Chapter-1

Reviewing Manifestations of different e-Governance Initiatives

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REVIEWING MANIFESTATIONS OF DIFFERENT e-GOVERNANCE INITIATIVES
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REVIEWING MANIFESTATIONS OF DIFFERENT e-GOVERNANCE INITIATIVES

1.0: EXECUTIVE SUMMARY:

In this chapter, the researcher attempts to review the manifestations of different e-Governance initiatives adopted, designed, and implemented. A view of Central Mission Mode Projects is checked, and their state-wise adaptation is reviewed. The UN e-Governance Survey-2018 has been assessed, which gives a detailed perspective of the various initiatives of the best-adapting nations of the world on an index.

The researcher reviews various Digital India initiatives undertaken by the Central Government in conjunction with the e-Governance initiatives. A brief review is being done of different e-Governance models, naming G2C initiatives, G2B initiatives, and G2G initiatives. In addition, a specific review is done on the SPOT model and e-Governance Maturity model, briefing about its phases and implementation from the current perspective.

The researcher has reviewed specific initiatives of Vadodara Municipal Corporation (VMC). Their success in implementation, a detailed review of initiatives like Property Tax online Payment, Online Professional Tax payment, Shop, and Establishment Certificate, FSSAI certificate, Vadodara Gas limited online bill payment, fire and emergency services online, Swachhata application, City survey app, e-Dhara has been made.

A brief review has then been done for e-Governance initiatives for the state of Gujarat. Finally, the researcher has gone into detail for reviewing various e-Governance Global level programmes of developing nations like Jordan, Iraq, Vietnam, and Pakistan. A review of multiple benefits of the e-Governance programme has been done, too, denoting various issues and challenges being faced for the implementation in our country.

The researcher also reviews the way forward for e-Governance for our country by explaining the various initiatives which could be conceived for its correct implementation of programmes, like thinking digitally, regulating multiple regulations, and last but not least, developing the human resources to suit in well to take the initiatives forward.

1.1: INTRODUCTION:

The e-Governance is a method of improving the way any Government works, sharing data, drawing in e-Governance clients, and conveying administrations to outer and inside clients to support the Government and the clients they serve. The State and Centre run administrations tackle data advancements like the Web, WAN, Internet, and versatile figuring to contact e-Governance clients, businesses, and different arms of the Government to further develop conveyance of administrations to e-Governance clients, organisations and workers. Connect with e-Governance clients during the time spent through collaboration; engage e-Governance clients through admittance to information and data. It makes the working of the Government more effective (Bhatnagar, S. C., & Singh, N., 2010).

There are many meanings of e-Governance, as people and associations define them. People at various degrees of authority have different impressions of e-Governance. e-Governance researchers and professionals at times need to possess clarity about it. Many people in regular offices understand e-Governance as only computerisation. However, even at higher levels of Government offices, e-Governance is meant to automate citizen-centric services. (Table 1).

Table No.:1.1: Definitions of e-Governance

Sr No	Level	Government Classification	Perception (E-Government)
1	First Level (Routine)	Group D	Computerisation
2	Second Level (Clerical)	Group C	Computerisation + Government Online
3	Third Level (Middle Management)	Group B	Computerisation + Government Online
4	Fourth Level (Senior Management)	Group D	Computerization + Online Government + Admin Reforms+ e-Citizen Needs=Transformation

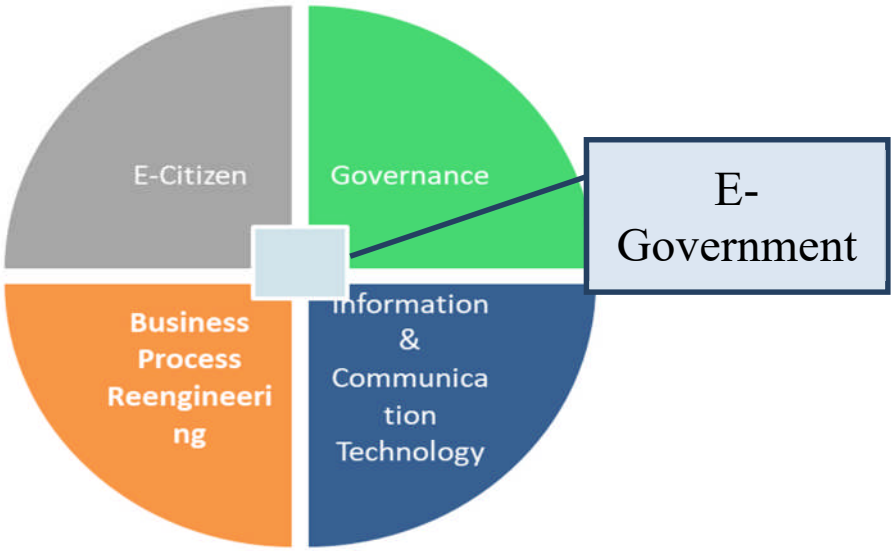
(Source: AOEMA-Asia Oceania E-business Marketplace Alliance http://www.aoema.org/ 2018)

1.1.1: Plotting e-Governance:

Four factors make up the word e-Government: Governance (G), Business Process Re-engineering (BPR), Information and Communication Tech (ICT), and e-citizen (E-C). The e-Governance fundamental equation is as below:

$$e - Gov = f\ (G, ICT, BPR, E - C)$$

Figure No.:1.1: Defining e-Governance



(Source: Misra, D. C., 2006)

The 'National Informatics Centre' started in 1977 in 'Department of Electronics,' Government of India. India's first significant move toward e-Governance, as it focused on 'information' and how it was communicated. With the introduction of personal computers, Government departments gained access to computer storage, retrieval, and processing capabilities. Many government personnel had computers by the late 1980s, although they were primarily utilised for 'word processing.' Computers were gradually put to various tasks, such as database management and information processing, as better software became available. The 'National e-Governance Plan (NeGP)' encompasses an all-inclusive aspect of e-Governance efforts for the entire spread of the country under a single vision. A colossal infrastructure has developed, ranging from the cities to all remote places in the country.

A very large level record digitisation has been undertaken for simplifying internet access simple and reliable According to NeGP's Vision Statement, bringing public services closer to e-Governance users is the eventual goal.

This leads to increased transparency, accessibility, enabling, reduced fraud, revenue progress, and rate savings.

Indian Government first conceptualised '31 Mission Mode Projects (MMPs) in 2011, comprising 11 Central MMPs, 13 State MMP's and 7 Integrated MMPs' across numerous Central Ministries.

A mission mode project (MMP) has been conceptualized by the Union Government. It lays impetus on various on different aspects of electronic Governance, assisting citizens for different services. (Ministry of Electronics & Information Technology -www.meity.gov.in, 2019).

1.1.2: United Nations e-Governance Survey 2018:

Development of e-Governance for the top 10 nations:

As per a survey done in 2018, Denmark ranks first among the top ten countries. Denmark's Digital Strategy 2016-2020 has been in effect since 2016, laying the groundwork for the country's public-sector digitalisation activities and its interactions with enterprises and industry. This strategy aims to lay the groundwork for a robust digital network in Denmark. Similarly, Denmark has made digital Government-Citizen contacts mandatory, but people who cannot use digital services are not exempt. In 2018, Australia was ranked second. Australia is at the top of the list in terms of the development of human capital. The Australian Government is implementing Digital Transformation Agenda. The Republic of Korea is still in third place.

Although the country excelled in internet services and technology infrastructure, it lags behind other top-ranked countries in terms of human capital development. In the face of rapid technological advances, nation promotes appropriate, competent, and transparency in Governance to improve citizen fulfilment and efficiency.

The Republic of Korea has developed expertise in digitising all Government-related policies and procedures; as a result, the country has further trained more than four thousand eight hundred Government employees from other friendly countries. The United Kingdom has a fourth place in the Survey report while being in first place in the previous years. Through its platform, GOV. UK, the British Government, is offering various integrated e-Governance services. Its 'Government Transformation Strategy, published in 2017,' lays the basis for further e-Governance modernisation by transforming businesses, people, ethos, and skills, improving tools, processes, and Governance, utilising data effectively, and creating shared platforms and components. Sweden improved one position from its 2016 rating to fifth place because of strength in human capital and technical setup indices. The Government's policy of 2017 was majorly focused on digitisation as a future tool, mentioning its benefits on competitiveness, employment, and economic, social, and environmental sustainability.

Sweden's strategy is to have a complete digital transformation of its processes and Governmental procedures. Sweden enjoys a very high mobile data usage amongst its citizens; it also visualises high future demand for high-speed Internet access. Ninety-one per cent of Swedes have access to the internet, and three-quarters have basic digital abilities.

