Chapter II

e-Governance Models and Plans

2.1 Introduction:

There has been an enormous development of Information and Communication Technology (ICT) systems towards e-Governance applications in recent years. Governments use ICT for the communication of information with citizens and businesses on topics like schemes and services, taxes, public utility services, vehicle registrations, land and property records, legal assistance etc. Online government followed the path of business services and private transactions, which had discovered first the usefulness of the Internet as information asset. Beyond the Internet, other technologies and applications can be used for e-Governance services, such as telephones, messaging, biometric identification, smart cards, RFID chips, as well as television or radio-based government services used to provide disaster warnings, electronic newsletters, education management systems and traffic control systems. Impact of social media, mainly in electronic form is also playing an important role of communication network. “e-Governance is often associated with government web portals because most governments, national or local, have created web sites and umbrella portals, operating as gateways and guidance to information and services.”¹

By introducing e-Governance services, governments can dramatically reduce transaction costs and improve internal planning mechanisms. Moreover, the introduction of e-Governance and the integration of services usually require government to streamline their administrative processes. “Streamlining improves efficiency, reduces costs and generates revenues. In some cases, generated revenues may be used to reduce or abolish service fees, or can be reinvested into more sophisticated e-Governance applications and services.”² “e-Governance aims at reducing corruption, increasing transparency and trust in administrations, as well as citizen’s involvement in government.”³ e-Governance is considered a means to reach an individual national citizen, as it eases the process towards a ‘paper less virtual office’ with a core objective of anytime, anybody, anywhere. Thus e-Governance applications improve efficiency, effectiveness, accountability, and
transparency of government service delivery. At the same time improve active participation of citizen in public decision making processes, hence realization of socio-economic development. Various studies\textsuperscript{4, 5} show that while most of the developed countries are in the final stages of e-Governance development, developing countries are still in the early stages. This gap is heavily influenced by the existence of technological and non-technological related issues including lack of proper ICT infrastructures, e-readiness, public awareness, economical, and political will.

According to the World Bank, e-Governance is defined as “e-Governance refers to the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions.”\textsuperscript{6} However, the concept of e-Governance has no specific definition; because it is defined by objective of activities rather than by the technology, therefore it requires broad definition and wider understanding for a government to implement it successfully.

To guide and benchmark e-Governance development, researchers and academia proposed different types of e-Governance system development models, so called maturity models. These models outline various stages for e-Governance development life cycle.

2.2 Overview of e-Governance Models:

Any system, when starts hatching is mainly influenced by its development models. e-Governance models are purposely and specifically designed to guide the implementation and development of e-Governance applications in a stage-wise manner. The evolution revolves from immature manual systems to the mature Digital Democracy. The advantage of having a stage-wise approach is to offer governments abilities to measure the progress and also to generate momentum that could subsequently be maintained. During the course of present study, critical review is carried out for widely known e-
Governance maturity models. These models are categorized according to Stakeholders, Categorization of Functional Stages Involved in the e-Governance System Development Cycle, Information Flow and National e-Governance Plans (NeGP). Each model has its advantages and limitations.

2.2.1 e-Governance Models as per Stakeholders Involved:

While e-Governance encompasses a wide range of activities, we can identify four distinct areas. These are G2G, G2C, G2B and G2E. Each of these represents a different combination of motivating forces. “G2G involves sharing data and conducting electronic exchanges between various governmental agencies. One benefit with this is cost savings, which is achieved by increasing the speed of the transactions, reduction in the number of personnel necessary to complete a task, and improving the consistency of outcomes. Another advantage, which flows from this, is improvement in the management of public resources.”

G2C facilitates citizen interaction with government, which is primary goal of e-Governance. This attempts to make transactions, such as information search, land and property records, and payment of taxes, renewing licenses, applying for domain benefits, etc. which are less time consuming and easy to carry out. These initiatives also strive to enhance access to public information through the use of websites and kiosks. “One of the main goals of implementing these initiatives has been to create a ‘single window’ where citizens can carry out variety of tasks, especially those that involve multiple government departments, without requiring the citizen to initiate contacts with each government department individually. Thus, the G to C initiatives is driven by an urge to provide ‘better government’ through improved efficiency and more reliable outcomes.”

G2B model includes permissions, monitoring, evaluation, payment of taxes, procurement of goods and services by the government, etc. The business community prefers to carry out its activities online such as permissions, returns, sales, procurement, and hiring through electronic means. “Developing countries, where there is great pressure to
minimize costs due to shortage of funds, G2B are being encouraged by the Governmental Agencies”.

G2E model is specifically inter and intra departmental instantaneous communication tools for government units, either national, state or local government. Purpose of G to E models is to increase the efficiency of public agencies’ internal performance. “Creation of integrated information systems in order to gather, transfer, process and store internal data provides foundations for further elaboration of government electronic services offered to external users; the citizens and organizations“.

