

Integration of technology enabled communication and data driven governance are two significant advantages of e-governance. Its use increases the transparency of all operational processes. But digital inequality due to differential levels of access to, actual utilization of and efficiency in application of digital resources has been a significant concern for implementing e-governance in a vast country like India.

Building Infrastructure To Overcome Digital Divide

- To bridge the digital gap and provide people with inexpensive, all-inclusive access to information, nations must prioritize the development of communication systems and IT infrastructure.
- Internet could be an important instrument to reach the goal of preserving stability, boosting viability for future, and taking accountability. By boosting efficiency, lowering prices, and raising labour productivity it could help economy.
- But advantages of internet technologies are distributed unequally among countries. Underdeveloped nations are paying more for internet connectivity that too for a slower speed.
- Local language material, culturally appropriate services are needed to convince potential users of the value of technology.

Achieving an Affordable, Inclusive Internet for All

To help establish an inclusive and inexpensive internet that increases prospects for innovation, empowerment and development, policymakers need to broaden their horizons and adapt following parameters:

- **Importance of Infrastructure:**
 - Government and business sector must collaborate to encourage network sharing and installation of fiber optic cables to construct other types of infrastructure like roads and powerlines.
 - To facilitate access, promote innovation and advance development, governments and regulators must create rules that stimulate competition and boost network investment.
- **Pricing:**
 - Governments can encourage a commercial and regulatory environment that is friendly to digital technology for private sector. This might enable finance and expedite infrastructure development.
 - Economic development is facilitated by accessible broadband connectivity but just 15% of people worldwide can afford broadband services. Lack of affordability can disproportionately impact women as they have less purchasing power.
 - Special packages like “zero-rated content”, permit unlimited access to certain content or services and can increase internet accessibility but can impact competition.
- **Digital Inclusion and Building Human Capacity:**
 - Lack of technical literacy and confidence are two major obstacles for people specially women to go online.
 - Government and other stakeholders must support the ability of SMEs and women to produce locally relevant content.
 - Education and digital literacy programs are essential to equip tomorrow’s software developers, local content creators and policy makers with the abilities they need to contribute to and profit from the information society.

- **Measuring Access:**

- High quality information is essential for determining effective policy responses.
- Making informed decisions can benefit all stakeholders.
- Knowing how many people are connected, how they are clicking and effects of being connected can help.
- Governments should allocate more funds and collaborate with relevant parties to create uniform measures.

- **e-Government Development Index (EGDI)**

- It serves as a benchmarking and development tool for countries to learn from each other, identify areas of strength and challenges in e-government and shape their policies and strategies in this area.
- India ranked 105th in 2022.

- **“Digital India” Programme**

- Launched by the Ministry of Electronics and Information Technology (MeitY) with the vision of transforming India into a digitally empowered society and knowledge-based economy by ensuring digital access, digital inclusion, empowerment, bridging the digital divide.
- It includes several government ministries and departments.
- *E-kranti*, electronic delivery of services envisages provisioning of various e-governance services in country. Its goal is to revolutionize e-government services by growing portfolio of Mission Mode Projects (MMPs) in e-Government under various government departments, implementing Government Process Reengineering (GPR), automating workflows, introducing cutting edge technologies including cloud and mobile platforms and emphasizing integration of services.
- Some of the significant initiatives under Digital India programme are:
 - **Common Service Centers**- provide digital government and commercial services to rural communities through village level entrepreneurs (VLEs).
 - **Unified Mobile Application for New Age Governance (UMANG)**- provides access to government services via mobile.
 - **E-District Mission Mode Project (MMP)**- implemented at district and sub-district levels of all States/ UTs benefitting all citizens by delivering various e-services such as certificates (birth, death, income etc.), pension, electoral, consumer court, revenue court etc.
 - **DigiLocker**- facilitates paperless availability of public documents.
 - **Unified Payment Interface (UPI)**- a leading digital payment platform.
 - **CO-WIN** – open platform for management of registration, appointment scheduling and managing vaccination certificates for Covid-19.
 - **MyGov**- citizen engagement platform developed to facilitate participatory governance.
 - **MeriPehchaan**- launched in July 2022 to facilitate/provide citizens ease of access to government portals.
 - **MyScheme**- launched in July 2022 to facilitate citizens to avail eligibility-based services.
 - **Direct Benefit Transfer**- 315 Schemes across 53 Ministries are offering Aadhaar-enabled direct benefit transfers to citizens.
 - **Diksha**- 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 country.

National Data Governance Framework Policy

Created by MeitY with the intention of realizing the full potential of India's vision for its digital government, enhancing effectiveness of data led governance, public service delivery and fostering data-based research and innovation. Government has made following moves in the direction of data governance for country's socio-economic development-

- **Open Government Data-** created to facilitate data exchange and encourage innovation about non-personal data. It has made 93.5 lakh downloads possible.
- **API Setu-** created to make data interchange easier across systems.

