5.10 Development of Local Language Interfaces

5.10.1 As India is a multilingual society, e-Governance initiatives need to provide citizen interfaces in the respective local language. Thus, displays and keys should be based on localized interfaces and multi-media instructions should be commonly used to make the interface accessible in rural areas, where low literacy rates can be an obstacle.

5.11 e-Governance – a Continuing Process

5.11.1 e-Governance represents a paradigm shift in the field of governance reforms. Bringing it about would have to be a continuing process which would require many adjustments. It has been well said that e-Governance is a journey and not a destination.

5.11.2 Dr. APJ Abdul Kalam, former President of India and a visionary in the field of e-Governance has aptly summarized the basic challenge lying before the country in this regard:

“e-Governance, has to be citizen-friendly. Delivery of services to citizens is considered a primary function of the government. In a democratic nation of over one billion people like India, e-Governance should enable seamless access to information and seamless flow of information across the state and central government in the federal set up. No country has so far implemented an e-Governance system for one billion people. It is a big challenge before us.”

Based on the core principles enumerated in the earlier Chapter, the implementation of e-Governance would require the administrative measures mentioned below.

6.2 Building a Congenial Environment

6.2.1 As government organizations function at varying degrees of IT-preparedness, there is first of all a need for building an environment within government organizations at various levels which is conducive to e-Governance. This would require computerization of the

Footnote:
lowest possible unit, as well as building capacity at the individual level which recognizes
the need for reforms in processes using modern technology. The essential elements in this
phase are as follows:

i. **The will to change:** Decades of following a particular mode of governance
   procedure tends to develop inertia and resistance to change. Further, old
   skills and habits will require to be replaced with new skills and new processes
   if e-Governance is to sustain. There has to be a strong will from within the
government itself to crossover from the present system to e-Governance.

ii. **Political support at the highest level:** The vast scope of e-Governance combined
   with the enormous task of process re-engineering which will be necessary at
   various levels and the infrastructural and financial requirement necessarily call
   for commitment to the vision of e-Governance at the highest political level. A
   bottom-up approach will not suffice.

iii. **Incentives:** Weaning government entities from the mechanical application
   of technology to adoption of e-Governance tools will require incentivising
   e-Governance among different entities and individuals. These incentives need
   to be reflected in the budgetary allocations.

iv. **Awareness:** Apart from building capabilities within the government, there is need
   for generating widespread awareness among the public at large. The success
   of e-Governance lies in increasing the number of electronic interactions between
   citizens and the government and not merely in building the infrastructure of
   e-Governance. In addition to governmental measures, a proactive approach
   from civil society groups would also generate greater demand and acceptance
   for e-Governance initiatives. Further, this would also require the adoption of
   ‘quality’ as a mission of governance, as was done in Japan.

v. **Overcoming resistance to change:** e-Governance has to be a collective effort.
   However, in every organization, there are people who would not be convinced
   about its benefits or who would perceive it as a challenge to certain entrenched
   interests. Such resistance would need to be overcome by demonstrating the
   potential benefits of e-Governance; how it strengthens the organization
   internally, creates goodwill externally and above all, enhances citizens’
satisfaction.

vi. **Training and capacity building:** Training would have to be imparted to
government officials starting right from the cutting edge level so that any
apprehensions of intrusive technology is removed and e-Governance is accepted
as an achievable and desirable target.

#### 6.2.2 Recommendations

- **Building a congenial environment is a sine qua non for successful
  implementation of e-Governance initiatives. This should be achieved by:**
  - Creating and displaying a will to change within the government
  - Providing political support at the highest level
  - Incentivising e-Governance and overcoming the resistance to change
  - Creating awareness in the public with a view to generating a demand
    for change.

#### 6.3 Identification of e-Governance Projects and Prioritisation

- **Within the overall framework of governance reform, e-Governance initiatives are
  undertaken to serve some basic needs:**
  - to provide information and services to the citizen which are qualitatively
    superior to those currently available and are provided in a less cumbersome
    manner.
  - to re-engineer governmental processes to achieve the above and also to make
    the system more efficient, transparent, accountable and cost-effective.
  - to strengthen the decision-making process through connectivity and transmission
    and analysis of large amounts of data.

The National Knowledge Commission has recommended:

“To make an immediate impact on citizens it is critical to identify and simplify
important processes and services, say 10 to 20 to begin with, which are currently
cumbersome, bureaucratic and prone to unnecessary delays and even corruption. These
lowest possible unit, as well as building capacity at the individual level which recognizes the need for reforms in processes using modern technology. The essential elements in this phase are as follows:

i. **The will to change:** Decades of following a particular mode of governance procedure tends to develop inertia and resistance to change. Further, old skills and habits will require to be replaced with new skills and new processes if e-Governance is to sustain. There has to be a strong will from within the government itself to crossover from the present system to e-Governance.

ii. **Political support at the highest level:** The vast scope of e-Governance combined with the enormous task of process re-engineering which will be necessary at various levels and the infrastructural and financial requirement necessarily call for commitment to the vision of e-Governance at the highest political level. A bottom-up approach will not suffice.

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  - Creating awareness in the public with a view to generating a demand for change.

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The National Knowledge Commission has recommended:

“To make an immediate impact on citizens it is critical to identify and simplify important processes and services, say 10 to 20 to begin with, which are currently cumbersome, bureaucratic and prone to unnecessary delays and even corruption. These
processes can be simplified and made available as web-based services. Initially, these services could include birth certificate, death certificate, proof of residence, ration/ID cards, etc. Other processes can be added over a period of time. This approach will require each state to implement these processes in concert and learn from each other.”

6.3.2 The Organisation for Economic Co-operation and Development (OECD) has defined four stages of e-government, each one more demanding than the next. These are:

i. **Information:** putting information on web-sites

ii. **Interaction:** allowing citizens to enquire about services, procedures etc. and filling up forms and submitting them online

iii. **Transaction:** allowing payments online

iv. **Transformation:** a mix of all the above and allowing the citizen to participate in governance through ICT.

6.3.3 The basic approach in case of e-Governance projects should be to focus on ‘KISS’: ‘Keep it Small and Simple’ principle. Thus, first of all, government entities should identify projects which would lead to providing useful and timely information to citizens. There is need to go beyond the requirements of Section 4(1) of the Right to Information Act, 2005 and provide accessible information to citizens on the basis of an analysis of their perceived needs. Many of the websites of government agencies do not go beyond rudimentary information and information to be provided under the RTI Act. Further, the websites also suffer from non-update of information. However, many agencies have taken pro-active steps and are providing a wide range of information on their websites. For example, the website of the Delhi Development Authority (DDA) provides information, inter alia, about the following: (i) organizational details and Annual Reports, (ii) planning, (iii) housing, (iv) lands, (v) urban heritage, (vi) procedures, (vii) notices, (viii) sports and greens, (ix) vigilance and (x) information under the RTI Act, 2005. A similar approach has to be adopted by other agencies regarding dissemination of information.

6.3.4 Secondly, those e-Governance projects should be identified which do not require the immediate creation of a historical database for providing services. Such initiatives could include services such as registration of births and deaths, albeit, prospectively. Such services do not require prior creation of a database. However, the design of the interface should be such that it should enable the activity to cater to future needs. Thus, in the case of registration of births and deaths, the activity should lead to building up of a database prospectively from such registrations. Gradually, the past registrations could also be included in the database.

6.3.5 Thirdly, those projects could be identified which allow for making elementary online transactions including payment for services. Payment of electricity bills etc. come under this category. Such initiatives are easier to implement and provide perceptible improvements in the quality of services delivered to citizens.

6.3.6 Fourth, are initiatives which require verification of information/data submitted online. A higher level of technological and process re-engineering required is represented by initiatives which cater to provision of services such as issuing of licences, registration for PDS (Public Distribution System), etc. These initiatives require verification of the data submitted online. Such initiatives should form the next level of implementation.

