# Impact of AI, and Information Technology on E-Governance. Certain Merits, Issues and Challenges

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**Abstract**

Governance, if done through electronic devices, and information and Communication tools it may be called as E-Governance. It is transparent, paper less, no cost or with less cost, and non-corruptive fair administrative service system provided by the government and non-government organisations, Service organisation, corporate organisation, marketing, industrial organisation. It is a paperless communication system. It is a time saving, money saving, physical energy saving and moreover it is a transparent and most convenient to both service providers and recipients or stakeholders.

It's a revolutionary change consequent on the adoption of information technology since last 3 decades. These are all computerised services, through software programming and through automation process. These services mainly we can see in E-Seva and Mee Seva service centres, collecting affordable service charges, they will issue certificates to public, passport seva services, collection of utility bills and taxes, police department fines challans, issue of ration cards, income and nativity, and caste certificates to students and public.

Technology enabled services are today facilitating public by many organisations, like education service organisations, medical services, Passport VISA services, Communication, transportation, and entertainment, temple seva services also are providing now a days through online. Online banking services, online stock marketing, online insurance payments, online investments services, online admission in educational institutions, EMCET, LAWCET, ICET, DOST and NEET admissions are being made through web-counselling mode.

Like that, world administration completely digitalised only though online. No physical mode transactions will be done in future to maintain transparency, paperless and non-corruptive and on-time transactions.

This paper is conceptual and descriptive in nature, depending on secondary data available in government, banking, stock trading and transport organisational websites, published papers in journals news-papers. This paper mainly observes, examines, and studies the mode of digitalised online transactions, how they are facilitating the public. How the public are benefitted through the computerised services, through the E-Seva and mee Seva services units. How the E-governance is quickly transparently providing quality services to the public. The merits, advantages and inconveniences and challenges in E-governance portals are being studied in this paper to give suggestion for the improvement of services to public.

**Keywords:** E-governance, ICT tools, computerised services, information technology, digital technology, web counselling, online services

## Introduction

Dr, A.P.J. Abdul Kalam described E-governance as "A transparent SMART e-Governance with seamless access, secure, ethnic flow of information crossing inter departmental barrier and providing a fair and unbiased service to the citizens".

Our late President APJ Abdul Kalam further expected that the E-governance as public centric and citizen service.

"Primary function of government is to deliver the governance services to citizens. E-governance plays s significant role in a democratic country of over 1 billion of population like India because e-governance enables citizen friendly, freely access to information and seamless flow of information of all levels of government in a federal set up."(A.P.J. Abdul Kalam 2014). He further added that no country so far implemented an e-governance service system for one billion of population which will be big challenge and with so many challenges and issue will generally arise in its implementation.

Governance made easy to the governing bodies and agencies through the information Communication Technology, electronic devices, and computerised software programming systems. Digital technology is a bridge between service providers and service stakeholders. While doing admissions in educational institutions, based on notifications, the stakeholders will be selected through an online entrance examination, evaluation and fill the admissions through web counselling computerised processing according to the ranks and grades. Now this system becomes very easy for the educational institutions, colleges, and various universities.

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Using of technology in e-governance started long back by the government of India under the department of electronics in 1970. Subsequently, in 1970. Subsequently in 1977 National Information Centres have been established. It was the first major step in the evolution of E-governance. E-governance is not only popular in India but also in the worldwide like USA, UK, France, Brazil, New Zealand Etc, First it was started in India by AKSHAYA in Kerala at 5000 multi-purpose community technology centres in Kerala state. For the effective initiative efficient working with high transparency, this E-governance scheme will be useful. With less cost, time, less strain, stress the public will get government services through documentary evidence. Various certificates like caste, income, nativity, Residence proof, identification proof,

passport VISA and the processing revenue certificates, Patidar passbooks can be obtained from E-governance mee seva, E seva centres.

While processing recruiting and selection the staff, the H.R. department will proceed with a notification calling applications from eligible candidates, screening them conducting online examinations, evaluate them digitally and finalise the shortlisted candidates for interviews through different modes, stages. Artificial intelligence and machine learning technology is being widely used in the selection and recruitment process while assessing the candidates' calibre in the selection.