2.2.2 e-Governance Models as per Categorization of Functional Stages:

Table 2.1: e-Governance Models as per Categorization of Functional Stages

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<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Model</th>
<th>Description of stages</th>
<th>Advantages &amp; Limitations</th>
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| 1       | Adaptive E-Government Maturity (AEM) Model | 1. *Presence*: starting point of personalization after reaching a certain maturity level through any chosen maturity models.  
2. *Semantic Adoption*: According to the chosen ontology the classification of information and e-services are identified.  
3. *User Modeling*: process of building a mechanism to construct a model about users’ behavior and characteristics.  
4. *Procedures Planning*: design triggers of different life scenarios based on the actors of the chosen ontology to reach certain objective such as, renewing a driving license for a handicapped person.  
5. *Middleware Layer*: integrates and assembles all the e-services from different agencies and standardizes a vocabulary for exchanging information. | Advantages: draws a guideline for a step wise transformation from e-Governance solutions to a personalized version.  
Limitations: The model is not specifying any detailed sub models such as interoperability maturity models, any specific ontology or user modeling technique and citizen relationship management. |
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| 2      | A Citizen Oriented E-government Maturity Model<sup>12</sup> | 1. **Web Presence:** post simple and limited information such as vision mission, time, contact information.  
2. **Interaction:** includes basic search engines, e-mail system, downloads.  
3. **Transaction:** complete online transactions like license applications, tax filing, etc.  
4. **Transformation:** transforming vertical and horizontal integration for seamless services instead of separate and distributed.  
5. **e-Democracy:** online voting, polling and surveys, participation. | Advantages: citizen tools like online voting, polling and surveys, political participation, citizen involvement, and politics transparencies.  
Limitations: security, personalization, citizen relationship management not catered. |
| 3      | Quirck’s Four Staged Maturity Model<sup>13</sup> | 1. **e-Management:** Basic Information, News and upcoming events, email.  
2. **e-Service:** Service details, Service tracking, FAQs, email support  
3. **e-Commerce:** On-line payments, Ordering facility, email payments/ordering.  
4. **e-Decision Making/e-Democracy:** Community information. | Advantages: Indicates of the maturity levels of websites.  
| 4      | Asia Pacific’s Six Stage Model<sup>14</sup> | 1. **Setting up an email System and Internal Network**  
2. **Enabling Inter-organizational and Public Access to Information:** systems from paper based.  
3. **2-Way Communication:** use of ICT for email, SMS, Fax, Voice, etc.  
4. **Exchange of Value:** online tax assessment, visa application, etc.  
5. **Digital Democracy:** participatory processes like empowerment.  
6. **Joined-up Government:** one step web portal without needing to know what/which/how government, or agency is responsible | Advantages: Focuses on citizen-centric and functionality. Also it considers the potential benefit of political changes.  
Limitations: With the exception of one stage; allowing of exchange of value, security related issues of technical and non-technical are not explicitly addressed. |
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<td>5</td>
<td>Word Bank’s Three Stage Model&lt;sup&gt;15&lt;/sup&gt;</td>
<td>1. <em>Publishing</em>: information to citizen through website.&lt;br&gt;2. <em>Interactivity</em>: interactions with citizen. Websites are enhanced with interactive capabilities such as feedback forms and email.&lt;br&gt;3. <em>Completing Transaction</em>: citizen can use the opportunity of the available technically enhanced website to conduct complete and secure transactions on-line.</td>
<td>Advantages: focus is on functionality and citizen centric. Does not consider benefit of political changes.&lt;br&gt;Limitations: Security is addressed only at its final stage, completing transaction and citizen relationship management.</td>
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<td>6</td>
<td>e-Government Maturity Model&lt;sup&gt;16&lt;/sup&gt;</td>
<td>1. <em>Simple Website</em>: static collection of pages, with a few downloadable forms phone nos.&lt;br&gt;2. <em>Online Government</em>: addition of transaction based services such as email, web based forms, FAQs, help and feedback.&lt;br&gt;3. <em>Integrated Government</em>: end-to-end e-transactions, fully integrated back office systems.&lt;br&gt;4. <em>Transformed Government</em>: services from citizen’s viewpoint to serve individual needs.</td>
<td>Advantages: model guide in selecting process improvement strategies by determining current process and identifying the few issues that are most critical to e-Government.&lt;br&gt;Limitations: citizen participation, not taken care.</td>
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<td>7</td>
<td>United Nation’s Five Stage Model&lt;sup&gt;17&lt;/sup&gt;</td>
<td>1. <em>Emerging Web Presence</em>: basic static information.&lt;br&gt;2. <em>Enhanced Web Presence</em>: dynamic, specialized and regularly updated information.&lt;br&gt;3. <em>Interactive Web Presence</em>: users and service providers are connected to government portals.&lt;br&gt;4. <em>Transactional Web Presence</em>: two-way interactions between citizen and government.&lt;br&gt;5. <em>Seamless/Networked Web Presence</em>: services and functions across levels are integrated.</td>
<td>Advantages: Centered to web-based and functionality..&lt;br&gt;Limitations: The model fairly considers specific issues related to technical security at its transactional stage. Also the model does not consider the potential benefit of political changes.</td>
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<sup>15</sup> Word Bank’s Three Stage Model: 1. Publishing: information to citizen through website. 2. Interactivity: interactions with citizen. Websites are enhanced with interactive capabilities such as feedback forms and email. 3. Completing Transaction: citizen can use the opportunity of the available technically enhanced website to conduct complete and secure transactions on-line.

