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Public Service Delivery through E-Governance : Challenges and Opportunities

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ABSTRACT: In 2003, the United Nations General Assembly began to observe 23rd June every year as the United Nations Public Service Day. As we move forward in the era of e-governance, ICT and a world that is now digital, it would be beneficial to look at the transformations in public service that have been possible through "Electronic Governance".

E-governance:

A good way to understand any issue or a topic is to start with the basics. It would be then right for me to lay down some simplest definitions of e-governance. E-governance, also referred to as Digital governance is the use of information and communication technologies (ICT) of the modern-day, that allows to improve and transform the delivery of public services.

KEYWORDS: e-governance, united nations, digital, ICT, public services

I. INTRODUCTION

The importance of e-governance in the transformation of public services resides in its ability to completely alter how governments engage with the people they serve. Governments can use technology to automate repetitive work, streamline administrative procedures, and deliver services through online avenues, increasing productivity, lowering costs, and improving citizen happiness.[1,2,3]

Principles and objectives of e-governance:

The United Nations encourages the governments to adopt new e-governance techniques through its numerous projects and programmes. It facilitates capacity building as well as exchange of vital knowledge that helps the countries to create e-governance frameworks and to put into practice the cutting-edge solutions that are in harmony with the regional requirements and local challenges. A key objective of e-governance is to enable citizens to contribute in development of policies or at the least, express their concerns. This also facilitates a democratic governance by ensuring the inclusive needs of one and all.

Benefits and Challenges:

Bidyut Chakrabarty and Prakash Chand in their book "Public Administration in a Globalising World" points out certain benefits and challenges that have been a result of e-governance. Some of these are noted below:

- 1- Reduces Red Tapism: E-governance helps in reducing excessive red tapism, further reducing the delay in the delivery of services.
- 2- Reduces the cost of government: With provision of goods and services possible through one touch, the cost of government has been fairly reduced.
- 3- Allows citizen's inputs: The new modes of communication and technology allows for citizens to provide inputs and feedback on various services they receive.
- 4- Increases transparency: Good governance and e-governance can go hand-in-hand in their objective of increasing transparency of the service providers.
- 5- Improves decision-making: With continuous feedback that is possible as a result of e-governance tools, the decision-making can be improved and made better.

However, it is true that while there are various improvements and advancement to make sure that governance can be met through ICT, the application is still limited. As noted by the mentioned authors, it also threatens the mass



retrenchment of workers. The public sector cannot completely outbid the old systems in place. The old and the new systems have to be in sync with each other.

United Nations and its role in e-governance:

The United Nations has been involved in promoting e-governance, by promoting digital transformation in the public administration. A key number of agencies have been involved with specialised initiatives that have a noteworthy impact on the development of e-governance. Some of these agencies are:

- United Nations Development Programme (UNDP): Through a number of projects, UNDP helps nations develop their e-governance capacities. It offers technical support, financial assistance, and policy recommendations to help governments use ICTs for better public administration. UNDP encourages inclusive e-governance[4,5,6] methods that strengthen citizen participation and give voice to marginalised populations.
- United Nations Department of Economic and Social Affairs (UN DESA): UN DESA is crucial in advancing digital transformation and e-governance. It aids member states in developing and putting into practise e-governance strategies by offering advice, knowledge, and technical assistance. In order to track and evaluate international e-governance trends and best practices, UN DESA also sponsors international forums including the UN E-Government Survey and the UN E-Government Development Database.
- United Nations Public Administration Network (UNPAN): UNPAN is an online information centre that offers access to materials, case studies, and best practices in public administration, including e-governance. It acts as a forum for knowledge exchange, facilitating conversation, and encouraging cooperation between governments, academics, and practitioners.
- UN Global Pulse: The mission of UN Global Pulse is to promote sustainable development by utilising data innovation. It looks at how big data, data analytics, and new technologies can be used to improve public service delivery and influence policymaking. The UN Global Pulse encourages data-driven decision-making and works with states to develop cutting-edge e-governance solutions.
- International Telecommunication Union: ITU, one of the oldest specialised agencies of the UN, plays a role in the advancement of e-governance. It builds standards and formulates various guidelines for ICT infrastructure and cybersecurity. Based on the World Summit of Information Society, ITU builds security in the use of ICT.

