

e-Governance Initiatives in India

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Abstract: The government forms the backbone of any nation. It provides the framework for its functioning by maintaining law and order, ensuring stability, and the implementation of different policies that benefit the nation and its people.

India, the world's largest democracy, has been making significant strides in the field of e-Governance in recent years. E-Governance refers to the use of various Information and Communications Technology (ICT) applications to deliver government services. It enhances the citizens' ability to access basic government programs while promoting transparency and openness in government operations.

The major scopes of e-Governance include four types of interactions: Government to Citizens (G2C), Government to Business (G2B), Government to Government (G2G), and Government to Employees (G2E) [1]. It also encompasses transparency in taxation, electronic registration, efficient management of various government departments, electronic education, diverse electronic service delivery mechanism, transparency in banking operations among others.

India is steadily progressing towards achieving e-Governance and has taken various initiatives for its full implementation. The goal of this paper is to discuss various initiatives taken by India to achieve e-Governance; along with minimum steps that government departments can take towards achieving e-Governance.

Keyword: e-Governance, Information and Communications Technology (ICT)

I. Introduction

India has witnessed rapid digitalization across nearly all spheres of public life, with over 1.2 billion [1] phone users and more than 954.4 million [2] Internet subscribers—a number that continues to grow. The rapid growth of digital media has provided easy access to various online services even for the rural population of India.

Initiatives such as Make in India and Digital India are creating a positive ripple effect across online services, including both government and commercial sectors. This presents India with a significant opportunity to implement e-Governance efficiently and effectively, while also expanding its reach into rural areas.

2. E-Governance: It refers to the use of various Information and Communications Technology (ICT) applications to deliver government services. Hence e-Governance is basically a move towards SMART [3] governance implying: Simple, Moral, accountable, responsive, and transparent governance.

The four pillars of e-Government are given in Figure 1.

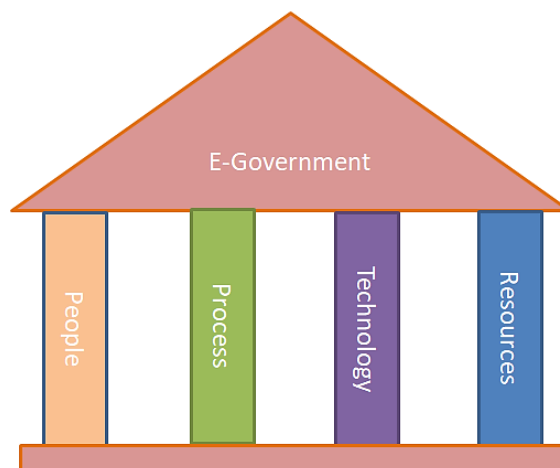


Figure 1: Four pillars of e-Government

- i. **People:** This pillar emphasizes the inclusion of citizens, government employees and stakeholders, addressing their needs, participations and empowerment through e-Governance initiatives [3].
- ii. **Process:** This pillar focuses on the streamlining and modernization of government processes and procedures, aiming for transparency and efficiency [3].
- iii. **Technology:** This pillar focuses on use of Information and Communication Technology (ICT) including software, Infrastructure and digital platforms [3].
- iv. **Resources:** This pillar includes human, financial, and organizational resources to support e-Governance implementation and ensure its sustainability [3].

There are four types of interactions in e-Governance as given in Figure 2 below, namely:

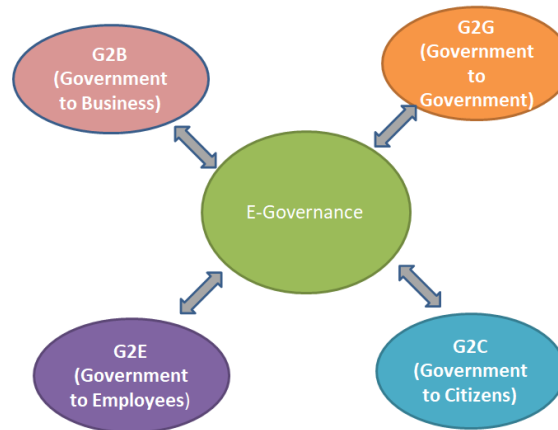


Figure 2: Four types of interactions in e-Governance

- i. **G2C (Government to Citizens):** In this scenario, a connection is established between the government and its citizens, allowing them to benefit from the effective delivery various public services. This not only broadens the availability and accessibility of public services but also enhances their quality. The basic idea is to create citizen friendly government [3].
- ii. **G2B (Government to Business):** In this scenario, a business community can interact with government by using e-Governance tools. The goal is to reduce bureaucratic obstacles, save time, lower operational costs, and foster a more transparent business atmosphere in interactions with the government. G2B initiative can be transactional, such as licensing, procurement, permits and revenue collection [3].
- iii. **G2G (Government to Government):** G2B enables seamless interaction between various government entities. This kind of interaction can occur between various agencies and departments within the government, between two government such as union government and state government or between multiple state governments. The main aim is to boost efficiency, performance, and output [3].
- iv. **G2E (Government to Employees):** This scenario includes interaction between the government and its employees. It represents a two-way relationship between the organization and its employees. The use of ICT tools in e-Governance helps make these interactions fast and more efficient and thereby increasing the satisfaction levels of government employees [3].

