepare a detailed blueprint for revamping the public administration system. One of the terms of reference of the Second Administrative Reforms Commission pertains to promoting e-governance and in particular, to the following aspects of this subject:

i. To reduce red-tape, delay and inconveniences through technology interventions including the use of modern tools, techniques and instruments of e-governance.
ii. Promote knowledge sharing to realize continuous improvement in the quality of governance.

The report advocated the following measures as e-governance initiatives to support the administrative reforms agenda of the government:

- Building a congenial environment
- Identification of e-governance projects and prioritization
- Business process re-engineering
- Capacity building and awareness creation
- Developing technological solutions
- Planning and implementation
- Monitoring and evaluation
- Institutional framework for coordination and sharing of resources
- Public private partnership
- Protecting critical information infrastructure assets
- Creating common support infrastructure
- Mission mode projects
- Strengthening the legal framework
- Knowledge management

3 NeGP: An Overview

"Make all Government services accessible to the common man in his locality, through common service delivery outlets and ensure efficiency, transparency and reliability of such services at affordable costs to realize the basic needs of the common man."

This is the vision of the 'National e-Governance Plan'(NeGP) - a plan that consolidates the e-governance vision, strategies, and programmes of the Government of India. There are 27 Mission Projects under the NeGP that encompass 9 Central, 11 State and 7 Integrated MMPs spanning multiple ministries/ departments. 'Mission Mode' implies that the objective and the scope of the projects is clearly defined; there are measurable outcomes (service levels) and well-defined milestones and time lines for implementation.

The NeGP also contains 'support components', which aim at creating the right governance and institutional mechanisms, core infrastructure, policies and standards, and the necessary legal framework for adoption of e-governance.

Central MMPs	State MMPs	Integrated MMPs
Banking	Agriculture	CSC
Central Excise & Customs	Commercial Taxes	e-Biz
Income Tax (IT)	e- District	e-Courts
Insurance	Employment Exchange	e-Procurement
MCA21	Land Records	EDI For eTrade
National Citizen Database/UID	Municipalities	National e-governance Service Delivery Gateway
Passport/Immigration, Visa and Foreigners Registration& Tracking	Gram Panchayats	India Portal
Pension	Police	
e-Office	Property Registration	
	Road Transport	
	Treasuries	

Table 1: Mission Mode Projects

3.1 NeGP management structure

Considering the multiplicity of agencies involved in the implementation of NeGP and the need for overall aggregation and integration at the national level, it had been decided to implement NeGP as a programme, with well-defined roles and responsibilities of each agency involved and to create an appropriate programme management structure. For the effective management of the NeGP, a programme management structure with well-defined roles and responsibilities had been approved. The key components and features of the Programme Management structure are as follows:

- The Cabinet Committee on Economic Affairs (CCEA) for programme level policy decisions

- A body under the chairperson ship of the Prime Minister has been constituted with representation drawn from relevant ministries, the National Knowledge Commission, and the Planning Commission to provide leadership and monitor periodically the implementation of the NeGP.
- A National e-Governance Advisory Group, headed by the Minister of Communications & IT has been created, to solicit views of external stakeholders and to provide inputs to the CCEA, advise the government on policy issues for accelerating introduction of e-governance across Central and State Government Ministries/Departments.
- An Apex Committee (NeGP), with Cabinet Secretary as its chairman and secretary, DIT as its member convener, has been constituted to oversee the programme and provide policy and strategic directions, for its implementation.
- The Expenditure Finance Committee (EFC)/ Committee on Non Plan Expenditure (CNE) to financially appraise/ approve projects, as per existing delegation of financial powers.
- Line ministries/ departments are responsible for the implementation of the assigned Mission Mode Projects (MMPs)/ Components.
- State governments are responsible for implementing State Sector MMPs, under the overall guidance of respective line ministries. An Apex Committee has been constituted at the State level headed by the Chief Secretary with a similar role and responsibility to the Apex Committee at the Centre.
- DARPG has mandate for e-governance as per Allocation of Business Rules. DIT is tasked with providing assistance to the departments and it serves as the secretariat to the Apex Committee by assisting it in managing the programme.

3.2 Mission mode projects (MMPs)

The NeGP initially recommended 27 MMPs, some of which are summarized below. The MMPs are classified as:

- Central MMPs
- State MMPs
- Integrated MMPs

3.2.1 Central MMPs

3.2.1.1 Banking

The Banking MMP is expected to streamline the functioning of the Indian banking sector. The focus of the MMP is:

- Electronic Central Registry under Sarfaresi Act, 2002
- One India One Account for PSU banks
- Electronic Mass Payment System

The central registry is a repository to be used for registration of assets provided as security against loans. It will be run by a special company set up under the Companies Act and will be operational

soon. All financial institutions are expected to use it once operational. The registry will make it easier for banks to verify the authenticity of the collateral provided by borrowers.

The provision of mobile banking services is another initiative under this MMP. By establishing the required legal and technological framework, this initiative will go a long way in bringing banking to the masses.

3.2.1.2 Central Excise and Customs

The objective of this MMP is the simplification of customs and excise processes. ACES, the software application developed as part of this project, provides the following services:

- e-Registration for excise and service tax
- e-Filing of returns and refunds
- Integration of e-filing with system driven, risk-based scrutiny
- Export facilitation through linkages between Excise and Customs
- Improved dispute resolution mechanism
- Monitoring of arrears and their recovery
- Central Excise Revenue reconciliation

3.2.1.3 e-Office

The objectives of the MMP are:

- To improve efficiency, consistency and effectiveness of government responses
- To reduce turnaround time and to meet the demands of the citizens charter
- To provide for effective resource management to improve the quality of administration
- To reduce processing delays
- To establish transparency and accountability

The system will automate movement of files within government offices.

3.2.1.4 Immigration, Visa and Foreigner Tracking (IVFRT)

This is an MMP for modernization of immigration services. The project will be implemented across 169 Missions, 77 Immigration Check Posts (ICPs), 5 Foreigners Regional Registration Offices (FRROs), and Foreigners Registration Offices (FROs) in state and district headquarters. Some of the services offered are:

- Authentication of traveler identity at Missions, ICPs, and other offices, using biometrics
- Update of foreigner details at entry and exit points
- Tracking of foreigners through better sharing of data captured during visa issuance
- Flagging of 'risky' travelers at Missions, ICPs, and FRROs, and generation of alerts about overstay and failure to register with concerned authorities

- Convergence and integration with other initiatives such as e-passports, e-migration and crime and criminal tracking network
- Online appointments

3.2.1.5 Insurance

This MMP aims to improve customer service in public sector general insurance companies. The services expected to be provided include:

- Online issue / renewal of policies
- Premium calculations and online receipt of premium
- Online processing of claims and settlement of claims
- Storing policy documents in soft form
- Improve customer awareness, through education and Information
- Online registration /redressal of grievances (direct from customers)
- Online registration / redressal of complaints / references

The system is expected to go live in the insurance majors Oriental, National, United India, and New India in the next few months. Various facilities, such as online issue and renewal of policies, online processing of claims, online registration of grievances, and premium calculation are already available.

3.2.1.6 Income Tax (IT)

This MMP envisages the setting up of a system that enables citizens and companies to transact with the IT department on an anywhere anytime basis. Some of the services provided by the system are:

- Allocation of Permanent Account Number (PAN)
- Tax accounting
- Taxpayer grievance redressal
- Taxpayer correspondence
- Tax compliance
- Online submission of returns
- Processing of tax return
- Processing of Tax-Deducted-at-Source (TDS) return

3.2.1.7 MCA21

Its mission is to build a secure portal that offers several services mandated by the Companies Act. The main services planned are:

- Name approval
- Incorporation of new companies
- Filing of annual statutory returns
- Creation/ modification/ satisfaction and verification of charges

- Filings for various statutory services required under the Companies Act
- Inspection of company documents (public records)
- Investor grievance redressal
- Electronic payment

The MCA21 system reduces processing time for many of these activities by more than half. It uses digital signatures, incorporates work flows, and links up with the Income Tax system through the PAN.

3.2.1.8 National Resident/ Citizen Database

The objective of this MMP is to create a database of Indian residents and citizens. As part of this project, it was decided to create a database of Indian residents called the National Population Register (NPR). The NPR would use the Aadhaar (from the UID MMP) as a unique identifier. The database will comprise of basic information such as name, date of birth, sex, marital status, and address along with biometric identifiers such as fingerprints, iris images, and facial photographs. The database will serve as an authentic source for verifying eligibility by the Election Commission, PDS, BPL, NREGA, and PAN. It can also be used by intelligence agencies for security purposes, especially in the border area and the Indian coastline. The project is managed by the office of the Registrar General and Census Commissioner of India.

3.2.1.9 UID

The objective of this MMP is to provide a unique identification number (Aadhaar) for every resident in India. Aadhaar would be used to authenticate users in other schemes such as PDS, NREGA, and PAN. By providing these authentication services, Aadhaar can help build a system of checks and balances to streamline the functioning of these schemes, reduce wasteful expenditure, and ensuring that their benefits accrue to the intended recipients.

The UID database will contain demographic and biometric information about residents. The system works by comparing biometric information passed to it by other systems with its own records and returning a match if the record exists. The system also contains complex algorithms to eliminate duplicate records in its database.

3.2.1.10 Passport Seva

The objective of this MMP was to streamline the issue of passports to citizens. It envisages the setting up of 77 networked 'Passport Seva Kendras', a call centre, and a centralized nationwide computerized system. Some of the services provided are:

- Sale of passport booklets
- Submission of application forms
- Verification of documents
- Granting of passports
- Printing and dispatch

3.2.1.11 Pension

The purpose of this MMP is to set up a portal to provide the following services to central civil pensioners:

- Online registration of grievances
- Dissemination of information concerning pension and retirement benefits

The portal, which uses a specially designed software application called CPENGRAMS at the back-end, was launched on March 30, 2007. CPENGRAMS is proposed to be integrated with CPGRAMS.

3.2.2 Integrated MMPs

3.2.2.1 Common Service Center (CSC)

The MMP aims to set up single windows for rural services such as utility payments (e.g. electricity and water). The CSC is structured as a three-tier model village level (Village Level Entrepreneur VLE), 5001000 VLEs (Service Center Agency - SCA) and state level (State Designated Agency SDA, identified by the state government). The model ropes in the private sector to run the CSCs.

Services offered via CSCs are:

- Agricultural services
- RTI services
- NREGA MIS data entry service
- Postal products
- Land records
- Issuance of birth and death certificates
- Utility services
- Electoral services
- Transport services
- Grievances
- e-District services

3.2.2.2 e-Biz

This is an MMP to streamline G-B interactions, such as licensing, applications, and approvals. The services to be provided include:

- Access to information on licensing
- Single window for application forms
- Issue of certificates for incorporation, commencement of business, PAN, industrial licenses
- Service tax registration
- Filing of returns by companies
- ESIC filings
- EPFO filings

3.2.2.3 National Portal

The objective of the National Portal is to provide a holistic view of the Government of India from Central to State levels. It is meant to be a single platform for providing information and deliver government services.

3.2.2.4 National e-Service Delivery Gateway (NSDG)

The NSDG is a messaging switch to standardize and control communication between diverse software applications in the government. There is one such setup at the centre (called NSDG) and one in each state (called SSDG). The NSDG and SSDGs define protocols that intercommunicating services must use. These standards ensure that legacy investments are protected, communication between heterogeneous systems is secure and based on non-proprietary standards, and front-end applications are separated from back-end processing systems.

SDGs provide a framework for interlinking delivery of electronic services and exchanging common information. They also provide directory services to identify available electronic services.

3.2.2.5 e-Courts

This MMP aims to transform the Indian judicial system by effectively using technology to enhance productivity. Some of the services planned are:

- Automation of case management processes like filing and scrutiny
- Online services such as case status, judgment copies, and court fee calculation.
- Information exchange with agencies like the police, prisons, registration, and land records
- Video conferencing facilities between courts and prisons

3.2.2.6 e-Procurement

This MMP aims to streamline government procurement. The following services are among those provided:

- Vendor management
- Indent management
- e-Auction/ reverse auction
- Rate contracts contract management
- e-Billing and e- payment mechanism MIS

3.2.2.7 e-Trade

The objective of this MMP is to streamline foreign trade services by using technology to connect organizations like airports, ports, DGFT, Container Corporation of India, banks, RBI, and Customs. Some of the services offered are:

- Online filing of documents by exporters and importers
- Online payments
- Electronic issuance of licenses

3.2.3 State MMPs

3.2.3.1 Agriculture

The objective of this MMP is to provide information to farmers on weather, seeds, fertilizers, government schemes.

3.2.3.2 Commercial taxes

This MMP will streamline the collection of taxes electronic filing of returns, electronic clearance of refunds, and electronic payment of taxes.

3.2.3.3 e-District

The aim of this MMP is to provide a common front-end to deliver electronic services to citizens at the district, taluk, and village level.

3.2.3.4 Employment exchange

This MMP will set up a system to provide online help to prospective employees and employers including guidance on vacancies.

3.2.3.5 Gram Panchayats

The Gram Panchayat MMP aims to create ICT systems that will improve the efficiency of Panchayats.

3.2.3.6 Crime and Criminal Tracking System (CCTNS)

This is an MMP to provide enhanced tools for investigation and crime prevention.

3.2.3.7 Land records

The main objective of this MMP is to modernize the land records system in the country by undertaking the following activities:

- Computerization of the Records of Rights
- Digitization of maps and updating of land records
- Survey using modern technology including aerial photogrammetry
- Computerization of registration
- Automatic generation of mutation notices
- Training and capacity building of the concerned officials and functionaries
- Connectivity amongst the land records and registration offices and modern record rooms/land records management centres at tehsil/taluk/circle/block level.

3.2.3.8 Municipalities

The objective of this MMP is the computerization of urban local bodies to streamline their operation and provide single window for services

3.2.3.9 Road transport

This MMP seeks to achieve the computerization of RTOs (to manage issue of licenses, registrations)

3.2.3.10 Treasuries

The objective of this MMP is the computerization of state treasuries.

3.3 Other infrastructure components

Apart from the mission mode projects, NeGP also contains several components that seek to establish a common shareable infrastructure for delivering e-governance services.

3.3.1 State Wide Area Network (SWAN)

One of the main components of this infrastructure is the State Wide Area Network (SWAN). Every state is expected to have a digital network with a minimum bandwidth of 2Mbps that links the state headquarters with district and block headquarters.

3.3.2 State Data Centre

Another important infrastructural component outlined in the NeGP is the State Data Centre (SDC). The SDC in a state provides a common hosting platform for e-governance applications. Such centralized hosting services:

- Provide a common security environment
- Optimize hardware utilization
- Facilitate virtualization
- Reduce power consumption
- Create a common disaster recovery infrastructure

3.4 NeGP guidelines for effective implementation of MMPs

- Guidelines for Strategic Control in Outsourced Projects (http://mit.gov.in/content/templates-guidelines)
- Guidelines for Setting up of Dedicated Project Teams(http://mit.gov.in/content/templates-guidelines)

- IT Security Policy for Government (http://www.cert-in.org.in/)
- IT Act 200 and IT (Amendment) Act 2008 (http://mit.gov.in/content/information-technology-act)
- Guidelines for Capacity Building and Institutional Framework for e-governance under NeGP (http://mit.gov.in/content/policiesguidelines)
- Guidelines for Usage of Digital Signatures in e-Governance (http://egovstandards.gov.in/guidelines/Guidelines%20for%20Digital-signature)
- Policy on Open Standards for e-Governance (http://egovstandards.gov.in/policy/policy-on-open-standards-for-e-governance).

4 e-Office: Conceptual Dimensions

An organization is considered empowered when its members have the knowledge, skill, desire, and opportunity to personally succeed in a way that leads to collective organizational success. For achieving this ideal, governments need to provide the overall direction, standardization and consistency across initiatives and at the same time, have the resources and flexibility to drive this organization-wide. Hence, most governments around the world have integrated e-governance into their broader modernization agenda. From the management angle, a thrust is needed to empower and motivate all levels of governance towards change and transition. Effective implementation of e-Office ultimately is going to be essentially a leadership challenge.

4.1 Digitizing paper-based documents

The need for paper is reduced by using online systems, such as replacing index cards with databases, typed letters and faxes with email, and reference books with e-books. Another way to reduce paper is to automate paper-based processes that rely on forms, applications and surveys to capture and share data. This method is referred to as 'Enterprise Forms Automation' and is typically accomplished by using existing print-perfect documents in electronic format to allow for pre-filling of existing data, capturing data manually entered online by end-users, providing secure methods to submit form data to processing systems, and digitally signing the electronic documents without printing.

Another key aspect of the paperless office philosophy is the conversion of paper documents, photos, engineering plans, microfiche and all the other paper based systems to digital documents. Technologies that may be used for this include scanners, digital mail solutions, book copiers, wide format scanners (for engineering drawings), microfiche scanners, fax to PDF conversion, online post offices, multifunction printers and document management systems. Each of these technologies uses software that converts the raster formats (bitmaps) in to other forms depending on need. Generally, they involve some form of image compression technology that produces smaller raster images or use Optical Character Recognition (OCR) to convert a document in to text. A combination of OCR and raster is used to enable search ability while maintaining the original form of the document. An important step in the paper-to-digital conversion is labeling and cataloging scanned documents.