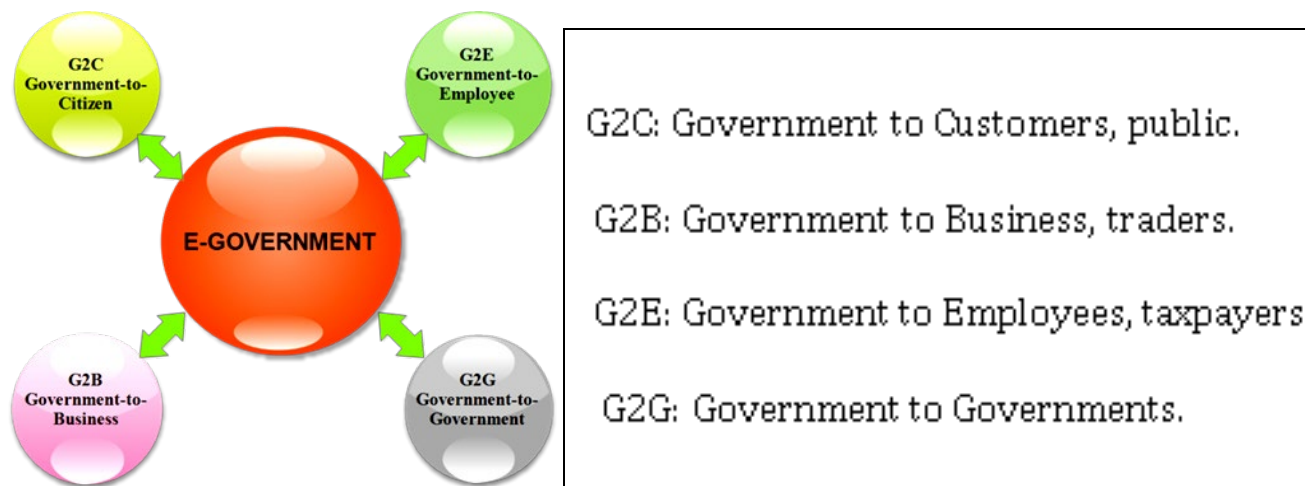Government wants to reach the public in different ways for providing governance. They are:



**Fig 1:** E-Governance to Various Categories

The term electronic governance started its magic since 1990. It is an application I.T and I.C.T with a software programming for providing public service by the government and government agencies through the computerised systems. The administrative communication process between government organizations to stakeholders if done through electronic equipment then it is known as e-governance. E-Governance made is with many services from government side to public since the public also acquainted with the electronic tools and wants to get the delivery of services promptly and timely from the service providers. Moreover, the people habituated the online ordering of services, purchasing of goods to their doorsteps, paying cost of equipment and service through mobile banking.

Therefore I.T. services, e-governance is an emerging techno-process essentially needs in the present scenario because it facilitates 24/7 online services to the beneficiaries with less cost, without physical stress and strain. Moreover, it is a transparent, non-corruptive and with less cost and paper less communication. Communication through orders, circulars, document numerical statements shall be made to mails, or mobile of beneficiaries.

**Significance of the Study**

In olden day's public used to visit government offices, both state and central government, banks, transport. Telecommunication, municipal administration, educational institutions for their physical services, sanctions, licenses,

permissions, approvals, grants, loans, certificates and for documents, applying physically in a prescribed application form in a concerned departmental office standing in long queues. Those days have gone with the adoption of technology since 1990. Every application can be made for the services required through online to the concerned department, after applying, tracking facility also has been provided to know the status of application. If the work completed, sanction orders, approvals, documents, will be communicated to the mails of the beneficiaries.

It is the system now prevailing. E-governance is an emerging techno process of public grievances, appeals. It is a technological grievance redressal mechanism by the service providers to service beneficiaries. Online arguments in court of law also now we are observing. Online applications and approvals, online examinations and online evaluations now are being processed the results. Through Web-counselling admission made easy in educational institutions. Through online booking train reservations, flight reservations, bus reservation cine movies tickets, temple seva tickets are made easy in these days. Everything is possible now if the technology adopted and habituated and acquainted with the techno devices.

