# E-Governance: Digitalization of Government System and World Ranking of India

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## Abstract

*Electronic Governance is combining information and communication technology in all the government processes to enhance the ability of government to address the need to its stakeholders. The aim behind the system is to simplify process for all; government, businesses, employees and citizens at local, state and national level. Effective implementation of IT in government services provide hassle-free government and citizens' connect. ICTs play a vital role in development and economic growth of the country. A successful implementation of ICT in e-Governance system endow with one stop solution to all the problems.* ICT is a remedy for many of the issues related to citizen and government connection and it is a key device to support the government for becoming good governance. Therefore the paper explores the concept of e-Governance system and India's position on world platform. The research develops an understanding on e-Government as a system, e-Governance as a function and how Indian government is constantly working upon for an upward move in world platform.

**Key Words**: e-Government, e-Governance, digitalization, technology.


## 1.     *Introduction to Government*

The new Oxford English dictionary defines government as "The system by which a state or community is governed" or "the action or manner of controlling or regulating a state, organization or people". An etymological view can focus on the statement of former American President Abraham Lincoln "The government is by the people, for the people and of the people". Government is a structure that influences citizens, control and regulate the country to move forward for the overall development of the country. The discovery of ICT

becomes a successful tool to replace the manual government to e-Government. In other words e-Government converted the manual system of citizen interaction into electronic system.

*The initial process of e-Government started with communication between government entities. After commanding on this aspect of information sharing government units moved towards engaging citizens online in a participatory framework. The internet and ICT became the participatory medium, Government throughout the world dependent on internet for providing information and services, more access on information and offered an alternative medium to citizens to connect with government. Also the internet friendly citizens are in more ease to access the updated information and services at their door step, fetch all the information through government websites.*

## *1.1 What is e-Government?*

The U.S. e-Government Act, 2002 describes e-Government as "The use by the Government of web-based Internet applications and other information technologies, combined with processes that implement these technologies, to enhance the access to and delivery of Government information and services to the public, other agencies, and other Government entities or bring about improvements in Government operations that may include effectiveness, efficiency, service quality, or transformation".

Almarabeh & AbuAli (2010) defined e-Government "government use of information communication technologies to offer for citizens and businesses the opportunity to interact and conduct business with government by using different electronic media such as telephone touch pad, fax, smart cards, self-service kiosks, e-mail / Internet, and EDI. It is about how government organizes itself: its administration, rules, regulations and frameworks set out to carry out service delivery and to co-ordinate, communicate and integrate processes within itself".

Rahim & Athmay (2015) discussed that "e-Government is an institutional approach that focuses on carrying out decisions related to policy making and service provisions whose ultimate aim is creating a more satisfied picture of government business processes".

Keefe and Crowther (2015) stressed upon the concept that "e-Government is the use of Information and Communication Technologies in public administrations combined with organizational change and new skills in order to improve public services and democratic processes".

Paoli & Leone (2015) opined that "e-Government can be defined as a system to improve organizational performance, processes efficiency and the interaction between governments and citizens through Information and Communication Technologies (ICT)".

### 1.1.1 Elements of e-Government:

A proper and attentive implementation of e-Government benefits both; the government and the citizens. e-Government where e represents electronic is the use of ICT to support government operations and engage citizens. The following four key elements of e-Government when combined together create a unified process:

- e-Services
- e-Commerce
- e-Democracy
- e-Management

**1.1.1.1 e-Services:** The term service implies to meeting the need of stakeholders and the electronic version includes service provider, service receiver and the channels of service delivery i.e. technology. e-Services is electronic delivery of services to government departments, employees, businesses and citizens. It includes passing on the information, delivery of government services etc.

**1.1.1.2 e-Commerce:** Electronic exchange of money for goods and services is considered as e-Commerce and it's the second salient of e-Government process. E-Commerce in e-Government created huge business opportunities, provided ease to citizens as they do not need to leave home, just browse websites, avail services and make the electronic payments.

**1.1.1.3 e-Democracy:** It is a form of government in which all the adult citizens are supposed to be eligible to participate for development of the nation. e-Democracy builds upon e-Government  initiative as an example digital service delivery, open access to government information, civic engagement and citizen digital literacy programs. It is concerned with decentralization of decision making power through fostering connection between government and stakeholders.