6.3.7 Finally, those projects should be identified which require creation of and integration into complex databases. These would be represented by initiatives which would involve creation of complex databases such as the National Citizen ID, which would then be linked to other databases and services. It would also include initiatives such as computerization of land records, which would further require integration of various databases including land surveys, manual records, satellite data etc. and involve many agencies.

6.3.8 If all these initiatives are undertaken at one go, then there is every possibility of costly and frustrating delays and creation of ineffective systems which would lead to dissatisfaction. Thus, as mentioned in the chapter on core principles, prioritization is necessary.
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**Fig. 6.1: Benefits from e-government Projects at Different Levels of Sophistication (millon Euros)**

(Source: Based on The Economist, February 16th, 2008)
required to provide early benefits to citizens. The five levels of projects mentioned above also represent the five levels of prioritization based on ease in implementation, time taken in implementation and impact on the citizens. Different organizations could follow the same principles in prioritizing projects. However, another criterion for working out the priority of e-Governance projects could be on the basis of the needs of citizens. In some cases, these may not suggest to adoption of the easy path. Although, it is advisable that projects easy to implement should be taken up first, but at the same time, it is necessary to ensure that the needs of the citizens are also given due importance while prioritizing e-Governance projects. It also needs to be recognized that different government organizations/departments, both at the Union and State Government levels, are best placed to identify the initiatives which would require prioritization on the twin basis of ease in implementation and the needs of the citizens. Thus, a broad framework of initiatives at different levels of complexity would have to be created by the organizations/departments themselves. It would be the role of the respective IT departments to coordinate the activities of various organizations/departments in this endeavour and provide them technical support if needed.

### 6.3.9 Recommendations

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 prioritization.

### 6.4 Business Process Re-engineering (BPR)

6.4.1 As mentioned in the earlier chapter, the processes and structures in government organizations generally owe their existence to and are regulated by statutes, rules, regulations etc. In India, the way government institutions conduct their business has evolved over 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 over time. 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.

6.4.2 The basic idea behind such re-engineering is to avail of the opportunity provided by ICT in transforming governmental processes and not just in modifying them. Michael Hammer and James Champy, who in their landmark book 'Reengineering the Corporation – A Manifesto for Business Revolution' (1993) introduced the concept of business process re-engineering, have the following to say in this regard:

> "Re-engineering is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed."

6.4.3 The business process re-engineering model has been further developed by James Champy (see Box 6.1). Thus, first, there has to be conviction within the organization that process re-engineering will lead to greater efficiency and efficacy. However, this conviction should lead to the realization that ICT offers the opportunity to accomplish it now and not later.

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6.4.3 The business process re-engineering model has been further developed by James Champy (see Box 6.1). Thus, first, there has to be conviction within the organization that process re-engineering will lead to greater efficiency and efficacy. However, this conviction should lead to the realization that ICT offers the opportunity to accomplish it now and not later.
Second, the rationale for each step involved in a process - both for activities which lie totally within the organization and those which involve outside entities – needs to be examined with the express aim of identifying the steps which can be simplified or eliminated altogether. Once this has been accomplished, the need for redesigning the processes ab initio immediately arises. In the case of government organizations, the needs of the citizens assume centre-stage.

6.4.4 Presently, in India, different government organizations, both at the Union and State Government levels, are engaged in carrying out a study of their business processes with the objective of re-designing them using ICT. These efforts are at various stages of planning/completion. One of the earliest organizations to undertake such a study is the Income Tax Department which created a separate Directorate of Business Process Re-engineering (BPR) for the purpose of May 2006. An external consultant was appointed through a global tendering process for carrying out the BPR Project. The project commenced in May 2007 and was completed with the finalization of 18 reports within a time frame of eight months (see Box 6.3). 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
- Assessees Tax Credit Accounting System


James Champy, one of the co-authors of the book ‘Re-engineering the Corporation – A Manifesto for Business Revolution’, has now put forward the idea of ‘X-engineering’ which, briefly, involves the following steps:

i. Step one: To get others within the organization to understand how technology – and particularly the Internet – can really drive the organization to a whole new level of efficiency. In other words, to get others within the organization to understand the potential of technology

ii. Step two: To actually start to redesign all the processes that govern the way the organization does business. In doing so, these processes are to be examined from the very beginning to end - and from both inside and outside the organization - and decide what can be simplified or eliminated. At the core of ‘X-engineering’, then, is the need to understand the rationale for every step in a process.

iii. Step three: To redesign the processes jointly with the entities with which the organization deals with.

iv. Step four: Internal re-engineering should allow the organization to do things which are really important to it. To achieve this, there is need for creating standards. This would include standardization of technology being used.


Government process re-engineering before any computerization – at present the e-governance efforts are primarily based on computerizing age-old processes left behind by British Raj and compounded by a plethora of new layers and silos by Indian bureaucracy, each working within departmental boundaries and pet-priorities. As a result, we are computerising cumbersome processes and hence not commercially benefiting from it. Simply digitizing the existing government processes merely adds an additional layer of expense, complexity, delay and confusion. In our judgment, now is a unique opportunity in the history of India to kneel behind the British Raj and re-engineer and modernize Government processes to build a new India of the 21st century. Hence, it is essential that we first redesign the government processes at cashing the citizens at the centre; providing hassle-free enablers of citizens, businessmen, producers and consumers, replacing the old mistrust and control regime from the British Raj. This redesigning of government processes will drastically reduce the numbers and duration of successive steps required to obtain services. It will also provide traceable records; enable enforcement of individual performance, accountability, efficiency, productivity as well as transparency of policies and processes.


The study has been completed with finalization of 18 reports which 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 mofussil areas (Haiypur, Mandya, Itarsi).

The BPR exercise has come up with, inter alia, 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. Currently, the same set of people is doing both these jobs. CBDT has accepted a majority of the recommendations.

Source: http://www.incometaxindia.gov.in/archive/NoteonbPR_26082008.pdf

The Union Finance Minister announced in his Budget Speech of 2006 about business process re-engineering (BPR) in the Income Tax Department. A Directorate of BPR 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’ information, convenience of filing tax returns & documents, payment of taxes and speedier issue of refunds and the ways in which the organization can meet them
- Increase alignment between people, processes and technology
- Enhance employee involvement, skills and organizational creativity

The study had been in progress. A Manifesto for business Revolution’, has now put forward the idea of "X-engineering" which, briefly, involves the following steps:

Box 6.3: Business Process Re-engineering Project of Income Tax Department
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Government process re-engineering before any computerization – at present the e-governance efforts are primarily based on computerizing age-old processes left behind by British Raj and compounded by a plethora of new layers and silos by Indian bureaucracy, each working within departmental boundaries and pet-priorities. As a result, we are computerizing cumbersome processes and hence not commensurately benefiting from it. Simply digitizing the existing government processes merely adds an additional layer of expense, complexity, delay and confusion. In our judgment, now is a unique opportunity in the history of India to leave behind the British Raj and re-engineer and modernize Government processes to build a new India of the 21st century. Hence, it is essential that we first redesign the government processes keeping the citizen at the centre, providing hassle-free enablement of services. It will also provide traceable records, enable enforcement of individual performance, accountability, efficiency, productivity as well as transparency of policies and processes.


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The BPR exercise has come up with, inter alia, 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. Currently, the same set of people is doing both these jobs. CBDT has accepted a majority of the recommendations.