Case Studies and Best Practices from the UN experiences:

E-governance has taken over all fields. In a stated example on the official website of the UN has been the case of an e-health application designed by the Egyptian government. The application offers free breast cancer screening to Egyptian women above 45 years of age. This e-service helps in early-stage treatment of breast cancer. Another case is of the Government of Nigeria, launching an e-agriculture application. This application allows the provision of strategic knowledge and promotes new helpful ICT skills among farmers.

Models of e-governance:

Government to citizen (consumer), government to employee, government to government, and government to business are the four most common models.

1. Government to Citizen (G2C)

G2C aims to improve the interaction between the government and the citizens by leveraging the technology to provide a range of services to citizens in a cost-effective manner. Various methods are available for G2C e-governance, ranging from two-way communication between citizens and public officials to online transactions such as payment of services.

2. Government to Business (G2B)

G2B aims to facilitate interaction between the governments and commercial business sector in order to inform firms about "best practices" for conducting business. Its emphasis is to reduce the difficulties for business, give quick information and to allow for digital contact between the government and business sector.

3. Government to Government (G2G)

In an effort to meet the growing expectations, several governments all around the world have steadily embraced IT. The support and simplification of governance for the government is a strategic goal of e-governance. Different authorities, and departments of government can interact through using ICT.[7,8,9]

4. Government to Employee (G2E)

G2E allows interaction between the government and the employees. It allows employees to become paperless and a variety of benefits from payroll to training is made possible via internet services. It's also an effective way to promote knowledge sharing among employees.

A variety of tools and platforms are used to access the benefits of e-governance. Digital identity systems are one of the most common management systems used by National governments. Biometric systems including recognition through face or fingerprint are often used. The UN has supported such digital identification systems. Its initiative known as ID4D (Identification for Development) aims to promote digital identification systems in order to promote development. Online service delivery and data analysis are also few sectors supported by the UN and its agencies.

Challenges and Concerns

E-governance is a relatively new phenomenon and is fraught with several challenges. Data security and privacy, lack of inclusivity, and digital divide are few among many.

E-governance entails the gathering, storing, and processing of enormous volumes of data, which raises questions regarding privacy and security. Sensitive citizen data must be protected against misuse, unauthorised access, and breaches. Systems used for e-governance are susceptible to cyberthreats like hacking, data leaks. To protect governmental systems, infrastructure, and citizen data, it is crucial to implement strong cybersecurity measures.

Digital infrastructure and dependable internet connectivity are essential for e-governance. However, there are large gaps in digital knowledge and access, resulting in a digital divide that prevents fair access to and participation in e-governance services, especially for marginalised communities. E-governance efforts must be inclusive and accessible to all citizens, especially those with impairments, language challenges, or low technological proficiency. Effective e-governance requires ensuring inclusivity and accessibility for all residents.[10,11,12]

Few Strategies and Suggestions to address challenges

Implementing robust data protection and privacy regulations that specify precise guidelines for the gathering, storing, and usage of citizen data would boost citizen's trust. To secure e-governance systems and citizen data from cyber threats, strong cybersecurity frameworks, such as firewalls, encryption methods, frequent security audits, and incident response plans, must be developed.

Governments may help close the digital divide by spending money on increasing internet infrastructure, granting inexpensive access, and encouraging digital literacy programmes. To guarantee that services are open to all, including those with disabilities, inclusive design incorporation is a must. Inclusivity can be improved by offering numerous language options and user-friendly interfaces.

Including citizens, civil society organisations, and other pertinent parties in the development, execution, and assessment of e-governance projects would be a way to create collaboration. This promotes inclusivity, addresses issues, and the gathering of many viewpoints. Investing in capacity building initiatives to improve people' and government officials' digital literacy and capabilities would result in people being equipped to interact with e-governance platforms and services.