**1.1.1.4 e-Management:** As a part of new evolving concept e-Government Francis Ohanyido coined the term e-Management. Here e-Management includes planning, organizing, staffing, directing and controlling governments' effort and accomplishing goal through ICT. Use of ICT in government operation improves and streamlines the business operations. E-record management is the important part of e-Management that improvises the

flow and integration of information however; this is defined as collection, maintenance, utilization and disposal of records and to upkeep the documentation.
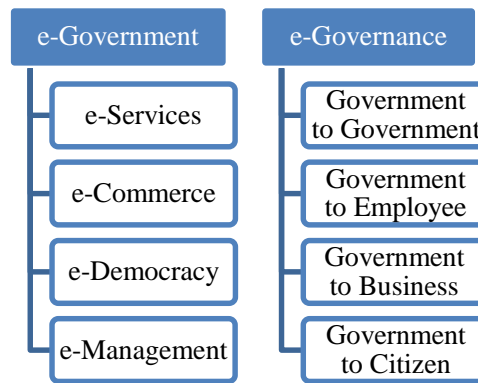
## 1.2 What is e-Governance?

Datta & Devi (2015) defined it as "E-Governance means the use of internet by the government to provide its services at the door step of customers, business and other stakeholders. It refers to the delivery of government information and services via the Information and communications technology (ICT) to citizens or businesses or governmental agencies"

Rahim & Athmay (2015) defined e-Governance as a wider concept and focused on "that this system defines and assesses the impact of technologies on the practices of civil servants and the relationship between them and the wider society, it goes beyond simple service provision and builds interaction with the diverse stakeholders of government through the integration of people, process, information and technology".

*Giri et al. (2018) defined "e-Governance as a tool that* helps to restructuring the way the Governments work, share data and information, connect citizens and deliver services using technology to external and internal clients for the benefit of both government and the clients that they provide".

A noteworthy Conclusion can be drawn from the above mention definitions that both the e-Government & e-Governance are not a day's process, but the entire system need to put effort together and make the strategies, which are able to implement it. As a general practice people use e-Government and e-Governance as the synonyms of each other but these words have different meaning though inter connected. "e-Government: which is provisioning of e-services with available technology and e-governance: which is the vision to use resources and technology and deliver e-services that are appropriate to the political, social, and economic contexts and are effective in creating citizen well-being and economic gains for the government". Howeverfigure 1 shows the key elements of e-Government and e-Governance to have a more clear understanding.

**Figure 1: Key elements of e-Government and e-Governance**

| e-Government | e-Governance |
|---|---|
| e-Services | Government to Government |
| e-Commerce | Government to Employee |
| e-Democracy | Government to Business |
| e-Management | Government to Citizen |

**Source: Author's Compilation**

### 1.2.1.  Elements of e-Governance:

The e-Governance is a function of ICT implementation and to make government services efficient and accessible. The intent is to overcome from the traditional paper based system to enhance the working of current government. e-Governance is delivery of SMART government that stands for S-Simple, M-Moral, A-Accessible and RT-Responsive Government. It is not only a website on the internet it is a digitalization of government services to promote digital democracy, online delivery and increase citizen participation. The network includes government, public and business organization. E-Governance system is classified into four categories:

- *Government to Government or G2G*

- *Government to Employees or G2E*

- *Government to Business or G2B*

- *Government to Citizens or G2C*

### 1.2.1.1. Government to Government (G2G):

The interaction between Government to Government between different government departments and agencies refers to G2G classification. It increases the efficiency of government and relationship between national, state and local government. The process is considered to be more transparent as by using online communication government can now able to share the database with other department without any difficulty. It is very difficult for the government to look upon all the related affairs therefore to make the process simple and more effective government appoints agencies, collaborates with different state and local government department to have a synchronized delivery system that further gives meaningful results. G2G services are at local, state and international level. It not only communicates with local or state level but also global level as well and constructs universal database for all member states to enhance the government operations.

### 1.2.1.2. Government to Employee (G2E):

Government to Employee is the internal component of G2G component. The objective behind is to bring employees together and improve technical education. It provides various online facilities that improvise the working pattern of government employees. The system connects government employees with the organization with verity of services such as record of salary and leave, medical records and insurance of employees, training and development etc. This refined system also focus on harmony and better interaction between G2E and take the important decisions to speed up all the need of employees.

### 1.2.1.3. Government to Business (G2B):

It is a platform where the exchange of services between Government and Businesses is done. G2B classification plays a vital role in business development in modern world. This interface enhances the quality of communication and brings transparency between business sector and government department. G2B provides timely business information, easy and convenient access to government and access to needed form to comply. In today's scenario businesses are facing cutthroat competition but a well structured public-private partnership will surely grow the business economy from a single window portal.