Source: http://www.incometaxindia.gov.in/archive/Notes/BPR_26082008.pdf

created a separate Directorate of Business Process Re-engineering (BPR) for the purpose of BPR Project. The project commenced in May 2007 and was completed with the finalization of 18 reports within a time frame of eight months (see Box 6.3). 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

Source: http://www.incometaxindia.gov.in/archive/Notes/BPR_26082008.pdf
• Core Processes Redesign – Assessment
• Core Processes Redesign – Post Assessment
• Core Processes Redesign – Appellate
• Risk Assessment System
• Knowledge Management System
• Record Management System
• Human Resources and Infrastructure
• Grievance Redressal Management
• Change Management

6.4.5 The lessons which emerge from this project are three-fold:

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 resulting in re-designing of these processes; and

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

6.4.6 As mentioned earlier, identifying changes in the legal and regulatory framework lies at the heart of business process re-engineering in government organizations, as many of the governmental processes, including the steps involved in them, arise out of the provisions contained in different legislations, rules, regulations and procedural manuals/codes. Process re-engineering in the sense mentioned above would require reformulation of such provisions. This was visualized by the Standing Committee on Information Technology (2005-06, Fourteenth Lok Sabha) in its 22nd Report entitled ‘Implementation of e-Governance Projects’ (December 2005). The Committee took note of the evidence given by a representative of the National Institute of Smart Governance (NISG):

"As regards ‘process’, in most of the departments, we are governed by more than hundred years’ old acts and rules. These are driving inefficiency. If you put the same thing in the computers, a hundred-year-old process, it will get inefficiency in a very efficient way. We will be enlarging that inefficiency. We have to change the process behind this. A lot of legislative effort at the highest level is also needed in this process area…”

6.4.7 The committee engaged in further discussions with various IT Service and Solution providers and 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. They are of the strong opinion that the legal and regulatory changes in the processes would be able to deliver the services more efficiently and effectively and remove a lot of other hurdles of manual regulatory mechanism. 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, if need be, to ensure that the implementation of e-Governance projects delivers the citizen-centric services in an effective and successful manner.”

6.4.8 In response, the Union Department of Information Technology stated in their Action Taken Notes that they along with DAR&PG will jointly examine and review relevant statutes and regulations and the possibility of a new legislation in order that the citizens obtain maximum advantage from NeGP. However, the Committee felt that no concrete steps have been taken regarding a comprehensive review of all relevant statutes and regulations governing manual processes specifically when a different set of legal framework and guidelines may be required for the purpose of e-Governance. In their Thirty Seventh Report (December 2006), the Committee stated the following while expressing their concern:

“In the changing scenario, it calls for immediate attention of the Government. Keeping in view the urgency involved in reviewing the relevant statutes and regulations, the Committee desire that the matter be accorded top priority and pursued to its logical conclusion…”

6.4.9 The Commission agrees with the views of the Standing Committee. The task involving complete re-engineering of business processes in government is in itself stupendous. Without providing the legal structure and mandate, it would be difficult to achieve it within any realistic time-frame. In fact, in a later chapter, the Commission has recommended that the whole framework of e-Governance should be given a statutory backing. Even the US legislation has provided this framework to government entities. Thus, Section 202 of Title

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69Ibid; Recommendation 54.
II of the E-Government Act of 2002 prescribes ‘Federal Agency Responsibilities’ in the following manner:

"a) The head of each agency shall be responsible for:

1) Complying with the requirements of this Act (including the amendments made by this Act), the related information resource management policies and guidance established by the Director of the Office of Management and Budget, and the related information technology standards promulgated by the Secretary of Commerce;

2) Ensuring that the information resource management policies and guidance established under this Act by the Director, and the related information technology standards promulgated by the Secretary of Commerce are communicated promptly and effectively to all relevant officials within their agency; and

3) Supporting the efforts of the Director and the Administration of the General Services Administration to develop, maintain, and promote an integrated Internet-based system of delivering Federal Government Information and services to the public under Section 204.

b) Performance Integration

1) Agencies shall develop performance measures that demonstrate how electronic government enables progress toward agency objectives, strategic goals, and statutory mandates.

2) In measuring performance under this section, agencies shall rely on existing data collections to the extent practicable.

3) Areas of performance measurement that agencies should consider include:

   a. Customer service;

   b. Agency productivity; and

   c. Adoption of innovative information technology, including the appropriate use of commercial best practices.

4) Agencies shall link their performance goals, as appropriate to key groups, including citizens, businesses, and other governments, and to internal Federal Government operations.

5) As appropriate, agencies shall work collectively in linking their performance goals to groups identified under paragraph (4) and shall use information technology in delivering Government information and services to those groups.

c) Avoiding Diminished Access: When promulgating policies and implementing programs regarding the provision of Government information and services over the Internet, agency heads shall consider the impact on persons without access to the Internet, and shall, to the extent practicable:

1) Ensure that the availability of Government information and services has not been diminished for individuals who lack access to the Internet; and

2) Pursue alternate modes of delivery that make Government information and services more accessible to individuals who do not own computers or lack access to the Internet.

d) Accessibility to People with Disabilities: All actions taken by Federal departments and agencies under this Act shall be in compliance with section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d).

e) Sponsored Activities: Agencies shall sponsor activities that use information technology to engage the public in the development and implementation of policies and programs.

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6.4.10 In effect, by providing a clear-cut mandate and prescribing the deliverables, the US law has ensured that business process re-engineering in government entities gets the attention it deserves.
6.4.11 Several experts have underlined the importance of government processes re-engineering:

“re-engineering administrative processes and re-organization of information ownership is the most important step for implementing an e-government application. Government entities would be required to implement substantive reforms in organizational structures, initiate a change in culture and mindset, train and improve skills of its people and put in place appropriate supporting ICT infrastructure to enable online processes that are timely and efficient for both the government entity and the entities it interacts with. Thus, the business processes would in effect be changed fundamentally to allow the efficiency and transparency gains associated with e-government.”

6.4.12 The Commission has considered the issues involved in re-engineering of business processes in government entities. It is of the view that for every function a government entity performs and every service or information it is required to provide, there should be a step-by-step analysis of each process involved in the anvil of rationality and simplicity. Such analysis should incorporate the viewpoints of all stakeholders. After identifying steps which are redundant or which require simplification, the provisions of the law, rule, regulation, instruction, code, manual etc. which form the basis of such steps should also be identified. This should be followed by prioritizing the functions of the government entity. Following this exercise, processes should be re-designed using the tools provided by Information and Communications Technology keeping in mind the objectives of speeding up decision making, maximizing outputs, minimizing costs, improving service delivery and quality of information to be provided etc. This should be accompanied by re-formulation of the legal/regulatory framework which underly governmental processes.

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

6.4.14 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. The 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 which could be redressed before any effort to upscale the project is taken. However, there should be flexibility within the whole 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 laws regulations.

6.4.15 To sum up, the Commission feels that the entire gamut of activities under Business Process Re-engineering could be classified into the following four heads:


b. Analysis of the existing processes and identification of the weaknesses and redundancies.

c. Redesigning of processes and the required changes to be made in the statutes and regulations.

d. Bringing about changes – in forms, processes, structures and statutes.

6.4.16 Recommendations

a. For every function a government organisation 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.

6.5 Capacity Building and Creating Awareness

6.5.1 The success of an e-Governance project would depend on building human capacities in terms of necessary knowledge and skills to conceptualize, initiate, implement and sustain e-Governance initiatives across government as also on the ultimate use by citizens.
6.4.11 Several experts have underlined the importance of government processes re-engineering:

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of the facilities created. The ‘India: e-Readiness Assessment Report 2006’ has prepared an e-readiness status report for the States using the three major components of ‘environment, readiness and usage’. In this Report, the general e-readiness of the Indian States along with their status after allowing for a weightage of 10% for size and population has been presented as follows (Table 6.1):

<table>
<thead>
<tr>
<th>e-Readiness</th>
<th>e-Readiness_mod (with size friction points)</th>
<th>Levels</th>
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6.5.2 Clearly, the States that are lagging behind outnumber those that have achieved higher levels of readiness. This implies that the speed and success in implementation of various projects will vary significantly across States. An important element for improving the e-readiness of any State would be the capacity building of its employees in general and those dealing with e-Governance initiatives, in particular.