An issue faced in taking the paperless philosophy to the limit has been copyright laws. These laws restrict the transfer of documents protected by copyright from one medium to another, such as converting books to electronic format.

4.2 Securing and tracing documents

As awareness of identity theft and data breaches became more widespread, new laws and regulations were enacted, requiring organizations that manage or store personally identifiable information to take proper care of those documents. Paperless office systems are easier to secure than traditional filing cabinets, and can track individual accesses to each document.

Commercially feasible technology is widely available to digitize documents, even full libraries of backlogs, at feasible cost. Sufficient processing power, storage, backup, and Internet speeds are available that can make old paper records instantly available not just from stationary computers, but also from laptops and even phones. Inexpensive skilled labor is available in India to perform labor-intensive work, like naming files or creating links and bookmarks. Sufficient processing power is available to perform massive amounts of optical character recognition.

A issue that has kept government from adopting automation is difficulty in capturing digital signatures in a cost-effective and compliant manner, but the Information Technology Act of 2000 now provides that a document cannot be rejected based on an electronic signature and requires everyone to accept digital signatures on documents. Today there are sufficient cost-effective options available, including solutions that do not require end-users to purchase hardware or software.

4.3 e-Office description

e-Office describes software and processes used to manage workflow and capture, store, and control organization-wide contents electronically. e-Office can assist in content control associated with organizational processes, and compliance.

4.4 Organizational data

All file formats which can be stored on the computer are part of the organization's data, including files of type:

- Documents, spreadsheets, and presentations
- Scanned Images and paper documents
- E-mails, fax, instant messages and SMS
- Multimedia files (audio, video and images)
- Electronic forms and CAD drawings
- Financial reports and software

4.5 Architecture

A robust e-Office framework and architecture has to be evolved for the development of e-Office product suite in any organization. The suggested architecture should be in alignment with open standards. The other salient features of the architecture include - Common data sets and standards, role-based access for authorization, workflow manager, and Unicode compliant support for local languages.

The aspects of extensibility, scalability, security, interoperability and open standards, and performance and productivity improvements need to be considered while defining the overall architecture. The architecture recommendations include enterprise architecture, technology architecture and application deployment architecture with breakup in hardware components and performance service levels.

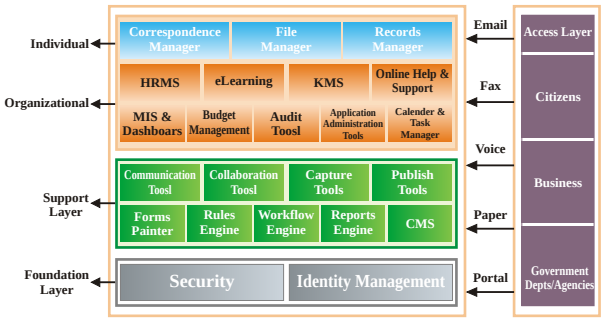


Figure 2: e-Office architecture

4.6 Subsystems of e-Office

The following are the key sub-systems that should be part of any e-Office solution:

- Document Imaging
- Document Management System
- Business Process Management System
- Web Content Management System
- Record Management System
- Digital Asset Management System
- Collaboration Management System

The e-Office system has the potential to bring internal operational effectiveness in the working of ministries/ departments. The services offered by the e-Office system can be classified in the following five categories:

- File related services
- Common services
- Productivity related services
- Knowledge related services
- Technical services

Expected results from process reforms through e-Office include:

- Workflow automation
- Knowledge management, including creation of institutional reminiscences
- Efficient communications management
- Management of records in effective manner
- Quality assurance
- Productivity Management (file tracking, dashboard view and performance management)
- Cost-effectiveness and ease in accessibility
- Accountability, including audit trails and transparency
- Horizontal and vertical integration of various departments

5 Evolution of the e-Office Framework

5.1 Genesis

The electronic office, or e-Office, was a term coined to cover the increasing use of computer-based information technology for office work, especially in the 1980s. The term appeared much earlier in the name of the LEO computer (Lyons Electronic Office), that first ran a business application in 1951 in England.

The 'paperless office' was a slogan, intended to describe the office of the future. It was facilitated by the popularization of video display computer terminals like the 1964 IBM 2260. An early prediction of the paperless office was made in 1975. The idea was that office automation would make paper redundant for routine tasks such as record-keeping and book-keeping, and it came to prominence with the introduction of the personal computer. While the prediction of a PC on every desk was remarkably prophetic, the 'paperless office' was not. Improvements in printers and photocopiers have made it much easier to reproduce documents in bulk, causing the worldwide use of office paper to more than double from 1980 to 2000. This has been attributed to the increased ease of document production and widespread use of electronic communication, which has resulted in users receiving large numbers of documents that are often printed out. However, since around the turn of the millennium, the global use of office paper has leveled off and is now decreasing, which has been attributed to a generation shift.

The ongoing process that led to e-Office adoption was elimination of paper and making most of the office communications electronic. The definition of electronic office is not precise, and it might be either:

- the introduction of individual computers running office software applications, such as word processors,
- or the interconnection of office computers using a local area network,
- the centralization of office functions via web applications.

Over the last 10 years, various NIC units have developed separate office automation solutions for the Central and various State governments, on a need basis. The requirements have primarily ranged from File Tracking Systems to Office Procedure Automation to Office Automation Package systems. Several experiments have been conducted in the e-Office space with varying degrees of success achieved. Some of the well-known projects are Smart Gov. in the AP Secretariat and iWDMS in the Gujarat Secretariat. Recently in October 2010, Kerala State NIC Unit has implemented the project across the various departments of the state. Some big IT companies, like TCS, Wipro and HCL have also developed their respective products, which can be customized and readily deployed. Some State governments and PSUs are using these products of private companies too.

5.2 e-Office: An intervention for administrative reform

5.2.1 Overview

The Government of India, in recognition of the long-felt need for efficiency in government processes and service delivery mechanisms, has included e-Office as a core mission mode project (MMP) under the National e-Governance Plan (NeGP). In 2006, the NeGP was approved by the

Cabinet and DARPG was made the Line Department responsible for the e-Office MMP. In 2009, NIC was selected for development of the e-Office software and in September 2010, Pilot projects were launched in DARPG, DIT(e-Gov Division) and DoPT (Training Division). It is being implemented in a phased manner in other central government ministries/departments.

e-Office aims at creating a positive environment by doing away with the cumbersome load of paper documents and files. Streamlining office workflow to reduce processing delays forms the core focus of e-Office project.

5.2.2 Objectives

The e-Office MMP has been designed to serve as the means to achieve the following objectives:

- To improve efficiency, consistency and effectiveness of government responses
- To reduce turnaround time and to meet the demands of the citizens charter
- To provide for effective resource management to improve the quality of administration
- To establish transparency and accountability
- To provide cost effective e-storage facility
- Environment friendly, eco-friendly

5.2.3 Outcomes

Success of e-Office would be measured by the simplification it brings in government processes and procedures, elimination of unproductive/ non-value-adding work, and reduction in paperwork. The outcomes expected from process reforms through e-Office are as follows:

- Workflow automation including standardization & automation of repetitive processes/work flows
- Knowledge management, including creation of institutional memories
- Record management
- Efficient communications management
- Quality assurance
- Productivity management (dashboard view, performance management, file tracking)
- User-friendliness
- Accountability, including audit trails
- Cost-effectiveness
- Responsiveness to citizens, with certainty of response
- Integration within the same office and with other departments

5.2.4 Current status

DARPG is facilitating e-Office implementation in 12 ministries/ departments during this year.

The aim is to:

i. Deploy NIC-developed e-Office product suite, comprising e-File, e-Tour, e-Leave, Knowledge Management System, Personnel Information System and Messaging and Collaboration services

ii. Enable creation of work environment through the Central Secretariat Manual of he-Office Procedure (e-Manual) recently prepared by DARPG

iii. Implement the strategies envisaged in the Change Management and Government Process Re-engineering documents formulated by the Department

iv. Ensure that the technical architecture of e-Office MMP is in alignment with open standards

5.2.5 Road ahead

DARPG's Strategic Plan (1.04.2011 - 31.03.2016) has set a target to implement e-Office MMP in 29 ministries/ departments. However, the effort is to cover, with the agreement of stakeholders, all the government ministries/ departments by the end of the 12th Five Year Plan. Also envisaged as part of the implementation are product awareness trainings, process studies, training and capacity building, and hand holding and post-deployment support.

5.3 Case studies on e-Office products

Various organizations have developed applications for automating office processes in government departments. The table below lists a small illustrative set of sites where e-Office applications have been installed. The table is not exhaustive and there are other organizations that have implemented similar applications in the telecom, education, and health sector, and in banks and public sector units.

NIC	TCS	HCL
eOffice	DigiGov	Advance Document Management Solution (ADMS)
Prime Minister's Office	Central Vigilance Commission, New Delhi	Ministry of Food Processing
Cabinet Secretariat	Ministry of Commerce	Bruhat Bengaluru Mahanagara Palike, Karnataka
Lal Bahadur Shastri National Academy of Administration	Law Department, Kerala	Land Records, UP
Ministry of Human Resource Development	State Secretariat, Bihar	State Archives
Ministry of Finance	State Secretariat, Gujarat	Supreme Court of India
Department of Justice	State Secretariat, Orissa	Bharat Heavy Electricals Ltd
Department of Food & Public Distribution	State Secretariat, Punjab	Oil and Natural Gas Corporation
Ministry of Rural Development	Electronics and Mechanical Corporations (EME Headquarters)	Power Finance Corporation
State Departments, Revenue, Rohtak, Yamunanagar, Haryana	Defence and Research Development Organizations	Punjab National Bank

Table 2: Select e-Office sites

5.3.1 Government of Gujarat

The DigiGOV (then IWDMS) project was conceptualized by Government of Gujarat in partnership with Tata Consultancy Services to improve accountability, efficiency, transparency and effectiveness in government administration.

A phased approach was used to roll out the DigiGOV solution across the State Secretariat and Head of Departments (HoDs) in Gujarat. Starting with 12 departments of the State Secretariat,

today DigiGOV has been full-fledged implemented in all 27 departments, Chief Secretary's Office and Chief Minister's Office, 155 HoDs and is catering to 6000+ users including administrative staff and ministerial staff.

DigiGOV caters to day-to-day file management system in Secretariat. DigiGOV is also exhaustively used in CM Office for CM's Appointment Scheduler, CM's Relief Fund, email correspondence and MP/MLA reference. For three years, DigiGOV has been used as a tool to prepare the statewide budget. This has almost nullified the preparation of more than 6000 physical files, which were previously needed in the budgeting process. Apart from this DigiGOV has satisfactorily served its stakeholder as an effective monitoring system with a quicker and immediate response for data.

There has been a steady increase in the number of users taking services through IWDMS. Some of the core users such as IAS, IPS, IFS officers and others are located across the state and access the system through the Gujarat State Wide Area Network (GSWAN).

The transformation of Gujarat Secretariat has only been possible due to dedicated and unflinching support of the Government of Gujarat and the commitment from the highest offices to ensure the success of the project.

5.3.2 National Authority of Chemical Weapons Convention

The e-Office journey began in December 2009 at the National Authority for Chemical Weapons Convention (NACWC), a department under the Cabinet Secretariat. NACWC implemented the product on an 'as is where is' basis. The department worked closely with NIC to overcome the issues that came up. The employees of NACWC, through their valuable suggestions, were instrumental in making the product more user friendly.

As a step towards extending e-Office to the entire Cabinet Secretariat, a live demo of the e-Office system implemented in NACWC was presented to the Cabinet Secretariat in March 2010. After a series of internal discussions, the decision was made to implement e-Office in the Cabinet Secretariat.

At present, the department has more than 1,200 files and more than 17,000 file movements in e-File. The department is now setting up a 24x7 data centre with the goal of making the Cabinet Secretariat completely paperless, a nontrivial feat by any measure.

The implementation of e-Office is being extended to all departments in the Government of India and State Governments. One of the steps in this direction is the inclusion of e-Office as a success indicator in the Results Framework Document (RFD), so that in the next three years there should be a government-wide flow of electronic files, resulting in increased transparency and efficiency in government processes.

5.3.3 Karnataka Power Transmission Corporation Limited

Karnataka Power Transmission Corporation Limited (KPTCL) was suffering from a big backlog of pending files because of the manual file and other document movement processes.

KPTCL then formalized their problem statement and approached HCL for a solution and its implementation. HCL came back with an Automation of Approval process and archival of

documents on turnkey basis using a web based DMS built-in workflow and Electronic Note sheet in Kannada language. The application is being used for automating the working of KPTCL's Personnel Department.

Some key benefits derived from the application are:

- Consistent and uniform processes
- Low process time due to automation of processes
- Ease of access to information/central repository
- Transparency in process
- Instant recovery of data in case of disasters

6 Capacity Building Strategies

The success of e-governance initiatives hinges critically on the existence of a competent workforce, along with other factors like leadership, regulatory frameworks, financial resources, organizational conditions, and information communication technology (ICT) infrastructure. Staffing is one of the key factors in determining the success or failure of technology applications. In fact, the survey of e-governance projects carried out by the World Bank revealed that successful e-governance projects expend at least ten per cent of their budgets on training.

While designing the NeGP, the Government of India recognized the importance of building human capacities in terms of necessary knowledge and skills to conceptualize, initiate, implement and sustain e-governance initiatives. The Government recognizes that development of e-governance strategies and induction of technology will not help deliver the expected quality of services unless human resources are aligned to provide the right services to the right customers from the right sources with the right tools at the right time. It was realized that it is important to foster an attitude and mindset that is receptive to ICT based administration and ICT based delivery of services.

6.1 Expertise requirements

The agenda for e-governance is typically set at the highest level of government. Thus, the capacity at the highest political and bureaucratic levels is extremely critical for informed policy-making. This also helps in sustaining such programmes. Further, as NeGP entails significant government process reengineering (GPR), adequate capacity is necessary to catalyze and drive such decisions.

6.1.1 Institutional arrangements

Institutional arrangements would vary although there would be consistency of key roles i.e. formulating and ensuring implementation of e-governance policies, addressing implementation bottlenecks and dependencies and finally monitoring progress and desired outcomes. These institutional mechanisms also include both full-time bodies and committees/ groups that meet on a periodic basis.

6.1.2 Access to professional expertise

To be effective, any institutional arrangement will not only need enough work force but also competencies that match the roles envisaged. This is an area, which requires the maximum attention. The focus of the capacity building initiatives has been to source the right people for the right job in order to make existing and proposed institutions effective. Even though the NeGP envisages accessing skills outside the government, a certain minimum level and combination of skills within the government are essential. Hence, a carefully calibrated mix of inducting professionals at various levels from the market and re-training of existing personnel has been built into the project.

6.2 Levels of capacity building

To enable the administration to carry out the requisite groundwork, prepare project proposals, implement the projects and oversee O&M thereafter, adequate support through dedicated, professional teams need to be in place with appropriate skill-sets and aptitudes at two levels:

- Programme level (i.e. at the Line Ministry Level)
- Project level (i.e. at Department Level)

6.3 Setting-up of project team

This team will have professionals in areas such as program/project management, process re-engineering, change management, ICT, and financial modeling. The team will assist government in designing

e-governance programmes and address issues pertaining to interdependencies, overlaps, conflicts, security, and standards.

6.4 Orientation programme for decision makers

This involves imparting of specialized training for members of legislatures and senior bureaucrats, providing a common platform to all stakeholders for knowledge sharing and bringing in international best practices through various workshops, conferences and suitable collaborations.

6.5 Strengthening training institutions

The support will be in terms of providing ICT infrastructure, content development and hiring experts for delivering training to facilitate them to train government employees engaged in e-governance programs.

6.6 Skill sets required for e-Office

e-Office offers enormous potential for improving the internal efficiency of the government and in turn, improving the delivery of public services to citizens and other customers. The following are the broad skill concentration areas required by departments to implement the e-Office project:

- Strategic planning
- Programme management
- Project development and conceptualization
- Project appraisal
- Project management / monitoring
- Project finance and funds management
- Awareness and communication
- Government process re-engineering
- Change management
- Technology expertise e.g. infrastructure and security

6.7 Capacity building under e-Office

The following recommendations should be implemented by departments implementing e-Office so that the above-mentioned skills are available with them:

6.7.1 Creating an institutional mechanism for supporting the implementation

Implementing e-Office that is consistent with the broad framework setup by the Government of India requires strengthening of appropriate institutional arrangements to oversee, drive and manage implementation.

6.7.2 Sourcing manpower

Three possible modes are:

- Deputation from government organizations
- Candidates from open market
- On lease from reputed consulting organizations

6.7.3 Training, knowledge sharing and good practices

The nature and scale of the e-Office initiative presents a considerable enhancement in the aspiration levels of government. Major managerial and technological challenges are one consequence of this, particularly in the context of the need for implementation of the project in a 'mission mode' by departments concerned. There is also a need to manage the entire programme in a coherent manner with consistent strategies for cost optimization and integration. For capturing the precious knowledge gained during implementation, e-Office software has a provision of an in-built Knowledge Management System (KMS).

6.8 Master Training Plan

Keeping in view the enormous task of driving Mission Mode Projects (MMPs) under NeGP, in line with the overall spirit of service orientation, most government employees need to be suitably trained.