### 1.2.1.4. Government to Citizen (G2C):

Government to citizen is important initiatives that link the relationship between government and citizens. It can be defined as an excellent platform equipped with comprehension to handle the public affairs and provide a democratic environment. Government infuse commendable efforts to provide citizen centric digital services such as tax returns, renewal of licenses and passport, electricity bill at reduce cost of conducting a transaction with no time and land barrier. The system all over the world acquired a great success with great citizen participation. It not only offers all the significant information to public but also a basket of services to ordinary man and established a strong relation between government and its citizens.

## 2.    *World e-Government Ranking*

*The United Nation e-Government survey is an assessment of application of ICT and e-Governance adopted by the countries. E-Government is a support system for the s*ustainable and resilient societies. *UN e-Government survey is conducted by* the United Nations Department of Economic and Social Affairs (UNDESA). The survey presents the e-Government Development Index and it is composite indicator that consists of three indexes (Online Service Index, Telecommunication Index and Human Capital Index). Along with an evaluation of the pattern of the website of the country, EGDI incorporates infrastructure and

education level just to understand how a country is utilizing the ICT to promote the participation of its citizens. The EGDI assess on four dimensions:

- Technology
- Content Provision
- Services Provision
- Participation and Engagement

Technology is the basic features of the government websites; Content Provision examines the availability of essential information; Services Provision evaluates the delivery of fundamental electronic services and Participation and Engagement refers to the level of participation and engagement by citizens.

UN e-Government survey 2018 is on "gearing e-government to support transformation towards sustainable and resilient societies". The survey highlights the e-Government development. It assesses change in people's everyday life due to innovation and digital technology in public sector. A case study based survey evidenced not just the improved government processes and work flow with greater efficiency and effectiveness, but also highlighted the inclusion and participation of the citizens. However, internet connectivity and access to this technology is still low in some regions and countries, in particular some parts of Africa. Countries moving ahead for digitalization must consider the unprecedented risks because without careful application design can harm the interest of large population and can adversely affect the economy of a nation. Therefore in the present UN survey, it has been discussed that designing of digital system is a significant process and to have an in-depth understanding of the system government and supporting agencies must plan proper training programs and impart them to stakeholders for the sustainability of digitalization of government and services.

The United Nation e-Government Survey 2018 is the $10^{th}$ edition to track the e-Government development achieved by member countries of United Nation. e-Government has been growing rapidly over the past 17 years since the first attempt of the United Nations to benchmark the state of e-government in 2001. The UN survey does not capture the development in absolute term rather it just gives an indicative assessment of the e-Government performance nations relative to one another.

The methodology of EGDI is a weighted average of normalized scores of three important parameters mentioned in figure 2.