<sup>16</sup> e-Government Maturity Model: 1. Simple Website: static collection of pages, with a few downloadable forms phone nos. 2. Online Government: addition of transaction based services such as email, web based forms, FAQs, help and feedback. 3. Integrated Government: end-to-end e-transactions, fully integrated back office systems. 4. Transformed Government: services from citizen’s viewpoint to serve individual needs.

<sup>17</sup> United Nation’s Five Stage Model: 1. Emerging Web Presence: basic static information. 2. Enhanced Web Presence: dynamic, specialized and regularly updated information. 3. Interactive Web Presence: users and service providers are connected to government portals. 4. Transactional Web Presence: two-way interactions between citizen and government. 5. Seamless/Networked Web Presence: services and functions across levels are integrated.
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| 8      | Gartner’s Four Stage Model\(^{18}\) | 1. *Web Presence*: static website with basic information.  
2. *Interaction*: capabilities such as search engines, documents downloading and emails.  
Limitations: Model fairly considers specific non-technical security related issues or the potential benefit of political changes. |
| 9      | West’s Four Stage Model\(^{19}\) | 1. *Billboard*: Static websites, information can be posted on website including reports and publication.  
2. *Partial Service Delivery*: services on-line for citizen; on-line website with capabilities and functionalities include sorting and searching of information.  
3. *Full Integrated Service Delivery*: one stop center government portal full integrated online services.  
4. *Interactive Democracy with Public Outreach and Accountability*: system wide political transformation with integrated on-line services. Citizens have on-line government information service delivery systems. | Advantages: Focuses on functionality and citizen-centric. In addition, the model gave fairly little consideration security on technical and non-technical as a specific issue.  
Limitations: it considers the potential benefit of political changes at its highest stage |

2.2.3 e-Governance Models as per Information Flow:

**a. Broadcasting Model:** It is most fundamental model as it enhances access and flow of information to all segments of the society, which is essential to bringing good governance. “Broadcasting model is based on mass dissemination of already available
This raises awareness among the citizens about on-going governance processes and government services that are available to them and how they can get benefit out of them. It allows citizens to form an opinion about administration, availability of information, quality of service, etc.

The model is useful in societies where there is free-flow of information, freedom of speech and expression, or political freedom is not restricted.

**b. Comparative Analysis Model:** Comparative Analysis Model is one of the least-used but a high potential e-Governance model for developing countries. The model can be used to empower people by comparing cases of bad governance with those of good governance and identifying specific aspects of bad governance, the reasons and people behind them, and how the situation can be improved. The model is based on using immense capacity of ICT and social media tools to explore given information sets with comparable information available in the public or private domain. Essentially, the model continuously assimilates best practices in different areas of governance and uses them as benchmark to evaluate other governance practices. It then uses the result to advocate positive changes or to influence 'public' opinion on existing governance practices. The strength of this model lies in the infinite capacity of digital networks to store varied information and retrieve and transmit it instantly across all geographical and hierarchical barriers. The model is very much based on the existing sets of information but requires the ability to analyse and bring out strong arguments which could then be used to catalyse existing efforts towards self-governance.

The model however becomes ineffective in absence of a strong civil society interest and public memory which is essential to force decision-makers to improve existing governance practices.

**c. Critical Flow Model:** The model is based on broadcasting information of critical value to targeted audience using ICTs and other tools. Targeted audience may include media, affected parties, opposition parties, judicial bench, independent investigators or the
general public. Those who would divulge such information could include upright officials and workers, whistleblowers, affected parties and those who were themselves involved in bad governance practices but have now changed their minds or may wish to trade such information for lenient punishments. The strength of this model is that the concept of 'distance' and 'time' becomes redundant when information is hosted on a digital network. Once available on the digital network, the information could be used advantageously by instantly transferring the critical information to its user group located anywhere or by making it freely available in the wider public domain.

d. **e-Advocacy Model:** e-Advocacy / Mobilization and Lobbying Model is one of the most frequently used Digital Governance model and has often come to the aid of the global civil society to impact on global decision-making processes. The model is based on setting-up a planned, directed flow of information to build strong virtual allies to complement actions in the real world. Virtual communities are formed which share similar values and concerns, and these communities in turn link up with or support real-life groups/activities for concerted action. The model builds the momentum of real-world processes by adding the opinions and concerns expressed by virtual communities. The strength of this model is in its diversity of the virtual community, and the ideas, expertise and resources accumulated through this virtual form of networking. The model is able to mobilize and leverage human resources and information beyond geographical, institutional and bureaucratic barriers, and use it for concerted action.

e. **Interactive Service Model:** Interactive-Service model is a consolidation of the other digital governance models and opens up possibilities for one-to-one and self-serviced participation of individuals in governance processes. ICTs have the potential to bring every individual into a digital network and enable interactive (two ways or multiple ways) flow of information among them. This potential of ICTs is fully leveraged in this model. As the participation is direct and not through representatives, it can bring greater objectivity and transparency in decision-making processes, and give a greater feeling of involvement and empowerment, provided that individuals are willing to engage in the governance processes. Under this model, the various services offered by the Government
become directly available to its citizens in an interactive manner. It does so by opening up an interactive Government to Citizen to Government (G2C2G) channel in various aspects of governance, such as election of government officials e.g. e-ballets; decision to make on specific issues e.g. health plans, delivery of individualised government services, gauging public mood and opinions, targeting specific communities for specific governance advice or services, bringing mass awareness.