Conclusion

While e-government focuses on creating online services, the future will center on how digital government may change governance by harnessing societal creativity and resilience to advance Sustainable Development Goals.

POST OFFICE SERVICES AT THE DOORSTEPS

- India Post is the only institution of the Central Government present in the entire country.
- The network is primarily rural centric with more than 90% of the post offices being situated in villages. The 1.4 lakh village post offices cover more than 7 lakh villages of the country viz on an average.
- Earlier these post offices used to be a fixed brick-mortar entity where citizens had to pay physical visits to avail services which consumed a lot of time and money.
- The situation has undergone a drastic change since the roll out of 4909 Cr IT modernization project 1.0 in the Department of Posts.
- All post offices are now networked, and all the services rendered by these post offices are made online.
- Village postmasters and postmen are all equipped with a handheld DARPAN device as well as smart phones enabling them to render multiple services at citizens doorsteps.
- *DARPAN* is a *Made in India* rugged handheld device with mobile connectivity and built-in biometric scanner, card reader and a bluetooth thermal printer which enables the postmaster to render services after proper biometric authentication of citizens at their doorsteps.
- Rendering postal services at the doorsteps have revolutionized delivery of financial and citizen centric services in rural areas.

India Post Payments Bank (IPPB)

- Launched on 1 September 2018.
- It's a credible Payments Bank rendering paperless financial services through a tech enabled platform.
- Its most popular service Aadhaar Enabled Payments System (AePS) has enabled postmen to make withdrawal from any bank account (both public and private) which has been linked with Aadhaar, after biometric authentication of account holder. This proved to be a lifesaver for many distressed citizens during lockdown when most ATMs were dry and bank branches were closed.
- It also renders insurance services, Aadhaar services (mobile number updation) and Digital Life certificate to pensioners.

Road Ahead

- In a country like India where a large population in rural areas is still uneducated enough to go for self-servicing options, the role of post office is to remain important for the next 15-20 years.
- The most effective way to ensure financial inclusion will be to equip the village postmasters/postmen with a robust and easy to use technology thereby enabling them to render banking, G2C and B2C services on demand at the doorsteps.
- In 2021, GOI had approved the IT modernization 2.0 project for India Post which will serve not only to upgrade the WAN (network) but also build micro services-based platform for rendering almost all the current and future services delivered by India Post through the mobile devices. It will have following features-
 - IT 2.0 will provide last mile technology ecosystem for any government organization to utilize the robust IT system on one hand and doorstep delivery of services on the other.
 - Agile central ecosystem will provide any government department/ organization to integrate their services / products with India Post.
 - Open platform will enable private agencies/ departments to plug and play into last mile delivery system of India Post.
 - IT enabled prioritization programme to help delivery of every scheme to every section and geography of country.
 - All post offices and delivery staff will be connected using a mesh of high internet connectivity utilizing open network.
 - Deploy artificial intelligence, machine learning, big data analytics for faster delivery and provide real time visibility to ensure supply chain operational efficiencies that keep costs down and deliveries affordable.
- Post office is all set to play an important role in the Open Network for Digital Commerce (ONDC) and One District One Product (ODOP) initiatives of the government by making available its network for order fulfilment by the MSMEs, after receiving an online order.
- An MoU with Government eMarketplace (GeM) has been signed for providing order fulfilment services to registered MSME sellers.
- **Digital Address Code (DAC) Project:** Under this project of India Post, each address of country is proposed to be geo-tagged and assigned a unique alpha numeric code. It is expected to make doorstep delivery of services easier for not only government agencies but also for private entities.

e-Commerce has already revolutionized goods delivery in urban and semi-urban areas of country. Rural hinterland is soon going to follow suit as India Post and other private players strengthen and build their rural network. Post offices are further strengthening their IT infrastructure to render all postal, G2C, and several B2C services at citizen's doorsteps especially in rural areas.

TECHNOLOGY INTEGRATION FOR QUALITY EDUCATION

E-governance has become the cornerstone for building effective, accountable, resilient, and inclusive institutions at all levels, as called for in Sustainable Development Goal (SDG) 16 and for strengthening the implementation of Goal-17. With such revolutionary impact of technology, education sector could not be left untouched and during the COVID-19 pandemic, the pace of integration of technology in teaching learning processes has increased exponentially. National Education Policy (NEP) 2020 gives utmost importance to technology. It also recognizes and addresses the issue of digital divide and elucidates that the benefits of online digital education cannot be

leveraged unless the digital divide is eliminated through concerted efforts such as Digital India campaign and availability of affordable computing devices.