Japan stands tenth as per the Survey; it stood eleventh in 2016 and tenth in 2018. Japan has a low human capital index compared to other top ten nations; it scored well in technological setup and the internet as a service. The Japanese Government is pursuing programmes such as digitised operations, e-delivery of Government data, Government e-procurement improvement, and information security measures. A 'Digital Government Strategy' and a 'Basic Plan for the Advancement of Using Public and Private Sector Data' are also in place in Japan. A platform for 'public-private partnerships' linked with the SDGs—promoting constant, comprehensive, and sustainable growth, is one of the 03 pillars of the 'Digital Government Strategy' (United Nations Department for Economic and Social Affairs, 2019).

India and UN's e-Governance Index:

The e-Governance Development Index (EGDI) is calculated as a weighted average of three normalized Indices:

(i) Telecommunications Infrastructure Index (TII): The International Telecommunication Union (ITU) provided the data for this index.

(ii) Human Capital Index (HCI): This index is conceived from data available at UNESCO.

(iii) Online Service Index (OSI): The OSI is built on information from data finalized by UNDESA available from 193 UN Countries. The index primarily examines national e-Governance progress. It assesses the Government services delivery using digital platforms. This index is based on parameters like breadth, quality of digitized facilities and the state of telecommunication infrastructure and human resources. India is at number 100 on the United Nations' 2018 e-Governance Index. India rose from 118th place in 2014 to 96th place in 2018.

e-Governance Development Index (EGDI): Key Highlights:

The country of Denmark topped the 2018 e-Governance Development Survey, having scored 0.9150. Australia is second, scoring 0.9053, and the Republic of Korea is third, scoring 0.9010. The United Kingdom came in fourth with a value of 0.8999, and Sweden came in fifth with a value of 0.8882. In 2018, there were more nations than in 2016, with 29 countries in the top tier of the index values between 0.75 and 1.00. In their respective regional rankings, these countries also rank first in Europe, Oceania, and Asia. While, Mauritius leads African countries with a worldwide rating of 66, the Republic of Korea leads in Asia with third rank, and the USA leads with a global raring of 11 in the American continent.

Table No.:1.2: e-Governance Development Index (EGDI)

Index Top 10 Countries		
Sr No	Country	Index
1	Denmark	0.9150
2	Australia	0.9053
3	Republic of Korea	0.9010
4	United Kingdom	0.8999
5	Sweden	0.8882
6	Finland	0.8815
7	Singapore	0.8812
8	New Zealand	0.8806
9	France	0.8790
10	Japan	0.8783

(Source: Jagranjosh, 2018)

Sub-Index for e-Participation:

With a score of 0.955, India comes in top 15 countries in the sub-Index of e-participation. In this category, India also took first place in the sub-region. Meanwhile, Denmark is the top nation for e-Governance, e-Participation sub-index.

1.1.3: Etymology of e-Governance:

e-Governance: The letter 'e' stands for 'electronic.' For e-Governance enablement, effective integration with Information and Communications Technology (ICT) is crucial for Governance functions and outcomes.

Across the world, countries are adopting e-Governance; as Governance is becoming more technological and complex, and citizens' demands are also rising. ICT provides adequate data storage and retrieval, speeding up Government processes, making timely and informed choices, enhancing transparency, and imposing accountability. It also aids in expanding Government reach — both geographically and demographically. India's use of IT to improve Government processes has become vital. (National Institute of Smart Government Handbook, 2015).

1.2: e-GOVERNANCE MODELS:

National e-Governance Plan (NeGP):

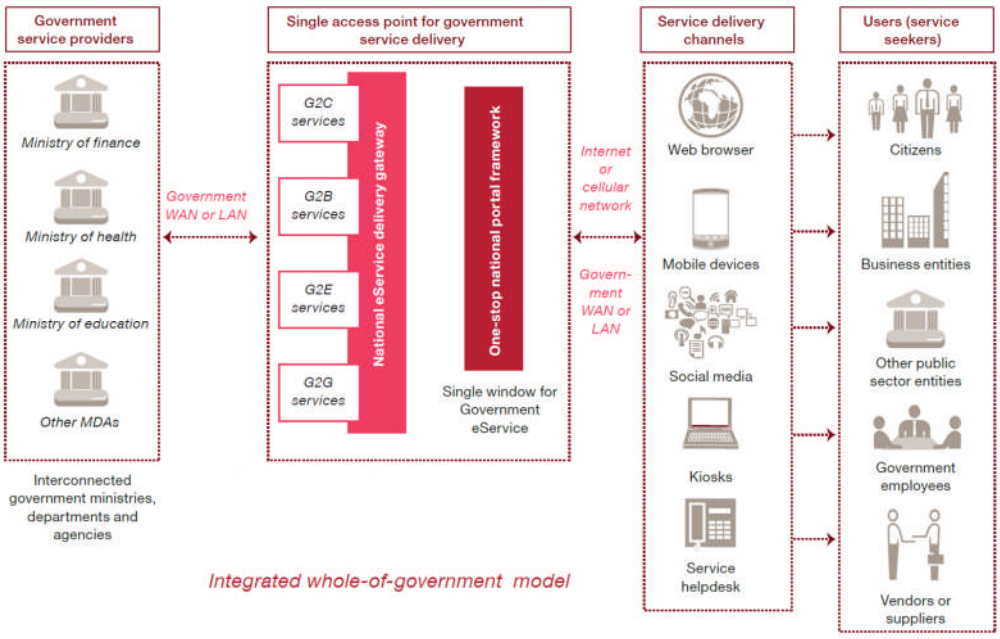
State Governments and several Government Ministries had already started implementing e-Governance during the launch of its National e-Governance Plan (NeGP) in 2006. Some e-Governance schemes of State and Central Government are highlighted to evaluate its strengths and faults, and note the lessons learned from them. The following categories are used to discuss these initiatives:

a) G2C- Government to Citizen Initiatives

b) G2B- Government to Business Initiatives

c) G2G- Government to Government.

Figure No.:1.2: e-Governance Transformation Model



(Source: Sen, Debdas., Bhowmick, Pradip., Mitra, Arunava., 2013)

1.2.1: Government to Citizen (G2C) Initiatives:

With the Digitization and percolation of IT assets, India's e-Governance situation has progressed significantly. The emphasis is on broadening the Governance scope to affect the general public significantly. e-Governance is an effective means for improving the excellence of Government services to its citizens, increasing openness, reducing corruption and subjectivity, lowering citizen expenses, and making Government more accessible. The Central and State Governments have taken a considerable number of initiatives in this category. In the subsequent literature, details of the same are described. (MEITY, 2019)

1.2.1.1: Computerization of Land Records (Department of Land Resources, Government of India):

As early as 1985, a state/UT revenue minister convention urged computerization. According to Computerization of Land Records in India, eight districts from states was chosen by the Union Ministry of Rural Development for computerising land records, funded by the Central ministry, based on the recommendation. It was implemented in partnership with the NIC beginning in 1994-95. (Rai, Kuldeep., Bhalla, DK., Computerization of Land Records, 2010)

Objectives of the scheme are as follows: (ibid)

(i) To provide landholders with on-demand access to copies of Records of Rights (RoR) and of their ownership, crop, and tenancy records.
(ii) We are obtaining fundamental land record data by preserving historical records in a reliable and long-lasting manner.
(iii) It ensures accuracy, transparency, and prompt resolution of disputes.
(iv) Improving the speed and efficiency with which information can be retrieved for decision-making.
(v) Give computer-generated land records certificates legal legitimacy following an authorised revenue official certification.
(vi) We are creating a detailed 'land information system' to enhance resource use and land-based planning.
(vii) We are emphasising citizen-oriented land and revenue administration services.
(viii) This scheme's coverage in phases is as follows:

At the time of the Seventh Plan, funds were allocated for implementation in Twenty-Four districts; For the 8th Plan, funds for 299 districts, and funds for 259 Districts in the 9th Plan; Funds for Computer Centres development was allocated in 2787 talukas in the 9th Plan, after it was agreed in 1997–1998 that the project should have an extension implementation till taluk level; and there was an inclusion of 1615 Talukas in the 10th Plan, as well as the establishment of computer centres in 1019 subdivisions, with 365 districts having land records data-centres.

(ix) This scheme's execution status is as follows:

Twelve States have finished the RoR, data entry procedure. Among the States that have stopped manually issuing RoRs are Madhya Pradesh, Maharashtra, Tamil Nadu, Gujarat, Karnataka, West Bengal, Uttarakhand, and Uttar Pradesh. The States that have posted RoR data on their websites include Madhya Pradesh, Rajasthan, Orissa, Andhra Pradesh, Chhattisgarh, Uttarakhand and Gujarat. Among the States that have made RoR data accessible on their websites are Madhya Pradesh, Rajasthan, Andhra Pradesh, Gujarat, Chhattisgarh, Uttarakhand and Orissa.