2.3 Worldwide National e-Governance Plans:

a. Korea (World Rank 2012: 1):
Korea’s e-Governance system is rated as the best e-Governance system of the world in 2012. After the 1980s, the Korean government started various projects with different time frames and strategies. “These projects were National Basic Information System Project (1987-1996), High Speed Broadband Network Project (1995-2005), Framework Plan for IT Development (1996-current), and e-Governance Project (2001-current).” The e-Governance, which was first commenced as an effort to computerize the administrative process, has gone through significant enhancement process with the advancement of information technology, automation of work process, and linkage with process innovation, as well as change in political leadership, implementation organization, and legal basis. In 1983, the Chun Doo-hwan Administration (1981-1987) established the National Basic Information System Plan for building 5 major national basic information networks by mid ’90s as a part of the preparation project for the e-Governance to raise the Korea’s IT infrastructure to those of advanced nations’ level. During the process, the IT Network Development Committee lead the automation of government administrative process by building nation’s core Database on information of citizens, real estate, and automobile and by distributing PCs. The National Basic Information System Project was pursued by individual ministries and offices through constructing interconnecting computer network environment.

During 1996-2000 e-Governance growth was achieved through development projects in accordance with the IT Development Framework Plan. Particularly, the period is categorized as internet’s explosive growth period as the social networking that links the
entire nation through mass distribution of internet service and mobile telecommunication service as a result of the high speed broadband network project that was fully launched in 1995. During 2001-2007 a Special Committee on e-Governance under the leadership of the President was established and the importance and priority of the e-Governance project was elevated as presidential agenda and implemented throughout all the government ministries and institutes. During this period, the administration wide work process become computerized through IT infrastructure and core Database possessed by the government to improve the civil service level provided to the citizens and to maximize the internal administrative process.

The IT development project was formed and implemented in mutual interaction of needs and seeds in the political & social as well as economic & industrial technical environment. “The major steps taken during the successful planning and implementation of e-Governance systems in Korea are:

1. Service Integration Based on the Needs of Citizens and Businesses
   1-1. Integration of Government Service Channels for Enhanced Public Convenience
   1-2. Integration of Information Service Channels to Support Corporate Activities

2. Intelligent Administration Service System
   2-1. Digital Information Network for Administration Services
   2-2. Support for Transparent Policy-Making and Administrative Information Sharing

3. Real-time Public Safety Information Network
   3-1. Advanced Services for National Security and Safety Control
   3-2. Intelligent System for Public Order Management

4. Strengthened e-Governance Basic Infrastructure
   4-1. Protection of Personal Information and Strengthened Information Security
   4-2. Ubiquitous e-Governance Services
   4-3. Advanced Information Resources Sharing System.”22
b. Netherlands (World Rank 2012 : 2): The e-Governance system of Netherland is ranked second in the world in 2012. The Flemish e-Governance Coordination Unit (CORVE) was assigned the task of developing and underpinning ICT-projects for an accessible, demand driven, simplified and integrated public service in Netherlands. “A component of the Flemish public administration, CORVE, provides list services to the government authorities, provinces and municipalities. e-Governance is the responsibility of Flemish Minister for Administrative Affairs, Local and Provincial Government, Civic Integration, Tourism, etc.” Another prominent e-Governance scheme of Netherlands is ‘Citadel on the Move (COM)’. COM uses live framework and template design approach for citizens in the creation of innovative new mobile applications. The major areas are targeted like transportation, tourism, education, social, NGO schemes, etc. COM is designed with open source technology and open access data. It helps citizens to create and use shared and citizen-centered mobile applications. CORVE is driving overall innovative efforts for ensuring the legal and technical issues.

Flemish has established pioneering MAGDA platform as an interactive tool for sharing data. Key focus is given on privacy, security of data, authorization and authentication of applications created by citizens, usability awareness and quality. COM has changed the way citizens are communicating and collaborating with stakeholders to develop public services as well as teaming up with each other for sharing specified government services. COM provides all the necessary infrastructural facilities to support the process of building and delivering innovative public services via mobile applications, over the internet.

The general benefits of the COM approach for citizens are, agility improves user’s abilities to rapidly and inexpensively create mobile applications of public services to bridge the gaps and fulfills the citizen needs. Costs for delivering public services remarkably reduced as citizen’s contribution, talent, R&D, knowledge, and innovations are available for free. Device and location independency enables users to access systems using a web browser regardless of their locations and hand held device. Scalability has
increased as all the citizens are potentially creating public service mobile applications without the need of highly skilled programmers.