2.1 A History of E-Governance in India

India's journey in e-Governance began in 1970 with the establishment of the government's Department of Electronics. The subsequent creation of the National Informatics Centre (NIC) in 1977 marked the first major step towards e-Governance in the country. However, the main thrust for e-Governance came with the launch of ICNET in 1987 – the national satellite-based computer network. The District Information System of the National Informatics Centre (DISNIC) program was launched to computerize all district offices in the country. By 1990, NICNET had been extended from state capitals to all district headquarters. In 1999, a separate ministry was created for Information Technology [3]. The Information Technology Act was passed by Indian Parliament in 2000 [4].

3. E-Governance in India

With initiatives such as the Digital India scheme and the National e-Governance Plan (NeGP) aimed at improving citizen access to government services, enhancing efficiency, and promoting transparency, India has made significant progress in e-Governance. As a result, India is now among the leading nations adopting e-Governance. In the UN's E-Government Development Index (EGDI) 2024, India ranks 97th out of 193 countries, with a score of 0.6678, reflecting a composite measure of online services, telecommunication infrastructure, and human capital [5].

3.1. Some E-Governance Projects in India:

- i. **Poshan Tracker:** It a platform for monitoring and improving the Anganwadi services, managed by the Ministry of Women & Child Development [6].
- ii. **iGOT (Integrated Government Online Training):** This Platform has been developed for skill development and capacity building of government employees and launched by Karmayogi Bharat [6].
- iii. **ShikshaSetuAxom:** A Project, i.e, a vital educational tool launched by SamagraShiksha, Government of Assam, focused on improving educational outcomes [6].
- iv. **RajkisanSaathi Phase –II:** This project is based on the pillars of the e-Governance Roadmap of Rajasthan & Modern Governance, aiming to empower farmers [12].
- v. **Open Network for Digital Commerce (ONDC):** It is a public technology initiative launched by the Department for Promotion of Industry and Internal Trade (DPIIT) to promote digital commerce and enable seamless transactions [6].
- vi. **Karnataka GIS:** It is envisioned as a tool to enable better Governance and citizen services and aims to provide a common platform for standardized, updated, and seamless GIS-ready data to enhance interoperability, integration, and e-Governance [6].

There are numerous projects running in India as an initiative of e-Governance.

3. National e-Governance Plan (NeGP)

The National e-Governance Plan was approved by the Cabinet in May 2006 with a vision to provide public services to the common man in his locality at affordable costs [7]. It is an initiative to make public services accessible to citizens through electronic media aiming for transparency, reliability, and efficiency, with the vision of “making all government services accessible to citizens in their locality.

The NeGP is a multi-stakeholder programme which primarily focuses on making critical public services available and promoting rural entrepreneurship. Numerous services targeted under NeGP such as Common Services Centres (CSCs), State Wide Area Networks (SWANs), State Data Centres (SDCs), the National Knowledge Network (NKN), E-Learning, Cyber Security, and e-Office, among others.

Common Services Centres (CSCs) serve as access points for delivery of Government-to-Citizen (G2C) e-services, bringing them within reach of the citizen by establishing physical service delivery ICT infrastructure.

A State Wide Area Network (SWANs) is a core infrastructure component of the National e-Governance Plan. Designed as a converged backbone network for voice, video and data communications, it spans all 29 States and 6 Union Territories. It aims to create a dedicated closed user group (CUG) network with a minimum speed of 2 Mbit/s by connecting around 7500 points of presence (PoPs), providing data, voice & Video connectivity to more than 50,000 government offices. Additionally, It seeks to ensure reliable vertical and horizontal connectivity within the state and UT administration, facilitating electronic transactions between government departments.

The National Knowledge Network (NKN) project is aims to establish a strong and robust Indian network which will be capable of providing secure and reliable connectivity.

4. National e-Governance Plan (NeGP) 2.0

The Union Cabinet chaired by the Prime Minister, Shri Narendra Modi, approved the Approach and Key Components of e-Kranti : National e-Governance Plan (NeGP) 2.0. This is a follow up to the key decisions made in the first meeting of the Apex Committee on the Digital India programme, held in November 2014. This programme was envisaged by the Department of Electronics and Information Technology (DeitY) [9].

The objectives of 'e-Kranti' are as follows:

- i. To redefine NeGP with transformational and outcome oriented e-Governance initiatives.
- ii. To enhance the portfolio of citizen centric services.
- iii. To ensure optimum usage of core Information & Communication Technology (ICT).
- iv. To promote rapid replication and integration of eGov applications.
- v. To leverage emerging technologies.
- vi. To make use of more agile implementation models.

The key principles of e-Kranti are as follows:

- i. Transformation and not Translation.
- ii. Integrated Services and not Individual Services.
- iii. Government Process Reengineering (GPR) to be mandatory in every MMP.
- iv. ICT Infrastructure on Demand.
- v. Cloud by Default.
- vi. Mobile First.
- vii. Fast Tracking Approvals.
- viii. Mandating Standards and Protocols.
- ix. Language Localization.
- x. National GIS (Geo-Spatial Information System)
- xi. Security and Electronic Data Preservation.