By working together and exchanging knowledge, nations can more easily learn from one another's experiences, obstacles, and best practices when implementing e-governance. The UN and other international organisations can play this role of cooperation.

Some examples of successful cross border initiatives

- **European Single Procurement Document:**

The ESPD is a tool that makes it easier for businesses to participate in public procurement. It is a single self-declaration form of suitability, financial status and abilities of a company used as preliminary evidence in all public procurement procedures. The European Union initiated this cross-border e-governance initiative.

- **India-Singapore Strategic Partnership in the Digital Economy:**

Both the countries have established a strategic partnership, including in areas of e-governance. In February 2023, the two countries witnessed the launch of real time payment linkage between the Unified Payments Interface (UPI) of India and PayNow of Singapore.



▪ ASEAN Digital Sector:

Earlier known as ASEAN Information and Communications Technology, ASEAN digital sector aims to create cooperation in ICT infrastructure, development policies, and network security. It also focuses on creating cooperation in the areas of e-commerce and digital skills development.

Effective e-governance and the way forward:

The buzzwords of the 21st century are globalisation, digitalization, information, communication, and technology. E-governance is the smart way to harness the newly emerging technologies and make governance better. For that to take place, the policy must be developed in a manner that includes e-governance strategies. These strategies should be in sync with national goals and supportive of the needs of the citizens it serves.

Strong laws and regulations are necessary in order to address the threats of cybersecurity, and data privacy. Governments can collaborate with governments, civil society, business sector and international organisations to bring innovation and for the sake of knowledge sharing. Furthermore, organisations like the UN can serve [13,14,15] as a platform to create cooperation among nation states.

The coming age is Artificial Intelligence and is driven by data. The newly emerging technologies can be used to create automation of the mundane administrative work. The success of such initiatives would rely on the ability of governments to create inclusion. Organisations like the UN can further help the governments in making sure that Digital Divide is reduced.

The UN E-Government Development Database (UNeGovDD) is one such initiative of the UN that acts as a benchmark to assess the development of UN nations in the e-government sector. Publications of reports like that of the UN E-Government Survey deliver a comprehensive assessment of its 193 member states in their ability to use ICT tools to enhance public sector efficiency among various other indicators.

The United Nations being the only platform that is truly international in its character can be instrumental for governments to interact and facilitate cooperation in the sectors of e-governance. UN Public Services Day is a good opportunity for us to appreciate what has been done so far, look at the progress of undertaken initiatives and bridge the gap that exists

II. DISCUSSION

In the digital age, e-governance and digital services are pivotal in transforming how cities manage and deliver public services, enhancing accessibility, efficiency, and transparency. This transition marks a significant shift from traditional, in-person interactions to a more inclusive, technologically driven approach. The core aim is to make governmental operations more responsive to the needs of citizens and businesses alike, leveraging technology to facilitate a seamless interaction between the government and its constituents.

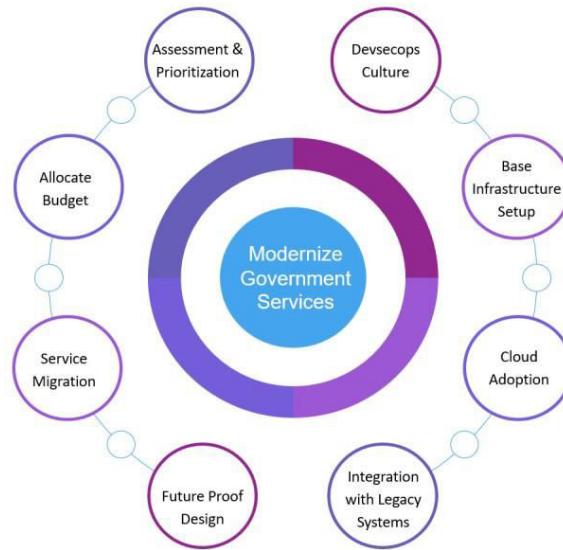
The Emergence of E-Governance

E-governance, or electronic governance, refers to the use of information and communication technologies (ICT) by government agencies to streamline and enhance all aspects of governance. It encompasses a wide range of activities, from digital communication methods and online services to data management and electronic voting. The initiative seeks to improve government service delivery, encourage citizen participation, and increase the transparency of government operations.