For crime detection through forensic lab analytical reports, drunk drive case detection, police signalling, imposing of fines to tress passers through e-challans generation everything now is made through online.
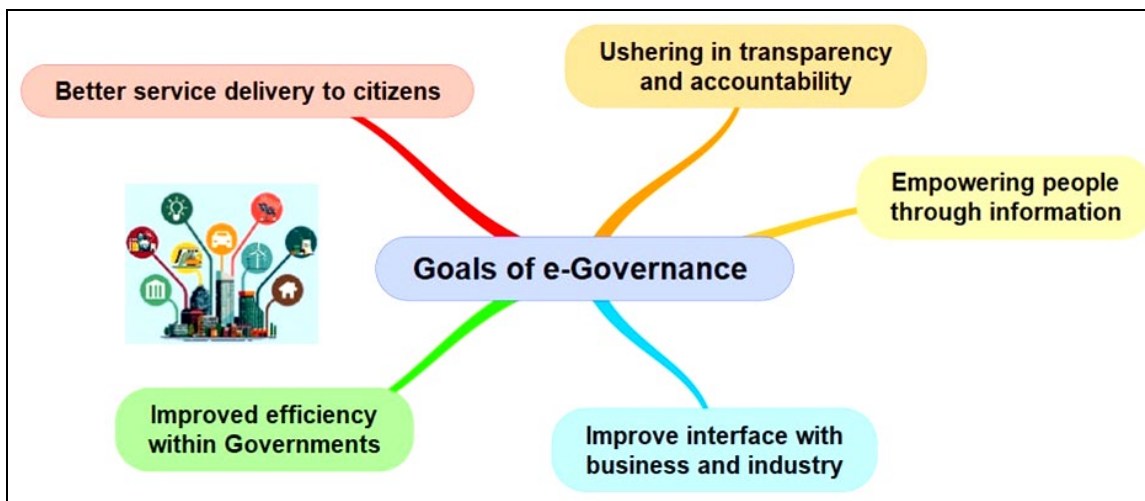
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**Fig 2:** Goals of E-Governance

**Review of Literature**

Shravya (2020), in her article "A study on the role of ICT & E-governance in rural development", mainly focussed on the effect of it in rural development aspects and projects and schemes of government taken up in public interest. And what are the challenges and issues in its implementation also explained well in the above paper published in the book "E-Governance in digital India success to Excellence" in 2020 by the publisher Press Books, Kolkata.

Aruna Jyothi (2020) in her article, "The role of E-governance in Explanatory of corruption in India", stressed the importance of E-governance in maintaining transparency and to avoid corruption in India by using ICT tools and E-governance, method of processing the transactions. E-governance model will

act as digital bridge between service provider and service recipient and stakeholders without the involvement of mediators.

Anusha (2020) in her article "A study on role of E-governance in empowering citizens in India'', how it is useful towards SMART governance as a smooth processing of transactions for the quick and accurate outcome. Even it is facing certain challenges and issues, finally it performs well in successfully.

The above reviews given a picture that E-governance moves the public transactions very quickly and transparently without the interference of mediators avoiding corruption. Moreover, accurate results will come in the process.

**Objectives of the Study**

1. For creating awareness among readers on merits, procedures of e-governance.
2. For alerting the readers on the challenges and issues how to overcome the problems.

**Conceptual Framework on E-Governance**

E-Governance is an electronic enabled governance. It is an electronic systematized governance towards public services. Using of the I.C.T tool for the processing of public transaction for their quick disposal with high transparency and accurate timely results (Manpreet Kaur). E-Governance is a rapid, emerging and a revolutionary technology being implemented since 1991 with the following benefits.

i). Quick service delivery with accuracy and with better quality.
ii). Having with highly accountability and answerability.
iii). Without mediator interference and involvement.
iv). Always avoids the unfair trade practices, corruption and red-tapism.
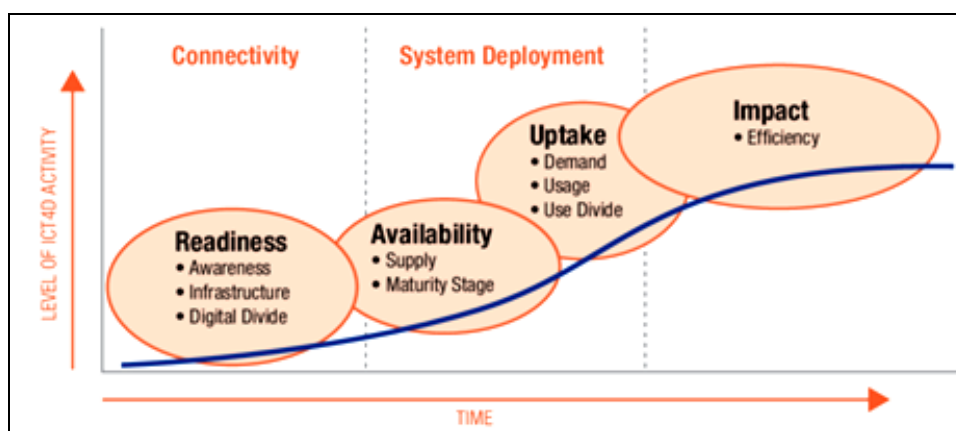v). Self-banking, self-processing, with online applying, tracking the status of transaction.