(x) The system now includes 1021 sub-divisions, 4423 taluks/tehsils/circles, and 582 districts, but the process continues as before.

1.2.1.2: Bhoomi Project in Karnataka: Online Delivery of Land Records:

Bhoomi is a self-sustaining e-Governance initiative in Karnataka that would use 177 Government-owned kiosks to computerize the distribution of 02 Crore rural land records to 67 lakh farmers. It was often thought that rural land records were crucial conduits for providing improved IT-aided schemes to citizens since they comprise numerous information features, including title, tenancy, credits, the form of title, irrigation details, and crops grown. The farmer uses this land record for several purposes, including tracking Agricultural loans and legal schedules, pursuing School scholarships, and proving land ownership. Nine thousand local governments manually maintained these documents in the past. As part of this effort, farmers can request land title changes and obtain land records via computerised kiosks. There are currently 20 million legally preserved records in digital form. Bhoomi charges users to make the initiative self-sustaining and extendable. For the following reasons, a project like Bhoomi was thought to be necessary:

The Land records were not subject to public review in the old system, which allowed for various levels of manipulations. The application procedure for a title transfer of land, was lengthy, time-consuming. The Government land has been illegally transferred in the name of influential people. The physically kept records needed to contain the necessary data for the administrators to collect, consolidate, and analyze. Land records provided an exclusive prospect to educate rural residents about the benefits of e-Governance. Various advantages were associated with the effective execution of such initiatives, including the capacity to obtain crop loans because banks would need to provide land records and minimize postponements in the resolution of court cases due to the lack of records.

Throughout the project's execution, all the team members engaged were given clear duties and responsibilities down to the ground level.

Project-Bhoomi is a remarkable endeavour that establishes a specimen for numerous projects in terms of how it approaches project piloting, implementation, and maintenance. The manually inscribed Right, Tenancy, and Cultivation (RTC) records have been declared illegal. In reality, Bhoomi currently plans to expand its offerings in the future, including the points as below:

Land records with digital signatures are issued; Providing courts and banks with Bhoomi connectivity; Scanning and connecting survey sketches/maps with Bhoomi; In conjunction with the RDS project, decentralise land records to Hubli. (Online Delivery of Land Records, 2019).

1.2.1.3: Gyandoot (Madhya Pradesh):

Gyandoot is a 'Government-to-Citizen (G2C)' service delivery project built on the Intranet. In January 2000, it was launched in Madhya Pradesh's Dhar district with the dual goal of data delivery and a link between the district authorities and citizens. The main goal of this service was to create and support a technologically advanced scheme owned and administered by the citizens. As part of the project, computers were given in 20 village Panchayats, with connectivity to the Dhar District Rural Development Authority, known as 'Soochanalayas,' They were run by local young citizens who had been hand-picked for the job (called Soochaks). They were not paid a regular salary or stipend. After a certain time, 15 more 'Soochanalayas' were established as for-profit businesses. The 'Soochanalayas' use dial-up lines to connect to the Intranet. The Gyandoot network provides services such as; Daily rates of agricultural commodities; Income, Domicile, Caste certificates; Public grievances redressal; BPL household list; Rural Hindi e-mail.

Each service being delivered is mentioned with its separate charges on the kiosk. In most cases, the person files his application online (using the Soochak) and then returns to the Soochanalaya to get the reply. However, if the provision involves getting certifications or documents, the citizen must visit the government department to obtain them. They can also be mailed to the individual.

This project's implementation is significant because it sheds insight into the challenges of bringing e-Government to rural areas. Connectivity and electrical availability, for example, are important constraints in the 'India: e-Readiness Assessment Report 2003.' Because Gyandoot e-Commerce dealings are expensive. Also, it is more useful for basic amenities (e-mail, Government databases) and not for complicated applications. In 2002, the World Bank commissioned a review of this initiative from the IIM's Centre for Electronic Governance. It was concluded that such programmes need electricity, connectivity, and backend support and that extensive backend procedure re-engineering and the provision of solutions that directly aid in the reduction of poverty are necessary for such initiatives to be sustainable. (e-Readiness Assessment Report, 2003)

1.2.1.4: Lokvani Project in Uttar Pradesh:

Introduced in November 2004 in the Sitapur district of UP, Lokvani is a PPP project. It aims for a single-window, e-Governance solution for managing complaints, maintaining property records, and offering various critical services. The programme needed to be accessible and available to people because 88% population of the district lives in rural villages, with only 38% being literate. To do this, a network of 109 Lokvani Kiosk centres throughout the area broadcast the programme in Hindi, the local tongue. By granting licenses to already-established cyber cafés, these kiosks were created. Lokvani provides the following services of Land records (khataunis); Public grievances online registration; Government schemes and their details; Application for Arms License- online; Basic Education teachers- GPF Account details; MPLAD/Vidhayak Nidhi-works; Gram Sabhas funds allotment for various schemes; Food grains allotment details for Kotedars (fair price shops).

No loans or Government subsidies were involved in this initiative, as the Gyandoot project in Madhya Pradesh. Capital expenditures are unnecessary because already-existing cybercafes are running the project. The approach is anticipated to raise money from the general public and increase the income of kiosk operators. However, similar to Gyandoot in Madhya Pradesh, significant impediments include the low literacy rate, low IT literacy, inadequate internet connectivity, and just five to six hours of power availability in rural areas. The feedback to this initiative has been overwhelmingly positive despite these difficulties. The online approach to resolving complaints is the key draw for the populace. The complaint is entered on the complainant's behalf by the Lokvani Center. To file a complaint, the user is not required to be literate or computer-savvy. The database has details of all the grievances submitted. The District Magistrate's Office keeps track of and organises all complaints submitted through this website. The appropriate officers are then notified of the complaints. Depending on the nature of the complaint, a timeline is established for the remedy. It might last between 15 and 40 days. The following day, the server is updated with the identity of the officer assigned the complaint and the deadline. The complainant can obtain these facts within two to three days of filing the complaint (Lokvani Project in Uttar Pradesh, 2004).

1.2.1.5: Project FRIENDS in Kerala:

'FRIENDS- Fast, Reliable, Instant, Efficient Network for the Disbursement of Services,' a facility with a single point of contact where citizens can pay taxes and other debts. Introduced in June 2000 in Thiruvananthapuram and later implemented in different places in 2001–2002.
This initiative is a prime example of delivering computerised front-end services to the public before various government entities have finished their backend computerisation. Thus, this project aims to clarify the challenging problems associated with business process re-engineering in the relevant departments. Participating entities receive tangible distributions of printouts of payments made through the counters for processing. (India-e-Readiness Assessment Report, 2003)

1.2.1.6: e-Mitra Project in Rajasthan:

The expertise derived from the LokMitra and JanMitra preliminary initiatives, commenced in 2002, is extended upon by this e-Governance programme. While LokMitra targeted Jaipur city, JanMitra was tried in the Jhalawar region. These two projects are combined through e-Mitra, a PPP that spans all 32 districts.

The 'back-office processing' and service counters are the two main components of this project. Back-office processing at the district level includes digitising involved departments and the creation of an IT-empowered centre (e-Mitra data centre). This data centre is linked to the service centres and all cooperating departments. The facilities management service provider handles it for the advantage of the district e-Governance Society. They are run by commercial business partners, the kiosks and centres (local service providers). The Local Service Provider receives payment from the relevant organisation through the e-Mitra Society.

The Rajasthan Government has decided to implement the Community Service Center project under NeGP through the e-Mitra project. (Arora, Aparna., Deshpandey, AM., Sharma, RK., 2008).

1.2.1.7: e-SEVA (Andhra Pradesh):

The objectives of this project are Government to Citizen services. As part of the TWINS (Twin Cities Integrated Network Services) initiative, it started operating in 1999 in Hyderabad and Secunderabad. Three tiers make up the network, each being geographically separated from the others. The initial tier of the citizen-end is housed in the eSeva centres. The second tier comprises of two servers, viz., Application Server and Data Server. The third layer is departmental server, serving as the backend in the appropriate departments. Currently, over sixty-six G2C and B2C services are provided by forty-six eSeva centres across the both cities and the adjoining district area, acting as a One-stop-shop. (Introduction of eSeva project by Government of Andhra Pradesh, 2019)

The concept has gained a lot of support from the populace, particularly for utility bill payments. It has been claimed that paying electricity bills will be crucial to the project's success. This initiative is an example of how Union, State, and Local Government service delivery could one day be integrated. (Bhatnagar, SC., 2005)

1.2.1.8: Revenue Administration Through Computerized Energy (RACE):

The Patna Urban Area's energy needs are met by the 'Patna Electric Supply Undertaking (PESU)', of Bihar State Electricity Board's (BSEB) seven area boards. However, anomalies in the system were harassing the customers and costing the Board money because it had manual billing and payment process. The system's primary issues included erratic billing cycles, poor data management, a lack of transparency, and tardy accounting. Therefore, the BSEB decided to use ICT to help provide clients with value-added and user-friendly services to address these issues. NIC created the software, and a separate IT department within BSEB was established to carry out the project.