The Shift Towards Digital Services

Cities worldwide are increasingly moving public services online to make them more accessible to residents. This shift towards digital services is driven [16,17,18] by the need to meet the growing expectations of citizens accustomed to the convenience and efficiency of digital transactions in other areas of their lives, such as banking, shopping, and communication.

Digital services cover a broad spectrum, including, but not limited to:



- Online Bill Payments: Utilities, taxes, and other government fees can be paid online, eliminating the need for physical visits to government offices.
- Electronic Filing and Documentation: Applications for permits, licenses, and other government documents can be submitted and processed online, streamlining bureaucracy.
- Information Dissemination: Governments use websites and social media to communicate with citizens, providing timely information about policies, services, and emergencies.
- Public Feedback Mechanisms: Digital platforms facilitate citizen feedback on government services, enhancing accountability and service improvement.
- E-Health Services: Telemedicine and online health resources expand access to healthcare services, particularly in underserved areas.
- E-Learning Platforms: Digital education resources and online courses increase educational accessibility and lifelong learning opportunities.

Benefits of E-Governance and Digital Services

The transition to e-governance and digital services offers numerous benefits:

- Enhanced Accessibility: Digital services are available 24/7, making it easier for people to access government services at their convenience.
- Increased Efficiency: Automated processes and online transactions reduce the time and resources needed to deliver services, cutting down on bureaucracy and speeding up response times.
- Improved Transparency: Digital records and transactions enhance the accountability of government operations, making it easier to monitor and report on government activities.
- Greater Participation: E-governance encourages citizen engagement by providing platforms for feedback, voting, and participation in government decision-making processes.

- **Cost Savings:** By reducing the reliance on physical infrastructure and paperwork, governments can achieve significant cost reductions.

Challenges and Considerations

Despite its benefits, the shift towards e-governance and digital services presents challenges that need to be addressed.

- **Digital Divide:** There's a risk of excluding individuals without access to the internet or digital literacy skills, making it essential to provide alternative access methods and digital education programs.
- **Cybersecurity:** Protecting sensitive information and ensuring the integrity of online services is crucial to maintaining public trust in e-governance initiatives.
- **Privacy Concerns:** Safeguarding personal data against misuse is vital, requiring robust data protection laws and encryption technologies.
- **Change Management:** Transitioning to digital services requires significant cultural and organizational changes within government agencies, including training for staff and redefining processes.

Case Studies: India and Cities Around the World Leading the Way

India: Several flagship initiatives have been instrumental in the proliferation of e-Governance in India. [19,20,21]The Digital India campaign, launched in 2015, stands out as a comprehensive program aimed at transforming India into a digitally empowered society and knowledge economy. Under this umbrella, initiatives like Aadhaar (the world's largest biometric ID system), the Unified Payments Interface (UPI) for financial transactions, and the Goods and Services Tax Network (GSTN) have revolutionized how citizens interact with government services.

The Government e-Marketplace (GeM) is another noteworthy platform, streamlining procurement processes and ensuring transparency. Moreover, the e-Hospital system and the National Scholarships Portal exemplify the sectoral impact of digital services, improving access to healthcare and education, respectively.

Several cities around the world are exemplars in the adoption of e-governance and digital services.

- **Estonia:** Often hailed as the most advanced digital society, Estonia's e-governance initiatives include e-residency, online voting, and digital health records.
- **Singapore:** Through its Smart Nation initiative, Singapore has implemented a range of digital services, from an integrated health information system to a national digital identity program.
- **Dubai:** Dubai's Smart City project aims to make the city the happiest in the world through digital initiatives, including blockchain-based services and the Dubai Paperless Strategy.