Government Initiatives for Improving Education System-

- **UDISE+:** It is an updated and improved version of UDISE (Unified District Information System for Education), an initiative of Ministry of Education (MoE) to integrate DISE for elementary and secondary education. It provides robust, real-time, and credible information for an objective evaluation of the system which can be used for designing evidence based specific interventions for improving school education sector. It collects information from all recognized and unrecognized schools imparting formal education from Pre-primary to XII and is the official database of MoE, operational in all the districts of India.
- **Performance Grading Index (PGI):** It is a tool to provide insights on the status of school education and to catalyze transformational change in the States/UTs based on key indicators that drive their performance and critical areas for improvement. Its purpose is to help States/UTs to pinpoint gaps and accordingly prioritize areas for intervention to ensure robust education system at every level.
- **Online Survey Platform for National Curriculum Framework (NCF):** NCF is a new framework being developed by NCERT to introduce critical thinking, problem solving skills, innovation, adaptation, experiential learning etc. in the education system. It follows a bottom-up approach and suggestions are invited from all stakeholders to develop it. DiSanc- a digital survey for National Curriculum has been launched to ensure participation of each citizen of country.
- **NDEAR (National Digital Education Architecture) and Vidya Samiksha Kendra (VSK):** The core idea of NDEAR is to facilitate achieving the goals laid down by NEP2020, through a digital infrastructure for innovations in education ecosystem, ensuring autonomy and participation of all stakeholders. VSK aims at leveraging data and technology to bring a big leap in learning outcomes. It includes student, teacher and school registry which will bring synergy to the work being done by integrating data from different datasets and empowers students, teachers, and parents to bridge the gap.
- **PRABANDH:** It is the Project Appraisal, Budgeting Achievements and Data Handling System developed under Samagra Shiksha as a significant step towards leveraging technology to enhance efficiency and manage implementation of Centrally Sponsored Integrated Scheme for School Education.

Initiatives Undertaken for Integrating Technology for Enhancing Quality of Education:

- **PM e-Vidya:** It ensures coherent access to digital education through multimodal approach. At present, 12 PM eVidya DTH TV channels are functioning that deliver class-wise contents on 24*7 basis.
- **DIKSHA:** It is the digital platform of MoE which has been declared as “One Nation, One Digital Platform”. It can be accessed by learners and teachers across the country and supports 30 Indian languages. Its policies and tools make it possible for education ecosystem (educationist, experts, organizations, institutions) to participate, contribute and leverage a common platform to achieve learning goals at scale for the country.
- **Capacity Building of Teachers through NISHTHA online:** NEP 2020 has stated that each teacher will be expected to participate in at least 50 hours of Continuous Professional Development (CPD) program every year for their own professional development, driven by their own interests. It will systematically cover latest pedagogies related to foundational literacy and numeracy, assessment, competency-based learning etc. National Initiative for School Heads and Teachers Holistic Advancement (NISHTHA) is an integrated training programme covering all recommended areas and aims at holistic development of teachers.

Budget 2022-23 Announcements to Expand Digital Technology and Ensure Learning for All:

- **200 TV Channels:** Launched under “one class, one TV channel” program of e-VIDYA to impart supplementary teaching and to build a resilient mechanism for education delivery for classes 1-12.
- **Virtual Labs:** Created to provide equal access to quality practical, critical thinking, and hands-on experience for teaching-learning of Science, Mathematics and Vocational Skills.
- **High Quality E-Content:** It will be developed in all spoken languages for delivery via internet, mobile, TV and Radio through digital teachers.
- **Competitive Mechanism for E-Content:** It will be set-up for development of quality e-content by teachers to empower and equip them with digital tools of teaching and facilitate better learning outcomes.

Conclusion

An inclusive, equitable, affordable, and integrated digital ecosystem is needed to facilitate and sustain lifelong learning and to reap benefits of inclusive technology development so that no one is left behind.

MOBILE GOVERNANCE

M-Governance in simplest terms is E-Governance delivered through the mobile devices, especially the smartphone. An internet connected mobile device is the answer to some of the most intriguing challenges and problems we face in delivering government services to the people. The challenges faced by E-governance mechanism like low PC penetration across country, broadband connectivity issues, physical infrastructure limitations and large rural population can be solved if we leverage internet connected mobile devices as an alternative to internet-connected PCs and kiosks.

Infrastructure at Service

- To deliver digital services over digital devices, good mobile download speed is required and presently the median speed on mobile devices is around 13.5 Mbps.
- With the launch of 5G, there is scope for significant improvements on this front.
- Cost of internet connectivity has come down to affordable levels.
- PM Modi during 18th National Conference on e-Governance said that for implementing e-governance the country must first think about “mobiles first” and give importance to mobile governance.