6.5.3 As stated earlier, e-Governance represents a paradigm shift in the manner of delivery of government services. This shift requires considerable enhancement in managerial and technical capabilities of government organizations as well as of government servants. Above all, it requires a basic change in the outlook and functioning of government, so that it becomes citizen-centric rather than process-centric. This would necessarily involve a comprehensive capacity building exercise.

6.5.4 The Commission in its Tenth Report has placed emphasis on capacity building of civil servants at all levels through compulsory induction and mid-career trainings. The Commission has earlier stated that a major part of e-Governance is ‘governance reforms’ and only a small part is ‘ICT’. Therefore, capacity building efforts should also be proportionately allocated. e-Governance reforms require a wide range of capabilities – conceptualization of reforms, policy analysis, preparing road maps, alternatives analysis, prioritization, application of technology, project implementation etc. These capabilities can be classified into four broad categories:
of the facilities created. The ‘India: e-Readiness Assessment Report 2006’ has prepared an e-readiness status report for the States using the three major components of ‘environment, readiness and usage’. In this Report, the general e-readiness of the Indian States along with their status after allowing for a weightage of 10% for size and population has been presented as follows (Table 6.1):

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<td>Jammu &amp; Kashmir</td>
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(L.1 indicates higher state of e-readiness)

6.5.2 Clearly, the States that are lagging behind outnumber those that have achieved higher levels of readiness. This implies that the speed and success in implementation of various projects will vary significantly across States. An important element for improving the e-readiness of any State would be the capacity building of its employees in general and those dealing with e-Governance initiatives, in particular.

6.5.3 As stated earlier, e-Governance represents a paradigm shift in the manner of delivery of government services. This shift requires considerable enhancement in managerial and technical capabilities of government organizations as well as of government servants. Above all, it requires a basic change in the outlook and functioning of government, so that it becomes citizen-centric rather than process-centric. This would necessarily involve a comprehensive capacity building exercise.

6.5.4 The Commission in its Tenth Report has placed emphasis on capacity building of civil servants at all levels through compulsory induction and mid-career trainings. The Commission has earlier stated that a major part of e-Governance is ‘governance reforms’ and only a small part is ‘ICT’. Therefore, capacity building efforts should also be proportionately allocated. e-Governance reforms require a wide range of capabilities – conceptualization of reforms, policy analysis, preparing road maps, alternatives analysis, prioritization, application of technology, project implementation etc. These capabilities can be classified into four broad categories:
6.5.5 Each one of these categories has a hierarchy of skills/competencies/capabilities – ranging from operational capabilities to managerial capabilities. The capabilities required can be presented in the form of a matrix, as shown in Table 6.2.

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<thead>
<tr>
<th>Conceptual</th>
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<td>Broad appreciation of technology</td>
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<tr>
<td>Understanding of external environment</td>
<td>Knowledge of rules and regulations</td>
<td>Strengths and weaknesses of a technology</td>
<td>Project management</td>
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<td>Appreciation of citizens’ need</td>
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<tr>
<td>Assessment of internal strength</td>
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6.5.6 It may not generally be feasible to develop all the required competencies within an organization. The technological capabilities in the field of ICT advance rapidly often rendering existing technology obsolete. It is therefore advisable that these capabilities are outsourced. Very large organizations may develop some in-house technological capabilities, but even they would, on occasions, have to take recourse to outsourcing. However, conceptualisation and subject matter knowledge are best developed among the employees of an organization. Similarly, it is advisable to develop the project management capabilities within an organization as it leads to ownership of the project and hence better implementation.

6.5.7 Thus, with the matrix given in Table 6.2 as the background, each government organization must carry out a capacity assessment and on that basis the personnel of the organization should be trained. Each organization should prepare a roadmap for enhancing the capabilities of its individuals as well as to develop organizational capabilities.

6.5.8 It needs to be clarified that there is a popular but erroneous misconception that ‘Capacity Building’ relates only to training and imparting new skills to employees and improving their existing skills. In fact, ‘Capacity Building’ is much more than training, and has two major components, namely:

- Individual development
- Organizational development

6.5.9 ‘Individual Development’ involves the development of human resources including enhancement of an individual’s knowledge, skills and access to information which enables him/her to improve performance and that of the organization. ‘Organizational Development’, on the other hand, is about enabling an organization to respond to two major challenges that it has to confront:

- External adaptation and survival
- Internal integration.

6.5.10 External adaptation and survival has to do with how the organization copes with its constantly changing external environment. This involves addressing the issues of

- mission, strategies and goals
- means to achieve the goals which includes selection of appropriate management structures, processes, procedures, systems of incentives and rewards etc.
- measurement, which involves establishing appropriate key result areas or criteria to determine how well individuals and teams are accomplishing their goals.

6.5.11 Internal integration is about establishing harmonious and effective working relationships in the organization, which involves identifying means of communication to develop shared values, power and status of groups and individuals, and rewards and punishment for encouraging desirable behaviour and discouraging undesirable behaviour.
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6.5.11 Internal integration is about establishing harmonious and effective working relationships in the organization, which involves identifying means of communication to develop shared values, power and status of groups and individuals, and rewards and punishment for encouraging desirable behaviour and discouraging undesirable behaviour.
6.5.12 The task of building organizational capacities is more complex and demanding than the requirement of skills upgradation of individuals partly on account of the hitherto complete neglect of this aspect and partly due to more complex initiatives required to achieve this goal. Organizational capacity building is, to a large extent, dependent on formulation of the appropriate recruitment and personnel policies and finding the right mix of ‘in-house’ provision of services and out-sourcing of functions. Organisational capacity building would include designing appropriate structures within the organisation, re-engineering internal processes, delegation of authority and responsibility, creation of enabling legal framework, developing management information systems, institutionalising reward and punishment systems and adopting sound human resource management practices.

6.5.13 Organisational capacity building should not be taken to mean that the organisation acquires all the skills and knowledge required to perform its tasks. With globalisation and liberalisation, a large number of agencies have developed certain specialised skills. Prudence demands that any organisation should have the option of tapping such skills rather than spending a large amount of resources in acquiring such skills themselves. Evolving partnerships, developing networks and outsourcing functions are all methods of enhancing the capability of an organisation.

6.5.14 The corporate sector has made efficient use of ICT tools in their internal management processes. Sharing experiences with them, having exchange programmes, seeking their expertise etc. could help in enhancing the capabilities of government organization. Apart from the institutional arrangements made at the State Government level for capacity building among Government officers, there is need to take advantage of competencies available with private institutions, and communication experts for augmenting the efforts towards capacity building of both institutions and individuals in the government. Further, government servants should be motivated to innovate and use creative methodology.

6.5.15 DIT has taken the initiative to prepare Capacity Building Roadmaps (CBRMs) for all the States which clearly identify the mechanisms/institutions, capacity building and training needs and the means of fulfilling them along with the financial requirements. The Capacity Building Guidelines for developing institutional mechanism was prepared by DIT in consultation with the Planning Commission and was issued to all the State Governments and UTs. These guidelines take cognizance of the fact that States are at different levels of readiness for e-Governance and have different levels of aspirations. Capacity gaps are therefore not viewed in an absolute context but relative to the goals set out by the respective State Government for itself. The capacity gaps that need to be addressed include engaging experts, developing skills and imparting training. The Capacity Building Scheme is aimed at addressing the above challenges in a holistic manner including support for creation of State e-Governance Mission Teams (SeMT), and Project e-Governance Mission Teams (PeMT). The guidelines identify three specific capacity gaps:

a. Lack of Personnel with appropriate background and aptitude
b. Inadequate skills sets of personnel already deployed
c. Lack of appropriate institutional framework to handle the programme.

6.5.16 In these guidelines, the approach towards capacity building at the State level is proposed as follows:73

- The State Government should designate a State Nodal Organisation, which would be responsible for initiating and implementing capacity building. This State Nodal Organisation would be providing services like selections, contracting of external agencies/persons/services and administrative support to SeMT.

- The State Government should release the funds to this designated State Nodal Organisation.