Under NeGP, HR and training is an important Support Component Category. The NeGP Master Training Plan 2012-17 for Central Government officials, developed by DARPG, highlights the need of training for effective implementation of e-governance projects and a common understanding on core training curriculum. Master Training Plan describes:

- Core competencies required by various roles
- Delivery mechanisms
- Institutional framework
- Broad curriculum
- Feedback mechanism
- Certification

The proposed NeGP Master Training Plan (2012-17) is basically role-based. Three types of training delivery mechanism are being contemplated Instructor-led, Web-based/ online and seminars/ workshops. Instructor led courses will be batch-based, with each course lasting between 1 to 5 days. Seminars/ workshop will be for one or two days. The plan caters to three levels of competency/ complexity and depth as per the need of the participants.

7 e-Office: Change Management Framework

Modern technologies demand a new way of thinking about service and business process design, new ways of working, the development of new skills, the application of traditional skills more effectively and a more flexible approach to working patterns and practices. Structural inertia (built-in mechanisms) is a big hindrance to any change process. Another impediment is people's resistance to any change. It becomes essential to design such employee-oriented Human Resource policies as would enable the department to prepare employees for change, and help them absorb the changed systems. There could be barriers-mindsets and practices of people - which pose considerable challenge in introducing new systems. The need is to create a value system which empowers, maintains team spirit, and reposes greater trust and mutual sharing of goals. Therefore, due cognizance is required to understand aspects of change and transition.

7.1 Need for change management

The main drivers for applying change management principles in e-Office project are:

- Taking a robust approach towards management by objectives
- Resolving conflicts/ resistance to change
- Building change management competencies

7.2 e-Office: Change management initiatives

Change management, amongst other things, requires the following:

- Mobilizing energy and commitment by identifying problems and solutions
- Developing and communicating a shared vision of the change programme
- Identifying the change programme leadership
- Creating short-term wins by focusing on results, not activities
- Institutionalizing success through formal processes, systems and structures
- Monitoring and adjusting strategies in response to problems in the change process

7.3 Change management framework for e-governance projects

The document prepared and circulated in this regard by the DARPG is at Annexure III.

8 Process Re-engineering for e-Office

The objective of the e-Office MMP is to bring internal operational efficiency. This necessitates appropriate process re-engineering. An evidence based analysis is given below.

8.1 The current office process

The figure below outlines the current file movement process.

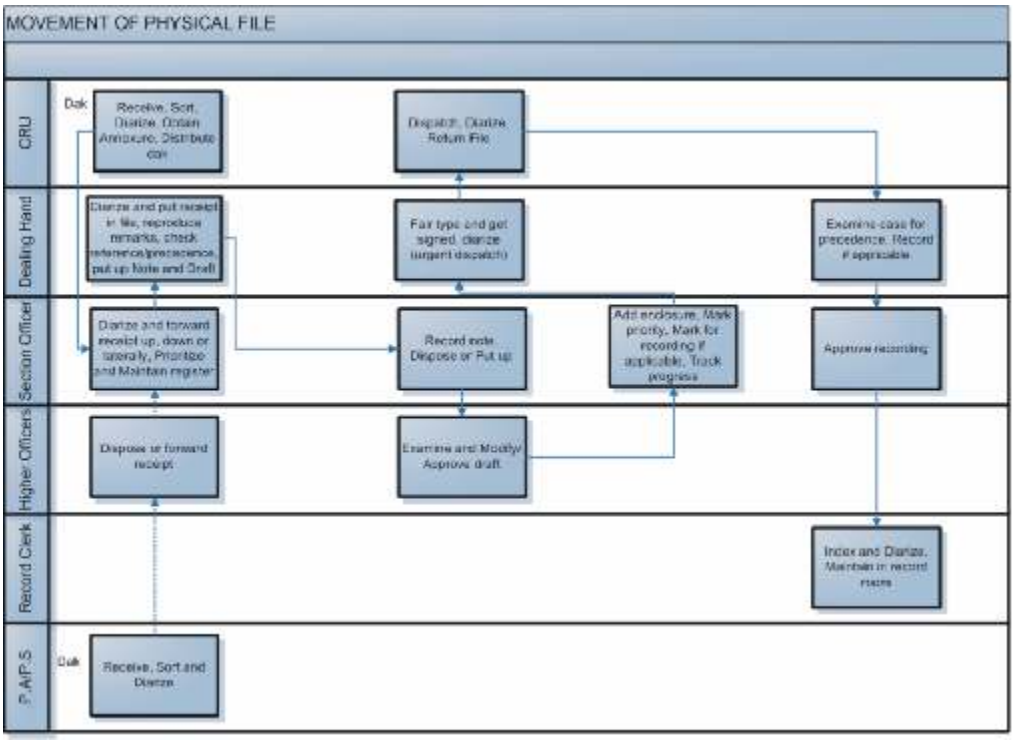


Figure 3: Current file movement process

Some of the key points identified in the areas of process, technology, people and physical infrastructure, during the study are as follows:

8.1.1 Workflow

- Activities like diarization, use of messenger to transfer file, and the absence of a reliable system of file monitoring and periodic audit of pending files creates delays.
- A large number of receipts are transferred to the department head, while a number of the receipts could be dealt at the section officer level itself.
- Non-standard formats and structure are in use.

8.1.2 Knowledge management

- Manual processes for retrieving relevant information causes delays in decision making
- Even widely used information, such as rules and orders is not often readily available.
- Documents and other sources of information do not have a standard taxonomy.

8.1.3 Quality

- Departments may work reactively without adequate planning.
- Staff may not have good visibility of pending work.
- Information regarding the status of services is not available to end customers.

8.1.4 Work environment

- All meetings require physical presence of the participants.
- Space constraints, inadequate physical security, and manual handling of records affects security and confidentiality of documents.

8.1.5 People

- Due to absence of any formal training and an objective performance assessment mechanism leads to de-motivation amongst staff members.
- The volume of activities/ processes has increased considerably but the system and infrastructure capacities have not increased proportionately.

8.1.6 Technology

- Limited use of standard software applications
- Electronically processed documents are often supported with hard copies, which not only duplicates effort but also makes document/ record management cumbersome.

8.2 Target office process

This includes process re-engineering, defining digitization strategy and the 'to-be' architecture. The re-engineered process and to-be technology architecture were decided upon consultation with pilot sites and NIC. The process re-engineering methodology given below is adopted for re-design of the processes in e-Office system. It involves three steps:

Step 1: Formulating the objectives and sub-objectives of e-Office

Step 2: Identifying and specifying the interventions required to fulfill each objective/ sub-objective

Step 3: Suggesting solutions to implement the interventions

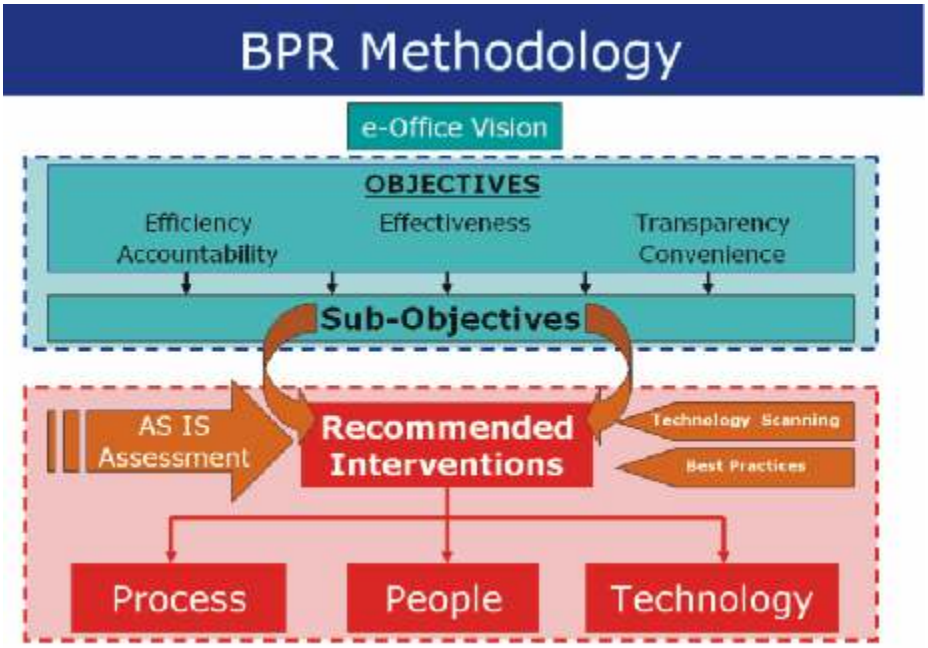


Figure 4: BPR methodology

8.2.1 Target process for file movement: an outline

The figure below outlines the target file movement process.

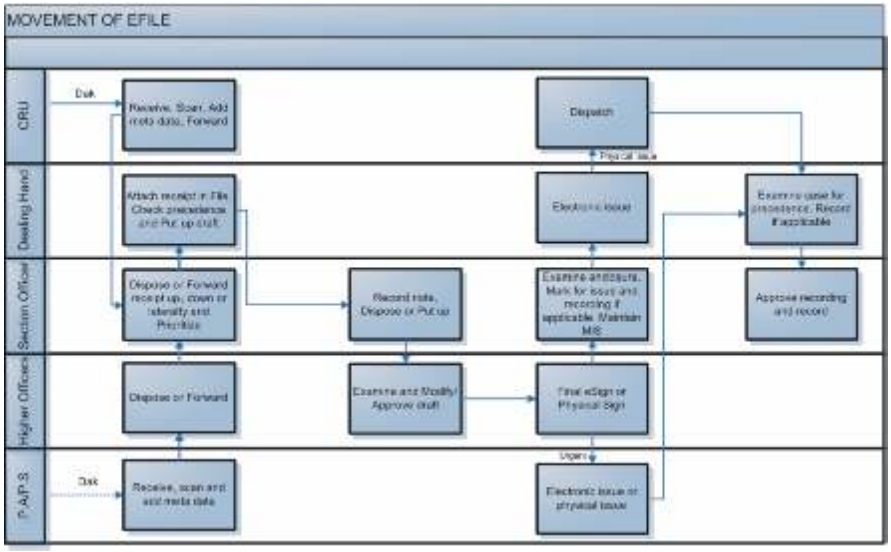


Figure 5: Target file movement process

8.3 Government process architecture framework

Annexure IV contains a summary of the process architecture framework developed by DARPG.

This is based on a report on business process re-engineering for-e-governance projects prepared and circulated by DARPG in November 2010 (Annexure V).

9 Key Aspects of e-Office Implementation

Implementation of e-Office in central government ministries/departments will be done in phases. Each phase will include a set of government ministries/departments. Twelve ministries/ departments are being taken up in the first phase.

9.1 Implementation plan

A typical high level project plan is shown below:

S. No.	Activity	Responsible	Start	*End
1	Conduct awareness presentation	DARPG/NIC	D	
2	Conduct brief process study at department	DARPG	D+1	
3	Set up department project team	User department	D+1	
4	Assess infrastructure requirements	NIC	D+2 (T)	
5	Start deployment	NIC/DARPG	T	
6	Allocate funds for IT infrastructure	User department	T	T+1
7	Conduct user training	NIC	T	T+1
8	Procure and install gap IT infrastructure	User department	T	T+2
9	Scan historical records	User department	T	T+3
10	Declare deployment complete	DARPG		T+3 (C)
11	Assess product feedback and manage change requests	DARPG	C+1	C+2
12	Provide handholding support	NIC	T+1	T+6
13	Post deployment support	NIC	C	C+60
14	Project assessment	DARPG	C+12	C+15
15	Conduct detailed change management	User department	Continuous	

Table 3: Project plan

9.2 Digitization of records

Since most decision-making will now be processed through the system, the department will have to convert its physical files to electronic format. Any new files will also have to be opened in electronic format and receipts scanned and uploaded into the system. This process is called digitization. It involves two basic steps:

i. Scanning of paper documents (e.g. letters, books)
ii. Tagging them with certain metadata prescribed in the system (based on certain guidelines)

9.3 Funding

This section prescribes guidelines for estimating the funds required for deploying e-Office.

9.3.1 Expenditure heads

The potential heads of expenditure for any ministry/ department are the below components of IT Infrastructure:

i. Hardware procurement (gap)
ii. Network bandwidth augmentation and periodic network costs (gap)

9.3.2 Funding mechanism

As per the recommendation of 11th report of 2nd ARC, ministries/ departments may allocate 2- 3 % of their plan budget for e-governance. Such funds can be used for e-Office project. Funding for application development and enhancement, user training, and hand-holding support will be provided by DARPG and NIC.

9.4 Infrastructure procurement

This section prescribes the categories of infrastructure that are pre-requisites for effective e-Office operation, and recommends guidelines for assessing the gaps.

9.4.1 Infrastructure categories

The following broad categories of infrastructure are required:

a. Computers (PCs)
b. Scanners
c. UPS
d. Digital Signature Certificates (DSCs)
e. Internal network connectivity
f. External network connectivity

9.4.1.1 Computers (PCs)

Every e-Office user requires a separate PC. Shared PCs are not recommended. The minimum PC specifications, which are being used in the pilot projects are:

9.4.1.2 Hardware (minimum recommended)

- Processor speed: 2.0 GHz
- RAM: 1.0 GB
- USB 2.0 controller (for Digital Signature Certificate)
- Software (minimum recommended)
- Windows XP, Windows Vista, Windows 7 or Linux
- Internet Explorer (6.0 and above) or other browsers
- Adobe Reader 9 (downloadable free of cost)
- Any Antivirus

9.4.1.3 Scanners

Scanners will be required for digitizing the following:

- Currently active files (including their contents)

- Files that could become active (including any relevant content)
- Paper receipts from outside the department, books or other documents that need to form part of the e-Office knowledge base

The number of scanners should be based on the following considerations:

- Estimated documentation load (in pages per day)
- Organizational units (divisions or sections) that need to maintain confidentiality
- Officers who have special confidentiality needs
- Geographical spread of the department

The general recommendations are the following:

- One heavy-duty scanner in the CRU
- One medium-duty scanner for every section provided that there is at least one per floor
- One light-duty scanner per official including and above the rank of DS
- However one medium-duty scanner per floor

9.4.2 Internal network connectivity

All computers with e-Office should be connected together in a modern LAN configuration with the standard configuration of cables, switches, and other networking equipment.

9.4.3 External network connectivity

The Ministry/Department will be connected to the e-Office servers located in NIC data centers over the NICNET. This requires primary and standby lease lines.

9.5 Project management

This section describes the organizational and institutional setup for managing the deployment of e-Office and prescribes the framework for monitoring it.

9.5.1 Project management team

The Departmental Nodal Officer should be appointed from among the senior-most officers of the department, preferably JS and above, who will be responsible for policy decisions and for resolving escalated issues. The department will also create a project management team headed by a Project Manager (Director-level or above) to coordinate the deployment effort and serve as the single window for interacting with DARPG and NIC. On its part, DARPG has set up a Programme Management Unit (PMU) which has been entrusted with the task of managing the implementation programme across all departments.

9.5.2 Monitoring framework

Monitoring framework for MMPs under NeGP exists. In addition, for closer monitoring, e-Office MMP has a system of

i. e-Office Monitoring Committee [headed by Secretary DARPG for overall coordination and direction],
ii. Project Implementation Committee [headed by the user Department Secretary]
iii. e-Office Product Development Committee [headed by DG, NIC]
iv. Nodal Officer [nominated by the user Department, for project implementation]
v. Project Team [headed by the Project Manager, to assist the Nodal Coordinator].

Mission Leader (e-Office MMP) from DARPG, assisted by Department's Nodal Officer and Project Management Unit, monitors progress on regular basis.

Regular monitoring of the status is key to the success of the project. The following metrics will be regularly tracked and reported:

- Existence of an updated project plan with time lines
- Progress against the plan
- Implementation issues

9.5.2.1 Issue tracker

The nodal officer will maintain an issue tracker listing the issues arising during deployment. The issue tracker should be updated regularly and shared with DARPG.

9.5.2.2 Reporting mechanism

The nodal officer will send a fortnightly report to DARPG on the status of implementation.

9.5.3 Project time estimate

Ministries/ departments have to complete the project in the time lines defined by the ministry/ department at the start of the project. Depending on various parameters like the size/ locations of the department, number of staff, computer knowledge of staff, etc. the project deployment/ implementation period could range from 3 to 9 months.

9.5.4 Digitization guidelines

A document entailing the procedure to be followed by the assistant/ officer responsible for scanning and metadata entry has been prepared after discussion with officers from DARPG, DoPT and DIT. This document is available on www.darpg.gov.in.

A brief on the files to be scanned and the process to be followed for scanning of different files has been suggested, addressing the following logical issues that are involved in the scanning exercise:

- Selection of files to be scanned
- Selection of pages in the file for scanning

ANNEXURES

10 Annexure I: Global trends in e-governance

More countries than ever before are adopting national e-government strategies and multi-year action plans. Governments in even less developed countries have launched initiatives that help them communicate and interact more effectively with increasingly technology-savvy citizens. The buzzword is e-governance 'development' as opposed to 'readiness', which reflects how far governments have actually advanced in this field instead of how ready or able they might be to do so.

From among the global trends that we see today, we have selected the following because of their relevance in the Indian context:

A. Connected government
B. e-governance for economic crisis management
C. Measuring e-government

The following paragraphs describe some of these global trends.