Advantages of M-Governance:

- Cost savings
- Proficiency
- Transformation/modernization of PSUs
- Added convenience and flexibility
- Better services to citizens
- Easy interaction

Examples of Success

There are four major M-governance models:

- **G2C (Government to Citizens):** Government interacts with citizens and vice-versa.
- **G2E (Government to Employees):** Government provides information and services to employees.

- **G2G (Government to Government):** Electronic sharing of data among various constituents of government.
- **G2B (Government to Business):** Making government systems more transparent and accessible to businesses.

“Mobile First” and Digital India

- M-governance is a component of e-governance.
- Its primary objective is to deliver personalized and localized information and services anywhere, anytime using different kinds of wireless and mobile technologies.
- The government stresses on the “One Web” approach, which means making same information and services available to users irrespective of the device or browser they are using.
- Mobile devices have an important role in governments vision for Digital India. Among the nine pillars of Digital India programme, aimed at transforming India into digitally empowered society and a knowledge economy, is e-Kranti which focuses on transforming e-Governance services.
- It relates to M-Governance as the government is targeting technologies such as cloud and mobile platform for effective transformation of e-Kranti whose key principles include Mobile First i.e., all applications are designed/redesigned to enable delivery of services through mobile. For example- Fintech.

Fintech Revolution and M-Governance

- Fintech has seen exponential growth in the country thanks to the delivery of financial services over mobile devices.
- Unified Payments Interface (UPI) rolled out in 2016 has been a huge success. It facilitates inter-bank peer-to-peer and person-to-merchant transactions and is used on mobile devices to instantly transfer funds between two bank accounts.
- Private companies like PhonePe, Paytm, Razor Pay, Mobi Kwik, Google Pay etc. have virtually revolutionized the entire banking and financial services industry in India.
- RBI has recently come up with “UPI for feature phones” to help users with less advanced mobile phones or slow internet use UPI services. It will allow the feature phone users to undertake a host of transactions like payments to friends and family, bill payments, FAST Tag recharge etc.

The Framework and Master Application

MeitY had developed and notified the framework of Mobile Governance a decade back followed by the launch of “Mobile Seva” which provides an integrated platform for delivery of government services to citizen over mobile devices using SMS, USSD, IVRS etc. Mobile Services Delivery Gateway (MSDG) was launched to enable delivery of public services over mobile devices for its effective implementation.

UMANG

- Unified Mobile Application for New-Age Governance, is one of the key initiatives under Digital India program.
- It is envisaged to act as a master application which will integrate major government services from various sectors such as agriculture, education, health, housing among others and will enable users to access e-Government services from Government departments.
- It is conceptualized to bring governance on fingertips through *mobile first* strategy.
- Its primary aim is to abridge inconvenience faced by users in managing multiple mobile apps and facilitate a one stop solution to avail varied government services.

Challenges to Address

- Difficult to install, manage and access significant number of applications to carry out tasks and access services from different stakeholders.
- Limited awareness, readiness, and lack of necessary skills among common users to access services through mobile device.
- Low level of digital literacy.
- Lack of access to good smartphones due to affordability issue.
- M-governance should be linguistically inclusive and accessible.

e-GOVERNANCE IN HEALTH SERVICES DELIVERY

e-Governance promotes 'Simple, Moral, Accountable, Responsive and Transparent (SMART)'. The government has launched health related online services like-

- National Health Portal: serves as a single point of access to health-related information for citizens.
- E-Hospital Management System: tracks the delivery of patient care and diagnostic services.
- Mera Aspataal: initiative captures patient feedback for the services received by them in hospitals.
- TB Missed Call initiative is a mobile service for providing treatment and counselling to TB patients.
- Kilkari application: used to deliver messages every week pertaining to pregnancy and childcare between the second trimester of pregnancy until child is one year old.
- M-cessation application: encourages people to quit tobacco use.
- National Health Policy, 2017: envisions a digital health ecosystem and recognizes the integral role of technologies such as eHealth, mHealth, Internet of Things (IoT), wearables and cloud, among others.
- National Digital Health Mission (NDHM) aims to:
 - Create a management mechanism to process digital health data and facilitate its seamless exchange.
 - Develop registries of public and private facilities, health service providers laboratories and pharmacies.
 - Support clinical decision making as well as offer services like telemedicine.
- NDHM provides a single health ID and profile for every citizen carrying details of their health and treatment history.

Digital health is a critical enabler for accelerating India's progress towards universal health coverage. NDHM is a step in this direction. It is anticipated that over the next 10 years an incremental economic value of over USD 200 Billion can be unlocked for the health sector through rigorous implementation of the NDHM. Three major shifts can enable this:

1. Greater demand for health services.
2. Improvement in quality of care enabled by digital health
3. Streamlining of multi-stakeholder processes and interactions health data system.