E-Kranti is primary pillar of the Digital India programme. The Vision of e-Kranti is "Transforming e-Governance for Transforming Governance". The Mission of e-Kranti is to ensure a Government wide transformation by delivering all Government services electronically to citizens through integrated and interoperable systems via multiple modes, while ensuring efficiency, transparency and reliability of such services at affordable costs[8].

The approach of e-Kranti is fully aligned with the Digital India programme. The programme management structure approved for Digital India programme would be used for monitoring the implementation of e-Kranti and also for providing a forum to ascertain views of all stakeholders, overseeing implementation, resolving inter-Ministerial issues and ensuring speedy sanction of projects. Key components of the management structure would consist of the Cabinet Committee on Economic Affairs (CCEA) for according approval to projects according to the financial provisions, a Monitoring Committee on Digital India headed by the Prime Minister, Digital India Advisory Group chaired by the Minister of Communications and IT, an Apex Committee chaired by the Cabinet Secretary and the Expenditure Finance Committee (EFC) / Committee on Non Plan Expenditure (CNE). The Apex Committee headed by the Cabinet Secretary would undertake addition / deletion of Mission Mode Projects (MMPs) which are considered to be appropriate and resolve inter-Ministerial issues.

5. Initiatives that government organizations can undertake to integrate with e-Governance.

The following are basic measures that a government organization can take to integrate itself with e-Governance:

- i. **A secure Internet:**For a secure internet connection, government organizations must use a government internet service provider, such as NKN or other government-approved providers.
- ii. **Firewall:** To securely access the internet, a firewall with necessary configuration is required.
- iii. **Software and Hardware:** Personal computers with necessary configurations and essential Software are required to access e-Governance services.
- iv. **A Secure Local Area Network (LAN) Infrastructure:** Individual hosts are required to integrate with an organization's LAN to access various e-Governance services.
- v. **E-Office:** It is one of the most important service of e-Governance, required by organization. To integrated with e-Office, each staff member of an organization need to register with PIMS and be granted access to e-Office.
- vi. **SPARROW (Smart Performance Appraisal Report Recording Online Window):** The Implementation of SPARROW is required by individual organization to facilitate the electronic filing and processing of Annual Performance Appraisal Reports (APARs) for government officials, aiming for efficiency and transparency.

- vii. **AADHAAR Enabled Biometric Attendance System (AEBAS):** The AEBAS device is required to integrate with the attendance management system used by Indian government offices, allowing employees to mark attendance using their AADHAAR biometric data (fingerprint, iris, or face) through a dedicated application.
- viii. **E-HRMS 2.0:** To integrated with e-HRMS 2.0, each staff member of an organization need to register with e-HRMS 2.0 portal to access end to end HR services.
- ix. **E-Billing System:** The integration of an organization with e-billing is required for the digital processing of sending and receiving bills and invoices online, aiming to streamline government operations, enhance transparency, and improve efficiency in financial transactions.

There are many other e-Governance services that can be integrate and access by Government employees if basic infrastructure is implemented.

6. Challenge and Future in India

The major challenge before the government is to extend the reach of e-Governance services to rural India, where 65% of the Indian population resides [9]. The penetration of ICT in rural India is poor especially, in hilly and forested areas. Even the benefits of e-Governance service are primarily accessed by the affluent section of urban society. Although a considerable portion of India's population is able to utilize benefits of the e-Governance, a concerted effort is required to direct e-Governance reforms towards the common citizens.

Another major challenge is the lack of awareness about e-Governance among the large rural population of India. A unique Id for an individual is required for the successful implementation of e-Governance. The AADHAAR Card [10] is a commendable initiative by the government in this regards. AADHAAR is a 12 digit individual identification number issued by the Unique Identification Authority of India on behalf of the Government of India. This number serves as a proof of identity and address anywhere in India. Additionally, the AADHAAR number facilitates access to various services such as Mobile connections Banking, AADHAAR based authentications, and others.

Now, with the initiative such as AADHAAR, State Wide Area Network (SWANs), National e-Governance Plan (NeGP) and numerous others e-Governance related project, it is expected that e-Governance services will reach to all section of society. It is expected that e-Governance would enable government to discharge its function more effectively and transparently.

7. Conclusions

Though significant progress has been made by the government, it is still limited to a small section of society. e-Governance will bear fruit only when it is inclusive, sustainable and accessible to all sections of the society.

Dr A. P. J. Abdul Kalam, former President of India and a visionary in the field of e-Governance, has summarised basic challenges before the country: *"E-Governance has to be citizen friendly. Delivery of services to citizens is considered as a primary function of the government. Particularly the democratic nation of the billion people like India, e-Governance should enable seamless access to information and seamless flow of information across the state and central government in the federal setup. No country has so far implemented an e-Governance system for one billion people. It is big challenge before us"* [11].

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