To implement the RACE software, a pilot was first carried out in one of the divisions in 2001. By July 2007, paying off the billing from any BSEB-division at any of the thirty-one counters was possible, thanks to the gradual implementation of various modules. For example, consumers can now download bills online and view the details of their payments, and bills are now generated with barcodes.

Several issues arose as the project was being implemented like; The importance of increasing staff members' interest and building capacity was not emphasised enough. As a result, the staff members did not take ownership of the project during the initial stage; and there was insufficient planning. Due to a lack of operating manuals and documentation, use was delayed.

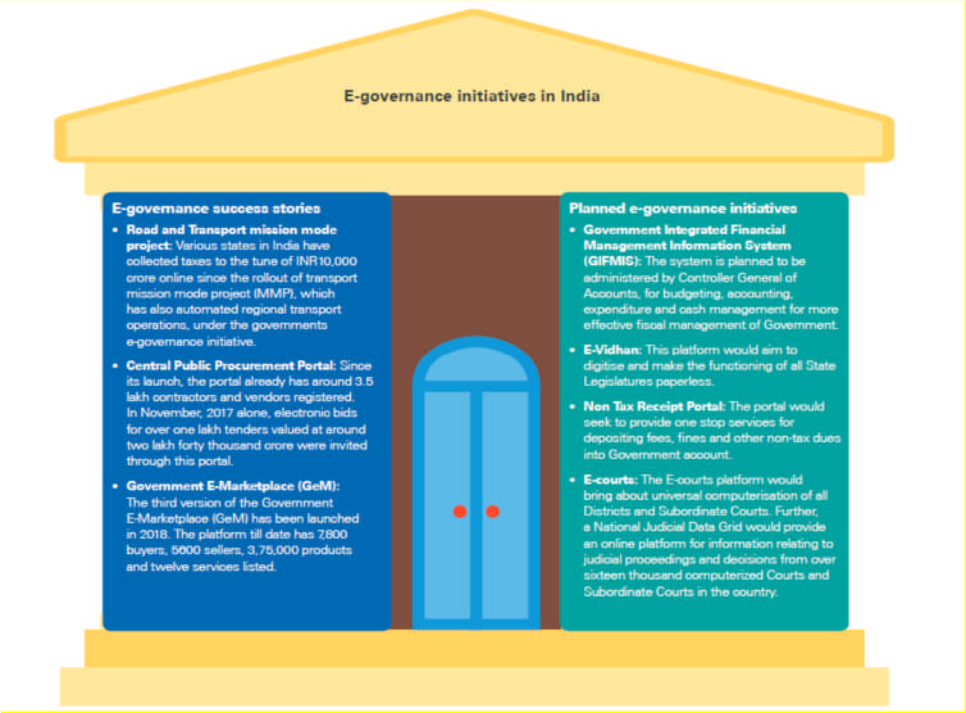
The project could move forward once these issues were fixed, and the system is now transitioning to online bill payment. (Gupta, Piyush., Bagga, R.K., 2008)

1.2.1.9: Admission to Professional Colleges – (CET):

Early in the 1990s, admission to these schools became tricky due to the tremendous expansion in supply and demand for professional education. The admissions process was then made transparent and unbiased by turning to ICT. Again, Karnataka made one of the innovative initiatives.

To determine admittance to various universities and disciplines, the department holds a common-entrance exam. Through "computerised counselling," seats are distributed among multiple institutions and fields, and students can select the discipline they prefer based on merit. Implementing IT has made the process completely transparent, equitable, and unbiased. Today, several colleges use a similar ICT-based admissions process.

Figure No.:1.3: e-Governance Initiatives in India



(Source: KPMG Report, 2018)

1.2.2: Government to Business Initiatives (G2B):

G2B initiatives cover all Government related actions that have an impact on commercial entities. These consist of data distribution between the Governmental department and the company as well as processes under various rulings, licences under multiple laws, etc. Including these operations under e-Governance gives the business a friendly legal situation, speeds up numerous procedures, and delivers pertinent information.

1.2.2.1: e-Procurement Project In Andhra Pradesh:

Before an e-Procurement scheme was implemented in Andhra Pradesh, various departments conducted manual bidding for purchases. The procedure required numerous trips from the suppliers to Government departments because it involved a long chain of internal approvals and inspections. Multiple issues with the manual tender process included prejudice, monopolization, delays, lack of clarity, etc.

The Andhra Pradesh Government announced the e-Procurement scheme in the year 2003 alongwith specific goals of, time and expenses reduction associated with conducting business in respect of Government and vendors; For improving value for money spent and cartel's mitigation; For simplifying the Government supply chain; For better liquidity resulting from increased demand accumulation; For offering all parties involved in the procurement process equal access to the e-Procurement system.

To accomplish the above purposes, the e-Procurement procedure was planned to forgo supplier or buyer engagement at the time of pre-bidding and post-bidding phases. Before launch of bids on the platform, the technology now ensures strict confidentiality of the participating providers, even to the buyers. In addition, based on the system's evaluation criteria, the e-Procurement application automatically evaluates bids. Through these improved procedures, subjectivity in receiving and evaluating proposals has been minimised, and corruption has been significantly reduced.

Tender documents with all the information are also uploaded on the website to increase transparency in electronic procurement. Since the day a tender was published, interested suppliers have had free access to obtain the materials. In addition, anyone engaged with the transaction may check on its status at any time during the procurement cycle. It helps with inventory planning and reduces the time and effort needed to check on a purchase order's progress.

Starting, an effort was made to unify different departments' forms and procurement procedures, particularly for public works tenders. As a result, all departments currently use the same forms for work tenders and procedures (World bank project report on e-Procurement in Andhra Pradesh, 2019).

1.2.2.2: e-Procurement in Gujarat:

From October 2004, the State of Gujarat adopted the e-Procurement system. Phased implementation of the system began with a small number of tasks or items for a small number of departments and was made mandatory for all Government agencies in 2007. The State Government provided funding for the initiative to gain advantages from the e-enablement of corporate operations, such as enhanced efficiency.

It aims to make the sourcing process more transparent, shorten the sourcing cycle, get a fair rate, increase vendor confidence, and make the tender process versatile and inexpensive for vendors. The following transactions are now covered by it: purchases and procurement of products, plants, equipment, machinery, medications, Ration Shops, acquisitions, vehicle purchases, equipment and fittings. Also, every building project, including any associated projects; Contracting out necessary services; all other acquisitions and work orders; Selling off outdated machinery, buildings, automobiles, furniture, and other items at auction.

No modifications to the legal framework were necessary because the project adhered to the State Government's well-stated procurement standards. But as physical bid filing gave way to online data submission, the bid submission procedure underwent a significant transformation.

The system itself presents evaluations of the bids and comparative information. The project was initially started as a pilot, and after successfully handling the tenders, it was expanded to include all departments. All essential team members received personalized learning. The project has reduced the cycle time from 30 days to 6.6 days.

The project clarified how vital it is to train all parties involved, including bidders, suppliers, vendors, and departmental workers. Because of consistent capacity building and awareness raising, this project became a success story (Gupta, Piyush., Bagga, R.K., 2008).

1.2.2.3: Ministry of Corporate Affairs (MCA) 21:

The Ministry of Corporate Affairs introduced the 'MCA 21' Scheme in 2006, September, as a component of the NeGP. The project's objective is to provide all company registration facilities that the Union Ministry of Corporate Affairs delivers to businesses and participants in a simple, secure, and anytime manner. The goals of this project were created with several stakeholders in mind. Which were, Business: to make it simple and quick to register a company and submit required paperwork; the people should have direct access to their data, with quick grievance resolution; Financial Institutions: to help them quickly locate registration and verification fees; employees: to equip them with the tools they need to ensure proactive and efficient adherence to pertinent legislation and corporate governance.

The following are the areas covered by MCA 21's technical requirements, Design and development of application systems; IT infrastructure setup; Digital Signature/PKI delivery mechanisms setup.

The Companies Act of 1956's legal obligations must be actively enforced and adhered to, and the MCA 21 is designed to automate those operations.