Sharing of resources, knowledge, innovations has made COM a successful e-Governance tool across Netherlands. COM approach has reengineered many traditional functionalities of public sector and converted traditional service delivery into an ecosystem. The investment done by Flemish for ‘MAGDA’ is recovered well before time and now has become a major income source for deployment of new e-Governance systems.

c. United States (World Rank 2012: 5)

The strategy focuses on the key priority area to innovate and deliver better digital services. This specifically focused to increase return on IT investments, reduce waste and duplication, and improve the effectiveness of IT solutions defined in the Federal Shared Services Strategy. A conceptual model was established having three layers of digital services. The information layer contains digital information. It includes structured information such as census and employment data, and unstructured information like fact sheets, press releases, and compliance guidance. The platform layer includes all the systems and processes used to manage this information. Like content management, API web processes, application development, critical services, availability of human resources & infrastructure and financial management. The presentation layer illustrates the methods in which information is organized and provided to citizens. It represents the way
government and private sector deliver government information digitally, whether through websites, mobile applications, or other modes.

To drive this e-Governance transformation following strategy was built. An Information-Centric approach that caters managing manual documents to open data content which can be tagged, shared, secured, mashed up and presented in the way that is most useful for the citizens. A Shared Platform approach helps to work together, both within and across agencies, to reduce costs, streamline development, apply consistent standards, and ensure consistency in how to create and deliver information. A Citizen-Centric approach Influences how to create, manage, and present data through websites, mobile applications, raw data sets, and other modes of delivery, and allows citizens to shape, share and consume information, whenever and whosoever want it. A platform of Security and Privacy ensures the safe and secure delivery and use of digital services to protect information and privacy.

d. Sweden (World Rank 2012: 7)
The IT strategy known as ‘IT in the service of mankind a digital agenda for Sweden', is implemented in 2011. It is an integrated strategy for the coordination of IT initiatives which aims to make the country the world leader in the use of digitization opportunities. “With effective measures, the digital agenda for Sweden identifies four strategic areas of actions, ease and secured use of the Internet in everyday public and private life, value/benefit added governance services, investment in infrastructure through communication networks, increase digitization in all parts of society.”

In Sweden, Lantmäteriet has been appointed as one of four developing agencies in the Swedish Government program for e-Governance. They are responsible for property and geographical information. Since 75 % of public procedures include at least one graphic component, government needs to provide geographical data to all stakeholders. “Citizens don’t only need a map when it is seeking the governments help in cases about cadastre and property; the map can also play a big role in other areas as an information bearer.”

One of the active steps that have been taken in Sweden is the geo data cooperation. It is
cooperation between government agencies, municipalities and other government organizations. e-services at Lantmäteriet are the Diary to Search for public documents, Access to Maps with the Geolex application user can browse national satellite image database for free, Ask the Surveyor communication options the citizen, create Applications for procedural, title registration matters citizens can create applications with the help of Lantmäteriet.

Other prominent e-Governance applications implemented in Sweden are Swedish central procurement agency, a framework agreement for Sweden's public administrations to purchase IT services based on open source software from any of the five pre-selected IT companies and their subcontractors. The Swedish employment agency provides a free-of-charge application enabling smart phone holders to look for a job via their phones.

e. China (World Rank 2012: 78):

China stated e-Governance plans in early nineties under the leadership of the China Communist Party, the State Council, the executive body of the central government, which consists of 30 ministries and commissions and 18 organizations and six offices. Early in 1992, the general office of the State Council set out implementation plans to develop the office automation system for national administration. “A four stage model was developed based on the governmental services provided and the functions deployed at different levels. These stages are government information delivery, one-way service delivery, two-way service delivery, and complete e-Governance.”\(^27\) In 1993, China initiated the three Golden Projects to build sophisticated information network throughout the country. Based on this information network, the State Council of China has been conducting Government Online Projects (GOP) since January 1999 to promote the applications of Internet-based technology at all levels of government.

These Golden Projects include several key initiatives to develop a national information infrastructure and projects like Internal Government Network for citizens, businesses, governmental branches and supporting transactions via internet. GOP also includes Project Office Business Resource System, Marco Policies Management System, Golden
Tax Projects, Golden Customs Projects, Golden Finance Projects for sketching national budget, supervising banks, trusts, securities and insurance, Golden Auditing Projects for supporting electronic auditing, resource database Population Database, Legal Person Database, Resource, Space and District Database, Marco Economy Database. GOP focuses on promoting office automation via government web sites in order to cut down on excessive bureaucracy.

“China government has adopted three thumb rules for implementation of e-Governance projects transforming government functions, reengineering government process, enhancing government transparency.” These are driving force behind many of China’s e-Governance applications at both the national and local levels. “China administrative reform has taken through transforming government functions, reengineering government processes, reorganizing government structures, clarifying functions of government, reducing administrative scrutiny and approval, improving government management. Through these reforms, the central and local governments reduced formalism and overly rigid bureaucracy to improve the governments’ capability to support China’s economic development.”

f. Egypt (World Rank 2012: 107):
Government of Egypt has taken initiatives to provide information services to utilize the benefits of ICT to citizens, businesses, and other governmental bodies. Information and Decision Support Center (IDSC) was established in 1985 to build up Egypt’s IT industry and governmental decision support infrastructure. One of its key objectives was to provide public access to information, with a particular emphasis on facilitating business and investment. “IDSC has launched many IT projects like legislative reform, public sector reform, human resources development and access to Internet, commercial registration, natural resources management, cultural heritage preservation, sectorial development projects at the ministerial & governorates level, and urban planning.”