**Fig 3:** E-Governance Hardware Infrastructure

**Evolution-Milestones and the Stages of Development**:

i). Government wants new electronic processing methods in the public service transaction in 24/7 hours 365 days service delivery through online computerised system

processing software technology-based automation since 1984.

ii). Formation of NASSCOM.

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iii). Electronic reforms, financial sector reforms, industrial sector reforms introducing online processing since 1991, replacing human intelligence artificial intelligence with machine learning.

iv). Information Technology act passed in 2000 year in the Parliament.

v). The 2001 year declared as it started the e-Governance by the Ministry of Information Technology.

vi). Appointed the High Court, Mumbai as an APEX appellate and adjudicating authority 2003.

## Stages and Process of Development

In 1970, separate department of electronic related to ICT established, in 1977 NIC countrywide network established. In 1980 Govt. departments started ICT based computerised soft and hardware services. In 1987 government launched satellite-based Network. In 1990 District information System of the National Information Centre has been launched. In 1998 National task force on Information technology under software development deployed. In 1999. The government launched a scheme" Operation Knowledge" to improve computer literacy. In Ministry of Information Technology has been established in 2000.

Number of further developments happened from 2001 to 2014 for further improvement, adding new civic centric service, throughout country in various states under various departments.

## Implementation of E-governance Projects in Indian State

With the tremendous success of Pilot E governance services to various citizen centric services, it has been expanded to various states in the country as shown below.

1. Andhra Pradesh, E-Seva, AP-online
2. Bihar, indirect taxes like Sales tax, Management Administrative Information System.
3. Chhattisgarh-Treasury services, Infotech services
4. New Delhi, ECS, automatic vehicle tracking system.
5. Goa, Land records Dharani Projects
6. Gujarat Online of computerisation of Government records. Census online, e tenders
7. Haryana, Innovative project works
8. Himachal Pradesh Lok Mithra Public utility services
9. Karnataka Land records Treasury records, Kavery

## Model of E-Governance

i). **G2C Government to Citizen:** Government service, sanctions, approvals, releasing certificates and document to citizens, Income certificates, Residential Proof Certificates, Caste certificates, VISA, PASSPORT documents.

ii). **G2B Government to Business:** Sanction and grant of licenses and permit to business people to start their businesses, after its applying through online.

iii). **G2G Government to Government:** The decisions and approval of one department to various other departments, central governments to state governments. One state government to other state governments, sending reports, reply to state and central governments. Releasing of budget, approvals and authorisations, and sanctions of revised.
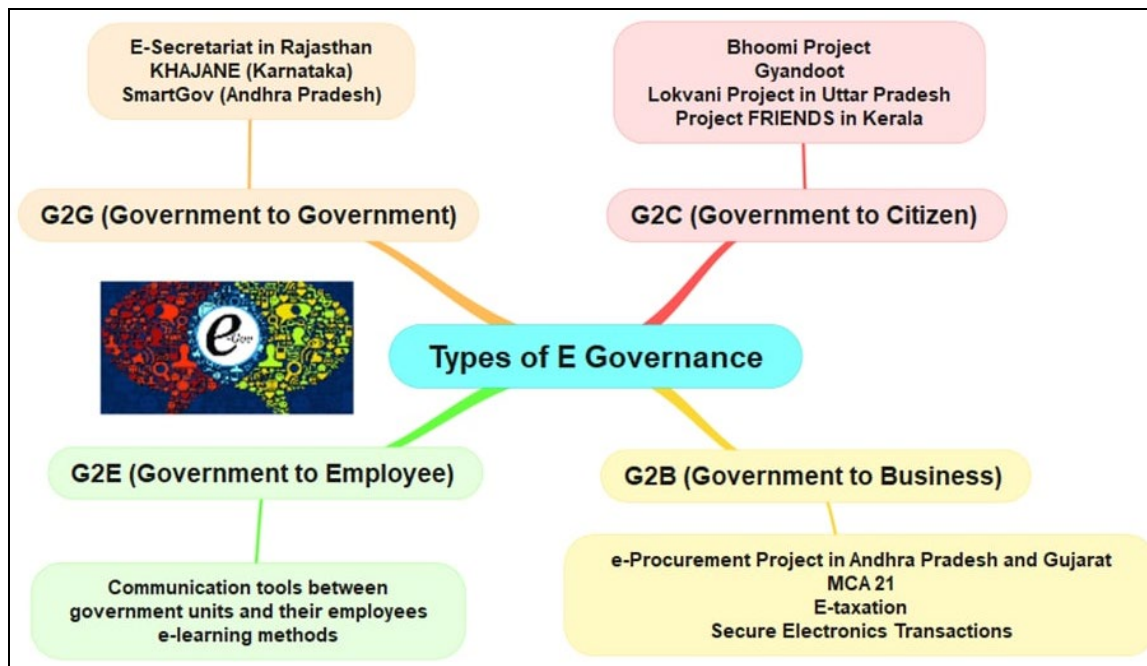