- The State Government should have the option of either designating an existing agency or setting up a new agency as a State Nodal Organisation. If the State Government so decides, it can directly undertake capacity building. However, this may entail operational bottlenecks and should, ordinarily, not be resorted to.

- If the State decides to form a new agency for the purpose, the same needs to be registered, either as a company or as a society. (In such a case, the State Government as an interim measure may transfer the funds to an appropriate body and ensure that this body would transfer the funds to the new/designated State Nodal Organisation after it gets registered as a Company/Society).

- If the State decides to designate an existing agency as a State Nodal Organisation, the following issues need to be kept in view:
  a. It should be a State Government owned/controlled agency working in the area of Information Technology and registered as a company/society.
  b. The company/society should be a “going” concern in a healthy financial condition and the net-worth of the company/society should be positive.

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76ibid
c. e-Governance and the capacity building activity should find necessary prominence within the organization and not get relegated to insignificance by other activities.

d. The agency should have its own infrastructure and logistics support.

e. It is possible that the designated agency for capacity building is/would also be involved in the implementation of e-Governance projects. Therefore, there is a potential conflict of interest in the two roles. As a part of SeMT, the role would be to monitor and oversee the project implementation and as an implementation agency it would be involved in actual deliverables. In such a situation, due care would have to be taken to ensure that the SeMT members, though technically working for a designated agency, are not involved in e-Governance implementation work in any manner.

6.5.17 Accordingly, it has been proposed that capacity building by the State Governments should be undertaken through an appropriate combination of the following two options:

a. From sources present within the Government or PSUs or any State agency or central agency, with the required background and experience. In such cases, where required, posts may be created in the concerned department or State Nodal Organisations identified as a vehicle for setting up the capacity and personnel to be taken on deputation. For domain expertise in PeMT, re-employment of retired personnel could also be considered.

b. From outside the Government set-up - by engaging consulting agencies having requisite skill sets. While doing so, the State would follow an appropriate selection process. Alternatively, the State could avail of the advice and assistance of NISG to undertake this task on their behalf. However, such support would be under the overall direction of the State Government. Additionally, if considered necessary and with the concurrence of the Planning Commission & DIT, contracts could be entered into with individuals.

6.5.18 The Commission would like to re-emphasise the importance of building in-house capacity in government departments for the implementation of e-Governance projects. The first step in this regard would be to make an assessment of present capacity levels followed by preparation of a road map for enhancing these capabilities both in respect of employees and organizations. Most States have well-established Administrative Training Institutes (ATIs), with adequate infrastructure for conducting training programmes for Government officials.

6.5.19 The Commission in its Tenth Report entitled ‘Refurbishing of Personnel Administration’ has recommended that there should be mandatory induction training for all government servants. The Commission would like to emphasise that all these training programmes should have an appropriately designed ICT module.

6.5.20 Such institutional approaches apart, there is also need for learning from the successful implementation of e-Governance programmes. For example, the Bhoomi project in Karnataka showed how a well-defined training plan made a major contribution to project success. Under a well-planned and well executed training programme, more than 10,000 government officials and over 700 village officials were trained on data preparation and validation process extending to a period of 60 weeks. Similarly, the experience of Andhra Pradesh shows that creation of adequate number of e-Champions by taking senior officers through a 10-week programme on e-Government is an important step in building a corpus of trained government officers who can implement the e-Governance vision embodied in the NeGP.

6.5.21 Along with capacity building efforts in Government, there is also a need to make the people aware about the benefits of e-Governance and to make them more conversant with technological interfaces introduced through e-Governance projects. This mobilization programme should be able to use resources like internet, television, radio including community radio and the local language press. The contents of the communications for generating such awareness should be tailored to suit local environments. This would take e-Governance to the interior parts of the country and will be able to provide public services to important sectors such as health, education, agriculture, environment and business related services. The Commission, in its earlier Reports, has also focused on generating awareness among the people, especially the rural population for successful implementation of programmes. Thus, in its Second Report entitled ‘Unlocking Human Capital’ (on the implementation of NREGA) it had recommended (paragraph 5.2.1.6):

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The Commission is of the view that a similar approach may be adopted in creating awareness among the people with regard to e-Governance initiatives.

### 6.5.22 Recommendations

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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.

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### 6.6 Developing Technological Solutions

#### 6.6.1 Adopting/Developing the Right Technological Solution

6.6.1.1 Modern ICT helps in the governance process by providing a spectrum of technological solutions. The rapid strides which have been made in development of Information and Communications Technology in recent years have made a wide variety of technological options available. Some of these novel technologies are shown in Box 6.5.

6.6.1.2 However, it would not be possible to prescribe a definite technology for any specific government function as firstly, technology changes rapidly and secondly, different technologies may be required under different circumstances. Therefore, once the business process re-engineering has been decided, the next logical step would be to design the technological interface. In doing so, it would be advisable, that the organizations adopt the best possible technology, subject to the standards, resource limitation and needs of the project. In-house competencies would have to be developed which would be able to demand technological solutions to match the organisation’s needs and not go for off-the-shelf solutions. It needs to be recognized that government organizations in most cases would need solutions which are substantially different from those needed by the private sector. Ideally the technological solution should ensure the following:

- i. Accessibility (at the citizens’ doorsteps)
- ii. User-friendly interface
- iii. Cost-effectiveness (e.g. making use of open source software)
- iv. Efficiency
- v. Flexibility
- vi. Scalability
- vii. Sustainability
- viii. Reliability and security.

#### 6.6.2 Standards and Inter-operability

6.6.2.1 As mentioned in an earlier chapter, different government organizations at Union and State levels have, in the past, implemented several e-Governance projects with varying
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Implementing e-Governance Reforms

The main driving force behind such initiatives has been either providing better services to the common man or simplifying internal governmental processes to increase their efficiency. Different organizations have adopted different technological platforms and arrived at their own solutions. Although many of the initiatives address concerns which are common across States, or across different departments or organisations, solutions have generally been developed in isolation with very little commonality or coordination. This has led to duplication of efforts on the one hand and difficulty in networking among organizations on the other. There is need to address such divergences so that successes are replicated across States and failures are eliminated. This calls for formulation of norms for standardization and inter-operability at the national level.

6.6.2.2 Efforts are already underway to arrive at such standards at the national level. An institutional mechanism has been put in place by the Department of Information Technology (DIT) with representation from Government, BIS, subject matter experts in Industry, domain experts, academia, NASSCOM, etc. The National Informatics Centre (NIC), a constituent of DIT, is steering and managing the standardization activity.30

6.6.2.3 The first task in this regard is the creation of a set of standards and policies, which would describe the way in which different organizations would interact with each other. This is generally known as an Inter-operability Framework. The purpose of this Inter-operability Framework is to facilitate inter-operability with other systems as necessary, while at the same time, providing flexibility in the choice of hardware and systems and application software used to implement solutions. The Inter-operability Framework normally comprises a set of policies, standards and guidelines pertaining to maintenance and exchange of data technological protocols etc. Some of the domains which are being addressed presently are:

- Information Access, Presentation & Archival
- Data Integration
- Data Interchange
- Meta Data
- Network
- Security

6.6.2.4 The second task is to create an 'Enterprise Architecture Framework' which would identify opportunities to simplify processes and unify work across the agencies and within the lines of business of the Union and State Governments. The outcome of this effort will be a more citizen-centered, customer-focused government that maximizes technology investments to better achieve project outcomes.