The Road Ahead

As technology continues to evolve, the potential for e-governance and digital services to revolutionize public service delivery is immense. Artificial intelligence, blockchain, and the Internet of Things (IoT) are set to play pivotal roles in further enhancing the efficiency, security, and personalization of government services.

The success of these initiatives, however, hinges on addressing the challenges head-on, ensuring equitable access, and fostering public trust through secure, transparent, and user-friendly services. By doing so, cities can not only improve the quality of life for their residents but also set the stage for a more engaged, informed, and responsive governance model in the digital era.

In conclusion, e-governance and digital services represent a transformative approach to public service delivery, promising to make government operations more accessible, efficient, and transparent. As cities continue to innovate and adapt, the promise of a more connected and empowered society becomes increasingly tangible, heralding a new chapter in the relationship between governments and the governed.

III. RESULTS



E-governance, meaning ‘electronic governance’ is using information and communication technologies (ICTs) (such as Wide Area Networks, the Internet, and mobile computing) at various levels of the government and the public sector and beyond, for the purpose of enhancing governance. The application of ICT to transform the efficiency, effectiveness, transparency and accountability of exchange of information and transaction:

1. between Governments,
2. between Government agencies,[22,23,24]
3. between Government and Citizens, and
4. between Government and businesses

Government Process Re-engineering using IT to simplify and make the government processes more efficient is critical for transformation to make the delivery of government services more effective across various government domains and therefore needs to be implemented by all Ministries/ Departments.

The main objective of the assignment was the inventorization national and municipal services, providing recommendations for e-services development and integration into the e-governance infrastructure. Our team prepared an analytical survey of the current situation regarding e-services development, developed recommendations on how to better utilize existing resources and bridge gaps to improve the electronic delivery of national and municipal services.

Were Developed an inventory methodology based on EU or other accepted standards, methodology for optimization and cost efficiency, uniform standards for public service delivery, Visits to state bodies to collect information on services “as it is”, mapping existing administrative services and describing 500 services, proposals for further reengineering and redesign of 400 services, drafting legal acts resulting from the revised business processes, optimising the front office and back office workshare and workflows.

The Ministry of Electronics and Information Technology (MeitY), Government of India launched the ‘Digital India’ programme with the vision to transform India into a digitally empowered society and knowledge-based economy by ensuring digital access, digital inclusion, digital empowerment and bridging the digital divide. In summary, our mission is to ensure that the digital technologies improve the life of every citizen; expand India’s digital economy, create investment & employment opportunities and global digital technological capabilities in the country.

Digital India has dramatically reduced distance between Government and citizens significantly. Further, Digital India has also helped in delivery of substantial services directly to the beneficiary in a transparent and corruption free manner. India has become one of the pre-eminent nations of the world to use technology to transform the lives of citizens. Digital India is an umbrella programme that covers multiple projects of various Central Ministries/Departments and States/UTs. Some of the major initiatives related to public service delivery are as follows:

- Common Services Centres – CSCs are offering government and business services in digital mode in rural areas through Village Level Entrepreneurs (VLEs). Over 400 digital services are being offered by these CSCs. So far, 5.31 Lakh CSCs are functional (including urban & rural areas) across the country, out of which, 4.20 Lakh CSCs are functional at Gram Panchayat level.
- Unified Mobile Application for New-age Governance (UMANG) – for providing government services to citizen through mobile. More than 1,570 government services and over 22,000 bill payment services are made available at UMANG.