There are two techniques for implementing front offices (FO). These are referred to as 'Physical Front Office (PFO)' and 'Virtual Front Office (VFO)'. Now PFO is replacing Record of Companies (RoC) counters. When logging onto the back-office portal, an MCA employee sees the back office. The back-office procedures concern the details as given; Smart routing of documents submitted digitally to the relevant MCA employee based on the type of request; Digital process solutions to boost delivering services reliability and reliability - Storing all documents approved by the company as digital records and providing stakeholders with access to such data; Improving defaulter identification; Improving the effectiveness of technical scrutiny; Ensuring thorough monitoring of compliance management-related issues, such as prosecutions; When tasks are not completed within the allotted time, alerts are sent out, enabling quicker responses to investor complaints.

As a result of MCA 21's implementation, stakeholders can now approach the government efficiently and transparently to request a full range of services. Plugging the leaks has also been made possible by the performance of e-Government. Additionally, the stakeholder can follow the transaction's progress at each phase, till final approved phase.

As a result, period taken it takes to deliver services has significantly decreased (National Institute of Smart Government- NISG, (2019) and Annual Report (2007-2008).

The table below displays these enhancements:

Table No.:1.3: Efficiency in Delivery Under MCA21

Table: Efficiency in Delivery under MCA21		
Service Metrics		
Type of Service	**Prior to MCA 21**	**After MCA 21**
Name Approval	7 Days	1-2 Days
Company Incorporation	15 Days	1-3 days
Change of Name	15 Days	3 Days
Charge Creation/Modification	10-15 Days	2 Days
Certified Copy	10 Days	2 Days
Registration of Other Documents		
Type of Service	**Prior to MCA 21**	**After MCA 21**
Annual Return	60 Days	Instantaneous
Balance Sheet	60 Days	Instantaneous
Change in Directors	60 Days	1-3 Days
Change in Registered Office Address	60 Days	1-3 Days
Increase in Authorised Capital	60 Days	1-3 Days
Inspection of Public documents	Physical Appearance	On-line

(Source: Annual Report 2007-08; Ministry of Corporate Affairs)

1.2.3: Government-To-Government Initiatives (G2G):

Inside the Government system, comprehensive data analysis and decision-making take place. G2G projects aid in increasing the effectiveness of internal Government procedures. Improvements in G2G processes are frequently required by G2C and G2B processes.

1.2.3.1: KHAJANE Project in Karnataka:

The Karnataka Government had started a significant online treasury digitalization initiative. Since the project's completion, the State Government's entire treasury-related operations have been computerized. The system can track every activity, from the state budget's approval to when the Government receives its accounts. The manual treasury system's structural flaws were addressed by the project. The project's components that need to be highlighted are, the top treasury system operations in various other States were reviewed; Systematic re-engineering was carried out to remove unnecessary procedures. To fit computer applications, policies were adopted. In addition, they designed a protocol manual; Staff input was gathered. A high focus was given to employee motivation. The software's usability, the streamlining of procedures, and the elimination of tedious tasks were recognised; Treasury teams oversaw the creation of the software. In realistic treasury settings, software was tested. The software was modified in response to feedback; The training was conducted before the release of the software.

The system has functions like online money transfers, budget management, etc. With the help of this project, previous attempts to reconcile account entries have been reduced to a minimum, and timely, reliable information is delivered. As a result, it has helped the Government become more efficient, and the project is a huge success (Department of Treasuries, Government of Karnataka, 2006).

1.2.3.2: SmartGov (Andhra Pradesh):

SmartGov was created to increase productivity through information management and automated workflows. By leveraging IT as a tool, the resolution automates the Governmental operational levels. It creates a detailed method for changing the mindset to digitised data. A digital file is used instead of a paper one by SmartGov. Software features include the ability to create, move, track, and close electronic files, automate tedious tasks, use knowledge management to support decision-making, prioritise work, make documents easily accessible, and foster departmental collaboration. More departments are being included in this project (National Institute of Smart Government- NISG, 2019)

The Table below shows the potential of such initiatives:

Table No.:.1.4: Benefits of e-Governance

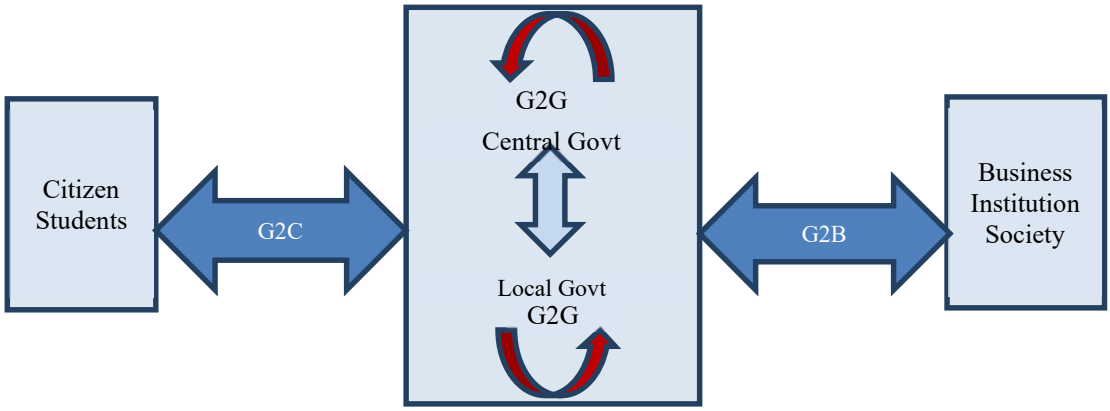
Table: Benefits of e-Governance			
Country	**Type of Government Application**	**Time to Process before application**	**Time to Process after application**
Brazil	Registration of 29 Documents	Several Days	20-30 Minutes per documents, one day for business license.
Chile	Taxes Online	25 Days	12 Hours
Andhra Pradesh (India)	Valuation of Property	Few Days	10 Minutes
Andhra Pradesh (India)	Land Registration	7-15 Days	5 Minutes
Gujarat (India)	Interstate check post for trucks	30 Minutes	2 Minutes
Jamaica	Customs Online	2-3 Days for brokers to process	3-4 Hours
Philippines	Customs Online	8 Days to release Cargo	4 Hours-2 Days to release Cargo

(Source: Bhatnagar S.C., Deane, Arsala., (2009).

1.2.4: The Basic Requirements of e-Governance Components:

The following are its component's fundamental requirements, A high-quality, reasonably priced information and Internet infrastructure for Government agencies, businesses, and individuals; ICT Human Capacity Development of Large Amounts in Public, Private, and Citizen Sectors; A basis for law that acknowledges and encourages digital communication

Figure No.: 1.4: Model of e-Governance



(Source: Suklabaidya, S., & Sen, A. M., 2013).

1.2.5: SPOT MODEL: Conceptual Framework for Implementing and Diffusing e-Governance:

The proper execution of services and data to the nation utilizing various data management strategies, as illustrated in the table below, forms the basis of the e-Governance paradigm. 'The SMART (Simple, Moral, Accountable, Responsive, Transparent)' working to achieve a dependable and constant data life-cycle of e-Governance is achieved by integrating the combination of ICT. It demonstrates seamless Government and citizen interaction (Sangita, S. N., et al., 2006)

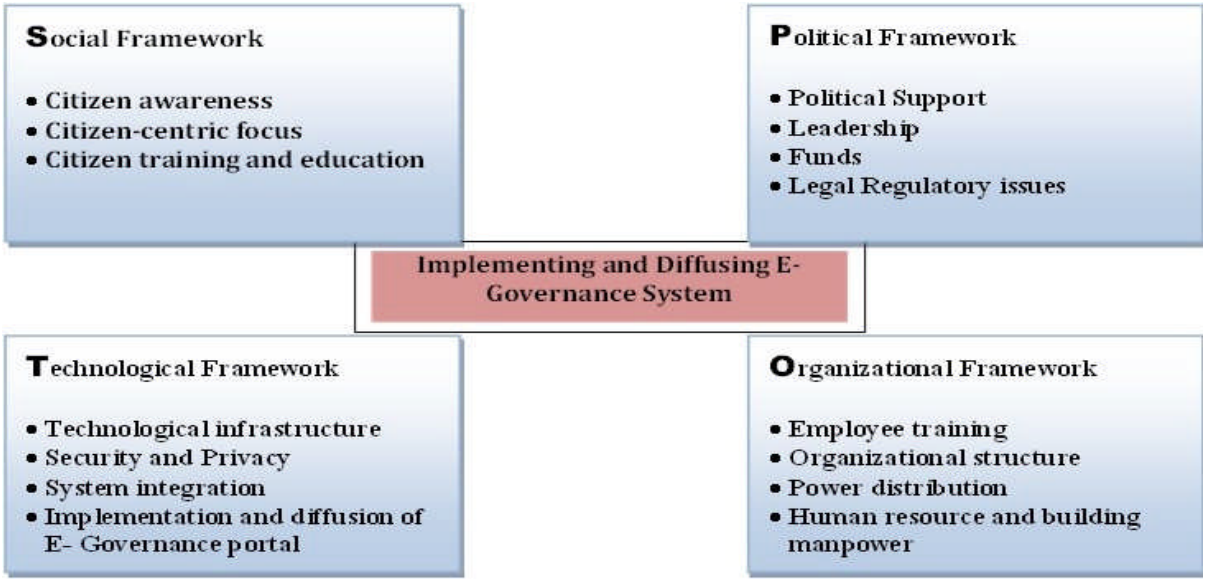
Table No.:1.5: Comparison of Traditional and e-Governance Systems

Participation Indicators	Traditional Governance Model	E- Governance Model
Mode of participation	Representative	Individual collective
Domain of participation	In-situ	Ex-situ
Approach of participation	Passive/reactive	Pro-active interactive
Impact of participation	Indirect/delayed	Direct/immediate

(Source: Sangita, S. N., et al., 2006)

Therefore, e-Governance is the technological transformation of the link between the internal and external public sectors to maximize Government operations. based on how social(S), political(P), organizational(O), and technological (T) factors influence each other. The SPOT framework encapsulates the key elements accountable for the effective adoption and spread of e-Governance in the self-governing setting of India (ibid).