6.6.2.4.1 "Enterprise Architecture (EA) is the process of translating business vision and strategy into effective enterprise change by creating, communicating and improving the key principles and models that describe the enterprise's future state and enable its evolution. The scope of the enterprise architecture includes the people, processes, information and technology of the enterprise, and their relationships to one another and to the external environment. Enterprise architects compose holistic solutions that address the business challenges of the enterprise and support the governance needed to implement them."31

6.6.2.4.2 EA is a management engineering discipline presenting a comprehensive view of the enterprise, including strategic planning, organizational development, relationship management, business process improvement, information and knowledge management, and operations. The Architecture of an organization consists of models, diagrams, tables, and narrative, which together translate the complexities of the agency into simplified yet meaningful representations of how the agency operates (and intends to operate). Such operations are described in logical terms (e.g., business processes, rules, information needs and flows, users, locations) and technical terms (e.g., hardware, software, data, communications, and security standards and protocols). EA provides these perspectives both for the enterprise's current or "as is" environment and for its target or "to be" environment, as well as a sequencing plan that charts the journey between the two.32

6.6.2.4.3 A well constructed Enterprise Architecture of an organization helps in understanding the linkage between vision, the mission and the functions of an organization. This exercise captures the inter-dependencies between the different parts of an organization. It helps in appreciation of the linkage between the objectives and activities of an organisation and the relationships between the organizational processes and the technology. In the end, some of the standards followed by State Governments.

Box 6.4: Common Standards

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30Source: The details of activities undertaken have been provided by NeGP PMU.


32http://www.g0014779.com/standardfeatures/
degrees of success. The main driving force behind such initiatives has been either providing better services to the common man or simplifying internal governmental processes to increase their efficiency. Different organizations have adopted different technological platforms and arrived at their own solutions. Although many of the initiatives address concerns which are common across States, or across different departments or organisations, solutions have generally been developed in isolation with very little commonality or coordination. This has led to duplication of efforts on the one hand and difficulty in networking among organizations on the other. There is need to address such divergences so that successes are replicated across States and failures are eliminated. This calls for formulation of norms for standardization and inter-operability at the national level.

6.6.2.2 Efforts are already underway to arrive at such standards at the national level. An institutional mechanism has been put in place by the Department of Information Technology (DIT) with representation from Government, BIS, subject matter experts in Industry, domain experts, academia, NASSCOM, etc. The National Informatics Centre (NIC), a constituent of DIT, is steering and managing the standardization activity.86

6.6.2.3 The first task in this regard is the creation of a set of standards and policies, which would describe the way in which different organizations would interact with each other. This is generally known as an Inter-operability Framework. The purpose of this Inter-operability Framework is to facilitate inter-operability with other systems as necessary, while at the same time, providing flexibility in the choice of hardware and systems and application software used to implement solutions. The Inter-operability Framework normally comprises a set of policies, standards and guidelines pertaining to maintenance and exchange of data technological protocols etc. Some of the domains which are being addressed presently are:

- Information Access, Presentation & Archival
- Data Integration
- Data Interchange
- Meta Data
- Network
- Security

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it provides an overall view of the complexities involved in the organizational processes. Thus, EA is not an end in itself but a means to optimize the contribution of different parts of the organisation. It also serves as an ideal platform for initiating the business process re-engineering exercise. The overall objective of having such an architecture is to have better decision making.

6.6.2.4.4 For the past two decades, Enterprise Architecture (EA) has been implemented successfully, by several large private sector organizations. But, in recent times, many government organizations have sought to develop frameworks, models, and reference architectures, for implementing and managing e-government services, and information and technology resources, in the form of enterprise architectures. For example, The Clinger-Cohen Act (USA) requires that every Federal agency develop an Enterprise Architecture.

6.6.2.4.5 The challenges faced by the Union, State and local government agencies in aligning and organizing their processes and integrating their e-government services are numerous, especially in a scenario where there are no fixed, cross-organizational procedures. Enterprise architectures provide a vital means to a desired end – successful delivery of e-Governance applications, ensuring inter-operability and avoiding duplication of efforts.

6.6.2.4.6 In the Indian context, e-Governance applications have already been introduced in many government agencies. As these applications evolve and become more sophisticated, resulting in fundamental process transformation, and as they extend beyond a single government agency, their success will become more dependent on whether they are defined and introduced within the context of enterprise architectures. At present, reforms are not based on a systematic enterprise architecture. One reason for this state of affairs has been that top managers in government organisations have not traditionally understood the purpose and value of enterprise architectures, thus not giving them the priority attention they deserve and require.

6.6.2.4.7 DIT had constituted a Working Group which has already given its report and presently an agency is being identified which would be responsible for:

- Verification of the completeness of the EA Framework with respect to its applicability at various levels and for different stakeholders.
- Detailing of the EA Framework components with respect to models and other artifacts in each component.
- EA Framework implementation methodology with one pilot implementation at the Union and State levels.

6.6.2.5 The next task involves formulating the standards for ‘Network and Security’. This task has been assigned to the Standardisation Testing and Quality Certification (STQC) Directorate under DIT. Under the institutional mechanism for Standardization, an Expert Committee on “Meta Data & Data Standard” has been created which has prepared the following two draft standards: (a) Person Identification Codification and (b) Land Region Codification. Apart from this, a “Standards Procedure Document” is also being prepared which would describe the scope of standards formulation process, principles of standards, roles & responsibilities of stakeholders in the institutional mechanism and various stages of standards formulation. The Working Groups, Task Forces, Expert Committees etc would follow this procedure for standards formulation.

6.6.2.6 Use of data by various stakeholders would require creation of identity and access protocols and standards which would be applicable across the country. A draft Policy document on Identity and Access Management has already been prepared in this regard.

6.6.2.7 In order to facilitate standards based inter-operability and integration to existing and new e-Governance applications, a National e-Governance Service Delivery Gateway (NSDG), a middleware infrastructure, has been created to act as a standards-based routing and a message switch for delinking the back-end departments from the front-end service access providers. The system has now been installed at the NIC Data Center, Hyderabad and is ready for integration with various e-Governance projects at the Union / State levels. Currently, the planning and procurement for the Disaster Recovery site is in progress.

6.6.2.8 At the centre of all e-Governance activities is the citizen. Therefore, on account of the diversity in languages across the country, e-Governance initiatives have to be built on a platform which supports interface in local languages in order to reach out to those living in rural areas. DIT is already preparing ‘Localization and Language Technology Standards’ which have the following deliverables:

- Draft Character Encoding Standard for Indian Languages
- Draft Best Practices/Guidelines for Indian Languages Font
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6.6.2.9 The success of various citizen-centric initiatives, especially those focusing on rural areas would depend on the successful and effective formulation of these localization standards.

6.6.2.10 Recommendation

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.

6.7 Implementation

e-Governance projects could be of a wide variety based on their objectives, technological requirements, dependence on databases, requirement of institutional support etc. They may range from simple projects aimed at providing access to information to complex ones which require extensive business process re-engineering and integration of databases across organizations.

6.7.1 Implementation of Simple e-Governance Projects

6.7.1.1 The first and perhaps the easiest activity which comes within the ambit of e-Governance is information dissemination using modern information communication technology. This is usually done by all organizations through a website on their own. This activity received a fillip with the passage of the Right to Information Act, 2005 which mandates all governmental organizations to put certain types of information in the public domain. The information which is disseminated through the websites can be classified into three categories:

(a) Static information
(b) Dynamic information
(c) Transactional information

Static information is that information which generally does not change in short time frames. These include information about the organization, rules regulations and various procedures. Dynamic information on the other hand changes quite often and this includes information like various notifications specifying time limits, tender notifications, notifications calling for applications etc. Websites having dynamic content have to be updated quite frequently. The third category of information – transactional information – is information about a particular transaction in which a citizen may be interested. This is usually in the form of the status of applications made by citizens.

6.7.1.2 A casual survey of all organizations having websites, reveals that the focus still is to provide static information and here also the information which is displayed is what the organization feels important rather than what the citizens want to know. It is, therefore, necessary to carry out an independent evaluation of the type of information being displayed so that the requirements of the citizens could be ascertained. This should be a periodic exercise.

6.7.1.3 Few sites have dynamic information. As far as transactional information is concerned, this is limited to extremely few organizations. In order to make the websites useful to citizens, it is necessary that organizations should gradually move from static information to transactional information.