Role of Technology

- Efforts are being made to increase number of doctors, it is equally critical to enhance their productivity and quality of service delivery. One of the ways in which technology can enable this is by deploying voice- or chat-

based bots in hospitals for creating a summary of the patient's symptoms and medical history prior to consultation with a doctor. They can also be trained on infectious disease triaging protocols to segregate patients appropriately within a hospital and minimize infection spread.

- Technology can facilitate the remote management of vulnerable patients, monitoring of chronic conditions like diabetes as well as proactive identification of health problems.
- Technology can improve operational efficiencies by strengthening supply chain performance and enables skilling of health professionals at scale.
- It can be a gamechanger for governance and research. Integration of various health information systems with standardized data collection formats, interoperability features and unique identifiers for patients and providers can minimize duplication of efforts, data redundancy as well as allow for more targeted planning of programmes, optimization of resources and monitoring of outcomes.
- To ensure successful deployment of technology-driven initiatives in health, due attention needs to be paid to informed consent, data privacy and security, digital infrastructure as well as training and buy-in from stakeholders at all levels of implementation chain.

Telemedicine

- With social distancing as the new norm and riskier hospital visits, telemedicine solutions are fast emerging as a convenient alternative.
- Market size of telemedicine in India is projected to increase to USD 5.5 Billion by 2025 growing at a CAGR of 31% during 2020-25.
- Telemedicine Practice Guidelines were released jointly by Ministry of Health and Family Welfare and NITI Aayog to provide:
 - Norms and protocols relating to physician-patient relationship.
 - Issues of liability and negligence
 - Evaluation, management, and treatment
 - Informed consent
 - Continuity of care
 - Referrals for emergency services
 - Medical records
 - Privacy and security of patient records and exchange of information
 - Prescribing
 - Reimbursement
 - Health education and counselling
- The guidelines coupled with Government's tele consultation services, e-Sanjeevani and e-Sanjeevani OPD have leveraged information communication technologies to enable diagnosis, treatment, and management of diseases.
- A coalition of over 100 healthcare specialists in the private sector came together to launch Swasth, a first-of-its-kind, made in India telemedicine application which aims to deliver equitable and affordable healthcare to all Indians, by cutting across geographical and income barriers. It facilitates seamless, remote interaction between registered medical practitioners and patients through multiple modes of video and telephony.

- Inclusion of telemedicine in NDHMs digital suite will further help connect patients with doctors and specialists.
- Teleradiology is an emerging area where foreign hospitals consult Indian experts for providing opinion to patients.

Indian Health-tech Industry

- Prior to Covid-19, health tech industry was primarily focused on developing wearable gadgets, diagnostics, and medicine delivery solutions, facilitating early diagnosis of genetic conditions, treating lifestyle-linked problems like stress and anxiety through remote therapy as well as post procedure pain alleviation.
- New opportunities have emerged post pandemic like development of tools for facilitating emergency care, improvements to medical infrastructure through technology-based optimization.
- Patient facing mobile health applications could be developed along with enabling greater integration of AI, robots, blockchain technologies e.g.- surgical robots, sensors, remote diagnostic, electronic records, and monitoring systems.
- AI Doctor could be a long-term solution especially in rural and remote areas.

Aarogya Setu and CoWIN Application

- Aarogya Setu app was launched to facilitate effective contact tracing and allows people to assess their risk of contracting the infection based on their location and interaction with others.
- CoWIN application is a repository of COVID vaccination data. Every citizen getting a COVID vaccine shot feeds their name and cell number as well as their Aadhar number into the system which then captures and stores the data. Its database contains verifiable information and allows people to download vaccine completion certificate.

Conclusion

- Nowadays Tier2 and tier3 cities are building capacity to treat patients with diagnosis being done by experts in tier-1 cities with the help of internet, e-consultations, and telemedicine.
- eLearning and use of simulators is helpful in online training and education of medical practitioners.
- With all these trends we are moving towards the digital transformation of healthcare.
- We are looking at a future where connected care becomes the norm and patients are no longer constrained by geography when it comes to accessing care.