Figure No.:1.5: Conceptual Model of SPOT Framework



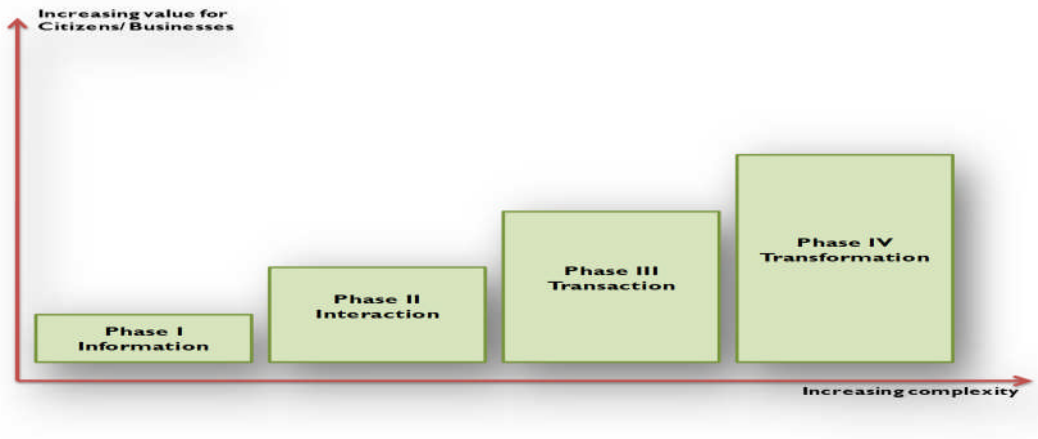
(Source: Nityesh, Bhatt., Akshai, Aggarwal, 2011).

The creation and upkeep of such a website also require regular updates and prompt responses from Governmental bodies to provide a steady stream of contact with e-Governance users. Therefore, the primary task of such an electronic Government is to restructure and improvement in societal-citizen relationships through an effective partnership of technical, social, organisational, and regulatory factors (Weerakkody, V., et al., 2011).

1.2.6: e-Governance Maturity Model:

For effective and productive e-Governance growth across all sectors, numerous authors over the period of years have defined sectoral e-Governance models, which have evolved over the years. These models can also be named as maturity models spelling various stages of its own evolution. The Gartner model for e-Governance maturity is considered to be most prominent amongst all the existing models by various authors. The model details out various stages viz., Information, Interaction, Transaction and Transformation. For these steps of e-Governance, digital facilities and the usage of ICT in Governance activities support these pillars: Democracy, Government, and Business.

Figure No.:1.6: e-Governance Maturity Model



(Source: e-Governance Maturity Model, Gartner 2000)

1.2.6.1: Gartner e-Governance Maturity Model:

The following is an explanation of each phase:

- Phase 1 Information:

  e-Governance's initial phase refers to having a web presence and making pertinent information available to the general public (G2C and G2B). The benefit to the public is that Government data is known to the general public; procedures are defined and, as a result, become more open, improving democracy and services. The Government can also transmit information internally (G2G).

- Phase 2- Interaction:

  In the second phase, numerous apps are used to promote G2C and G2B interactions between the Government and the general population. People can use search engines to find information, ask inquiries via email, and download various forms and papers. These features help in saving time. Governmental organisations (G2G) use email, intranets, local area networks (LAN), and LAN to transmit information internally. Because a significant portion of the intake process is completed online, efficiency and effectiveness are increased.

- Phase 3- Transaction:

  As third phase progresses, technological difficulty rises, but customer (G2C and G2B) value will also increase. Without visiting an office, entire transactions can be completed. Online services include online services, online voting, income tax filing, property tax filing, licence extensions and renewals, and visa and passport applications.

- Phase 4- Transformation:

  In this phase, during which all data systems are combined, and the general public can access G2C and G2B services at a single (virtual) counter. The ultimate objective is to have a single point of contact for all services. The inner side of achieving this goal is where the complexity lies, as in the requirement to fundamentally alter the culture, procedures, and roles within the government entity (G2G). Government workers from many departments must collaborate efficiently and seamlessly. Cost reduction, efficiency, and customer happiness are now at their best.

  The fifth phase of the UN e-Governance Survey 2008 report, which has advanced this paradigm, presented the idea of "Connected Government," which refers to Governments becoming connected entities that react to their citizens' requirements by establishing an integrated back-office infrastructure. (NISG Handbook, 2015)

1.3: e-GOVERNANCE IN INDIA: CURRENT POLICIES, INITIATIVES AND INSTITUTIONS:

1.3.1: National e-Governance Plan (NeGP):

The NeGP, comprises of Twenty-Seven Mission Mode Projects (MMPs) and eight components. It was adopted by the Government on May 18, 2006, to promote e-Governance activities in the country. The cabinet is processing the public distribution system, health, and education sectors. The DIT and DAR&PG jointly developed the National e-Governance Plan (NeGP). (e-Governance Model**,** Adopted from Suklabaidya, S., et al., 2013')

1.3.2: Current Policies, Initiatives and Institutions:

The e-Governance proliferation in India is very high. The Union Government has released a directive to include 25 per cent of its own transactions to be online. The Policy objective of the Union Government have attributes viz., computer frequency, connectivity, material, affordability, and cybersecurity law. The Union Government is enhancing 'computer concentration', 'accessibility' by enhancing the wired optical fibre networks, 'content' by providing access to Government schemes/website, 'cost' by adequately funding, and 'cyber laws' by enacting the Information Technology Act. By doing the above the Union Government has ensured a broader policy implementation integrating different e-Governance services/ schemes (ibid).

1.3.3: Initiatives and Institutions at the National Level:

A key project conceived by the Government has been the IT Act of 2000. The Act governs cyberspace and creates IT-related offences and penalties, including manipulating computer source materials, violating privacy and confidentiality, disseminating fake digital signatures, and other violations. The Union Government also already tabled the 'Freedom of Information Bill,' in the Parliament. Under this Act, all public entities are required to have all the information and maintain all possible details in form of records. This would go a long way in creating access to all Government information pertaining to citizens.

- For implementing the above vision in-sync with the policy and legal requirements for e-Governance, a variety of organizations and official responsibilities have evolved in India. For instance, the government has formed a Ministry of Information Technology (MIT), a Centre for Electronic Governance, and a National Task Force on IT and Software Development to improve IT and e-Governance. MIT, in particular, plays a vital role in helping e-Governance by encouraging knowledge-based enterprises, enhancing user collaboration, putting international standards into practice, promoting the world wide web, and incorporating it into education.

The Centre for Electronic Governance's primary duties, however, are to identify the appropriate ICT forms needed for better service delivery, to conduct training to raise awareness among government officials, and to assist state governments in putting best e-Governance practices into procedure through the enforcement of laws and reforms. In addition, several ministries and departments have developed Information and Facilitation Counters as one-stop locations for providing citizens with a range of information via electronic connectivity.

- Another essential institutional element of India's e-Governance is the Government's decision to choose administrators for it in the ministries or departments. These administrators are responsible for implementing it in their organisations. By the institutional requirements of e-Government, the ministries and departments have taken action to establish and improve the structures and procedures of e-Government. These organisations frequently show Facilitation centres to communicate information to the general public and maintain their websites. Most other central Government ministries and departments have comparable communication and information infrastructure (ibid).

1.3.4: Initiatives and Institutions at the State Level:

The State Governments have made substantial efforts to improve their Governance systems to implement e-Governance, with assistance from Central Government.