6.7.1.4 Furnishing transactional information may not be possible without back-end computerization of processes, but ultimately computerization of all back-end processes would result in generation of transactional information in which the citizens are interested. Therefore, to begin with, the transactional information may be off-line which could be up-dated at very short intervals, but at the same time, the process for computerizing all processes should be taken up simultaneously and this should later on be linked to the information dissemination system.
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Box 6.5: Some Novel Technological Solutions

(a) GIS for e-Governance and Grass-root level Planning:
Planning for sustainable development requires grass-root level decision-making. To develop such capacities, there is need to integrate spatial data obtained through use of Geographic Information System (GIS) with other databases. In this regard, NIC has already set up a ‘National GIS Framework’ under the ‘Spatial Data Infrastructure for Multi-Layer GIS for Planning’ project, which is supported by the Planning Commission. The Department of Space and ISRO have a nodal role in creating the satellite systems required for widespread application of GIS.

(b) Hand-Held Devices in e-Governance Projects for Improving Accessibility:
Various development programmes such as the the National Rural Employment Guarantee Scheme, National Rural Health Mission, Sarva Shiksha Abhiyan etc are oriented towards the rural areas. For proper management and monitoring of these programmes, mobile hand-held devices could prove handy to overcome the challenges thrown by poor or no connectivity and erratic power supply.

(c) Mobile-Based E-Governance:
The spectacular growth in use of mobile telephony in the rural areas has opened up the possibility of their use in introducing electronic transactions (including financial transaction) and internet facilities in rural areas thus opening up a new gateway to various citizen-friendly services provided by e-Governance initiatives.
6.7.2 Implementing Complex e-Governance Projects

6.7.2.1 Implementation of complex e-Governance projects, as complicated as the execution of a major construction project. An e-Governance project has a large number of components and each one of these has to be executed properly. More importantly, there is a certain amount of sequencing and synchronizing involved in carrying out these components. As mentioned earlier, e-Governance projects involve re-designing and installation of new processes, building of capabilities of hardware and development of software. Each one of these, in turn, has several components which would have to be performed in a proper order. The general experience has been that comprehensive planning for execution for e-Governance projects is not done, and this leads to delays on the one hand and wastage of efforts and resources on the other. Often, the procurement of hardware is fast, but other components lag far behind. Further, it is also seen that technological solution providers do not fully grasp the functioning of government organisations while government functionaries have a poor grasp of technology. The ideal situation would be to find a government functionary who is equally conversant with technology and place him/her to manage implementation. Since this may not always be possible, domain specialists need to work in close coordination with the technology specialist.

6.7.2.2 Another important aspect of e-Governance projects is that any government function to be put in the e-Governance mode would normally have several parts. Some of these parts lend themselves to ICT easily whereas, others would require more effort. The grievance redressal system – Lokvani – is a good illustration. First of all, computerization of the central facility for receipt of petitions was done. The logical next step perhaps would be computerization of all processes in all the departments so that a petitioner can actually track his or her application. The ultimate stage, would be a paperless office, wherein, each movement of paper is on computer and kept in the public domain, so that all petitioners are able to actually see the movement of their request online.

6.7.2.3 The Commission is of the view that implementation of e-Governance projects would involve a detailed ‘project management’ exercise which should consist of the following activities:

1) Breaking up the entire e-Governance projects into components/activities: This would involve identification and segregation of activities into those which are sequential in nature and those which could be taken up in parallel.

2) Preparing an implementation plan: This should include detailed plan and schedule for each activity. Standard project management tools should be used.

3) Allocating resources: Once the framework has been finalized, the human and financial resources would require to be allocated.

4) Commencement and continuous tracking: The activities would be required to commence as per the framework and continuous monitoring of different activities would have to be ensured as they progress.

5) Mid-course correction: If need be and as determined through continuous monitoring of activities during implementation, mid-course correction may be resorted to in order to achieve the outcomes.

6.7.2.4 Change management: As e-Governance represents a paradigm shift in governance reform, government organizations and individuals would have to change their way of working to be able to adapt to and accommodate these changes. This would require conducting a change management exercise within organizations in order to adapt to perception of loss of power, authority and discretion, inculcate faith in digital documents and develop a sense of ownership in the projects.

6.7.2.5 A World Bank document79 which analysed how personnel issues slowed down e-Governance projects in different countries identified five challenges which need to be addressed while bringing about change:

- **Threats of job losses increase resistance** – A real or perceived threat of job loss should be addressed adequately to mitigate the damage to employees’ morale through inaccurate information and rumors. Employees need support and re-training for a new set of skills.

- **Government staff may resent external staff** – Intrusion by external consultants on to what is considered their privileged domain creates stiff resistance. It helps a great deal if external staff have the time and patience to talk to employees.

- **High-level support does not ensure staff buy-in** – Even when top political leaders support an e-government project, senior officials and their staff may remain uncommitted if they do not see benefits from moving to a new system.

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79Staff incentives and project implementation: Lessons from e-government, World Bank, October 2005
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\(^7\)Staff incentives and project implementation: Lessons from e-government; World Bank, October 2005
6.7.2.6 Change Management has an organisational as well as a human angle and it needs to be handled with utmost care. Change Management requirements vary widely across organisations and across employees within an organisation. A systematic and measured approach is needed for undertaking Change Management exercises as a necessary concomitant to process reforms, adoption of technology and capacity building. A systematic and measured approach is needed for undertaking Change Management exercises as a necessary concomitant to process reforms, adoption of technology and capacity building. It may often be desirable to take the services of organisations with expertise in Change Management.

6.7.2.7 Recommendations

a. All organizations should carry out a periodic independent evaluation of the information available on their websites from the citizens perspective 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.

6.8 Monitoring and Evaluation

6.8.1 Even though e-Governance projects are generally rolled out after testing them at the pilot stage, owing to the scale and complexities of the roll-out, such projects need continuous monitoring. Such monitoring could be based on a variety of parameters – financial viability, ease of use, assessment of in-house capacity, volume of transactions, appropriateness of technological solutions, adequacy of business process re-engineering, ability to handle difficult situations etc. The basic objective would be to identify problems in a timely manner so that corrective measures could be taken. It would also involve finding out the implementation status at any given point of time vis-à-vis the planned framework, tracking the inputs against projected estimates and identifying the corrective measures in case of any variations. Thus, monitoring has to be done continuously by the implementing agencies.

6.8.2 The success or failure of e-Governance projects would depend on the achievement or otherwise of the objectives which were set out initially. Their evaluation could be based on different parameters – satisfaction level of citizens, ease of use by different stakeholders, cost effectiveness of the technology, actual acceptance or otherwise by the target population, financial sustainability, etc. However, the evaluation of success or failure of the project needs
6.7.2.6 Change Management has an organisational as well as a human angle and it needs to be handled with utmost care. Change Management requirements vary widely across organisations and across employees within an organisation. A systematic and measured approach is needed for undertaking Change Management exercises as a necessary concomitant to process reforms, adoption of technology and capacity building. A systematic and measured approach is needed for undertaking Change Management exercises as a necessary concomitant to process reforms, adoption of technology and capacity building.

6.7.2.7 Recommendations

a. All organizations should carry out a periodic independent evaluation of the information available on their websites from the citizens perspective 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 of 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.

6.8 Monitoring and Evaluation

6.8.1 Even though e-Governance projects are generally rolled out after testing them at the pilot stage, owing to the scale and complexities of the roll-out, such projects need continuous monitoring. Such monitoring could be based on a variety of parameters – financial viability, ease of use, assessment of in-house capacity, volume of transactions, appropriateness of technological solutions, adequacy of business process re-engineering, ability to handle difficult situations etc. The basic objective would be to identify problems in a timely manner so that corrective measures could be taken. It would also involve finding out the implementation status at any given point of time vis-à-vis the planned framework, tracking the inputs against projected estimates and identifying the corrective measures in case of any variations. Thus, monitoring has to be done continuously by the implementing agencies.

