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## 12.4 E-GOVERNANCE APPLICATIONS

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The developments in Information and Communications Technology (ICT) impacted the world tremendously. Besides, ICT now seeps even into the political sphere and demonstrably creates opportunities for governments. E-governance uses ICT to improve the effectiveness, efficiency, service delivery and to promote democracy of the governments. It also helps to innovates services, create new approach in leaderships, to develop better policy making strategies and finds new ways of making the administration more effective and efficient. E-governance broadens the involvement of citizens and makes it possible to participate in government's decision or the policy making processes. In addition, e-governance also helps government to access even in the remotest areas, and reduces the cost of both running and transacting with government itself. So e-government is "a government that applies ICT to transform its internal and external relationships" (UN, 2003).

Three main domains of e-governance are e-administration, e-services and e-society. The main purposes are:

- **e-administration** is to improve the internal workings of the public sector by reducing process costs, managing process performance, creating strategic connections within government bodies, and creating empowerment. Shortening the lead time for passport applications from two weeks to one day is an example of e-administration.

- **e-service** initiatives focus on improving the relationship between the government and its citizens by increasing the information flow between them. Notably, involves two-way communication and improving the service levels of government towards its citizens. Public service institutes offering citizens the opportunity to apply for business licenses through a government website is one example of e-services.
- **e-society** initiatives extend the previous e-services domain by focusing on institutional stakeholders, such as private sector service providers, other public agencies, and not-for-profit and community organisations.

#### 12.4.1 Geoinformatics in e-governance

The basis for e-Governance is fusion of ICT supporting and transforming the governance by processing and communicating data. Key innovation of E-governance is computer networks, from Intranet to the Internet, creating a digital network between various user nodes. Easy access to complete information with common geographic-reference using high speed communication network (including Internet) helps employees to improve their efficiency and government to make better decisions. The potential of geoinformatics that offers better governance for the benefit of both, government and citizens are:

- In **land records management** area the benefits are mapping and updating land parcels using high resolution remote sensing data and field surveys; Computerised maps of land parcels, easy updating of changes in land mutations and ownership, linkages to data base management system (DBMS) for management of land records.
- In **industrial estate management** area the benefits are mapping of industrial plots and infrastructure using high resolution remote sensing data, field surveys, computerised maps of layout and infrastructure details, on line allotment of lands to customer, decision support system (DSS) for user departments: Land, Engineering, Planning departments and web GIS based application for providing plot level details to potential customer.
- In **disaster management** area the benefits are mapping of disaster prone at varying scales, mapping of amenities and infrastructure, required for disaster management, integration with network technology for exchange of information between and among institutions, governments, citizens, NGOs, etc. DSS built around Disaster Management Information System can address needs at all the stages such as preparedness, early warning, relief/response and mitigation.
- In **integrated development** area the benefits are mapping land use/land cover, ground water potential and soil conditions etc. Monitoring of land use/land cover and impacts, including salinity and land degradation, implementation of developmental programmes, such as hill area, drought prone area, wasteland etc.
- In **telecom network planning and management** area the benefits are mapping of components of network: land base, such as roads, parcels, etc., asset management for efficient maintenance of components, routing of the network and complaint management.

- In **electricity distribution and transmission network** area the benefits are mapping of components of network: land base, such as roads, parcels etc., asset management for efficient maintenance of components, routing of the network, fault management by locating fault location on the map and designing and optimisation of network, load management, load forecast, etc.
- In **transport network development** area the benefits are mapping of roads and other transport network, identifying pocket of poor transport network, planning new transport network and GIS based Road Information System tool to monitor road development and maintenance.
- In **law and order** area the benefits are spatial analysis of crime data, GIS based Police Information System and emergency planning.
- In **environmental management area** the benefits are mapping of environmentally sensitive areas. Issues include water, air and noise pollution, soil salinity, oil spills, deforestation, wetland depletion etc. Modeling for predicting extent of environmental degradation, inputs for mitigating negative impacts on environment and Environmental Impact Assessment based on spatial data.