In 1999, the Ministry for Communications and Information Technology (MoCIT) was formed to build momentum to create an information society and to improve the
information infrastructure. Egyptian National Communications and Information Technology Plan (NCITP) were launched in 2001. NCITP has started Egyptian Information Society Initiative (EISI) which has been structured around seven major related mechanisms. These are e-readiness, e-learning, e-Governance, e-Business, e-Health, e-Culture and ICT Export. “While, many initial projects and efforts have been made, Egypt is still facing many challenges in its endeavor for implementing e-Governance initiatives successfully. This is because of bureaucracy, lack of accountability and transparency, and lack of citizen involvement in decision-making process, privacy and security concerns, and lack of technical unified standards.”31

g. Bangladesh (World Rank 2012: 150):
In Bangladesh in the year 2002 an ICT task force headed by the Prime Minister was formed to implement Bangladesh's first National ICT Policy in 2002. In 2006 access to information programme and in 2008 a national vision for digital Bangladesh was developed as a long-term development platform. “Digital Bangladesh was focused on Bangladesh’s e-Governance ability to compete global economy, and building a responsive and effective e-Governance, capable of delivering e-services to the poor and marginalized.”32 Some of the national e-Governance programme run by Bangladesh government are, policy development, 60 ‘quick win’ projects, union information and service centers (UISCs), district e-service centers (DESC), Capacity-building, Education, Media. These programmes played an important role in spreading Digital Bangladesh at the grassroots level and at the same time raised awareness about e-Governance among the most senior level of government.

2. 4 India’s National e-Governance Plan (NeGP) (World Rank 2012: 125):
Government of India launched its flagship e-Governance programme in May 2006. With the objective of enabling transparent and accountable good governance, Government of India has approved the national e-Governance plan NeGP with the vision, “Make all government services accessible to the common man in his locality, through common
service delivery outlets and ensure efficiency, transparency & reliability of such services at affordable costs to realize the basic needs of the common man.”

NeGP embrace mainly following modules i. Common Service Centers (CSC), ii. e-District projects, iii. State Wide Area Network (SWAN), iv. State Data Centers (SDC), v. State Service Deliver Gateway (SSDG), vi. Standards for e-Governance, vii. National e-Governance Division (NeGD) for capacity building, viii. e-Governance Awareness Strategy, ix. Legislative Framework for Electronic Service Delivery (ESD), x. Mission Mode Projects (MMPs) at the central, state and local government level. The NeGP programme was launched with a wide scope & authenticity and for its effective management. “National e-Governance Advisory Group, headed by the Union Minister of Communications and Information Technology, with representation from central and state government, NASSCOM, public and private sector entities and eminent academia were tasked to solicit views of external stakeholders and to advise government on policy issues and strategic interventions necessary for accelerating and introduction of e-Governance across central and state government ministries / departments.”

Department of Information Technology (DIT), Government of India, is ensuring smooth sharing of information and seamless interoperability of data across e-Governance applications for the success of e-Governance projects. DIT is focusing on e-Governance standards as a high-priority area, and is promoting the usage of open standards to avoid any technology lock-ins. The critical aspects of human resource development and specialized skill training, technical and professional support to state level policy makers, has been taken care by the module ‘capacity building’. To understand the scope and challenges of the NeGP, it is necessary to have an overview of the various Mission Mode Projects (MMPs). The section 2.4.2 provides information on selected MMPs in a concise manner.

To explore the impact of e-Governance projects in India, it is pertinent to learn about the status of SWAN in various states. NeGP act as a medium to facilitate knowledge sharing between various e-Governance domains, enable optimum utilization of the common
infrastructure, create awareness about common policies, standards and guidelines, reduce
duplication of effort, spread learning’s and best practices, promote replication of
successful models across the country in order to attain the envisaged outcomes and goals.

2.4.1 Common Services Centers (CSC) Scheme:
The CSC Scheme as approved by Government of India in September 2006 for setting up
of one lakh internet enabled centers in rural areas under the NeGP with Public Private
Partnership (PPP) mode. CSC are happening delivery points for government, private and
social sector services to rural citizens of India, at their doorstep. The CSC Scheme is
implemented as a bottom-up model for delivery of content, services, information and
knowledge through a collaborative framework between public and private enterprises.
CSCs are set up with the objectives to develop a sustainable business model for citizen
services, social objectives and profit in rural India.

“Under NeGP there is an outlay of Rs. 1649 Crores for CSC scheme out of which
center’s share is Rs. 856 Crores and the state’s share Rs. 793 Crores. A total of 84,000+
CSCs have been rolled out in thirty states/UTs. More than 70% of the rollout has been
completed in 21s states viz. Assam, Bihar, Chandigarh, Chhattisgarh, Delhi, Goa, Gujarat
, Haryana, Himachal Pradesh, Jharkhand, Kerala, Madhya Pradesh, Manipur, Meghalaya,
Mizoram, Orissa, Pondicherry, Sikkim, Tamil Nadu , Tripura and West Bengal and 50%
in 2 states, Maharashtra and Uttarakhand. The State Governments like Andhra Pradesh,
Assam, Bihar, Chhattisgarh, Haryana, Himachal Pradesh, Jharkhand, Madhya Pradesh,
Maharashtra, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal has using
CSC to deliver G2C services”.