CITIZEN PARTICIPATION AND RURAL WELL-BEING

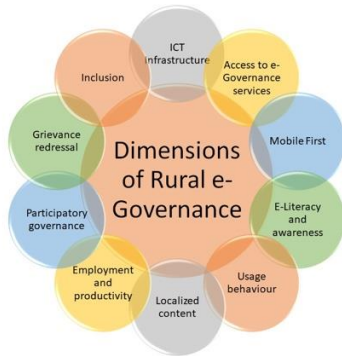
It's essential to focus on sustainable governance for rural development considering its contribution in national income. Government of India has taken various initiatives in this direction including digital-first and other ICT-application services to improve public service delivery through improved digital connectivity.

e-Governance and Rural Economy

- E-governance is a mechanism through which public services are made available and accessible to the common man at their doorstep at ease through common services delivery outlets.
- It ensures services efficiency, transparency, and reliability at affordable prices.
- It is ICT friendly which establishes connections between providers and users of government services.
- Government implemented the National e-Governance Plan in 2006 for the rural areas by providing services including birth and death certificates, land registration, employment opportunities etc.

- It represents a paradigm shift in the provision of essential public services, moving from human to technological interface.
- Some popular initiatives include e-Panchayat, e-Gram, e-Choupal, e-Shakti, TARA haat, e-Health etc.
- The primary focus of these initiatives is to contribute to 'Surajya' and encourage citizens to 'discuss and do' It includes projects like: Clean Ganga, Green India, Job Creation, Girl Child Education etc.

Dimensions of Rural e-Governance



e-Governance and Citizen Participation

- To design a suitable governance initiative in rural areas, diverse needs and people's capabilities should be considered during policy formulation.
- There is a need to design customized e-governance initiatives which is affected by following factors-
 - Needs and expectations of people
 - Socio economic dynamics
 - Contextual reality
 - Ease and simplified design and structure of policy
 - Feedback mechanism
 - Outcome mechanism etc.
- Citizen governance and civic engagement are two important pillars in strengthening valued citizen participation.
 - Citizen governance helps in removing gaps and differences between governments and citizens.
 - Civic engagement allows active participation and collaboration among individuals, institutions, communities, and governments and helps in shaping public policy.

Citizen Participation and Governance

Citizen participation has a significant role in shaping and transforming 'governance into good governance'.

- Citizen as a Customer:** It's participation and feedback are essential for designing public services and ensuring quality service delivery at affordable cost.
- Citizen as an Owner:** Their involvement is essential, and they must seek information about public services and delivery.
- Citizen as a co-producer:** Their involvement and participation will improve the quality and timely delivery of services.

- d. **Citizen as a Quality Evaluator:** Can become the evaluator of the public services quality and effectiveness and can contribute for its better design.

Citizen Participation and Framework

- A customized framework should be carefully thought out and planned to ensure meaningful engagement with citizens.
- All stakeholders must be able to voice their contribution and concerns and a suitable feedback mechanism must be in place to close deficiencies and leakages.
- Nature of Citizen Participation and Engagement:

Stages	Levels	Tools
Issue/Problem Identification	Resistance	Citizen Panels
Analysis of Problem	Opposition	Community Participation
Policy Formulation	Information	Forums
Policy Design	Consultation	Public Hearings
Implementation	Consensus-building	Community Outreach
Evaluation	Partnership	Citizen Committees
Feedback and Follow-up	Self-management	Joint Projects

- Citizen Partnership and Engagement Spectrum:

No.	Purposes	Tools & Techniques
1	Inform	Mass Media, Print, TV, Radio, Citizen Charters, Bulletins Boards, Newsletters, Social Media, Websites & Portals, and Face-to-Face Meetings
2	Consult	Focus Groups, Surveys, Expert Panels, Delphi Methods, Open Meetings, Debate & Discussion
3	Involve	Citizen Outreach, Workshops, Qualitative Interview
4	Collaborate	Social Networking, Crowd Sourcing, Participatory Planning
5	Empower	Stakeholder's Dialogue, Participatory Learning & Actions, Matrix Scoring Ranking

Benefits of Citizen Participation

- Helps in smooth participation of public policy.
- Helps in transparency and makes citizens more accountable and responsible.
- Enhance the projects efficiency and efficacy.
- Develops a sense of belongingness and upholds ownership.
- Lessen political will-based e-governance and help in bringing more inclusiveness and positive outcomes.
- Help in improving the political positioning of marginalized and vulnerable groups.
- Help in developing long-term sustainable e-governance and outcome-focusses initiatives.
- Help in community empowerment, leading to better awareness and superior monitoring.

Way Forward

The vision to transform India into a digitally empowered society and knowledge economy can be accomplished only through citizen participation (political, policy and social participation) and engagement. This will reduce socio economic stress, minimize deprivation, and help overall development. A variety of services can be delivered in rural areas with collaborations with all the stakeholders, with maximum citizen participation.

India has pole-vaulted herself to emerge as a torchbearer in e-governance and technology has been instrumental in this journey. Be it famous JAM (Jan Dhan Aadhaar Mobile) trinity or the Common Services Centres (CSCs) or e-file systems or real-time monitoring of schemes, the Indian e-governance paradigm is based on the solid foundations of good governance.