**Fig 4:** Types of E-Governance

## Innovations of E-Governance

i). **Direct Money Transfers:** Through the crores of Jan Dhan bank accounts, and crores of Indian mobile phones and more than 130 crore Aadhar links, it has benefitted to poor people by direct money transfers of welfare schemes by the government agencies.

ii). **Digitalised the Payment Process:** Digitalised the economy by encouraging the mobile and online phone payments for the last 6 years during demonetization and Covid pandemic situations the digitalization. Thousands of crores of worth public trading transactions were being settled the payments. Through the digitalization process every rupee transaction of payment and receipts were accounted for in the books of trading and business concerns. Evasion of tax reduced.

iii). **Jeevan Pramaan:** Government service, family civil and military, pensioners face identification, life certificates are being issued every year through the bio metric fingerprint poof and face recognition and Irish technology. Both the state and central government are

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following the procedure for the assessment of living status of pensioners.

iv). **Online Registration Process:** For the O.P. registration in hospital service, job portals, property registration, and opening bank accounts, loan application process, for applying government welfare schemes by the people, government is initiating online application in the format designed for the concerned purpose.

v). **E-Seva and Passport Services:** Central government under the Home and foreign affairs ministry for the process of passport issuing and VISA through online application mode only. Verification and process of issue of the Passport and VISA are being monitored though the online computerised systems.

India is now empowered and transformed technologically and with superfast running on technology wheels with drivers. Electronic services, electronic processing, online net services, web counselling, software programming and automation process of portfolio management in banks, insurance companies, transport services online ticket reservation bookings.

**Working Process of Information Technology, A.I. And ICT Tools on E-Governance**

The role of information technology, I.C.T, tools, artificial intelligence, computer software and hard technology is inevitable to reach the communication and information to the stakeholders. Online application for a specific document and certificate with all the particulars of the individuals will be processed with the automation and artificial intelligence and after scrutiny processing, the beneficiaries will get applied documents and certificates from the computerised system and printers.

"A study revealed that satisfactory index for the successful effectiveness is extremely high around at 90% (Bhaskar Vempati) in his paper. The delivery channels process individual applications to the government and corporate organisation with all evidence for certain sanctions and approvals. Entire process will be done through online without the Interference and physical file processing. Just only the operators will feed the data collected through application from the individuals concerned. "Government of Rajasthan and Kerala implementing various projects. Proved the successful implementation of e-governance covering more than 3.25 lakh employees." 'Bhaskar' revealed in his paper.

**Central Government Projects of E-Governance**

i). Passport and visa processing, tracing, immigration e-ticketing approvals and sanctions.

ii). Banking, financial, insurance postal, telecommunication and courier services.

iii). E-tendering, e-procurement, Aadhar enabled payment systems, Direct Benefit transfers.

iv). Digitalisation of projects, Aadhar registration, Jeevan Pramana certificates, insurance policy sale, bonds circulation, claim settlement.

v). Municipal administration civil services online application, approvals, sanctions

vi). E-medical consultations, online medical treatment, and billing processing.

vii). Forensic and crime detection in Enforcement directorate, CBI, ACB crime detection

viii). Aadhar enable payment systems.

ix). Aadhar, voter id card, Pan Card, Arogya Mission card, Debit card, credit card, smart card generation projects.