In some states CSCs are being utilized to collect data for various government schemes
for MIS, conduct of survey, digitization of records, collection of utility bills and other
related activities. The B2C Services like e-learning, financial services, mobile / DTH
recharge, utility services, employment services, railway ticketing, matrimony services,
UTI, PAN card processing etc. are being identified and offered through the CSCs. State
Bank of India , Punjab National Bank and other commercial banks have started using
CSCs for delivery of financial products and services including banking and insurance. “CSC Online Monitoring Tool (www.csclive.in) has been developed to monitor the uptime performance of the CSCs that are set up in various locations.”

2.4.2. e-District Mission Mode Project:

e-District is a state mission mode project and DIT is the nodal department. “The core services covered under e-district project is, issue of certificates, pensions, revenue court, and public distribution system and grievances redressal services. States can choose five additional service categories.” The implementation strategy takes into account the infrastructure being created under NeGP such as SWAN, SDC, CSCs and NSDG. The state government follows NeGP guidelines for implementation of entire e-District project in two phases, pilot implementation covering few districts and national rollout by 2013. e-District Pilot project is being implemented in 41 Districts of 16 States across India.

2.4.3. State Wide Area Network (SWAN):

In 2005 DIT got approval to implement SWAN scheme in 29 States and 6 UTs across the country for an overall outlay of Rs. 3334 Crores. SWAN is supposed to be backbone network for data, voice and video communications throughout state/UTs and is expected to cater to the information communication requirements of all the departments. SWAN has two components, vertical component and horizontal component. The vertical component of SWAN is implemented using multi-tier architecture with the State/UT Headquarter (SHQ) connected to the District Head Quarter (DHQ) which in turn is connected to the Block Head Quarter (BHQ). Each SHQ, DHQ and BHQ is called a Point of Presence (PoP).

SWAN is implemented either through Public Private Partnership (PPP) Model or National Informatics Centre (NIC) Model. By mid-2013 around 8500 PoPs are providing data, voice & video connectivity to more than 1 Lakh government offices. “SWAN primarily focuses on establishment of service based framework to increase efficiency of government delivery mechanism, to optimize performance, to provide reliable vertical and horizontal connectivity within the state administration, to make the government more...
productive, to provide a secure backbone for encouraging electronic transactions between government departments at all levels within the States/UTs. BSNL has been identified as a preferred Bandwidth Service Provider for SWAN." As on date, SWAN is operational in almost all States/UTs.

In Maharashtra, MSWAN is operating as a network for data, voice and video communications in the state catering information communication requirements of the entire state government and its departments. “The MSWAN consists of a 3 tier structure, State Head Quarter (SHQ), District Head Quarter (DHQ) and Taluka Head Quarter (THQ). These tiers have Point of Presence (PoP) and Point of Interconnectivity (PoI) for various horizontal offices. MSWAN is designed to connect 35 DHQ to SHQ, 358 THQ to respective DHQ. Some of the services of the MSWAN are being used for various applications including HD video conference at SHQ, Mantralaya, DHQ and THQ. 92 offices of police department, 6 offices of MHADA, 4 offices of employment & self-employment, courts, sales tax offices, transport offices, maritime board offices, urban local bodies, treasury, food and civil supply are connected through MSWAN.”

2.4.4. State Data Centre (SDC):

SDC is one of the three components of the core infrastructure of NeGP, the other two being SWAN and CSCs. “SDC scheme is for establishment of data centers in all the States/UTs so that common and secure IT infrastructure is created to host state level e-Governance applications / data to enable seamless delivery of G2G, G2C and G2B services duly supported by SWAN and CSC established at the village level. SDC scheme approved by the government involves a total outlay of Rs.1623.20 Crores towards the capital and operational expenses over a period of 5 years (2011-2015).”

The SDCs will be equipped to host / co-locate systems to use centralized computing power and storage facilities. Once implemented, SDC shall enable state departments to host their services/application on a common infrastructure, ensuring easy integration and
efficient management and further ensuring that computing resources and the support connectivity infrastructure is adequately and optimally utilized.

In regard to the physical and logical security components, necessary from information security perspective, the SDCs went for having ISO:27001 certification. To manage and control strategically, the unified and secure e-Governance infrastructure of the DCS, DIT had designed an institutional framework. A MoU has been executed between the state / UT government and NIC for setting up a composite team of technical experts. The composite team will be responsible for all aspects of establishment and management of DSCs and associated e-Governance infrastructure.

2.4.5 State Service Delivery Gateway (SSDG):

NeGP is aiming to create an integrated information infrastructure that will enhance the utility & reach of the services provided by the government through CSC network and aims to enhance the services provided to the citizens through CSCs by leveraging the common infrastructure (SWAN, SDC etc.) at the States/UTs level. “It is planned that state portal (SP) along with State Service Delivery Gateway (SSDG) will be developed and implemented, so that citizens will get outlets where they can access the services under a single interface mechanism in the form of a portal. This will enable citizens to download forms and submit their applications electronically with the help of electronic forms hosted on the SP and routed SSDG.”