**Figure 2: EGDI Parameters**
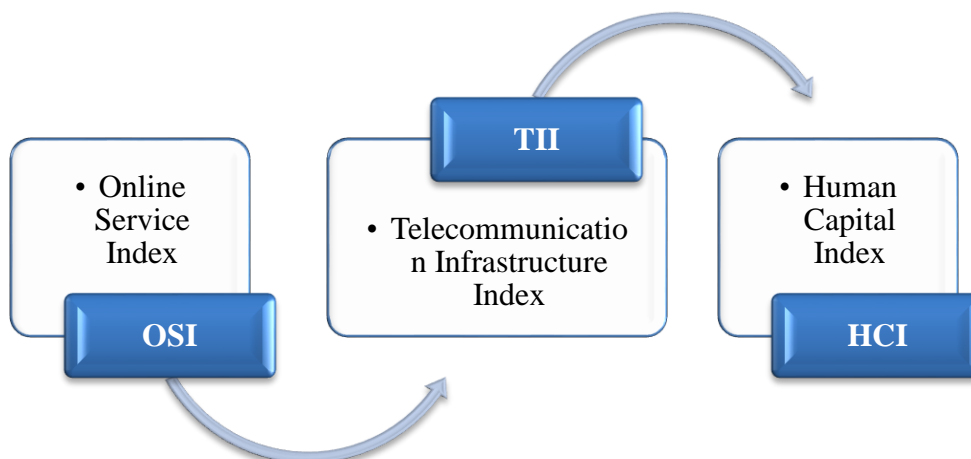


**Source: Author's Compilation**

*Table 1:* **World e-Government Ranking UN Survey 2018 (Top 20 Countries)**

| *Rank* | *Country* | *Region* | *EDGI* |
|--------|-----------|----------|--------|
| *1* | *Denmark* | *Europe* | *0.9150* |
| *2* | *Australia* | *Oceania* | *0.9053* |
| *3* | *Republic of Korea* | *Asia* | *0.9010* |
| *4* | *United Kingdom of Great Britain and Northern Ireland* | *Europe* | *0.8999* |
| *5* | *Sweden* | *Europe* | *0.8882* |
| *6* | *Finland* | *Europe* | *0.8815* |
| *7* | *Singapore* | *Asia* | *0.8812* |
| *8* | *New Zealand* | Oceania | *0.8806* |
| *9* | *France* | *Europe* | *0.8790* |
| *10* | *Japan* | *Asia* | *0.8783* |
| *11* | *United State of America* | *America* | *0.8769* |
| *12* | *Germany* | *Europe* | *0.8765* |
| *13* | *Netherlands* | Europe | *0.8757* |
| *14* | *Norway* | Europe | *0.8557* |
| *15* | *Switzerland* | Europe | *0.8520* |
| *16* | *Estonia* | Europe | *0.8486* |
| *17* | *Spain* | Europe | *0.8415* |
| *18* | *Luxembourg* | Europe | *0.8334* |

| 19 | Iceland | Europe | 0.8316 |
| 20 | Austria | Europe | 0.8301 |

*Source: UN e-Government Ranking 2018*

The ICT offers a strong pillar to build an effective transformation system with transparency, accuracy and accountability. *Table 1 shows the top 20 developed countries in World e-Government ranking 2018. The index shows that out of 20 countries 14 countries belongs to Europe, 3 are from Asia, 2 are from Oceania and 1 from America. Denmark topped with EGDI 0.9150. These top 20 countries are the inspiration to other developing countries for further progress and to upgrade themselves in world ranking.*

*The UN e-Government survey 2018 also grouped e-Government index on the basis of region and income. Table 2 shows the regional grouping of e-Government Development Index and Table 3 describes the economic grouping of* e-Government Development Index.

*Table 2:* **World e-Government Ranking UN Survey 2018 – Regional Grouping**

| Rank | Region | EGDI |
|------|----------|--------|
| 1 | Europe | 0.7727 |
| 2 | Americas | 0.5898 |
| 3 | Asia | 0.5779 |
| 4 | Oceania | 0.4611 |
| 5 | Africa | 0.3423 |

*Source: UN e-Government Ranking 2018*

**Table 3: World e-Government Ranking UN Survey 2018 – Economic Grouping**

| Rank | Level of Income | EGDI |
|------|-----------------|--------|
| 1 | High Income | 0.7838 |
| 2 | Upper Middle Income | 0.5655 |
| 3 | Lower Middle Income | 0.4411 |
| 4 | Low Income | 0.2735 |

*Source: UN e-Government Ranking 2018*

*The Denmark with high EGDI 0.9150 jumped to first position in 2018 which was at 9 in 2016. The table shades light on the high EGDI region that is Europe, European countries lead          e-Government development. 5 of the top 10 countries are of Europe and none of the country ranks below the high EGDI category. The survey also observes a positive correlation between the income level and ranking in most of the cases, reasons Europe leads while Americas and Asia stands almost equal in row. European e-Government action plan 2016-2020 intend to speed up the digital transformation of e-Government, to ensure success of EU as a single market and making it possible by removing exiting digital barriers.*

## 3.    *United e-Government Survey and India*

*India, a country with 26 local languages, finding content to communicate with the local population is a challenge. It is a significant effort to create awareness and provide* local, relevant and useful content. According to the UN survey 2018 the e-Government development score of India is 0.5669 falls above the global EGDI index. e-Initiatives taken by Indian Government are remarkable and India makes a massive leap in 2018.

UN e-Government survey is conducted in every two years and the position of India is upgrading in every survey. In 2012 India ranked 125 with 0.3829 EGDI, in 2014 the position was 118 with 0.3834 EGDI, in 2016 rank was 107 with 0.4637 EGDI and now in 2018 survey India takes 96 position with moderate EGDI score 0.5669.

*Government of India is constantly working on the development of e-Governance system. The National Portal is developed* as a single-window access to information and services for citizens especially for un-reached rural population and women. UN e-Government survey 2012 highlighted that in India e-services is at formative stage where large population is an associated challenge. Government announced rural broadband connectivity to gram panchayats to bridge the digital divide.

The survey of 2014 shades light that even though there is a manifold increase in internet access population in India. It was million in 2000 and in 2012 it is close to around 137

million but literacy level is very low in comparison. So, in absence of command over language and education they will be barred from the vast reservoir of information available in the electronic world. But the availability of more than one language national portal is quite notable. eFMS (electronic fund management system) is a remarkable e-payment initiative taken by Indian Government which involves disbursement of wages direct to the accounts of National Rural Employment Guarantee Scheme (NREGS) beneficiaries.