10.1 Connected government

Governments are increasingly adopting the 'government-as-a-whole' strategy to deliver public services. This strategy focuses on ensuring that services provided by multiple arms of the government mesh efficiently and do not inconvenience users. Connected government aims to improve cooperation between government agencies and between government and citizen, allowing for useful and active participation by citizens and other stakeholders.

The strategy recognizes that an increase in the value of services is not possible without consolidating the way the back-end systems and processes work to bring about the front-end service delivery. Services can reach the customer through multiple channels and in multiple forms, but in doing so leverage a unified set of back-end of processes, hardware, software, and enabling standards. This consolidation at the back-end reduces overall cost while the multiple vendors and end-user formats create the competition necessary to maximize customer value.

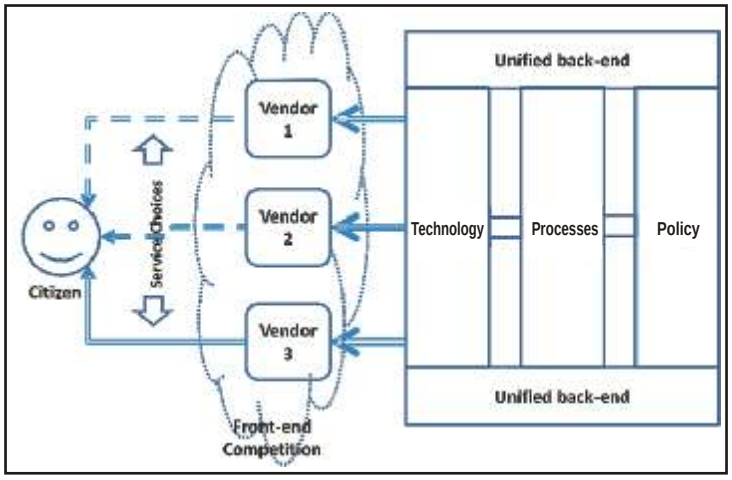


Figure 6: Connected government

Drivers for integration arise at the operational and strategic levels. Typically, these encompass achieving cost savings, improving service delivery and efficiency, and improving control and decision-making.

10.1.1 The three stages of connected government

This path to connected governmentis usually accomplished incrementally, in three stages as shown in the figure below infrastructure, integration, and transformation. These three steps reflect increasing levels of sophistication from a government that provides basic infrastructure to one that is continually pushing for improvement and participative development.

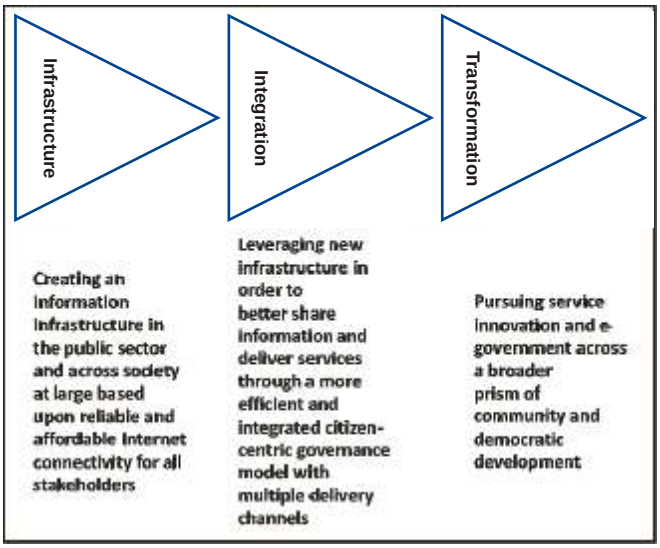


Figure 7: Three stages of connected government

The existence of basic and continually upgraded infrastructure is the foundation that drives back-end integration. However, effectively building on this foundation requires wide and active stakeholder involvement. Strategies for e-governance must not ignore this aspect of participation to ensure that transformation touches citizens individually, organizationally and institutionally.

10.1.2 Integration models

Countries adopt a mix of models to achieve back office integration - in-house delivery, strategic partnerships, and outsourcing. The models chosen also depend on the complexity of the integration - single function integration, cross-functional integration and end-to-end integration.

Governments often examine this list of factors while planning back-office integration:

- Governance: Have governance arrangements been put in place?
- Scope: Is the scope clearly defined?
- Benefits realization: Are expected benefits identified
- Work stream management: Have the delivery work streams been identified?

- Planning: Has a project plan been produced for each work stream?
- Risk management: Have key risks to delivery been identified?
- Culture change: Has the scope of the culture change required been identified?
- Reporting and decision-making: Are adequate reporting arrangements in place?
- Project staffing: Have staff been selected based on their skills, experience and attitudes?
- Communications: Is there a communications plan in place to keep all affected staff and stakeholders informed
- Project management: Is there an agreed and standardized approach to project management covering all work streams?
- Skills development: Have the skills and competencies required for delivering the changes and working in the new environment been identified?
- Knowledge transfer: Have the key outputs from the areas to be integrated been identified?
- Process re-engineering: Have model new processes been mapped?
- Financial management: Is there a robust system for financial management of the project in place?
- Leadership: Is there a clear leader accountable for overall delivery of the project at senior management level?

The level of complexity, expressed in terms of the number of functions within the scopeand the number of organizations involved, is the primary factor influencing a successful outcome. The key variables involved in the delivery of back office integration are the people, process and technology required. Evidence indicates that success or failure is less a technological issue and more a fallout of people factors in particular the ability to change cultures, motivate workers to new ways of working, and provide adequately skilled and competent management and leadership.

Connected governance provides better organized, aligned and integrated information flows, new transactional capacities, as well as new mechanisms for feedback, consultation and more participative forms of decision-making. In the management and delivery of services, it is about driving down costs and improving the effectiveness and efficiency of 'back office' functions, including basic government processes. These multiple facets of connected governance affect stakeholders in different ways and in doing so ultimately provide the drivers for change and the motivation to engage with government in its transformation agenda.

10.2 Efficiency in times of an economic crisis

Can e-government help policy makers to respond to the global financial and economic crisis? Faced with pressure to do more with less, governments find themselves in the position of having to be more efficient and agile in delivering public services in order to meet national development objectives. e-government services bring several important advantages in the current financial and economic crisis, most notably improved efficiency. These benefits, however, need to be assessed against existing constraints and limitations. Potential and actual e-government applications vary across countries and groups. Issues of public service delivery arising from the current financial and economic crisis also vary across countries and group. This high degree of variation is reflected in the many different e-government approaches taken in employment, education, women's empowerment, health care and the environment.

By October 2009, more than 50 countries had committed $2.6 trillion to fiscal stimulus and pledged another $18 trillion in public funds to under writing the financial sector and other industries. The challenge of assessing whether or not the stimulus was indeed working for all and of assuaging public unease about the distribution of these huge sums became an important driver of e-governance initiatives.

In response to the crisis, governments have been exploiting e-governance solutions to enhance transparency and track stimulus spending.

10.2.1 Tracking web sites

Governments around the world have created websites that enable citizens to track stimulus packages and other public funds committed to addressing the financial and economic crisis. The functionality provided on these websites is of the following nature:

- General information on various fiscal initiatives in different sectors
- Information on employment support
- Invitation to citizens to ask questions regarding recovery measures
- Geographic information systems for interactive assistance in locating fiscal allocations
- Systems to help recipients of aid to meet reporting requirements

10.2.2 Low cost solutions

There appears to be no correlation between the resources invested in technology (e.g. in website costs) and the quality and quantity of transparency that is achieved. There is widespread evidence that expressive results can be achieved at very low costs, which in a context of constrained budgets is important for policy makers to know as they prioritize e-government initiatives. This bodes well for reformers at a moment when budgets for investing in technology are limited, particularly in countries in which e-government structures are less developed. In sum, rather than focusing on the expensive implementation of unnecessarily sophisticated technology, governments might provide better value for money by creatively utilizing pre-existing and low cost ICT infrastructures to provide comprehensive and detailed information in a single point of access, and in an accessible and timely manner.

10.2.3 Inter-agency coordination

This aspect has already been discussed while examining the trend of connected government. It requires governments to build up networks to provide services for the public, and to do so in a coordinated fashion.

10.2.4 Moving from transparency to participation

Most government websites that provide information to the public in an attempt to be transparent tend to be one-directional in their provision of information, enabling citizens to track and monitor government spending but not to take a more active role. Few governments are taking advantage of the benefits of interactive technologies. More advanced websites can facilitate two-way interaction with citizens. These websites enable citizens to move from being passive consumers of government- provided information to active participants in the generation of related content.

10.2.5 Open data access

Much of the innovation in the use of ICT to enhance management of crisis-response funds comes from the use of open data by non-governmental actors providing services of high public value without governments having to bear the costs. The aim of the 'open data movement' is to make information freely available to everyone, without restrictions from copyright or patents and in standard machine-readable formats that can be exploited without the use of any given piece of software. Recently, the notion of open data is associated with the notion of government as a 'platform' or provider of data. Advocates for the concept of government as a platform believe that if governments provide data in a non-proprietary and predictable format, third parties are more likely to maximize the value of this information, hence providing services that better respond to users' expectations and needs. To increase this kind of innovative work, the first step is to create a structure to ensure that governments provide data in an appropriate manner. Addressing the problem of data dispersion and the lack of common standards would require governments to implement and enforce policies for shared standards of data gathering and reporting across public agencies at different levels and branches. The creation of the data. gov website by the United States Government is one of the most substantial steps taken so far to provide such a platform for third parties. Launched in 2009, the website functions as a clearing house for data sets generated by the government in an accessible developer-friendly format.

10.3 Measuring e-governance

There are substantial challenges to monitoring the efficacy of e-governance. Most of the statistics are derived from supply side indicators and often by assessing the available government portals alone. Little information is yet available on the demand side of e-governance in terms of the interest and up-take of e-services by those meant to utilize them.

Few surveys exist that would indicate 'how' citizens use these services and 'what' they see as maximizing public value.

10.3.1 Core indicators

A draft list of core indicators under consideration by the United Nations is shown below:

Capacity indicators

i. Percent of staff in government institutions with a computer
ii. Percent of staff in government institutions with Internet access at the office
iii. Percent of government institutions with websites and/or databases
iv. Percent of government institutions with corporate networks (LAN, intranet, extranet)
v. Percent of government institutions offering mobile phone technology accessible platforms
vi. Percent of ICT personnel in government institutions
vii. Number of intrusions and hacking of networks and websites of government institutions
viii. Percent of spam messages per total email messages received
ix. Percent of expenditure on ICT

x. Percent of ICT budget spent on institutional capacity-building and human resource development

xi. Percent of government institutions with access to the Internet

Usage indicators

i. Percent of open source software vis-à-vis proprietary

ii. Percent and type of applications used, e.g. word processing, accounting, data base, website

iii. Percent of staff in government institutions who are trained on use of ICTs

Transformation indicators

i. Percent of government institutions providing services online and type of services

ii. Percent of requests processed using ICTs vis-à-vis overall number of requests

iii. Percent of requests processed online vis-à-vis overall number of requests processed using ICTs

iv. Degree of satisfaction of e-government service users

10.3.1.1 Assessing online services

Any serious effort at understanding the state of governmental online services calls for careful consideration of the types of interaction expected among citizens, businesses and governmental actors, and some assumptions about minimally acceptable interface design across a range of technologies. Evaluation methods need structure, simplification and flexibility in evaluation methods, given the diversity of contexts and options for service provision.

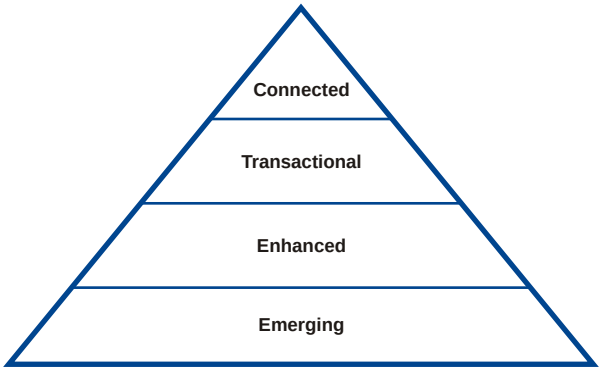


Figure 8: Kinds of online services

10.3.1.2 Stage 1 Emerging information services

Government websites provide information on public policy, governance, laws, regulations, relevant documentation and types of government services provided. They have links to ministries, departments and other branches of government. Citizens are easilyable to obtain information on what is new in the national government and ministries and can follow links to archived information.

10.3.1.3 Stage 2 Enhanced information services

Government websites deliver enhanced one-way or simple two-way e-communication between government and citizen, such as downloadable forms for government services and applications. The sites have audio and video capabilities and are multi-lingual. Some limited e-services enable citizens to submit requests for non-electronic forms or personal information, which will be mailed to their house.

10.3.1.4 Stage 3 Transactional services

Government websites engage in two-way communication with their citizens, including requesting and receiving inputs on government policies, programmes, regulations, etc. Some form of electronic authentication of the citizen's identity is required to successfully complete the exchange. Government websites process non-financial transactions, e.g. e-voting, downloading and uploading forms, filing taxes online or applying for certificates, licenses and permits. They also handle financial transactions, i.e. where money is transferred on a secure network to government.

10.3.1.5 Stage 4 Connected services

Government websites have changed the way governments communicate with their citizens. They are proactive in requesting information and opinions from the citizens using Web 2.0 and other interactive tools. e-services and e-solutions cut across the departments and ministries in a seamless manner. Information, data and knowledge is transferred from government agencies through integrated applications. Governments have moved from a government-centric to a citizen-centric approach, where e-services are targeted to citizens through life cycle events and segmented groups to provide tailor-made services. Governments create an environment that empowers citizens to be more involved with government activities to have a voice in decision-making.

10.3.2 Assessinge-participation

Assessment of e-participation is an area that requires particular attention. It is less well-defined than the quality, scope and utility of online service delivery but no less important to the realization of citizen-centric governance. This is particularly relevant at the local level where individuals are most likely to come into contact with public agencies. To what degree are governments providing supporting information, actively consulting with citizens through online channels, and involving them in decision-making as a matter of course? Each of these aspects of citizen-centric governance must be defined in concrete, measurable terms, and corresponding data collected, in order to monitor the relationship between online services and citizen empowerment. Electronic participation in decision-making entails communication between citizens and government that results in direct citizen input into public policy. Governments elicit feedback from citizens and businesses on government proposals. Alternatively, citizen's groups might introduce their own proposals for creating or amending public policies or programmes to be taken up by political representatives and government officials.

10.3.3 Assessing capacity

e-government development is often impeded by constraints in public sector capacity. Such limitations often originate in the fragmented information systems that often accompany organizational complexity and, to a lesser degree, in deficiencies in ICT skills in the public sector

work force. Future work on measuringe-government capacity within the public sector might usefully expand beyond ICT infrastructure and human resource issues to cover, where feasible, adherence to recommended practice in design of institutional machinery, laws, regulations, policies and standards. Constraints in public sector capacity extend to work processes and the need to measure the connectedness of public agencies behind the scenes. Capacity constraints are very much present on the demand side of the e-government equation as well. Here questions of national ICT development, human capital and service delivery preferences come into play. A general picture of a population's ability to access and take advantage of online services is provided by telecommunication infrastructure indicators that cover Internet usage, diffusion of personal computers, main telephone lines, and number of mobile cellular and fixed broadband subscribers along with literacy and education levels. It is also necessary to ascertain demographic trends. Usage of e-services needs to be measured.

10.4 Global leaders in e-government

The United Nations e-Government Survey of 2010 evaluates member nations on their respective state of e-governance development. The survey computes an 'e-government Development Index' (EGDI) to rank countries. The EGDI is a weighted average of what the UN considers the three most important aspects of e-governance:

- Scope and quality of online services
- Telecommunications connectivity
- Human capital

The scope and quality of online services was determined by assessing (through detailed questionnaires) whether a country had:

- An 'emerging online presence'
- An 'enhanced online presence'
- A 'transactional presence'
- A 'connected presence'

Telecommunications connectivity was assessed based on five indicators:

- Personal computers per 100 persons
- Internet users per 100 persons
- Telephone lines per 100 persons
- Mobile cellular subscriptions per 100 persons
- Fixed broadband subscribers per 100 persons

Human capital is a composite of two indicators:

- Adult literacy
- Student enrollment

1.	Republic of Korea	11.	Singapore
2.	United States	12.	Swerlen
3.	Canada	13.	Bahrain
4.	United Kingdom	14.	New Zealand
5.	Netherlands	15.	Germany
6.	Norway	16.	Belgium
7.	Denmark	17.	Japan
8.	Australia	18.	Switzerland
9.	Spain	19.	Finland
10.	France	20.	Estonia

Table 4: Top 20 leaders in e-governance (UN E-Government Survey 2010)

Korea: Korea scored particularly high in providing e-services and tools for citizen engagement. The ministries of health, education and social welfare scored the highest among ministries.

United States: In the United States, politicians have been inclined to embrace and encourage the use of e-participation and e-tools. They are providing information directly to citizens, which may help citizens to have a better understanding of the issues at hand.

Canada: Research in Canada suggests that using the Internet to transact with government has a positive impact on trust as well as public perceptions of government responsiveness. The country has well-developed portals with a wide spectrum of e-services for its citizens. It has created a favorable environment to encourage citizens to participate in decision-making around political issues and to provide feedback.