Good Governance to E-Governance

- Good governance aims at providing an environment in which all citizens irrespective of class, caste, and gender can develop to their full potential.
- It aims at providing public services effectively, efficiently, and equitably to the citizens.
- The four pillars on which the edifice of good governance rests are-
 - a. Ethos (of service to the citizen)
 - b. Ethics (honesty, integrity, and transparency)
 - c. Equity (treating all citizens alike with empathy for weaker sections)
 - d. Efficiency (speedy and effective delivery of service without harassment)

- Attributes of Good Governance:



- Technology in governance results in-
 - Transparency
 - Minimized interface between government and public
 - Accelerated service delivery while fixing accountability
 - Less corruption
 - Revenue growth
 - Cost reductions

Scope of e-Governance

- **Government to Government (G2G):** Information flow and decision-making process have often been found to be slow and marred with red-tapism in government departments. A simple e-governance solution of electronic files or e-files has improved system's efficiency as it is time stamped and creates a log of delays and tracks inefficiencies and malpractices within various departments.
- **Government to Citizens (G2C):** Enables citizens to benefit from efficient delivery of a large range of public services like social pension schemes, gas subsidies, pregnancy scheme benefits, uniform money, textbook money etc.
- **Government to Employees (G2E):** Use of ICT tools helps in making government-employee interactions fast and efficient on one hand and increase employee satisfaction levels on the other.

- **Government to Business (G2B):** Many technical solutions have been implemented to ease the burden on businesses and allow them to thrive and add value to the economy and create jobs. India's rankings has improved consistently in the "Ease of Doing Business" index due to these efforts.

Government Initiatives and Roadmap for e-Governance

- Various policy initiatives and projects have been undertaken to develop core and support infrastructure and to promote e-Governance in a holistic manner.
- Important support components include Core policies and guidelines on security, HR, Citizen Engagement, social media as well as standards related to Metadata, Interoperability, Enterprise Architecture, Information Security etc.
- E-Kranti programme was launched with the vision of "transforming e-governance for transforming Governance" considering shortcomings of National e-Governance programme like-
 - Lack of integration amongst Government applications and databases.
 - Low degree of government process re-engineering.
- It's thrust areas include:
 - **Technology for Education- e-Education:**
 - All schools will be connected to broadband.
 - Free wi-fi will be provided in all secondary and higher secondary schools.
 - Digital literacy will be taken up at national level.
 - Develop Massive Online Open Courses (MOOCS).
 - **Technology for Health- e-Healthcare:** To cover online medical consultation, medical records, online medicine supply, pan India exchange for patient information.
 - **Technology for Farmers:** To facilitate farmers get real-time price information, online ordering of inputs and online ordering of inputs and online cash, loan, and relief payment with mobile banking.
 - **Technology for Security:** Mobile based emergency services and disaster related services would be provided to citizens on real-time basis to take precautionary measures well in time and minimize loss of lives and properties.
 - **Technology for Financial Inclusion:** to strengthen financial inclusion using mobile banking, micro-ATM program and CSCs/ Post Offices.
 - **Technology for Justice:** to strengthen Interoperable Criminal Justice System by leveraging several related applications like e-Courts, e-Police, e-Jails, and e-Prosecution.
 - **Technology for Planning:** Implement National GIS Mission Mode Project to facilitate GIS based decision making project planning, conceptualized, design and development.
 - **Technology for Cyber Security:** Setting up National Cyber Security Co-ordination Centre to ensure safe and secure cyber space within the country.

New Age Analytics, AI, and Machine Learning in E-Governance:

- Many smart dashboards have been created across departments which are powered by analytics and show real time data on many government schemes, present comparative statistics between states and districts.
- These data points are out in public for scrutiny, giving power in the hands of citizens to hold government accountable.

- Many innovations in the field of real time and transparent inspections for providing recognition to colleges and universities has been started. For example, AICTE has started a live real time video conferencing-based inspection mechanism where everything is recorded, and time stamped resulting in completing objectivity and transparency.
- Career platforms are being built by GOI using the power of artificial intelligence for career readiness through training in demand technologies and areas. They recommend courses to students based on interest and existing knowledge and skills.
- Government of Andhra Pradesh in collaboration with Microsoft has deployed a combination of artificial intelligence and machine learning to predict possible dropouts in schools and provides immediate interventions in the form of governmental support, counselling, academic support etc.
- National Informatics Centre has setup Centre of Excellence (CoE) in Blockchain Technology to foster stronger collaboration between government, public and private sectors ensuring latest technological tools and frameworks available for use in different dimensions of governance.