UNEGS 2016 discussed various initiatives taken by Indian Government for the sustainable digital development. Streamline of land records is done by the Government of Karnataka by introducing and implementing the project Bhoomi – ICT based land registry management system. Innovative public private partnership helps in effective planning and implementation of e-Governance projects. Taking the example of two states, e-Mitra project undertaken by Rajasthan Government and local services providers aims to deliver e-Governance services via dedicated centers and kiosks and MPonline project a joint venture of Madhya Pradesh government and TATA consultancy services, the portal provides online citizen services in the areas of education, health, agriculture etc.

Survey of 2018 appreciated the AADHAAR program of Indian Government aiming to provide a digital identity to entire population and it is serving as a basis of interaction with government and other agencies. Most Indian states have enrolled more than 80% of their residents. Though country is putting efforts in ICT field preparing and implementing desired policies aiming to provide efficient and accurate e-Governance system but due to inadequate infrastructure support, low literacy rate, poverty and political instability the efforts are not giving desired results.

Talking about all the said setbacks, India has registered commendable growth in UN 2018 e-Government survey. It is going to boost up the confidence of policy makers and make all the so called impossible things possible through continuous improvements and efforts in the field of ICT. Focusing all the three dimensions of EGDI, India has shown a promising OSI (online service index) score of 0.9514, considering the factors of adult literacy rate and enrolment percentage in schools there is interesting HCI (human capital Index) 0.5484 but shown a notable low performance TII (telecommunication infrastructure index) with a meager score of 0.2009.

## 4. e-Governance in India

Ministry of Electronics and Information Technology, Government of India defined e-Governance is "Make all Government services accessible to the common man in his

locality, through common service delivery outlets, and ensure efficiency, transparency, and reliability of such services at affordable costs to realize the basic needs of the common man". Being in the era of ICT, India decided to take a firm step and set up a Department of Information Technology in the year 2000. Government of India approved the National e-Governance Plan, consisting of 31 Mission Mode Projects on 18th March 2006. The Government has accorded approval to the vision, approach, strategy, key components, implementation methodology, and management structure for NeGP. The projects were implemented by central ministries, state and state departments with its core objectives. The MMP's were classified as state, central or integrated projects and described in table 4.

**Table 4: Mission Mode Project's of Indian e-Government System**

| Central MMP's | State MMP's | Integrated MMP's |
|---|---|---|
| • Banking | • Agriculture | • CSC |
| • Central Excise and Custom | • Commercial Taxes | • e-Biz |
| • Income Taxes | • e-District | • e-Courts |
| • Insurance | • Employment Exchange | • e-Procurements |
| • MCA21 | • Land Records | • EDI for e-Trade |
| • Passport | • Municipalities | • National e-Governance Service Delivery Gateway. |
| • Immigration, Visa and Foreigners Registration and Tracking | • e-Panchayats | • India Portal |
| • Pension | • Police | |
| • e-Office | • Road Transport | |
| • Post | • Treasuries Computerization | |
| • UDI | • PDS | |
| | • Education | |
| | • Health | |

**Source: Ministry of Electronic and Information Technology**

In order to encourage e-Governance in integrated manner, various initiatives have been taken to develop the infrastructure support. The major infrastructure supports are State Data Centre's (SDCs), State Wide Area Networks (S.W.A.N), Common Services Centre's (CSCs) and middleware gateways i.e. National e-Governance Service Delivery Gateway (NSDG), State e-Governance Service Delivery Gateway (SSDG), and Mobile e-Governance

Service Delivery Gateway (MSDG). The support components were policies and guidelines on securities, employees and citizens' engagements.

## 5.    *Conclusion*

The National e-Governance Plan (NeGP) is originated by the Department of Electronics and Information Technology (DEITY) and Department of Administrative Reforms and Public Grievances (DARPG) in 2006. It intends at efficient delivery of government services to citizens and businesses with the following 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."e-Governance system is introduced by several developed and developing countries to have  smooth , effective and transparent flow of information and services to the citizens. Plenty of researches have been conducted till now in this domain. Expansion of            e-Governance for citizen centric service delivery domain in different state of India is an empirical progress. The e-Governance projects have been implemented with true commitments in different parts of the country to improve the service delivery and increase the citizen and government interaction through digital mode of communication. But the success of e-Governance implementation is greatly depends upon how far its alertness, accessibility and the consistency in usage done by the citizens through digital system.

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**Web Resources**

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