**Advantages of E-Governance**

i). Speed and accuracy, timely the document will be issued with authenticity.

ii). Cost reduction, with less and no cost the services will be provided Ex: voter id card, Aadhar card.

iii). Highly Transparent no hidden cost, everything is open fact and with open terms and conditions.

iv). Accountability and Answerability. For every document, certificate issued and released once, it is accountable with all facts and correct information from government agency with all approvals and sanctions with proper stamping and signatures of competent authority.

v). The data collected from the individuals for issuing a certificate or a document, the concerned authorities, and agencies will maintain confidentiality and privacy and security data.

vi). Paperless office and in Demat shape of documentation.

vii). No corruptive trade practices except official fixed charges.

viii). No brokerage and involvement of middlemen.

ix). No time taking, and no need to visit offices frequently, as per the citizen chart schedules works will be completed and the documents will be released to the applied persons.

x). Minimisation of cost of works to the universities, higher education institutions and colleges.

xi). It will benefit to the stakeholders.

xii). Privacy to the stored data and can easily access.

xiii). Virtual Lecturing to the students, with demonstrative mode of practical session will have clear understanding to students. Virtual experiments in labs. Demonstrations in virtual boards.

xiv). Innovative methods od routine portfolio in banking and insurance through automation technology.

xv). Legal complications are minimised.

xvi). This e-Governance practice is more advantage to the local governments, Municipalities. In tax collections, issuing e-notice, online applications, e-approvals. E-licensing, e-tenders, e-auctions.

xvii). Easy sharing of data, easy processing in transferring of the documents.

xviii). Online tax assessments, e-filing and processing of filing, final settlement of refunds by I.T. and G.S.T authorities.

xix). Online stock trading in stock exchanges, analysis.

xx). Technology made easy many things and facilitates and make it convenient with accuracy, accountability and answerability and reaches on time without delay. Ex. Banking made easy, education at doorstep, payments made easy through mobiles, online trading through e-booking ordering through mobiles. And E challan of fine payments

xxi). E-Seva and Mee-Seva centres are providing services to citizens as service hubs.

xxii). Fast and timely services with less cost and paperless service.

xxiii). Documents can be transferred through Electronic data interchange technology to the mails of stakeholders.

xxiv). Reduction of delay, red-tape and corruption in government organisations.

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xxv). E-governance brings SMART(Simple, Moral, Accountable, Responsive and Transparent)
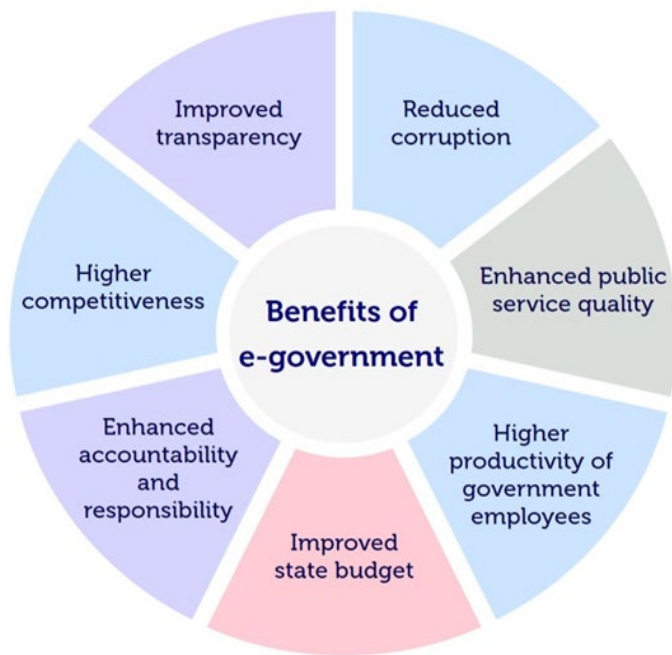


**Fig 5:** Merits of E-Governance

**Challenges and Issues of Technology in E-Governance**

Though there are so many advantages and merits of technology usage in e-Governance, many disadvantages also there to the public and stakeholders in habituating and acquainting with the technology and I.C.T tools and equipment due to lack of awareness and procedures. These are the following issues and problems to the public.