United Kingdom: The United Kingdom offers a comprehensive and user-friendly national portal. A tab on the top navigation tool bar titled 'Do It Online' also links to the 16 categories, and specifically to all of the transactions that can be conducted online within these categories. Citizens can text in a key word and receive information via mobile phone on job opportunities, public transport delays, train schedules, nearest passport or doctors' offices, emergency and terror alerts and many other services. The country's Web network also features a wide range of public consultations, mostly available at specific ministry sites; model-practice portals for public tenders and contracts; and e-services at the Government Gateway.

Netherlands: The national portal of the Netherlands offers a gateway to the municipalities of the Netherlands. It also harbors a substantive resource for elderly and disabled individuals wishing to locate online government services.

Norway: The website of the Ministry of Finance of Norway is one of the best portals among government portals.

Denmark: Denmark, like other North European countries, draws on the advantages of a well-developed telecommunication infrastructure and high human resources capacity to be a leader in e-government development.

Australia: The extensive national portal for Australia helps citizens to navigate to key features, government initiatives, services and information. The website prominently features the Social Inclusion website with the vision of society in which all Australians feel valued and are equipped with the opportunity to participate fully in society. New features on the site include smart forms for enrolling to vote and making complaints, and new e-consultation features for public consultation, blogs and a feature called Bright Ideas where citizens can provide new ideas and perspectives on a specific or any subject.

Spain: Spain enjoys a well-developed online e-services portal, Red.es, with clear statements to citizens about its purpose and mission.

France: France has a proven record of accomplishment in integrating back-office operations and providing e-services to citizens in a seamless manner. Information is efficiently transferred between agencies and departments. The country is a front-runner in using the internet to communicate with citizens and regularly receive inputs from them. These inputs are used to shape public policy and law.

11 Annexure II: Recommendations of Eleventh Report of Second Administrative Reforms Commission (ARC)

The second Administrative Reforms Commission, in its eleventh report, has published a set of recommendations related to e-governance.

1. Building a congenial environment

a. Building a congenial environment is a sine qua non for successful implementation of e-governance initiatives. This should be achieved by:

i. Creating and displaying a will to change within the government
ii. Providing political support at the highest level
iii. Incentivising e-governance and overcoming the resistance to change within government
iv. Creating awareness in the public with a view to generating a demand for change

2. Identification of e-governance projects and prioritization

a. Government organizations/ departments at Union and State Government levels need to identify e-governance initiatives which could be undertaken within their functional domain, keeping the needs of the citizens in mind. Such initiatives may be categorized as follows:

i. Initiatives which would provide timely and useful information to the citizens
ii. Initiatives which would not require the creation of a database for providing useful services to the citizens. This may include initiatives where database may be created prospectively without waiting for the updation of historical data
iii. Initiatives which allow for making elementary online transactions including payment for services
iv. Initiatives which require verification of information/data submitted online
v. Initiatives which require creation and integration of complex databases

b. Instead of implementing all such initiatives at one go, these should be implemented after prioritizing them on the basis of ease of implementation, which would generally follow the categories mentioned above in that order. However, suitable modifications in their prioritization may be made by organizations/ departments on the basis of the needs of and likely impact on citizens.

c. Respective Departments of Information Technology at the Union and State Government levels should coordinate between organizations and provide technical support if needed, in the task of identification and prioritisation.

3. Business process re-engineering

a. For every function a government organization performs and every service or information it is required to provide, there should be a step-by-step analysis of each process to ensure its rationality and simplicity.

b. Such analysis should incorporate the viewpoints of all stakeholders, while maintaining the citizen-centricity of the exercise.

c. After identifying steps which are redundant or which require simplification, and which are adaptable to e-governance, the provisions of the law, rules, regulations, instructions, codes, manuals etc. which form their basis should also be identified.

d. Following this exercise, governmental forms, processes and structures should be re-designed to make them adaptable to e-governance, backed by procedural, institutional and legal changes.

4. Capacity building and creating awareness

a. Capacity building efforts must attend to both the organizational capacity building as also the professional and skills upgradation of individuals associated with the implementation of e-governance projects**.**

b. Each government organization must conduct a capacity assessment which should form the basis for training their personnel. Such capacity assessment may be carried out by the State Department of Information Technology in case of State Governments, and the Union Department of Information Technology in the Centre. Organisations should prepare a roadmap for enhancing the capabilities of both their employees and the organization.

c. A network of training institutions needs to be created in the States with the Administrative Training Institutes at the apex. The Administrative Training Institutes in various States should take up capacity building programmes in e-governance, by establishing strong e-governance wings. ATIs need to be strengthened under the NeGP.

d. State Governments should operationalise the Capacity Building Roadmap (CBRMs), under the overall guidance and support of the DIT, Government of India.

e. Lessons learnt from previous successful e-governance initiatives should be incorporated in training programmes**.**

f. The recommendations made by the Commission in its Second Report entitled 'Unlocking Human Capital' in paragraph (5.2.1.6) should be adopted for creating awareness among people with regard to e-governance initiatives**.**

5. Developing technological solutions

a. There is a need to:

i. Develop a national e-governance 'enterprise architecture' framework as has been done in some countries

ii. Promote the use of 'enterprise architecture' in the successful implementation of e-governance initiatives; this would require building capacity of top level managers in all government organizations

6. Implementation

a. All organizations should carry out a periodic independent evaluation of the information available on their websites from the citizens prespective and then re-design their websites on the basis of the feedback obtained.

b. Each government organization should prepare a time-bound plan for providing of transactional information through their websites. To begin with, this could be done by updating the websites at regular intervals, while at the same time, re-engineering the back-end processes and putting them on computer networks. Ultimately, all the back-end processes should be computerized.

c. Complex e-governance projects should be planned and implemented like any major project having several parts / components for which Project Management capability should be developed in-house.

d. Implementation of e-governance projects would involve a detailed 'project management' exercise which would consist of the following activities:

i. Breaking up entire e-governance projects into components/activities
ii. Planning each activity in detail
iii. Allocating resources, both human and financial
iv. Commencement of activities as per the plan and continuous tracking
v. Need-based mid-course correction

e. While implementing transformational programmes like the NeGP, it is essential to recognise the importance of a structured approach to Change Management the people side of transformation. It is necessary for Government agencies, especially the Nodal Ministries and the Administrative Reforms and IT Departments, to design appropriate change management strategies and plans to accompany the e-governance implementation.

7. Monitoring and evaluation

a. Monitoring of e-governance projects should be done by the implementing organization during implementation in the manner in which project monitoring is done for large infrastructure projects. Even after the project has been implemented, constant monitoring would be required to ensure that each component is functioning as per the design.

b. Evaluation of success or failure of e-governance projects may be done by independent agencies on the basis of parameters fixed beforehand.

8. Institutional framework for coordination and sharing of resources/ information

a. The Departments of Information Technology at the Union and State Government levels should provide institutional support to other departments and organizations in implementation of e-governance projects identified and conceptualized by them. The DIT should focus on the following:

i. Conducting an e-preparedness audit for each organization
ii. Enforcing standardization
iii. Assisting in co-ordination when e-governance projects transcend an organisation's functional domain
iv. Carrying out evaluation of e-governance projects
v. Acting as a repository of best practices and encouraging horizontal replication of successful projects
vi. Helping in selection of technological solutions

b. The Second Schedule to the Government of India Allocation of Business Rules, 1961 may be suitably amended to incorporate these elements with regard to the subject matter of 'e-governance'.

9. Public-Private Partnership (PPP)

a. Several components of e-governance projects lend themselves to the Public-Private Partnership (PPP) mode. In all such cases (PPP) should be the preferred mode.

b. The private partner should be selected through a transparent process. The roles and responsibilities of government as well as the private partner should be clearly laid down in the initial stage itself, leaving no room for any ambiguity.

10. Protecting critical information infrastructure assets

a. There is need to develop a critical information infrastructure assets protection strategy. This should be supplemented with improved analysis and warning capabilities as well as improved information sharing on threats and vulnerabilities.

11. The Common support infrastructure

a. As recommended by the Standing Committee on Information Technology in its 58th Report, the State Data Centres (SDCs) should be maintained by Government agencies such as NIC as it involves handling of sovereign data. Further, all data centres at the State level should be subsumed in the SDCs.

b. The implementation of SDCs, SWANs and CSCs should be coordinated to prevent significant time-lag between their operationalisation. Last mile connectivity issues involved in operationalisation of CSCs should also be addressed in a time-bound manner.

c. Gram Panchayats should be involved in monitoring the operation of the Common Services Centres in the first four years of their operation when they are receiving revenue support from government for providing 'Government to Citizen' services. They should proactively engage in making citizens aware of the services provided through the CSCs and encourage them to make use of them.

d. State Governments should make available a large bouquet of G2C services through the CSCs. In doing so, they should adopt the approach outlined in this Report while discussing identification and prioritization of e-governance projects.

e. The Mission Mode Project on Gram Panchayats should be finalized and implemented in a time-bound manner. The MMP should incorporate the recommendations made by the Commission in its Sixth Report entitled 'Local Governance', in paragraphs 3.10.2.8 and 4.5.5.6.

12. Mission Mode Projects

a. State Governments should first provide a clear mandate for governance reforms that must precede the e-governance initiatives. This would involve, if necessary, changing procedures and even structures and statutes. Therefore as a first step, these issues need to be analysed, decision points identified and political approval taken.

b. The major decisions involved in (a) above should be identified by the State Level Apex Committee and approval of the State Government obtained within six months.

c. The Secretaries of the concerned departments should be entrusted with the responsibility of project implementation in unambiguous terms. They should be provided with the requisite authority and resources for project implementation.

d. The business process re-engineering and capacity building exercise should be completed by the concerned department within a maximum period of one year. The IT component of these projects should not be funded until this step is completed.

e. The Annual Performance Appraisal Report (APR) of public servants entrusted with the responsibility of project implementation under NeGP should have a separate entry for evaluation of their performance in this regard.

13. Mission Mode Project on computerisation of land records

a. Surveys and measurements need to be carried out in a mission mode utilizing modern technology to arrive at a correct picture of land holdings and land parcels and rectification of outdated maps.

b. This needs to be accompanied by an analysis of the existing mechanism for updating land records which varies from State to State to be supplanted by an improved and strengthened mechanism which ensures that all future transactions in titles are immediately reflected in the land records. Such a system should be able to detect changes in titles through various means namely, succession, will, partition, gift, survivorship etc and update records accordingly.

c. The dispute resolution mechanism with regard to land titles needs to be strengthened in order to be compatible with the demands made on it.

d. In case of urban areas, a similar exercise needs to be undertaken especially since measurements and surveys have not been done in many of such areas and even record of titles is not available in most cities.

14. Passport & Visa MMP

a. The entire passport issue process needs to be put on an e-governance mode in phases. As the processes which precede and follow the police verification have already been re-engineered

and put in e-governance mode, this may be integrated with online police and citizen identification data bases. In the mean time, the process of police verification should be streamlined and made time bound.

15. Unique National Identity Number/Card

a. The proposed Unique ID Authority should evolve a database of UIDs on the basis of permanent identifiers such as date of birth, place of birth etc. as described in paragraph 7.3.4.3.11.

16. (Para 8.2) Legal framework for e-governance

a. A clear road map with a set of milestones should be outlined by Government of India with the ultimate objective of transforming the citizen-government interaction at all levels to the e-governance mode by 2020. This may be enshrined in a legal framework keeping in consideration the mammoth dimension of the task, the levels of required coordination between the Union and State Governments and the diverse field situations in which it would be implemented.

b. The legal framework should, inter alia, include provisions regarding:

i. Definition of e-governance, its objectives and role in the Indian context;
ii. Parliamentary oversight mechanism;
iii. Mechanism for co-ordination between government organizations at Union and State levels;
iv. Role, functions and responsibilities of government organizations with regard to e-governance initiatives, especially business process re-engineering;
v. Financial arrangements;
vi. Specifying the requirements of a strategic control framework for e-Government projects dealing with the statutory and sovereign functions of government;
vii. Framework for digital security and data protection; and
viii. Responsibility for selection and adoption of standards and inter-operability framework.(45)

c. This legislation should have an overarching framework and be able to provide flexibility to organizations.

17. Knowledge Management

a. Union and State Governments should take proactive measures for establishing Knowledge Management Systems as a pivotal step for administrative reforms in general and e-governance in particular.

12 Annexure III: Change management for e-governance projects

A well-thought out change management strategy will help in planning and executing e-governance projects. A change management framework has three main objectives:

- Provide a solid foundation for change management and the necessary tools necessary to effectively manage change on the project
- Help apply these tools so that the project objectives are realized
- Enable education of the project key sponsors and create change management competency within the project owner department for project implementation

A change management strategy contains 2 phases:

i. Phase 1: Preparing for change
ii. Phase 2: Managing change

12.1 Phase 1: Preparing for change

Phase 1 is an 'as-is' study to understand the current readiness for change of the departments and to identify the key issues. Phase 1 is also for developing the change management strategy around the BPR exercise. Preparation of change should include the following:

Defining a change management strategy: This can be done by identifying change characteristics i.e. assess the size and nature of change, after which assess the readiness of the department for change. Based on the assessment develop a change management strategy including 'team model' and 'sponsor model'.

Setting up the change management team: Identify the members of the change management team and assess team competencies. To fill the gaps arrange suitable trainings for the team.

Developing a sponsorship model: For developing a sponsorship model, sponsors and stakeholders need to be identified. Assess sponsor capabilities/ competencies to manage change. Based on the assessment provide required training for sponsors.

12.2 Phase 2: Managing change

Phase 2 involves designing specific interventions for managing change and capacity building initiatives for effective implementation of the e-governance project. This constitutes:

Develop change management plans: Change management plans include developing of communication plan, sponsor roadmap and coaching plan.

Take action and implement change management plans: Implement the change management plan by developing resistance management plans, training plans and overall master change management plan.

Change management implementation: Integrate change management plan with project activities into project plan. Implement the plans and track progress on regular basis.

Figure 9: Change management framework

12.3 Significance of structured approach to change management

While implementing transformational programmes like the NeGP, it is essential to recognize the importance of a structured approach to change management the people side of transformation. It is necessary for Government agencies, especially the nodal ministries and the Administrative Reforms and IT departments, to design appropriate change management strategies and plans to accompany the e-governance implementation.

12.4 Key steps to implement a change management plan

Create sub-department level forums for exchange of ideas, involving the leadership as communicators and forming a core team of change agents who will be responsible for departmental redefinition, developing department capabilities, providing functional support and implementing capacity building measures.

12.5 Levels of decision-making

For quick decision-making, levels of decision-making should be reduced to three, leading to re-engineering. Quick decision making also necessitates employee empowerment.

12.6 Leadership

The e-governance implementation leader should have strong conceptual and man-management skills. The leader will be required not just to direct but to also act as mentor and coach. Leaders need to change their styles and will have to adopt different approaches to manage people in new work settings in the departments that are characterized by use of modern technologies, and continuous change.

12.7 Manpower planning

Job analysis comprising job description and job specification needs to be reviewed. New responsibilities, tools, changed relationships etc. have to be determined. Restructuring and

redefining job responsibilities would also necessitate determination of additional skills and qualifications required for the job. Number of employees required must be determined to optimize the work overload. Re-allocation of existing work force to the new department structure is a challenge. Reshuffling of workforce can be done based on their skills and competences. This process needs to be supported by a good career planning and performance management system which helps in identification of employee potential and hence placement of right person at the right job.

12.8 Training and development

Training and acclimatization of the personnel at all levels, especially at the lower rung of government departments, is required. It is essential to train all employees in basic computer usage. There should be workshops and seminars for all levels. The employees need to be trained regularly for learning new skills and updating skills to keep in tune with the rapidly changing ICT technology. In line with the training and development, a draft of Master Training Plan has been prepared by DARPG. This master training plan is proposed under National e-Governance Plan (NeGP) for Central Government officials.

12.9 Performance management

The performance management system should be modified to incorporate new competences and skills expected from employees. Periodic reviews of employee performance must be conducted to get desired results. Technology that has restructured work will force those who are responsible for employee development to create ever more flexible and responsive learning and performance solutions.

12.10 Reward system

Departments need to be creative in designing a reward system for employees who are new to the use of ICT to motivate them. Any positive behavior that is in consonance with the requirements of the new job must be re-enforced. Any outstanding efforts, suggestions and innovations can be rewarded/ recognized to boost morale of employees.

12.11 Team work and motivated change management team

Last but not the least, the human aspects of the change management initiatives are more important than the technology innovations. Wherever there is teamwork, with a good and sound human networking, the possibility of adaptation to the needs of change would be stronger. In any given work situation, a motivated team of change management leaders should be identified, who by their persuasive skill would be able to inspire all others, and build up a cohesive teamwork.

12.12 Change management: Frameworks and models

No two projects have similar changes. Therefore, following a recipe for change management is not useful. Changes can fail even when a standard change management process, which succeeded in one project, is followed in another. However, it is important to understand the basic structure for change management in a systematic way, using a framework that helps to construct an approach that will succeed in a particular initiative.

The two widely used change management frameworks are ADKAR and DICE.