Conclusion

E-governance is at an inflection point in India and with new disruptive technologies, right usage could propel Indian economy and services for citizens and businesses. At the same time there is also a need to put in place proper governing principles for these technologies ensuring that they are equitable, accessible, and fair. With such checks in places, India would become a major force to reckon with in digital governance for social impact.

E-GOVERNANCE IN TOURISM

E-governance is about transforming government mechanisms to make them simple, automated, and efficient. Many initiatives of e-governance are acting as catalysts for the tourism sector and focuses on prominent aspects of tourism related to attraction, accessibility, supportive infrastructure, travel intermediaries and travel documentation.

Attraction

- From the point of view of tourism growth, converting its tourism resources into tourism products becomes very crucial, e-governance can help in this transformation.
- Majority of India lives in villages, rural tourism in India can open a myriad of indigenous opportunities for tourism, despite that at present; tourism is an urban phenomenon in India.
- SMART cities mission and the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) are two flagship schemes of GOI to drive urban transformation.
- Geospatial technology uses tools like Geographic Information System, Global Positioning System and Remote Sensing for geographic mapping and analysis may help in implementation of SMART cities mission and AMRUT scheme.

Accessibility

- Ministry of Civil Aviation, GOI launched e-GCA i.e., e-Governance for civil aviation with an aim of bringing about ease of doing business, enhancing transparency and automation of the processes and functions of the civil aviation regulator in India i.e., DGCA (Directorate General of Civil Aviation).
- It is a single window platform launched to eliminate operational inefficiencies, improve regulatory reporting, and increase productivity. It aims at automating processes and functions of DGCA.

Supportive Infrastructure

- Infrastructure is an umbrella term that covers all the structural elements constituting the framework on which different activities can take place: it includes transport platforms like roads, railways, airports etc. as well as utility systems such as water and electricity, sewage systems etc.
- To decrease traffic at toll booths and enable faster digital transactions, FASTag (an e-governance initiative) was launched to allow automatic deduction of toll without having to stop for carrying out cash transaction. It facilitates seamless movement on roads for tourists.

Travel Intermediation

- Intermediaries are integral to tourism distribution network. Their fundamental role is to bring buyers (tourists/ travelers) and sellers (principal service providers like airline companies, hotels, railways etc.) together.
- GOI opened a vertical named IRCTC (Indian Railway Catering and Tourism Corporation Ltd.) whose multiple objectives included establishing an ICT enabled eco-system to book railway tickets.
- Following PSUs of Indian railways are a part of digital ecosystem which enables e-Governance:
 1. **CRIS (Centre for Railway Information Systems):** Develops and manages information technology applications of Indian railways. NTES (National Train Enquiry System) developed by CRIS gives real time accurate train running information.
 2. **Rail Tel:** It is an ICT infrastructure provider owning a pan-India optic fiber network on exclusive right of way (ROW) along railway tracks. It launched the Prime Minister Wi-Fi Access Network Interface (PM-WANI) to provide free public WiFi services at 100 railway stations across the country.

Travel Documentation

- India needs to work hard to increase the inbound tourism numbers as it can fetch foreign exchange.
- Enhancing the inbound tourism numbers is easier said than done. Out of the various ways that can contribute to the growth of inbound tourism creating an ease in the manner of granting visa.
- The India e-Visa is an electronic authorization to travel to India for following categories: tourist, business, conference, medical and medical attendant. Under this, a foreigner can apply online, four days prior to travel from his/her own country without visiting Indian Mission and pay the fee online.
- After verifying the details, an email i.e., Electronic Travel Authorization (ETA) is generated which must be presented at immigration check post on arrival.
- Ministry of External Affairs signed an agreement for second phase of the Passport Seva Programme (PSP 2.0) with Tata Consultancy Services as the service provider.
- PSP 2.0 is a continuation and enhancement of PSP-V1.0, an e-Governance instrument which introduces unprecedented transformation in delivery of passport related services to citizens.
- It focused on timely, transparent, more accessible, and reliable platform, accessed by citizens in a comfortable environment through streamlined processes and a committed trained and motivated workforce.
- The programme has recently been connected to more than 176 Indian Missions / Posts through Global Passport Seva Programme (GPSP), providing seamless delivery of passport services to Indian diaspora.

Conclusion

- Advantages of e-governance from Indian perspective include:
 - Effectiveness in governance as it will be data driven

- Help in cost reduction
- Make government functioning transparent and government officials more accountable.
- Challenges associated:
 - Linguistic diversity of country due to which e-Governance initiatives need to be implemented in local languages.
 - Integration of e-Governance services of central and various state governments.
 - Digitally illiterate population
 - Lack of technical awareness
 - Internet connectivity and availability of electricity
- As they say, “Data is the New Oil”, therefore enforcing strict data protection protocols and privacy concerns of e-Governance are issues to ponder about.