The State Government of Andhra Pradesh started Andhra Pradesh State Wide Area Network, a system for audio-video connectivity. Utilizing this, it created the Twin Cities Network Services, which set up Integrated Citizen Services Centres (ICSC) to provide a range of facilities to citizens in Secunderabad and Hyderabad, two significant cities. Through ICSCs, citizens could obtain information on State and Central agencies, also it would help in paying off utility bills, building permits applications, property registration. By implementing its e-Governance with certain adjustments, Madhya Pradesh followed the lead of Andhra Pradesh.

Karnataka has launched a comprehensive e-Governance initiative. Most State Government departments, particularly the education department, have started to get computerized. Bangalore is a well-known IT hub that draws more than 1500 IT enterprises. The e-Governance centre is co-located with the Department of Information Technology. It agreed to a Memorandum of Understanding with the Microsoft firm to computerise all divisions. By computerising its central departments and enhancing technical capacity, the Tamil Nadu Government is constantly devoted to converting the state into an e-Governance enabled state, with the ultimate goal of recovering the public's trust and establishing a productive relationship with its constituents. The state has also instituted a Tamil Internet Research centre for access by local population.

The State Government of Kerala deploys nodal persons in every department to speed up implementation of e-Governance. Kerala has decentralized the e-Governance implementation to the districts. Accounting, State-Tax collections, Legal documents of courts, and are a few examples of activity and paperwork that can be found online. In addition, the 'A PC for Every Home' project was launched by the Kerala Electronics Development Corporation (KEDC).

For enhancing the e-Governance implementation, the Rajasthan State Government formed a state-wide network to supply data and audio-visual communication for public and commercial establishments. The Rajasthan State IT department developed RajSWIFT to assist in using digital data and email connectivity among authorities. RajNIDHI was established to provide citizens with services in an effective style. The Gujarat Government has built a state-wide-network linking the offices and commercial establishments in the state.

In the States of Meghalaya, Tripura, Haryana, West Bengal, Himachal Pradesh and Odisha, several initiatives are being carried out. In addition to these schemes, local neighbourhood-level governance has been implemented. In addition to previously discussed district and state information systems, the national information infrastructure also consists of local information facilities, creating a broad multidimensional system linking all data users and providers. An example of these efforts is Gyandoot, which integrates both e-Governance and e-Commerce for all users/ citizens (ibid).

1.4: MAJOR IMPACTS OF e-GOVERNANCE ON THE RELATIONS AMONG CITIZENS, POLITICIANS AND PUBLIC SERVANTS:

The impact of e-Governance is visible while the interaction between democratic structures, bureaucracies, and residents, facilitates a relationship based on transparency and public participation, which has been identified as the most crucial aspect to consider when evaluating e-Governance. The cyber-visionaries think that e-Governance does strengthen relationships between above parties by providing Government data, encouraging citizen input or reaction, empowering citizens for the decision-making process. By facilitating the transmission of statistics to citizens, ensuring more accessibility to Government Data, and enhancing citizen involvement in creating and implementing Government policies, e-Governance, in the eyes of Indian policymakers, increases the government-public interface. However, cyber-pessimists believe ICT in Governance may make availability to Government programmes inequitable owing to insufficient facilities, unequal ownership of computers, and language restrictions. Therefore, examining how e-Governance in India has affected how politicians, public servants, and citizens interact is crucial (Haque, M. S., 2002)

Relationship between Politicians and Citizens:

The interaction and dependence between various groups of people, elected leaders, and political groups are meant by this particular relationship aspect. A significant way for citizens and politicians to interact is through the Government websites, aiming to enhance transparent functioning by offering comprehensive information about Governmental activities, providing a channel for citizen responses to politicians, and increasing the possibilities for greater Governmental analysis of the working of the legislative body. There are 98 countries with National Parliaments; the ones from Scandinavian countries, western European countries, and North American nations have the most in-depth websites. One of the most comprehensive websites among developing countries is the Indian Parliament. It is an overview of crucial information on the House of People's Lok Sabha, Rajya Sabha, and the Council of States. It gives citizens a choice to email their comments and suggestions. The website for the prime minister's office also provides information on his policy objectives, a way to poll the public's view on current political problems, and a way for members of the public to submit questions and remarks (ibid).

Relationship Between Citizens and Public Servants:

The interaction among citizens and Government functionaries has undergone a considerable change due to the development of e-Governance. The e-Governance approach promotes deeper ties between Government employees and citizens. It is based on openness, accountability, better service quality and delivery and a greater realisation of entitlements. Public entities now have to do their business publicly and provide justification for their decisions based on public input. The e-Governance process reinforces a top-down Governmental approach, by communicating details about the composition & operations of civic institutions and supporting the current manner of communication alongwith documentation (ibid).

Relationship Between Politicians and Public Servants:

Most mature democracies strongly emphasise two aspects of the interaction between politics and the administration: the political impartiality of Government employees and the responsibility to elected political members. The tradition of political neutrality among public employees was carried over to India, which chose a liberal democratic form of government. Still, it was commonly found that the bureaucracy was very powerful to be objective and responsive to political members. In comparison to the traditional Governance by democratic process, which emphasises a balanced way of power based on impartiality and parting of different departments of Government. There is an emphasis between elected political members and bureaucrats. Because such a development will enhance effectiveness and coordination in managing different Government functions and reduce conflicts and repetitions within Governments, e-Governance proponents favour these murkier divisions between the sectors and levels of Government. India's scenario fits into the global trend of growing networks and links between various groups and spheres of administration (ibid).

1.5: e-GOVERNANCE INITIATIVES OF VADODARA MUNICIPAL CORPORATION (VMC):

The e-Governance initiatives are very effectively structured and implemented in the Vadodara Municipal Corporation, for offering various citizen services. A few of these services are given below:

1.5.1: Online Payment Services:

The VMC has launched an online portal where online payments for various citizen-centric services can be made. The details of citizen-centric services are as below:

1.5.1.1: Property Tax Online Payment*:*

The Property Tax is levied on the property used by the urban citizens; residential or commercial is taxed along with water and safai charges. The ease of payment on the payment portal of VMC enhances tax collection and gives convenience to the citizens of the town.

1.5.1.2: Online Professional Tax*:*

The tax collected by VMC from Professionals working in various organizations, in the Corporation limits. Online remittance is a convenient way to remit the tax to professionals.

1.5.1.3: Shop & Establishment Certificate*:*

VMC offers online applications for the said certificate. It helps the traders, business houses, and service providers apply for the same on-line, as well as for the inspection of the Inspector. Certificate generation, too, is an online option.

1.5.1.4: Food Safety and Standard Authority of India (FSSAI):

VMC offers online food licensing and registration on its portal; this assists prospective sellers and traders in obtaining the relevant license online. (Vadodara Municipal Corporation-VMC; www.vmc. gov.in)

1.5.1.5: Vadodara Gas Limited (VGL):

VGL is a joint venture formed on 13 Sep 2013 between the Gas Authority of India Ltd (GAIL) and Vadodara Municipal Seva Sadan (VMSS). This organisation was created for gas distribution in and around Vadodara. VGL distributes two types of gas, Compressed Natural Gas (CNG) for the Automotive sector viz Cars, buses, and auto rickshaws, by running Eight CNG stations and 46 Kms of Pipeline. VGL distributes Piped Natural Gas (PNG) to One lakh city-based citizen households and more than five thousand commercial customers. In addition, VGL runs more than 2000 km of PE Pipeline Distribution Network Grid in the town. Vadodara Municipal Corporation (VMC) has been distributing PNG since 1972 to domestic consumers, one of the country's first Municipal Corporation to do so. VGL has an online portal which offers its consumers to pay bills online. (VGL, 2019).

1.5.1.6: Fire & Emergency Services Online*:*

The online portal assists citizens with three different services, Fire Emergency Services; Water connection and Drainage connection

1.5.1.7: Self-Assessment of Property Tax:

This portal assists the citizens in assessing their property tax for property in the corporation limits.

1.5.1.8: SWACHHATA App:

It's a Government of India App available on Google Play that assists citizen in uploading a picture of any litter problem in their respective areas, along with a small detail to be typed and sent.

1.5.1.9: Disaster Management:

The online portal describes Fire Safety Hazards, School Safety Standards, School disaster management plans, and First Aid details.

1.5.2: Functions of City Survey office of Vadodara City:

The city survey office is located opposite Collector Office in Raopura, Vadodara. The primary functions of the office are; To examine the surveyors for maintenance; To assess Governmental pressure and protect public areas; Reporting of property cards via MS and updates to the public via these edit requests; Disagreeing with the arguments put forth by others Citizens' demands; The city surveillance director manages remarried cases of remand cases and makes appropriate decisions; Copying the property card and distributing it to the public via the city survey office; Measuring the apartments of a house by the possible note of temporary orders by the competent authority and its measurements are fresh generating a property card. (VMC, 2019).