12.12.1 ADKAR

Figure 10: ADKAR Model

The ADKAR model consists of five sequential steps or actions:

1. Awareness of the need for change: Understanding why change is necessary is the first key aspect of successful change. This step explains the reasoning and thought that underlies a required change. Planned communication is essential. When this step is successfully completed, the individual (employee) will fully understand why change is necessary.
2. Desire to participate in and support the change: In this step, the individual is able to reach a point where they make a personal decision to support the change and participate in the change. Naturally, a desire to support and be part of the change can only happen after full awareness of the need for change is established. Building desire is partly achieved by addressing incentives for the individual and creating a desire to be a part of the change.
3. Knowledge on how to change: The third building block of the model, providing knowledge about the change, can be achieved through normal training and education methods. Other methods of transferring knowledge, such as coaching, forums and mentoring, are equally useful, so do not limit this process to formal training. Two types of knowledge need to be addressed: knowledge on how to change (what to do during the transition) and knowledge on how to perform once the change is implemented.
4. Ability to implement required skills and behaviors: In the ADKAR model Ability is the difference between theory and practice. Once knowledge on how to change is in place (theory) the practice, or actual performance of the individual, needs to be supported. This can take some time and can be achieved through practice, coaching and feedback.
5. Reinforcement to sustain the change: This final stage of the model is an essential component in which efforts to sustain the change are emphasized. Ensuring that changes stay in place and that individuals do not revert to old ways can be achieved through positive feedback, rewards, recognition, measuring performance and taking corrective actions. This is often the most difficult part of change

management. However, for successful change, reinforcement is essential to ensure that changes are maintained and new outcomes can be measured.

12.12.2 D.I.C.E.

The DICE framework is a tool for assessing the likely success of a project based on objective measures. The acronym DICE stands for:

i. Duration (D): Either the total duration of short projects, or the time between two milestones on longer projects
ii. Integrity (I): The organization's ability to complete a project on time
iii. Commitment (C): Levels of support composed of two factors:
    - C_1 backing from the sponsor and senior executives for the change
    - C_2 support from those who are involved in implementing the change
iv. Effort (E): How much effort will it require to implement (above and beyond business as usual)

The DICE framework builds a continuum:

- At one extreme, there are short projects that are led by a skilled, motivated, and cohesive team. They are championed by top management and implemented in a department that is receptive for the change and has to put very little additional effort. Such projects are very likely to succeed.
- At the other extreme, there are long, comprehensive projects that are executed by a non-expert, unenthusiastic, and disjoint team. Without any top-level sponsors and aimed at a function that does not like the change and has to spend a lot of extra work. Such projects will normally not succeed.

By using a set of simple questions, each factor must be given a score from 1 (very favorable) to 4 (highly unlikely to contribute to success). Next, the DICE score is calculated, applying the following formula: DICE score = D + (2 x I) + (2 x C1) + C2 + E.

The best possible score is 7 and the worst 28. Projects between 7 and 14 are in the “Win Zone” and are very likely to succeed. Projects between 14 and 17 in the “Worry Zone” are risky. Projects with scores over 17 are in the “Woe Zone” and are highly risky.

The DICE framework is used as follows

- Track the score of a project regularly.
- Compare the score of a project with the scores of previous projects.
- Compare the scores of a project before and after making changes to the structure of a project.
- Manage a portfolio of projects. Determine which ones should receive the most attention and resources.
- Provide a common language to discuss change.
- Enforce conversation/ communication.

12.12.2.1 Strengths of the DICE framework

- Hard factors such as the DICE Factors can be measured, communicated and influenced.
- The framework is simple and facilitates effective communication.
- Consistency: Standard way of determining project feasibility
- Using a framework helps managers to evaluate projects consciously.

12.12.2.2 Limitations of the DICE framework

Though useful and amenable to implementation, the DICE framework can face the following limitations:

- Determining the scores is a subjective process.
- Simplicity: The method does not deal with the soft change factors, although they are important.

13 Annexure IV: Government process architecture framework

13.1 The mandate

The eleventh report of the Administrative Reforms Commission focuses on the need to conduct a business process re-engineering exercise in the Government of India. According to the report "the way government institutions conduct their business has evolved over a period of time and is codified in different Statutes, Rules, Regulations and procedural manuals enacted or formulated over a wide span of time (with many processes even continuing from the colonial period). On the other hand, the scope and complexities of governance along with the government machinery have expanded during the last few years. The advent of ICT has led to the recognition that these technologies provide a unique opportunity to redesign government processes not only to provide better services and reliable information to citizens but also to improve efficiency and effectiveness within government institutions. For every function, a government organization performs and every service or information it is required to provide, there should be a systematic analysis of each process to ensure its rationality and simplicity.

13.2 Process architecture and enterprise architecture

The concept of process re-engineering or architecture should be viewed in the context of 'enterprise architecture'. The theory of enterprise architecture views an enterprise along several dimensions strategy, organizational structure, technology, and business (or operational) processes. Enterprise architecture describes each of these views in a distinct yet related manner. Process architecture is one of these dimensions or views of an enterprise.

Every organization can be decomposed into functional units, each of which performs a set of interlinked activities. There are two related but different ways to classify these activities 'functions' and 'processes'. For instance, the accounts function in an organization performs activities related to updating the books of accounts of the organization. Activities that are clubbed together into a 'function' usually require similar skills. The activities constituting a function are not required to be performed sequentially. However, when activities are clubbed together to form a sequential chain they form a 'process'. A process usually results in the output of goods and services to the external world. These outputs are called 'services'. The content and source of data used by a process at various stages is collectively referred to as data architecture'. The network of functions, processes, services, and information requirements is collectively referred to as process architecture.

The fundamental approach behind re-design of government process architecture is to work backward from the vision and goals of the organizations to the desired services and finally to the underlying processes and information requirements. By linking the goals of the organization to the services, it builds a solid rationale for eliminating unnecessary services, introducing new ones, and streamlining existing ones. By further drilling down to the constituent processes, it provides a mechanism for deciding which process improvements will result in maximum value. Next, information requirements are studied because process optimization cannot be carried out without tailoring data inputs that go into processes. Finally, suggestions are made regarding the areas where computerization can help and broad IT application specifications defined.

The goal of process architecture is to rationalize the various activities and information requirements in an organization so that they effectively function together to produce the desired services.

13.3 The 'sector-as-a-whole' view

The Government of India hierarchy consists of organizational units at various levels of aggregation sections, divisions, departments, ministries, sectors, and state and union governments. Also forming part of the hierarchy are autonomous bodies and other affiliated organizations. A process rationalization exercise could span one or more of these organizations.

Since rationalization involves identifying commonalities between processes and eliminating duplicates, the wider the organizational span considered, the more effective the rationalization. As a sector is one of the highest levels of organizational aggregation, the GPAF recommends considering consolidation across a sector for the purpose of process architecture. As amplified later, this consolidation implies evolving a set of harmonized goals across the sector, which when cascaded down helps eliminate artificial and sometimes inefficient boundaries between departments.

A sector is a group of related government entities (such as departments or autonomous bodies) that form a unit across which a process re-architecture initiative is to be seamlessly executed. Because the entities in a Sector are related functionally or share resources with each other, the Government process architecture expects a sector to offer significant opportunities for process rationalization across organizational boundaries. A sector contains a hierarchy of ministries, departments, autonomous bodies, and other organizational entities.

13.4 Methodology

Every sector is required to initiate its own process architecture project and follow the methodology outlined in this Government process architecture document to implement it. A Steering Committee comprising of Executive Heads from the sector will oversee the project and set up a working level group to handle day-to-day execution.

The following are the main phases in the Government process architecture methodology:

I. Establish team and launch project
II. Define the strategic purpose and scope of the architecture
III. Analyze current (baseline) process and data architecture (As-is)
IV. Design the target process architecture (To-be)
V. Evolve IT solution architecture
VI. Formulate the transformation blueprint and its implementation

The figure below graphically represents the phases sequentially.

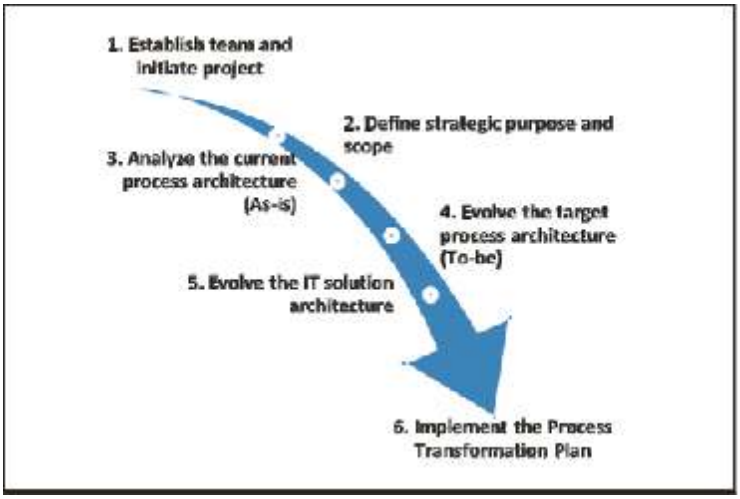


Figure 11: Government process architecture Methodology

The idea of government process architecture must be examined in the context of 'enterprise architecture'. The theory of enterprise architecture views an enterprise along several dimensions strategy, organizational structure, technology, and business (or operational) processes. Enterprise architecture describes each of these views in a distinct yet related manner.

Every organization can be decomposed into functional units, each of which performs a set of interlinked activities. There are two related but different ways to classify these activities 'functions' and 'processes'. For instance, the accounts function in an organization performs activities related to updating the books of accounts of the organization. Activities that are clubbed together into a 'function' usually require similar skills. The activities constituting a function are not required to be performed sequentially. However, when activities are clubbed together to form a sequential chain they form a 'process'. A process usually results in the output of goods and services to the external world. These outputs are called 'services'. The content and source of data used by a process at various stages is collectively referred to as data architecture'. The network of functions, processes, services, and information requirements is collectively referred to as process architecture in the Government process architecture.

The fundamental principle of the Government process architecture is to work backward from the vision and goals of the organizations to the desired services and finally to the underlying processes and information requirements. By linking the goals of the organization to the services, it builds a solid rationale for eliminating unnecessary services, introducing new ones, and streamlining existing ones. By further drilling down to the constituent processes, it provides a mechanism for deciding which process improvements will result in maximum value. Next, information requirements are studied because process optimization cannot be carried out without tailoring data inputs that go into processes. Finally, suggestions are made regarding the areas where computerization can help and broad IT application specifications defined.

The goal of process architecture is to rationalize the various activities and information requirements in an organization so that they effectively function together to produce the desired services.

13.4.1 Launch team and initiate project

This is the first phase in this methodology. It establishes the overall governance framework and a core team required to guide the architecture development. The phase includes activities to structure the overall governance framework, educate Executive Heads on the process and time commitment, select the Executive Sponsor, formulate the overall mission statement for the architecture development, and form the core team to guide the Sector architecture development.

13.4.2 Define strategic intent and scope

In this second phase, the scope and strategic intent of the process architecture is defined. Since Sectors may often cover a vast spectrum of functions or processes, not all of which need to be covered by the project, the focus of the architecture must be defined in the beginning. The phase aims at developing a comprehensive understanding of the relevant Sector goals and desired outcomes, major strategic transformational opportunities, performance gaps, mandates and drivers, and common or mission-specific services. The phase consolidates these factors to lay the context and scope that determine the remaining steps of this methodology. Gathering and analysis of stakeholder needs and business drivers contributes in identifying strategic transformational opportunities.

13.4.3 Analyze current process architecture (As-is process)

The third phase analyses the current or "as is" environment. It links the performance and strategic goals of the Sector with specific processes, functions, services, and data requirements. The key to success in this phase is to analyze and document the requirements to the lowest level of detail necessary to form actionable recommendations.

13.4.4 Evolve the target process architecture (To-be-process)

This phase uses the findings from the previous phases to recommend a desired or target process architecture. The phase involves:

- Identifying the target state processes
- Deriving the information requirements (data architecture)
- Harmonizing the processes with the data architecture to arrive at the target process and data architecture

The objective will be to achieve the strategic transformational opportunities identified earlier, and to maintain compliance with information assurance and security mandates.

13.4.5 Evolve IT solution architecture

This phase includes activities that help the architect describe the IT solutions that are required to implement the target process and data architecture derived in the previous phase. The description is kept at a top-level, which can be used later by application designers to arrive at the detailed specifications of the IT solutions. Accordingly, this phase defines the broad service requirements, interfaces with the external world, system functionality, system boundaries, data entities, and interfaces between systems. As far as possible, the solution description should be kept vendor agnostic.

13.4.6 Implement the process architecture transformation plan

This phase completes the process for creating a sector process architecture. It contains an implementation plan. The phase includes the categorization of findings, the identification of associated transition options, and implementation of the target process, data, and solution architectures developed in process phases II to V. The recommendations are prioritized to form a plan with work-breakdown, schedule, milestones, clear allocation of responsibilities, and a monitoring framework.

13.5 Synchronized approach

The Government process architecture describes a six-phase methodology to rationalize the processes within a sector. Rationalization implies drawing a line of sight between the sector's goals and the operational processes so that redundant processes that do not add value are eliminated, and processes that are essential to the delivery of the critical services are optimized. Information requirements are spelt out in a structured manner that eliminates duplication and ensures security. Finally, by deriving the IT application requirements from the desired processes, the Government process architecture paves the way for managing the overall IT investment optimally.

14 Annexure V: Report on business process re-engineering for e-governance projects

14.1 Introduction

e-Governance is in essence, the application of Information and Communications Technology to government functioning in order to create 'Simple, Moral, Accountable, Responsive and Transparent' (SMART) governance. This new paradigm focuses on the use of information technology to bring public services to the doorsteps of our citizens and businesses. e-Governance comprises decisional processes and the use of information and communications technology for wider participation of citizens in public affairs.

e-Governance has to be comprehensive; mere introduction of the IT component is not an end in itself. Comprehensive e-Governance reforms cover the process; preparedness and the technology; and the people. Introduction of e-Governance needs process engineering as the first step. Unless the processes and procedures and even structures of government are re-engineered, e-Governance projects cannot succeed. Technology comes second, only after the processes have been re-engineered. And ultimately, in order to make the reforms sustainable the people in the concerned departments/ agencies have to internalize the change. This is also one of the reasons why e-Governance projects succeed at the pilot level but 'when up-scaled' they become unsustainable.

The types of services possible through e-Governance can be broadly classified into three categories - providing information, improving processing efficiency and facilitating transactions. Amongst these, providing information is the simplest and the degree of complexities increase as we move from information to transactions. But it is the second and the third category of services that provide maximum convenience to the citizens. The challenge is to cover such services.

14.2 Business process re-engineering definition

Business process re-engineering has been defined as: “fundamental rethinking and radical redesign of business processes to bring about dramatic improvements in performance”.

Business process re-engineering is not - downsizing, restructuring, reorganization, automation, new technology, etc. It is the examination and change of five components of the business - Strategy, Processes, Technology, Organization and Culture.

Re-engineering became very popular in the early 1990s, however, the methodology and approach was not fully understood or appreciated. Many times, improvement projects labeled with the title 'Business Process Re-engineering' were poorly planned and executed. Employees and organizations cringed at the thought of another 'Business Process Re-engineering' experience. The term itself is being used less, or is being altered so that these types of initiatives are not associated with the "Business Process Re-engineering" of the past.

The alternative business improvement methodology is Continuous Process Improvement, which emphasizes small and measurable refinements to an organization's current processes and systems. Continuous process improvement has its origins in Total Quality Management and Six Sigma.

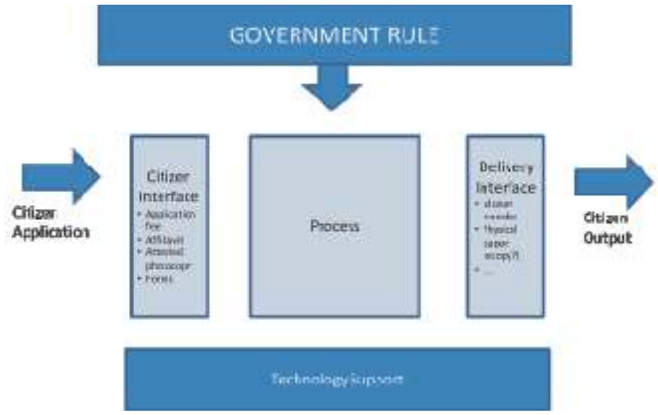
14.3 Government process re-engineering

There is an increased emphasis of usage of information and communications technology in the delivery of public services. Information and communications technology is starting to redefine the landscape of government by changing the relationships (power and responsibility) between players between service providers and industry, amongst the public, private and third party sectors, and between government and citizen.

Government process re-engineering is a necessary condition for the realization of the benefits of e-governance. The importance of process redesign to facilitate and ensure best practices in the realm of e-Governance needs to be emphasized. While deployment of IT solutions increases the efficiency of operations, it will not necessarily deliver the best results unless the processes are reconfigured. There is always a threat that replacement of manual processes by machine-based processes will only lead to 'automated' waste. Process re-engineering ensures that the processes are redesigned to make them most effective and deliver the maximum value to the government, its employees and the citizens.

It is vital that the process redesign, i.e. the critical analysis and redesign of work flows and processes within and between governmental departments, is undertaken if we are to achieve breakthrough improvements in performance. Hence, features of a good Government Process Re-engineering exercise are:

- Innovativeness: It should come up with solutions rather than replicating the manual system.
- Transformation: It should bring about a drastic improvement in the quality of services provided.
- Rationalization of forms and data requirements: Very often the information asked for in the application is rarely used or is already available with the Government. A good Government Process Re-engineering would question the need of all information sought.
- Efficient usage of data: Very often the information sought is available in the government domain. Hence asking for the same is a redundant activity. In a Government Process Re-engineering, one has to differentiate between a government rule and a procedure. Very often it is seen that procedures can be completely revamped through the use of IT.