6.8.2 The success or failure of e-Governance projects would depend on the achievement or otherwise of the objectives which were set out initially. Their evaluation could be based on different parameters – satisfaction level of citizens, ease of use by different stakeholders, cost effectiveness of the technology, actual acceptance or otherwise by the target population, financial sustainability, etc. However, the evaluation of success or failure of the project needs
to be done by independent agencies in order to present a holistic and objective picture. The parameters for such evaluation should be decided beforehand.

6.8.3 Recommendations

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.

6.9 Institutional Framework for Coordination and Sharing of Resources/Information

6.9.1 The Commission is of the view that the responsibility for effective and efficient development, procurement and use of information technology and resources as well as the management and planning of information technology and e-Governance programmes should vest with individual government agencies at the Union and State levels. In addition, there would be need to put in place an institutional mechanism in respect of those initiatives where integration of multiple databases and sharing of information between agencies is required because ad hoc collaboration and poor coordination could lead not only to inordinate delays in implementation of programmes but also their total failure. Also, since many e-Governance projects presently under implementation or being envisaged have commonalities both within and across States right down to the local self government levels, it would be very useful to create an institutional repository of best practices and innovation in all States/UTs. Sharing of such information could greatly encourage easy replication of such best practices and save valuable time and effort in avoiding those projects which have inherent defects and have failed.

6.9.2 Government of India and a majority of State Governments have created Departments of IT, however, there is need for clear distinction of the duties and responsibilities between the respective DIT and the other Ministries/Organisations. DITs should undertake those tasks that cannot be efficiently executed by other departments. It could also run or manage certain common services and common infrastructure. Development and implementation of solutions should however be left to the line departments. In order to bring clarity, the following tasks may be entrusted to the respective DITs:

1) Conducting an e-preparedness audit for each organisation
2) Enforcing standardization
3) Assisting in co-ordination when e-Governance projects transcend an organisation’s functional domain
4) Facilitating capacity building by linking the user departments and the training institutes (including academic and private sector institutions)
5) Carrying out evaluation of e-Governance projects
6) Acting as a repository of best practices and encourage horizontal replication in case of successful projects
7) Helping in selecting/developing the technological solution.

6.9.3 The Second Schedule to the Government of India Allocation of Business Rules, 1961 allocates inter alia the following business matters, in case of the Department of Information Technology:

“(3) Assistance to other departments in the promotion of e-Governance, E-Commerce, E-Medicine, E-Infrastructure etc.”

The Commission is of the view that the business allocated to DIT may be made more elaborate in case of e-Governance so as to include the tasks mentioned above.

6.9.4 Thus, the IT Departments at the Union and State Government levels should function as coordinating agencies for providing technological support, linkages and networking and overall functioning of projects which have inter-agency involvement at different levels.

6.9.5 Recommendations

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:

Implementing e-Governance Reforms

...
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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’.

6.10 Public-Private Partnership (PPP)

6.10.1 Financial and managerial resources are critically required for successful implementation and more so, the sustainability of e-Governance initiatives. While the normal preference for any reform initiative is through exclusive use of inhouse resources, the merits of inducing the private sector resources into the e-Governance sector have now been appreciated and accepted by policy-makers in Government. Public-Private Partnership has thus become one of the cornerstones of NeGP. PPP, as applied to the e-Governance sector is still in a stage of evolution. While early PPP projects like eSeva had attempted a simple version of PPP, more complex projects like MCA 21 required considerable innovation and experimentation in designing and adoption of an appropriate PPP model. The following is an attempt to examine PPP in the light of the requirements of the e-Governance sector.

6.10.2 New technologies demand new types of implementation models. In the conventional approach, the project ownership lies with the public sector itself along with the responsibility for funding it and bearing the entire risk. The concept of PPP has been in operation for more than a decade, primarily in relation to the construction and operation of public infrastructure projects like bridges, airports, highways, hospitals etc. PPP is a mechanism that attempts to capture the strengths of both – a government organization as well as a private enterprise.

6.10.3 There are many compelling reasons why governments should look at PPP in relation to their e-Governance plans. Some reasons are enumerated below:

a. **Combining accountability with efficiency**: The PPP model can combine the accountability mechanisms and domain expertise of the public sector with the efficiency, cost-effectiveness and customer-centric approach of the private sector. As compared to the public sector, the private sector is more efficient and innovative in adopting and applying new technologies. This is also true in the specific case of Information and Communications Technology. Therefore, the PPP approach in the field of e-Governance is well suited in combining the core strengths of the public and private sectors for delivery of efficient online services.

b. **Pace of implementation**: New innovations in the field of ICT are happening at a fast rate. This applies to all its segments – hardware, software and networks. Newer versions and releases of operating systems, database servers, application servers, and security software are continuously being released at regular intervals. The typical life cycle of a large e-Governance initiative is 18 to 24 months from initiation to completion. It has been observed that the private sector is generally faster than government in adopting and making use of the latest technology. This is a compelling reason to join hands with the private sector.

c. **Resources**: The combined effect of the huge size of e-Governance effort and the speed of implementation is that investments required in the e-Governance sector are very large over a continuous period of 5 years. It is estimated that India needs over Rs 45,000 crore of investment in e-Governance sector over a period of 3-5 years - excluding the cost of communication and access infrastructure. This is sixteen times higher than the current annual IT expenditure of about Rs 3000 crore in the government sector. In addition to this, high quality managerial and human resources are required. It is difficult to mobilize such large amounts of financial and human resources within the government. Tapping the financial, managerial and manpower resources of the private sector is a viable alternative in this regard.

6.10.4 The PPP model of implementation is more suitable for particular areas of e-Governance and not to all. The criteria for PPP include long-term nature of demand for a service, profitability and amenability to structuring a commercial framework and business model for PPP. The following is an illustrative list of areas suited for PPP.
1. Conducting an e-preparedness audit for each organization
2. Enforcing standardization
3. Assisting in co-ordination when e-Governance projects transcend an organisation's functional domain
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a. Information Infrastructure Projects
   • Data centres
   • Communication backbone
   • e-Governance gateway

b. Government-to-Citizen Projects
   • Citizen service portals
   • Integrated service centres
   • Departmental service centres
   • Networks of kiosks, like CSCs

c. Government-to-Business Projects
   • e-procurement
   • G2B portals

d. Government-to-Government Projects
   • Online data-capturing and central consolidation (e.g. treasury computerization and networking)

6.10.5 Public-Private Partnership projects also pose several challenges which need to be understood and addressed carefully. There is often lack of congruence in the objectives of the two partners - government and the private sector. The success of PPP depends on the degree to which the public and private sector partners align their efforts in achieving these objectives. Clarity on objectives has to be achieved by both the parties at the outset. Also, the organizational cultures in the private and public sector differ widely. This may result in conflicting situations, since e-Governance involves substantial process reform needing interaction between the partner company and the government agency or agencies in charge of the ‘domain’. It is necessary to create an appropriate coordination and review mechanism that develops mutual trust and confidence. Also the agreements defining the mutual role and responsibilities should be precisely drafted, following a transparent process of selection of the private partner.

6.10.6 Recommendations

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.

6.11 Protecting Critical Information Infrastructure Assets

6.11.1 The overall e-Governance infrastructure would in the end include national and state level network systems, national and state level data centres, electronic service delivery gateways and widespread service delivery centres across the country. Protecting the information systems that support these critical information infrastructure assets from potential cyber crimes is one of the serious challenges currently facing the government. In addition, as greater amounts of money get transferred through e-Governance systems, and more sensitive economic and commercial information is exchanged electronically, it increases the likelihood of information attacks threatening vital national interests. Therefore, there is need for development of defence mechanisms and a legal system that is capable of addressing these issues. This should be supplemented by institutionalizing early warning systems to enable timely counter measures.

6.11.2 Recommendation

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.
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