- e-District Mission Mode Project (MMP): e-District project has been implemented at district and sub-district levels of all States/UTs, benefitting all citizens by delivering various e-Services such as Certificates (Birth, Caste, Death, Income and Local Resident), Pension (Old Age, Disability and Widow), Electoral, Consumer Court, Revenue Court, Land Record and services of various departments such as Commercial Tax, Agriculture, Labour, Employment Training & Skill Development etc. Presently 4,671 e-services have been launched in 709 districts across India.
- DigiLocker: It is facilitating paperless availability of public documents. Digital Locker has more than 11.7 crore users and more than 532 crore documents are made available through DigiLocker from 2,167 issuer organisations.
- Unified Payment Interface (UPI) is the leading digital payment platform. It is integrated with 330 banks and facilitated over 586 crore monthly transactions worth over Rs 10 lakh crore has been facilitated for the month of June, 2022.
- CO-WIN - It is an open platform for management of registration, appointment scheduling & managing vaccination certificates for Covid-19. More than 203 crore vaccination doses and 110 crore registrations have been facilitated by co-win.
- MyGov – It is a citizen engagement platform that is developed to facilitate participatory governance. More than 2.48 crore users are actively using MyGov.
- MeriPehchaan – National Single Sign-on platform called MeriPehchaan has been launched in July 2022 to facilitate / provide citizens ease of access to government portals.
- MyScheme – This platform has been launched in July 2022 to facilitate citizens to avail eligibility-based services.
- Direct Benefit Transfers – 315 Schemes across 53 Ministries are offering Aadhaar enabled direct benefit transfer to citizens. So far, Rs 24.3 lakh crore has been disbursed through DBT platform.
- Diksha – Diksha is a national level educational platform that helps students and teachers to participate, contribute and leverage a common platform to achieve learning goals at scale for the country. As on 27th July 2022, 7,633 courses are available and more than 15 crore enrolments have been done.

Some of the major digital initiatives taken by the Government for welfare of farmers are as follows:

- National Agriculture Market (e-NAM): Government of India has launched National Agriculture Market (e-NAM) Scheme with the objective of creating online transparent competitive bidding system to facilitate farmers with remunerative prices for their produce. More than 1.73 crore farmers & 2.26 lakh traders have been registered on e-NAM platform. Also, 1000 mandis of 18 States and 3 UTs have been integrated with e-NAM platform.
- M-KISAN – mKisan Portal (www.mkisan.gov.in) for sending advisories on various crop related matters to the registered farmers through SMSs. In mkisan more than 5.13 crore farmers are registered for receiving crop advisories through SMS. More than 2,462 crore mobile based advisories have been sent to farmers to assist them in their farming activities.
- One Stop Window-Farmers Portal (www.farmer.gov.in) for dissemination of information on various agricultural related matter including, seeds variety, Storage Godown, Pests and plant diseases, Best Agricultural Practices, Watershed, Mandi details etc.
- Soil Health Card – It provides soil related information to facilitate farmers in farming activities. More than 22 crore soil health cards have been printed and dispatched to farmers.
- Mobile based advisory system for agriculture & Horticulture (M4AGRI) – It is mobile based advisory system for agriculture and horticulture. It has been implemented in the North-East States namely Tripura, Mizoram, Manipur, Meghalaya, Sikkim, and Arunachal Pradesh.

IV. CONCLUSION

The Government has taken following steps in direction of data governance for socio-economic development in the country. The brief details are as follows:

- Open Government Data – To facilitate data sharing and promote innovation over non-personal data, Open Government Data platform has been developed. More than 5.65 lakh datasets across 12,800+ catalogues are published. The platform has facilitated 93.5 lakh downloads.
- API Setu – To facilitate data exchange among the system, API Setu has been developed as a platform. The platform has more than 2100 APIs, and 1000+ user organisations.



- MeitY has prepared the draft National Data Governance Framework Policy which aims to realize the full potential of India's digital government vision, maximize the efficiency of data-led governance & public service delivery and to catalyze data-based research and innovation. Currently the draft policy is under finalization. MeitY released the Draft National Data Governance Framework Policy on 26th May 2022 for public consultation.

The Government has already taken necessary measures to tackle challenges with regard to data privacy and data security through administering the Information Technology (IT) Act, 2000 which has necessary provisions for data privacy and data security.[24]

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