This important initiative of e-service delivery provides significant benefits to the citizens especially in the form of a single gateway to citizen. Holistic and harmonious use of the CSCs along with the common infrastructure SWAN, SDC and technology across the state for all application and services has made an impact. “The SSDG project mainly focuses on assured electronic delivery to citizen, electronic acknowledgement, and query status at any point in time. It also state portal & ensure to provide easy, anywhere and anytime access to government informational & transactional services. It helps to reduce number of visits of citizens for availing the services, to reduce administrative burden and service fulfillment time & costs for the government. It tasks to reduce direct interaction of citizen
with government and encourage e-interaction and more efficient communication through portal. It works to enhance perception & image of the government and its constituent departments, to promote uniform web interface across government and build in synergies with the National Portal of India (NPI). Using NSDG, it helps to publish static data and all information of the state departments in line with guidelines necessary for integration with NPI.

2.4.6. Standards for e-Governance:
Standards in e-Governance are a high priority activity which helps to ensure sharing of information and seamless interoperability of data across e-Governance applications. DIT under NeGP is promoting the usage of open standards to avoid any technology lock-ins. An institutional mechanism has been setup under NeGP to evolve/adopt standards for e-Governance. “There is an apex body under the chairmanship of Secretary, DIT with members from NASSCOM, MAIT, BIS, central & state government which is responsible for approving and notifying e-Governance standards. Standards and guidelines already notified and made available on the standards website http://egovstandards.gov.in. Standards are designed for data & metadata, localization and language technology, network and information security, digital signature, policy on open standards, biometrics, etc.”

2.4.7. Capacity Building Scheme – Role of NeGD:
The implementation of the NeGP requires significant capacity building, institutional strengthening and change management. Recognizing this need, the Government of India approved the Capacity Building (CB) scheme as a central sector scheme in 2008. The scheme addresses critical human resource development and training needs of NeGP to provide technical and professional support to state level policy and decision makers, and to develop specialized skills for e-Governance at all levels.

The objectives are establishing institutional frameworks for e-Governance programme, setting up of State e-Mission Teams (SeMTs), imparting specialized training, knowledge
sharing and bringing in international best practices, strengthening training institutions in the states, setting up a capacity building management cell for coordination and implementation.

The SeMTs provides professional support for standardization and consistency through program management. This SeMT functions under the administrative control of state government through a nodal agency for day-today operations. National e Governance Division (NeGD) is an independent business division within Media Lab Asia, a public sector company, registered under section 25 of companies act under the Ministry of Communications and Information Technology in 2009. “In NeGD, special Capacity Building Management Cell (CBMC) handles tasks like strengthening SeMTs, training of stakeholders, design and development of training content and curriculum, plan and identify resources, strengthen the institutional mechanism for imparting training on regular basis, design and development of knowledge management framework, roll out of training programmes, share good e-Governance practices in other states, e-Governance project lifecycle, government process reengineering (GPR), business models and PPP, change management, regulatory framework for e-Governance, IT act, information security management, enterprise applications & open source for e-Governance, project management assertiveness, communication & presentation skills.”

2.4.8 Awareness Strategy for NeGP:
e-Governance has enormous potential for improving the internal efficiency of the public sector and the delivery of public services to citizens and other government customers. NeGP is a major initiative of the Government of India for ushering in e-Governance for improving the quality of basic governance, on a massive scale in areas of concern to the common man. “NeGP consists of 10 components and 31 Mission Mode Projects (MMPs) to be implemented at the central, state and local government levels. To enable e-delivery of public services, a digital service delivery infrastructure of 1 Lakh+ CSCs, SWAN, and SDC are being setup across India.”
The main objectives of the NeGP awareness & communication strategy are to build NeGP as an umbrella brand under which all individual product brands flourish. The important aspect of these campaigns is that while each of these products is a mega brand in its own right, by virtue of being part of an umbrella brand, it derive additional benefits such as pooling of additional resources, greater exposure etc. The activities which are planned under awareness strategy are, use of unified logo and tag line, formulate joined campaign, promote NeGP as flagship programme, create awareness about services and service channels, synergies with CSC campaign for grassroots awareness, raise awareness among leadership, involvement of stakeholders like industry, civil society organizations and academia.

2.4.9 Framework for Mandating Electronic Service Delivery (ESD):
The Information Technology Act, 2000 provides legal recognition for electronic transactions and enables citizens to electronically access information and public services efficiently and seamlessly. IT act 2000 was amended in 2008. But delivery of public services electronically to the citizens was not broadly covered in IT act. “Second Administrative Reforms Commission (ARC) in its eleventh report submitted in 2008 has recommended that, a clear road map with a set of milestones should be outlined by Government of India with the ultimate objective of transforming the citizen-government interaction at all levels to the e-Governance mode by 2020. In backdrop and keeping these views, it was proposed to provide a legal framework that would mandate provisioning of all public services of the central government ministries / departments compulsorily through electronic means only.

The legal framework will complement the RTI act by ensuring mandatory delivery of all public services electronically by a fixed date by fast-forwarding implementation of e-Governance projects. This would ensure accessibility of all public services by the common man at a place near his locality at affordable costs and will also result in efficiency, transparency and reliability of such services, thereby improving the quality of governance.” The proposed legal framework has not come into existence yet and hence all the e-Governance activities are ruled under IT act 2000.
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