i). Lack of awareness on using ICT and technology tools and equipment even to the educated persons, elders, rural public.
ii). Due to illiteracy and unaware of using software and hardware technology for a specific purpose. Ex: train reservation, flight reservation, temple seva bookings, online ordering, slot booking for VISA and passport.
iii). No updating attitude to the technical staff in using and knowing the updated techniques.
iv). Technical, servicing and server down problems, signalling problems.
v). Due to cybercrime threats, senior citizens feeling in-secured on using the technology. They are still preferring to visit banks for their physical transactions. This is due to lack of technical knowledge, confidence, and lack of integration.

vi). Feel inconvenient with the technical procedures, problems and with heavy cost of usage and with the maintenance of electronic devices like Smart Phone, I-phone and Android phones, computerised equipment printers, purchasing of software. Hiring of technicians and providing of infrastructure A.C roofing for computer soft and hardware room.
vii). Keeping with confidentiality of data storage is a big challenge and with risk if leakage of data happened. There may be so many security problems with passwords and O.T.Ps
viii). Maintenance cost is recurring in nature it's a heavy burden, salaries to software employees, rent payment, electricity, A.C. room maintenance, A.M.C contracts, insurance payments transportation like expenses.
ix). Updating with the changing technology due to lack of interest, attitude, training and understanding and necessity. Ex: cloud computing, Blockchain Technology
x). Initial investment for creation of infrastructure is a big problem, with limited financial sources.
xi). Protection soft wares for endless cybercrimes is also big challenge now a days.
xii). Coding and decoding of data leakages is big task and risk in the present competitive business environment.
xiii). Providing regular training programme also involves with cost effective. Leads to unfair trade practices if the technology not known with technology unawareness.
xiv). Health issues to software and hardware employees. Eye-sight problems, back pain and neck pain, and spondylosis problems may frequently cause inconvenience.
xv). Low literacy, no technical awareness, no application of technical knowledge.
xvi). Inadequate power supply, internet signal problem, satellite connectivity problems
xvii). Lack of coordination and cooperativeness between concerned departments
xviii). Security threats and frequent servicing problems to cables, infrastructure hardware due to natural calamities, cyclone storms.
xix). Limited computer software knowledge to the educated youth and to old age people.
xx). Delay tactics and psycho attitude of some bureaucrats towards public.
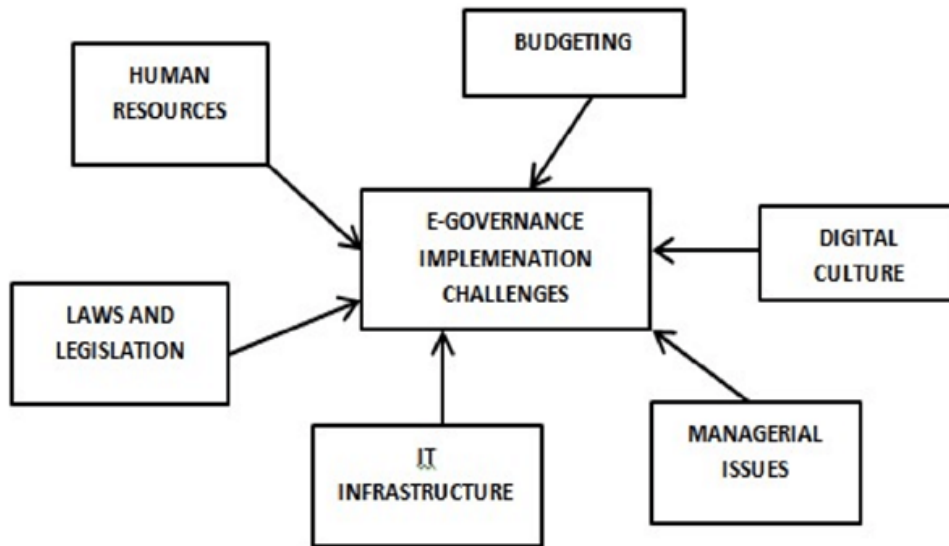xxi). Senior people old age government servants may not having learning and updating attitudes.