In the next section, we will study about an e-governance initiative of Indian Government i.e. National e-Governance Plan.

#### 12.4.2 The National e-Governance Plan (NeGP)

The National e-Governance Plan (NeGP) has been formulated by the Department of Information Technology (DIT) and Department of Administrative Reforms & Public Grievances (DAR&PG). The Union Government approved the National e-Governance Plan (NeGP), comprising of 27 Mission Mode Projects (MMPs) and 10 components on May 18, 2006. MMPs encompass 10 Central MMPs, 10 State MMPs and 7 Integrated MMPs spanning multiple Ministries/ Departments (Table 12.5). The concerned Ministry/ Department are entirely responsible for all decisions related to their MMPs.

**Table 12.5: NeGP Mission Mode Projects (Source: Department of Information Technology, Government of India)**

| Central MMPs                                                                                                                                                                                                                                                                                                                            | State MMPs                                                                                                                                                                                                                                                                                      | Integrated MMPs                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Banking</li> <li>• Central Excise &amp; Customs</li> <li>• Income Tax</li> <li>• Insurance</li> <li>• MCA21</li> <li>• National Citizen database</li> <li>• Passport</li> <li>• Immigration, visa and Foreigners Registration &amp; Tracking</li> <li>• Pension</li> <li>• e-office</li> </ul> | <ul style="list-style-type: none"> <li>• Agriculture</li> <li>• Commercial taxes</li> <li>• e-District</li> <li>• Employment Exchange</li> <li>• Land Records</li> <li>• Municipalities</li> <li>• Gram Panchayats</li> <li>• Police</li> <li>• Road Transport</li> <li>• Treasuries</li> </ul> | <ul style="list-style-type: none"> <li>• CSC</li> <li>• e-Biz</li> <li>• e-Court</li> <li>• e-Procurement</li> <li>• EDI for e-Trade</li> <li>• National e-governance Service delivery Gateway</li> <li>• India Portal</li> </ul> |

### 12.4.3 E-Governance Infrastructure

The key to successful implementation of any e-governance initiative is the availability of adequate infrastructure for the service delivery system. The backbone infrastructure and human resource requirements need to be determined and acquired for successful e-governance implementation. The essential infrastructure components for e-governance are: State Wide Area Network (SWAN), State Data Centre (SDC), National e-governance Service Delivery Gateway (NSDG), and Common Services Centers (CSC) (Fig. 12.13).



Fig. 12.13: E-Governance Infrastructure

- **State Wide Area Network (SWAN)** is an advanced telecommunication infrastructure. It is now-a-days used extensively for exchange of data and other types of information between two or more locations, separated by significant geographical distances. Such wide area networks, in a way, create a highway for electronic transfer of information in the form of voice, video and data. This in turn brings speed, efficiency, reliability and accountability in overall system of Government-to-Government (G2G) functioning in each State/Union Territories.
- **State Data Centre (SDC)** has been identified as one of the important elements of the core infrastructure for supporting e-Governance initiatives of National e-Governance Plan (NeGP). SDCs provide better operation and management control and minimise overall cost of data management, IT resource management, deployment and other costs.
- **The National e-Governance Service Delivery Gateway (NSDG)**, an integrated MMP is a standards-based messaging switch and providing seamless inter-operability and exchange of data across the departments. NSDG acting as a nerve centre handles large number of transactions and helps in tracking and time stamping all transactions of the Government. This also includes the National Services Directory (NSD). All the Gateways that need to resolve services, which are not in their domain, need to resolve it at the NSD.
- **Common Services Centers (CSC)** is a strategic cornerstone of the National e-governance Plan (NeGP) and provides high quality and cost-effective video voice, data content and services. A highlight of the CSCs is that it will offer web-enabled e-governance services in rural areas including application forms, certificates and utility payments such as electricity, telephone and water bills.

Many of those initiatives, such as National Natural Resources Management System (NNRMS) would maintain an archive of digital data of different themes for use in government, business and societal needs. These will be useful for e-governance and sustainable development.