There are some elements of government that will not change and remain challenging for re-engineering implementers. For instance, government agencies are subject to greater political executive management and oversight. Election cycles and administration changes also affect re-engineering efforts. Legislation, taxpayer accountability, competition for funding and resources, as well as partnerships with international, state, and local governments will continue to challenge government agencies. Perhaps the most critical challenge for government lies in the area of risk-taking. Historically the culture of the government has been to avoid risk. Any successful re-engineering effort will need to embrace change and negotiate some degree of risk. Also, government cannot choose its customers. It is perceived by the staff entrusted with re-engineering that their jobs are under threat from the transformation.

Re-engineering recognizes that a department's processes are usually fragmented into sub-processes and tasks that are carried out by several functional areas within the department. Often, no one is responsible for the overall performance of the entire process. Re-engineering maintains that optimizing the performance of sub-processes can result in some benefits, but cannot yield dramatic improvements unless the effort focuses on redesigning the process as a whole. This drive for realizing dramatic improvements, by fundamentally rethinking how the department's work should be done, distinguishes re-engineering from process improvement efforts that focus on functional or incremental improvement.

Those responsible for a specific process are called process owners. The re-engineering team consists of designers, implementers, and people well versed in technology. The team should be cross-functional, and include members from all impacted functions.

Analyzing a process involves looking at how things are currently done, what changes are occurring, and what new contingencies exist in the current business environment. It requires determining where the process begins and where it ends the boundaries of the process and understanding the underlying reasons why a process is performed a certain way. In executing this analysis, agencies may realize that the dramatic change involved in a more orthodox BPR effort might not be necessary. A slower, incremental approach might be more appropriate. It is not always necessary to go for a total transformation approach.

There are many possible drivers for re-engineering the current processes adopted by the government departments. To address some of these drivers, we can consider the following five scenarios that address some of the typical issues which arise while designing new processes or amending existing processes:

- Redesign existing processes - this is where existing processes are revisited to improve performance. This may also include ceasing parts of processes
- Fundamentally reworking the way a process is executed - here the process tasks and steps may remain largely the same but how and where the process is executed may be changed
- Replaced completely - here the focus is just on gathering existing performance measures, considering migration issues and capturing experience to avoid problems being replicated in the replacement process
- Remove the process - if a process is to be removed or replaced, the focus may be on the overall process performance measures to show the impact of the removal and the boundaries or connections to other processes which have to be changed

- Outsource the process - here the process mapping may need to be at a lower level of detail to ensure that all nuances of the current process are captured.

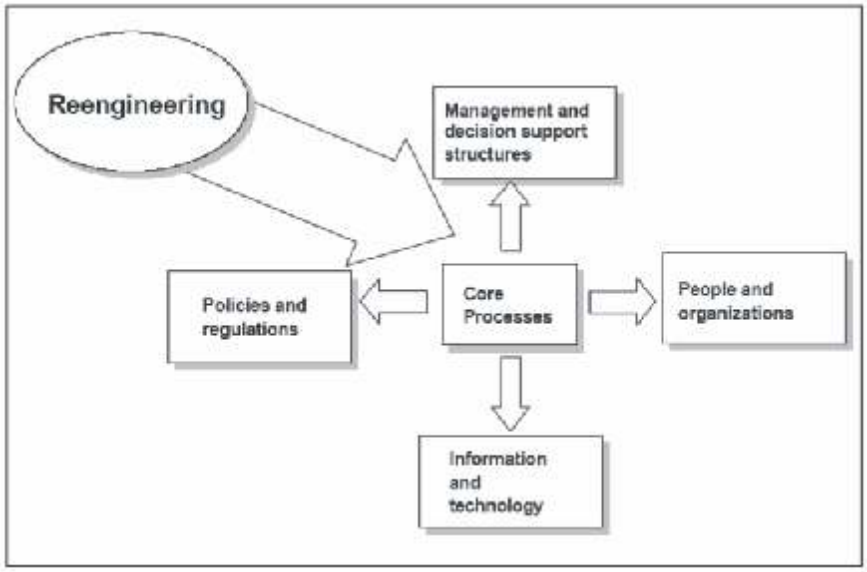
14.4 Government process re-engineering: strategy and framework

Re-engineering starts with a high-level assessment of the organization's mission, strategic goals, and citizen needs. Within this framework, re-engineering focuses on the organization's processes - the steps and procedures that govern how resources are used to meet the needs of the citizens.

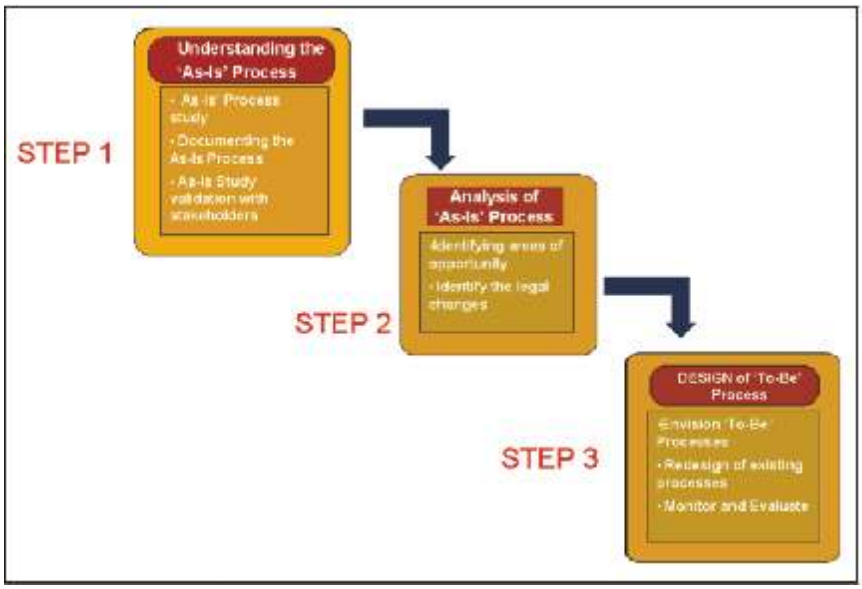
The following are the areas which must drive the Government Process Re-engineering exercise in government departments:

- Service Orientation: Re-orientation of government processes with focus on citizen's expectations and delivering services to his satisfaction.
- Streamlining: The processes between provider (government) and customer (citizen, businesses, employees) need to be reduced leading to faster delivery of services.
- Standardization: Similar type of work should be done in the same way.
- Information Management: Government Information is a strategic resource and should be managed effectively throughout its life cycle (capture, store, process, apply, exchange and reuse).
- Partnerships: Government processes need to be oriented in such a manner, so as to facilitate partnerships among all stakeholders including private sector agencies.
- Enabling Technology: Information and communication technologies should be used for redesigning government processes as well as for delivery of government services.
- Continuous Improvement of Services: The design of government processes should incorporate performance standards and evaluation mechanism to enable continuous improvement of government services.
- Monitoring and Evaluation: Monitoring of e-Governance projects should be done by the implementing organization in the manner similar to project monitoring for large infrastructure projects. Even after the project has been implemented, constant monitoring would be required to ensure that each component is functioning as per design. Evaluation may be done by independent agencies on the basis of parameters fixed beforehand.

Any change may impact several agencies. Re-engineering leads to wide ramification across the organization, as shown in the figure below. Implementation of a re-engineering initiative usually has considerable impacts across organizational boundaries, as well as impact on citizens. For this reason, it requires sensitivity both to employee attitudes as well as to the ramifications of changes in their lives.

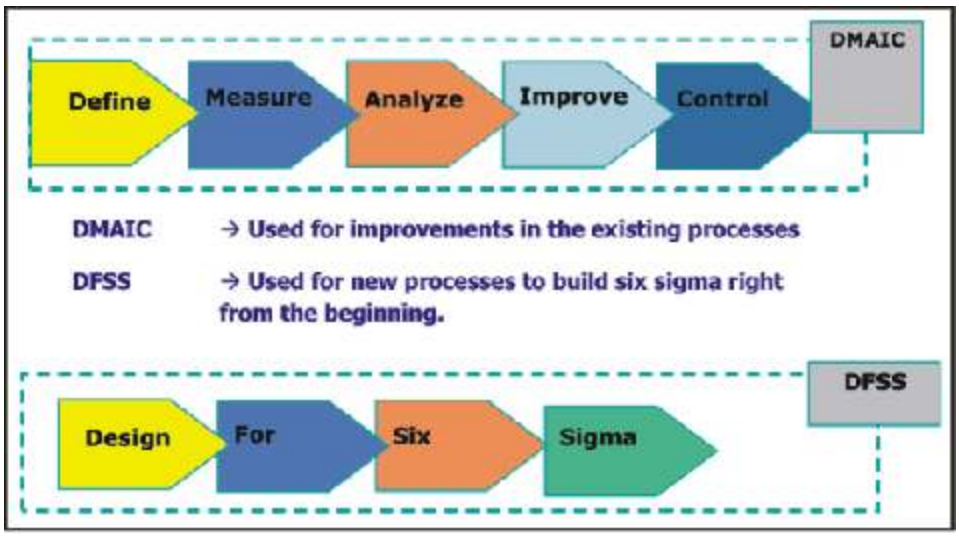


The following tasks as shown in the figure below are part of any functional management approach to re-engineering projects:



14.5 Six Sigma: A framework for government process re-engineering

It is often not possible to wipe the slate clean and start afresh at redesigning a process. However, Six Sigma is a structured methodology that can be used to improve the quality of service and performance. Once the actual performance level for any service is known, its performance level can be improved using Six Sigma. Following diagrams gives the details on the two commonly used techniques for improving process using Six Sigma:



Six Sigma's Define Measure Analyze Improve Control (DMAIC) offers a framework for improving existing processes.

Design for Six Sigma (DFSS), on the other hand, offers a framework that is specifically geared at creating new processes.

Six Sigma brings to Government Process Re-engineering the following elements:

- Proven set of statistical tools and methods to eliminate variation
- Data driven design or improvement
- Use of scorecards, dashboards, metrics and baselines
- Stage-gating to ensure initial assumptions are valid while maintaining vigilance for changes
- Elimination of waste time, effort or resources
- All efforts are linked back to the 'Voice of the Citizen', the strategy and the objectives

14.6 Recommendations of the Second Administrative Reforms Commission

Under the National e-Governance Plan, Department of Administrative Reforms & Public Grievances is responsible for generic process re-engineering and Change Management, which are desired to be realised across all Government departments.

The Standing Committee on Information Technology (2005-06, Fourteenth Lok Sabha) in its 22nd Report entitled 'Implementation of e-Governance Projects' (December 2005) recommended the following:

"The Committee observe that the age-old statutes and regulations governing the manual process will not be suitable for governing the electronic processes which require altogether a different set of legal framework and guidelines to make the e-Governance successful. The Committee, therefore, recommend that a comprehensive review of all relevant statutes and regulations should urgently be done to bring about suitable changes therein so as to make them compatible with the cyber age technology enabling the citizens to obtain maximum advantage of e-Governance projects. They further recommend that possibility of bringing a new legislative mechanism may also be explored to ensure that the implementation of e-Governance projects delivers the citizen-centric services in an effective and successful manner."

The Second Administrative Reforms Commission (ARC) agreed with the views of the Standing Committee. The task involving complete re-engineering of government processes is stupendous. Without providing the legal structure and mandate, it would be difficult to achieve it within any realistic time-frame. In fact, the ARC has recommended that the whole framework of e-Governance should be given a statutory backing. Even in the US, legislation has provided this framework to government entities. Section 202 of Title II of the e-Government Act of 2002 of the US prescribes 'Federal Agency Responsibilities'.

Also, the wholehearted participation of government officials within a department cannot be overemphasized while re-engineering processes as, in the end, the technological solutions would have to be put to effective use only by them. In fact, each government department would be required to constitute a team drawing from expertise available within the department at various levels of functioning.

Once the business processes have been re-engineered and the technological solutions developed, these should be tested in real life situations to assess their functioning. e-Governance projects should not be implemented on a large scale, in the very first instance. To start with, a pilot project should be designed to work in the most difficult circumstances, so that the bottlenecks and shortcomings are identified during the pilot stage itself. There should be flexibility within the initiative to adjust to problems thrown up at the pilot stage and a two-way feedback process should be ensured between the BPR exercise and the pilot stage with the BPR leading to the pilot stage and pilot stage leading to further changes in the BPR. The whole exercise should focus on forms, processes, structures and regulations.

14.7 Case Study: Business Process Re-engineering Project of Income Tax Department

One of the earliest departments to undertake a study of its business processes with the objective of re-designing them using information and communication technology was the Income Tax Department. An external consultant was appointed through a global tendering process for carrying out the business process re-engineering project. The project commenced in May 2007

and was completed with the finalization of 18 reports within eight months. To begin with, awareness was created about the need for such an exercise through meetings with employees as well as their associations/ unions. This was aimed at developing a sense of ownership within the workforce. In the end, more than 800 departmental personnel from Chief Commissioners to Group 'C' employees participated in the exercise. Further, customer views were ascertained through specifically designed questionnaires administered to different categories of taxpayers and consultants. The study included an 'As-is' study phase aimed at mapping of existing processes followed by a 'gap analysis' to identify problem areas and bottlenecks. These, along with best global practices in the field of tax administration, were incorporated in re-designing the processes and suggesting 'To-be' models. Such 'To-be' models and recommendations have been prepared in respect of the following:

- Bulk Operations Division including Regional Processing Centre
- Facilitation Centres and Receipt and Despatch Units
- Changes to PAN/ TAN Issuance and Management
- Assessee Tax Credit Accounting System

The Union Finance Minister announced in his Budget Speech of 2006 about business process re-engineering in the Income Tax Department. A Directorate of Business Process Re-engineering was created within the Department in May 2006 which launched this exercise with the following objectives:

- Re-evaluation of all current processes to remove redundant and obsolete processes and redesign/create new processes
- Identification of stakeholders for information, convenience of filing tax returns & documents, payment of taxes and speedier issue of refunds and the ways in which the department can meet them
- Increase alignment between people, processes and technology
- Enhance employee involvement, skills and departmental creativity

The 18 reports are focused on the key strategic areas of tax administration i.e. pre-assessment, assessment, post-assessment and appellate/ dispute avoidance as well as key enabling processes such as information technology, human resources, infrastructure etc. This project was undertaken in two phases: an 'As-is' study phase and a 'To-be' Model stage. It was conducted at 15 locations which included metros (Delhi, Mumbai, Kolkata), mid-size cities (Hyderabad, Nagpur, Patna, Bhopal, Mysore, Lucknow, Guwahati, Ludhiana and Shillong) and moffusil areas (Hajipur, Mandya, Itarsi).

The business process re-engineering exercise came up with a major recommendation of functionally segregating the working of the department across two broad lines a Bulk Operations Division (BOD), handling routine and repetitive activities, not requiring the use of discretion and amenable to large scale automation and a Compliance Operations Division (COD) to carry out specialized activities. Earlier, the same set of people were doing both these jobs. CBDT accepted a majority of the recommendations.

The lessons which emerged from this project were:

i. the workforce has to believe in the benefits of business process re-engineering through ICT;

ii. There is no shortcut to step-by-step examination of all business processes

iii. Each government department will have its own specific set of design outcomes which would require close interaction between technological solution providers and the domain experts.

14.8 Conclusion

The entire gamut of activities under Government Process Re-engineering could be classified into the following four heads:

- Clear assessment of citizens' needs
- Analysis of the existing processes and identification of the weaknesses and redundancies
- Redesigning of processes and the required changes to be made in the statues and regulations.
- Bringing about changes in forms, processes, structures and statutes.

Accordingly, the major recommendations for government process re-engineering are:

- For every function a government department performs, there should be a step-by-step analysis of each process to ensure its rationality and simplicity.
- Such analysis should incorporate the viewpoints of all stakeholders, while maintaining the citizen-centricity of the exercise.
- After identifying steps which are redundant or which require simplification, and which are adaptable to e-Governance, the provisions of the law, rules, regulations, instructions, codes, manuals etc. which form their basis should also be identified.
- Following this exercise, governmental forms, processes and structures should be re-designed to make them adaptable to e-Governance, backed by procedural, institutional and legal changes.

15 Annexure VI: Extracts from Central Secretariat Manual on e-Office Procedures (e-Manual)

The Central Secretariat Manual on e-Office Procedures (CSeMOP) is the successor to the Central Secretariat Manual on Office Procedures (CSMOP). The CSeMOP, also called the e-Manual, outlines the office procedures to be followed in an electronic environment.

15.1 Need for an e-Manual

There have been several changes in the functioning of Central Government policies particularly with reference to the recent strides in ICT enabled environment which arouse the need to draft a Central Secretariat Manual of e-Office Procedure (e-Manual). As a part of the implementation of the e-Office Mission Mode Project of the National e-Governance Plan and with a view to making systems and procedures as well as monitoring capacity efficient, the Department of Administrative Reforms and Public Grievances has prepared the first edition of the e-Manual. This manual is intended to take care of the present scenario demanding simplified, responsive, effective and transparent working of government offices with the help of state of art, cost effective, technologies available in the market.