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**Fig 6:** Challenges of E-Governance

**Suggestions, Recommendations for Challenges and Problems**

i). Public and youth mindset and attitude should be changed first. They must be updated with changing technology as per the present situation of electronic era.

ii). Create awareness and curiosity to know something about the usage of technology otherwise he will be treated inefficient and technically unfit for employment and in society. He is not fit for survival.

iii). Usage of technological equipment is must today. The day start with mobile and end with cell phone. With proper friendly training from friends, colleagues, somehow, they must get in touch with latest technology.

iv). Organisation must give training to the staff when technology changes on changing software. In every organisation Research training development wing should be there. Incentives should be provided to the software technicians on using updating technology.

v). Continuous health checkups are needed to the employees and treatment should be provided to those suffering with chronic health issues. Medical, insurance, medical claims and reimbursement facilities should be provided. Entertaining facilities, recreation facilities also must be there to the software employees to get relief, strain, and physical stress.

vi). To make E-governance more effective and efficient and powerful, two more technologies shall be adopted. Those are Open source Software and cloud computing if added, some more adding services with high speed quality shall be possible.

vii). It is gradually updating by the government of India with Open source software cloud computing for E-governance projects.

**Conclusion**

E-governance is the latest trend of government administration. It is fastest governance and reaches to the doorstep of the people. It is completely paperless and low-cost E-Seva and e-governance. Through this e-governance process of administration many sections of the people will be benefitted. After adopting the information technology, E-governance is presently dominating in serving the public by many state and central government departments. With the commencement of electronic governance, physical, traditional, and conventional governance is completely dispensed with and disappeared. Its

timely, and quality service. It is a transparent non corruptive and fair-trade practice of governance. Once applied to a specific service, license, permission, through online application with all necessary documentary evidence, it will process electronically and automatically without human intervention just with computer technology. Information and communication technology and with the help of Artificial intelligence. Though they are so many benefits through the e-No governance, online service some more problems and issues are there. Due to lack of technical and software knowledge, awareness to the public.

**References**

1. Man Preeth Kaur "Effective E-Governance towards good government in India"-published in "E-governance-Digital India Success to Excellence" by Asian Press Books, Kolkata, 2020.

2. Padmakar SS. "A study on E-governance concepts, Significance, advantages procedures, challenges" published in E-governance-Digital India-Success to Excellence by Asian Press Books, Kolkata, 2020.

3. Swapnika Jaiswal. "E-Governance Development and issues: Role of ICT, published in in E-Governance"-Digital India-Success to Excellence" by Asian Press Books, Kolkata, 2020.

4. Punya Sailaja. "A Study on E-governance and Technology in Education, Banking and Cyber Crime"-published in E-governance-Digital India-Success to Excellence" by Asian Press Books, Kolkata, 2020.

5. Avinash Bajpai. "A study on digital Transformation in India"published in E-governance-Digital India-Success to Excellence by Asian Press books, Kolkata, 2020.

6. Richa Sharma, Risha Thakur *et al*, a study on "E-governance in India Challenges during Covid-19 Pandemic and Emerging prospects for the future" chapter published with ISBN No.978-93-91842-39-0.

7. Beniwal VS *et al*. "E-governance in India: Prospects and Challenges: published in an *International Journal of Computer& Communication Technology*. 2013, 4(3), P.No.1 to 5 with ISSN No0975-7449.

8. Riyaz Ali *et al*. "E-governance in India-the Road Ahead" in Vol5 issue 4 ISSN 2319-9202, published the *International Research Journal of Commerce Arts and Science*, 2014.

< 71 >

9. Sanjay B. Bagde. "E-governance: Major Challenges in India"-Published in. In *International Research Journal of Marketing & Economics* wit ISSN No.2348-9766, 2020, 7(2).

10. Satish Sood. A study on E-Governance in India-Issues and Challenges, 2020.

11. Lokhande MA. E-governance in India. Vol. 48 published by Yojana (A development Monthly), in December 2004 with ISSN-0971-8400.

12. Pradheep Adhikary. "Interactions, issues and Initiatives of E-Governance in India: An Overview" chapter contributed in a book titled ''E-governance-Digital India: Success to Excellence" published by Asian Press books, Kolkata, 2020.

13. Nayan Jyoti Gagoi. "E-Governance in India: Issues &Challenges" published in October 2020, by *International Journal of Management (IJM)*. 2020; 11(10):1861-1865.

14. Nikitha Yadav and Singh VB. "E-Governance Past, Present and future in India" published by *International journal of Computer applications*, 2012, 53(7).

15. Adarsh Suryakant Patel, *et al* faculty in computer applications, published their article in their college magazine.

16. Darpan Anand, Vineeth khemchandini. Study of e-governance in India: a Survey published by *International Journal Electronic Security and Digital Forensics*, 2019, 11(2).

< 72 >