15.2 Objective of e-Manual

The efficiency of an organization, to a large extent, depends on evolution of adequate processes and procedures and the ability of its employees to follow them. Accordingly, the efficiency of persons handling secretarial work in an organization can be judged by their ability to dispose of receipts with speed, following the procedure prescribed for the purpose. The ultimate object of all government business is to meet the citizens' needs and to further their welfare, without undue delay. At the same time, those who are accountable for the conduct of that business have to ensure that public funds are managed with utmost care and prudence. It is, therefore, necessary, in each case, to keep appropriate record not only of what has been done but also of why it was so done.

The procedures prescribed in e-Manual attempt to balance the considerations of speed and propriety. In a dynamic context, this balance cannot be rigidly or permanently fixed.

e-Manual has been drafted to create awareness about these processes and practices at various levels in the Central Secretariat and to aid the work of the functionaries in various Departments of the Government of India.

15.3 Structure of the e-Manual

The e-Manual describes the generic processes to be followed across departments in all the Central Government Offices in an e-Office environment. The department specific processes will be built on this generic e-Office processes framework by the respective departments, such that nothing is in contravention of the intent laid down in e-Manual.

Apart from the chapters, certain definitions and terminologies also have been added, including, Accountability trail, Capture, Classification, Dispose/ Close, Document, e-File, e-Office, Final Disposal, Fresh Receipt, Metadata, MIS Dashboard, Portal, System Administrator, User and Version.

The Appendix on forms and templates lays down the standard format of various data fields arranged into a particular order/ sequence to achieve the ultimate objective of removing duplication and increasing efficiency.

15.4 Enhancements in the CSeMOP over the paper based CSMOP

Procedures have been modified keeping the core spirit of paper-based Central Secretariat Manual of Office Procedure (CSMOP) in consideration, but incorporating procedures to support electronic environment and introducing transformational opportunities after due deliberations. The notable changes are as follows:

- Processes to support the electronic file processing: This will include definition of activities to ingest/ digitally capture all modes of inbound information/ receipts, including e-mails. Digital signature and record management and archival process have also been accordingly defined. Further, there will no need to bifurcate bulky files, since only set of pointers will get passed with transfer of files.
- Same file/ document could be put in multiple processes, simultaneously since the system will eliminate need of physical linking and de-linking of files. There will be provision of linking with precedence cases and relevant rules.
- Efficiency in handling communication: Procedure of official communication and its management will be substantially simplified with the help of an electronic system as the need to maintain registers for file and receipt movement will be eliminated as the system will keep an automatic trail/ record.
- Standardization of routine tasks through transactional operations: e.g. regular reporting, checks and verification.
- Improved knowledge management practices: The system will have provision of library of widely used documents such as rules, acts, standing orders, etc. available online with all the officials. All the documents and records in the system will be suitably structured to allow effective search.
- The records will be maintained electronically with the help of ICT system.
- Introduction of standard taxonomy: The standard taxonomy across all the departments will be mandated. The taxonomy will be defined, authorized and controlled centrally for effective exchange of information and integrated knowledge management.
- Provision of flexible MIS and Dashboards
- Provision of effective means of collaboration/ consultation like net meeting, video-conferencing, instant messaging. The discussions and minutes could be effectively captured in the system to considerably reduce the need of physical meetings.
- Visibility of pending work at all levels. Automatic alerts based on predefined rules can be introduced.
- Adoption of functional file numbering system, to allow generation of unique e-File number by the system.
- Availability of back-up files in the server, thus eliminating the need for re-construction of lost/ misplaced files.
- Facility of electronic records management. (Two categories of files have been identified in consultation with the National Archives of India e-Files for permanent preservation and e-Files meant to be kept for 20 years).
- Provision for usage of electronic signatures for authentication of electronic records by users.

16 Annexure VII: Glossary of key terms

This annexure defines some important terms used in e-governance.
Accessibility: Accessibility indicates the degree (ease or barrier) of access and usability of ICT (information and communication technology) systems, services, applications and information via ICT.
Accountability: Accountability is a concept originating from the field of ethics and bearing several implications and various nuances. In the field of governance and public management, accountability implies that those who work in the public sector must be able to demonstrate that their actions are in keeping with legal, moral, organizational or moral authority.
Accreditation: Accreditation is the act of granting credit/recognition, or certifying, that an entity has met specific requirements.
Application: An application program is a piece of software which helps users to carry out given tasks by providing helpful functions, for example programs for word processing, spreadsheet analysis and graphics editing, web browsers and specific applications of individual public administrations. Application programs differ from operating programs as the latter only enable the operation of a computer.
Architecture: Architecture is the collective term representing the structure of the various components of an organizational unit (services, processes, functions, organizational units, information, information sources, computer systems, and technology) and their inter-relationships. The ISO/IEC definition is: *"The fundamental organization of a system, embodied in its components, their relationships to each other and the environment, and the principles governing its design and evolution."*
Attribute: An attribute is a distinct, physical or abstract, named property belonging to an entity or identifier.
Audit: An audit is an independent review and examination of records and activities to assess the adequacy of system controls, to ensure compliance with established policies and operational procedures, and to recommend necessary changes in controls, policies, or procedures.
Authentication: Authentication is the process of determining whether someone or something is, in fact, who or what it is declared to be. In the virtual world, it refers to verifying the digital identity of a person in a communication or transaction with the purpose to confirm that the identity provided belongs to the person he or she claims to be. Thereby, a certain attribute of a user certifies authorized access to systems or data.
Authorization: The term authorization refers to the system controls and surrounding processes that provide or deny parties the capability and opportunity to access systems (i.e. gain knowledge of or to alter information or material on systems).
Back office: The term back office covers the processes and work flows of organizations which, unlike the front-office, are run in the internal part of an organization and which are mostly invisible to the [external] customer or citizen.

Baseline model: A baseline is the reference state (usually current) against which improvements or other changes are compared. The term baseline model is mostly used in the context of process or data architecture to refer to the original architecture that needs to be re-designed.
Best practice: Best practices are solutions, practices and products, which are already realized and successfully used in practice.
Biometrics: Related to information and communication technology the term biometrics describes different biometric security processes for the identification, detection and measuring of physical traits to secure the identity of a person and guarantee secure authentication.
Business process re-engineering (BPR): (re-engineering) is an approach to modernize and restructure main business processes in organizations with the aim to improving effectiveness, efficiency, service performance (productivity), and quality of products and services, whilst at the same time reducing costs and effort, and exploiting the potentials of modern ICT.
Business to business (B2B): In general, the term Business to Business (B2B) stands for business relations between private companies.
Capability Maturity Model: The Capability Maturity Model (CMM) was developed by the Software Engineering Institute (SEI), and is a standard for analyzing and validating software engineering processes in organizations with the objective to enhance and determine necessary actions in project management.
Client: A Client is a computer or a programme that uses different services and resources in a network provided by a server.
Common Criteria: The Common Criteria for Information Technology Security Evaluation is a standard for computer security that provides criteria for the evaluation and certification of the security attributes of computer products and systems in terms of data security and data privacy.
Consumer: A consumer (of a service) is the external entity (e.g. individual, business firm) or internal entity (e.g. function or organizational unit) that utilizes a service.
Content management system: A content management system (CMS) is a software system used to create, edit, manage and publish digital data (content).
Customer relationship management: Customer relationship management (CRM) is the management and the maintenance of relationships with clients and the improvement of company-wide customer related processes.
Data architecture: The term data architecture is used to refer to the information requirements of processes and information sources used to supply the required information.
Data mining: Data mining is the process, usually using ICT, of automatically analyzing and synthesizing large volumes of data to identify patterns and turn raw data into more intelligible information, using tools such as classification, association rules, clustering, etc.

Data protection: Data protection is an emerging need, which is addressed in several initiatives to provide a range of measures to protect personal and sensitive data from unauthorized public access, and to control the flow of such sensitive data and information.
Database: A database is an electronic memory for saving and managing a large amount of data. It is concertedly used by different programs and users and provides fast access to stored data.
Decision support system: A decision support system is a computer supported system that provides relevant information for management in its decision-making role. DSS also supports management in active processes of problem-solving and decision-making.
Digital certificate: In practical terms, a certificate is a digital identity card or a digital certification provided with a digital signature.
Digital divide: Digital divide describes the gap between the haves and have-nots in a society, which arises from the influence and use of information and communication technology.
Digital government: Digital government is the use of information and communication technology to support and improve public policies and government operations, engage citizens, and provide comprehensive and timely government services.
Digital preservation: Digital preservation refers to the ability to display, retrieve, and use digital data collections over a long time-span and in the face of rapidly changing technological and organizational infrastructures and elements.
Document management system: A document management system (DMS) is a software system for storing, tracking, editing, managing and publishing electronic documents.
Effectiveness: Effectiveness is the extent to which an organization or programme accomplishes its mission, goals, and objectives, especially from the perspective of key stakeholders.
e-governance: e-governance refers to the application of electronic means in the interaction between government and citizens; government and businesses as well as in the internal government operations to simplify and improve democratic, government and business aspects of governance.
Electronic Administration (e-administration): e-administration covers the deployment of modern ICT in the public sector administration in order to make the performance and management of business operations more efficient and effective.
Electronic Business: (e-business) deals with all forms of electronic transactions of business processes by the use involving the use of information and communication technology.
Electronic commerce (e-commerce): As a part of e-business, e-commerce deals with the business transaction of goods, information and services over electronic systems in the commercial sector.

Electronic data processing (EDP): EDP is the traditional term for data processing with computers. Nowadays the term information technology or information and communication technology (ICT) is used.
Electronic democracy (e-democracy): e-democracy describes the (technical and organizational) modernization and support of political and democratic processes with innovative information and communication technology.
Electronic file (also electronic record or e-file): An e-file serves the same purpose, and is subject to the same requirements as a conventional file. However, its content is stored and processed electronically.
Electronic form: An electronic paperless form which is, for example, available on a web page and can be completed on the screen.
Electronic learning (e-learning): e-learning encompasses all forms of teaching and learning based on information and communication technology and thus extends traditional methods of knowledge transfer.
Electronic participation (e-participation): e-participation develops and implements forms of participation in decision and policy-making processes for citizens based on the extensive use of information and communication technology.
Electronic payment (e-payment): e-payment is the generic term for accepted systems and processes for the electronic transmission of data required for payment over a network.
Electronic procurement (e-procurement): e-procurement refers to an organization's process of procuring goods and services online, for example via the Internet.
Electronic services (e-services): e-services is a generic expression for services which are handled and delivered electronically.
Enterprise resource planning (ERP): ERP provides support for managing and controlling companies via efficient control, improved business processes and effective resource planning.
Extensible Markup Language (XML): XML is a meta language for the specification of data and documents.
File (record): A file is a factual and task-related arrangement and collection of documents which belong together.
Front-office: The term front office refers to a set of application programmes and (virtual or physical) access points that enable direct contact between customers and service providers. In e-governance, these include web portals, offices for citizens contact, and call centres where citizens get information about public services.
Function: The term function refers to a logically cohesive set of activities an organization performs in order to deliver services.

Gateway: The term gateway refers to technical infrastructure (Middleware), which enables consumers of public services to access electronic public information and transaction services via a centralized software.
Government to business (G2B): G2B describes business processes between private companies and public administrations based on information and communication technology.
Government to citizen (G2C): G2C describes business relationships between public administrations and citizens (as customers) based on information and communication technology.
Government to government (G2G): G2G describes business relationships between various public authorities based on information and communication technology.
Groupware: Groupware are application programmes which support the collaboration of individuals, teams and working groups via group support systems.
Identification: Identification (biometrics, digital identity) is the process of providing the essentials of a person's (digital) identity (name, biometric characteristics such as fingerprint, iris scan, and DNA).
Identity management: Identity management is the process of managing, providing and using identities, especially digital identities.
Information and Communication Technology (ICT): ICT is the collective term for all technical processes and devices for electronic data processing and for the support of communication over electronic media.
Information architecture: Information architecture is a component of an organization's enterprise architecture and refers to a snapshot of an organization's systems and information landscape.
Information Society: Information Society describes an economic system and a form of society which is heavily influenced by, and based on information and communication technology (ICT).
Internet forum: An Internet forum is a discussion platform or forum for a specific field of interest, which is available over the Internet and where users can share different opinions and arguments on topics in open or closed groups.
Interoperability: The term interoperability (organizational, semantic, and technical) in the public sector refers to a smooth interaction of heterogeneous systems, independent organizations and people, and different information with no need to develop specific point-to-point interfaces and agreements.
Knowledge Management: Knowledge management refers to a range of technical systems for the organization and management of explicit and implicit knowledge in companies and public authorities aimed at the efficient identification, storage, processing, spreading and use of knowledge.

Lean government: This term describes a concept to reform a government including its organizational and operational structure by e.g. flattening hierarchies, reducing bureaucracies, reengineering and reducing service portfolios, as well as minimizing manual work.
Metadata: The term refers to structured data, which contain information about other data.
Middleware: Middleware is a technical infrastructure (software), which enables different applications to access resources on shared systems.
Mobile government (m-government): m-governance is the intensive use of mobile technologies and devices in connection with e-governance. The term also includes the transaction of business processes over wireless networks and mobile devices like laptops and mobile phones. The goal is to provide location-independent services.
Networked government: Networked governments refer to the concept of governments being fully inter-linked with their partners and constituencies via modern ICT in order to fulfill their public duties.
Open Source: Open Source software is software which is freely available. Arbitrary copying, use and distribution of the software is permitted.
Organizational unit (OU): An organizational unit is the general term for an entity (within the government) that has a well-defined management structure. An OU can be as small as a section and as large as a sector.
Outsourcing: Outsourcing is a strategy for the delegation of fields of work and services of an organization to an external contractor.
Privacy: Privacy refers to aspects of the private sphere or personal data of an individual or a group. Privacy protection is concerned with keeping an individuals or groups personal and private affairs out of public view.
Process architecture: Process architecture is the collective term representing the various processes (along with their constituent activities), functions, organizational units, and information requirements.
Process flow model: A process flow model is a collective representation of the various processes in an organization.
Process: A Process is a group of sequential activities that results in a service.
Project management: Project management refers to the planning, orchestration, organization and controlling of all activities relevant for a successful project implementation, including coordination and leadership of the project team.
Public Private Partnership (PPP): PPP is a sustainable method of cooperation between private and public institutions for the attainment of corporate objectives. With this form of collaboration, public duties are performed by using synergies and balancing competencies among public and private bodies. This may result in partial or full privatization of public duties.

Public value: Public value is an abstract term for describing the benefits and contributions of public sector activities to social welfare and growth.
Roadmap: Roadmap [in technology road mapping] refers to an extended look at the future of a chosen field of inquiry composed from the collective knowledge and imagination of the brightest drivers of change in that field. Roadmaps communicate visions, attract resources from business and government, stimulate investigations, and monitor progress.
Sector: A sector is a group of related government entities (such as departments or autonomous bodies) that form a unit across which a process re-architecting initiative is to be seamlessly executed. Because the entities in a sector are related functionally or share resources with each other, a sector as a whole presents significant opportunities for process rationalization across organizational boundaries.
Service level agreement: A Service Level Agreement (SLA) is an agreement or contract between a service provider and a customer.
Service: The term service refers to any output produced by an organization for the outside world or for other organizational units (OU) within a parent organization. Services can be consumed by other OUs (in which-case they are called 'internal services') or by the external world (in which case, they are called 'external services').
Single sign-on: Single sign-on is the one-time authentication of a user in a system, which enables access to different services and systems outside the initial system without having to renew authentication at each subsystem.
Software engineering: Software engineering is the part of computer science which deals with the production, use and further development of software systems.
Standard: The term is mostly used for common, well-known and generally approved rules for engineering approaches and solutions in specific contexts
Transaction: A transaction describes the exchange of services (goods and services) or data, and the transfer of rights of disposal.
Transparency: Transparency refers to an aspect of government activity where the customer (e.g. citizen or business) knows at any time what is happening and what comes next in the interaction with a government agency. Transparency is strongly related to trust, privacy and data protection. I.e. transparency is a precondition to establish trust.
Trust: Trust is the degree to which citizens and other groups in society believe they will be treated fairly.
Usability: Usability is the degree to which users are able to use a system with the skills, knowledge, stereotypes and experience they can bring to bear.
Use case: A use case is a formal description of steps or actions between a user (or "actor") and a system which constitute a process.

Value chain: Categorizes the generic value-adding sequence of activities of an organization.
Web 2.0: The term Web 2.0 describes the further development and use of the Internet. An essential part of this concept is communication between users and possibilities of participation whereby supply and change of content should increase the value for others. This reorientation of the World Wide Web is supported by open web technologies and standards. Blogs, Wikipedia, YouTube or Flickr are well-known examples for Web 2.0. Web links.
Web portal: In general terms a web portal indicates an access point in the Internet to a set of information and transaction services, applications, and contacts.
Web log: The term web log (or blog) is derived from "web" and "log" and means an Internet logbook or web diary. These are web pages which are regularly updated with articles by one or more authors (bloggers).
Wikis: Wikis are open content management systems for the creation and maintenance of content which is available over the Internet or Intranet in the form of a web page collection. Users are not only able to read the pages but can also edit them and create new content.

17 Annexure VIII: Bibliography

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