1.5.3: e-Dhara:

For the evaluation and collection of taxes, land revenue, and changes impacted about by sales, inheritances, hires, and distributes, among other things, the administration part of its e-Government programmes keeps track of land records. The digitisation of land records in the state, the abolition of paper forms, the digital mutation process, were the main objectives of this e-Governance process. It also provided prompt issuance of computerized Records of Rights across the counter and online updating of land records. Furthermore, through the distribution of Saat Barah (VF7/12), the provision of account information (VF8A), and the mutation entry—the transfer of land rights under several categories—e-Dhara offers services to farmers. (https://revenuedepartment. gujarat. gov.in/)

Benefits of e-Dhara:

Only the mutation process can change data, and RoR (Record of Rights) is available at e-Gram centres around-the-clock; Reusing data for NLRMP (National Land Record Modernization Programme) surveys, agriculture censuses, document registrations, etc; Highly secure data; A mutation process based on workflow and using FIFO; Different departments have read-only access to data; - The ability to automatically generate mutations can be extended to various offices; Apno Taluka Vibrant Taluka (ATVT) can now accept mutation requests.

Process of e-Dhara:

A farmer or landowner who wants a computerized print of the Records of Rights (RoR) does not need to apply. However, suppose the farmer or land owner does not know their survey number, khata number, farm name, or farmer/land owner name when requesting an RoR printout at an E-Dhara Kendra. In that case, Bhulekh software allows searching for the requested RoR with two fields survey number, khata number, farm name, or farmer/land owner names. The 7/12 or 8A form is printed once names or khata numbers are obtained from the Bhulekh programme. When the computerized copy of the RoR is given to the farmer or landowner, the receipt signature is recorded in the RoR issuance register (ibid).

1.6: e-GOVERNANCE INITIATIVES OF STATE GOVERNMENT OF GUJARAT:

The Department of Science and Technology (DST)of the Government of Gujarat gives an intense impetus to the growth and development focusing on emerging technologies. With intensified usage of Information and Communication Technologies (ICT), many initiatives are offered to the citizens for more transparency, reducing the project time and cost. In addition, the DST proactively has ensured that the e-Governance implementation is operation in all Municipal Corporation and Panchayats for the first time in the country, which is on record.

The Gujarat Government has been proactive, innovative, helpful, and result-oriented on the front of e-Governance through the use of flexible and adapted policies for the future. The Government is establishing a Government-Citizen interface to help all projects be carried out to the very end and with minimal difficulty at the local level.

Gujarat has demonstrated its e-readiness as a nationwide pioneer by publishing the most current IT policies and related efforts. The state has been recognized as the finest e-Governance state in the nation (Gujarat Government, Department of Science and Technology, retrieved from https://dst.gujarat.gov.in).

Key projects of the Government of Gujarat being effectively implemented are as below:

GSWAN (Gujarat State Wide Area Network):

GSWAN is an Audio-Video IP based service. The Gujarat State Wide Area Network (GSWAN) connects 33 Districts and 247 Talukas to the capital Gandhinagar. The GSWAN has a wide connectivity to 3300 Government offices of various District and Taluka level from various Government ministries (ibid).

SWAGAT Online (State-Wide Attention on Grievances through the Application of Technology):

The applicants show up to the Chief Minister's Office with the grievances designated on the fourth Thursday of each month. The received complaints are analysed, looked into, recorded, and then sent electronically to the appropriate individuals at the various levels in the state. The Secretaries of the relevant department are present as the Chief Minister listens to the applicants and displays their grievances on the screen. The appropriate authority is also connected via video conferencing if a district, in particular, must react to a citizen's request.

As a result, the 55 million people living in the State and all 225 Sub-Districts were included in the geographic scope. The district authorities hear the public grievances on the day of the district-level SWAGAT meeting. The Sub-District level SWAGAT is held every fourth Wednesday, the day before District and State SWAGAT (ibid).

e-GRAM – Vishwagram:

As part of the e-GRAM Project, the Gujarat Government has, from 2004-2005, equipped all three tiers of panchayats. Computer gear and software have been installed in every Village Panchayat (VP). All of the VP's to be digitized and connected to VSAT.

With the use of the e-GRAM programme, the VPs now issue digital, computerized certificates for things like death, birth, income, caste, domicile, property, proof of residency, agriculture, tax collection, etc. In addition, the account keeping has been computerized, and other registers are now kept on a computer, modernizing record keeping in the VP office (ibid).

Hospital Management Information System (HMIS):

The HMIS project got conceptualized for online review and monitoring, providing clinical and diagnostic tools. The Department of Health and Family Welfare came up with it.

The HMIS fulfils the following requirements, assisting doctors and medical personnel in improving health services by providing easily accessible patient data while helping administrators better monitor and control hospital operations.

Restricting the paper usage, the workflow made it possible to parameterize alarms and triggers at various points during the patient treatment cycle (ibid).

e-City:

The Ahmedabad Municipal Corporation has established six city civic centres duly connected with the Internet to facilitate 36 Lakhs citizens with municipal delivery services like primary health and education, birth and death registration, water supply, city cleanliness, sewage etc. (ibid).

IWDMS (Integrated Work Flow and Document Management System):

At all levels of the administrative structure, the 'Integrated Workflow and Document Management System (IWDMS)' project has been put in place to automate Government operations and activities. IWDMS has several characteristics, including IWDMS has several factors, including, Integrating Documentation Management; Daily Work-flow Management.

Collaborative Environment and Knowledge Management; delivering an Electronic Workplace that boosts Government efficiency. (ibid).

e- Procurement:

The state Government implemented an electronic purchase system for all state-funded organizations, including Nigams and societies. e-Procurement is an online bidding method that uses the Internet and related technology to conduct physical tendering activities online. E-procurement services are available to all organizations through the www.nprocure.com site (ibid).

The portal is handling the following details, the announcement requesting bids; The publication of the complete proposal in electronic form; journal of a rectification; The security through encryption; electronic signatures on online bids; multistage evaluation; The Bids Conclusions.

ICT and e-Readiness Initiatives:

The State of Gujarat exhibits its e-readiness activities via IT Policy 2016–2021. Each department has developed an Information Technology Action Plan. The chief information officer (CIO) directly reports to the department's secretary through each department's organisational structure (ibid).

The IT Policy has the following characteristics, Information Technology improves teamwork, collaboration, and commercial advancement; Other areas of concentration include financial aid and power exemptions for large units. Bhaskaracharaya Institute for Space Application and Geo-informatics, which utilizes remote learning and education, make the most of the available educational facilities, including virtual classrooms using satellite communication services (BISAG).

Gujarat State Data Centre:

One of the Indian Government's Mission Mode Projects (MMP) is the NeGP. According to the National e-Governance Plan, the State Data Center (SDC) is a fundamental and critical infrastructure module required for the aggregation and Webhosting of services, crucial for provision of e-Government services (NeGP). The Gujarat State Data Center (GSDC) was built by the state government in Gandhinagar. Between the sensitive Government environment and the open, unsecured public realm, GSDC serves as a mediator and convergence point. The GSDC may host or co-locate various systems, including Web servers, application servers, database servers, SANs, and NAS. GSDC provides the following services State's Central Data Repository is being maintained with them, A Secure Data Storage is provided, State Intranet Portal is hosted with them, Online Delivery of Citizen Information/ Services is hosted, Recovery after the disaster, Integration of services and remote management and Deployment and Management of IT Resources (ibid).

1.7: REVIEW OF e-GOVERNANCE SERVICES AT THE GLOBAL LEVEL, ILLUSTRATIVE, DEVELOPING NATIONS.

1.7.1: e-Governance Initiatives in Jordan:

Introduction:

Jordan has a limited number of natural resources and a demographic of about five million people. Many ICT-related programmes, including the Jordanian e-Government initiatives, were initiated. These programmes seek to make Jordan a knowledge-based nation and support ICT-driven growth. Jordan's national e-Governance initiative aims to provide services from the government and agencies through various electronic channels, such as the internet, SMS gate, mail, and others, where various electronic services are currently being developed. The e-Governance programme aims to deliver high-quality services to individuals, businesses, and organisations; to improve government performance and efficiency; to increase Jordan's competitiveness; to ensure public sector transparency and accountability; to decrease costs and make interacting with the government easier; to promote the growth of Jordan's ICT industry; to learn skills inside the government sector; to increase e-commerce activities; and to improve information security.

Four categories have been established for the e-Governance initiative's activities and delivery models. First, citizens can access life-related services, including birth, education, work, retirement, healthcare, and other life events. Second, the Government to Business (G2B) intends to inform potential investment agencies in Jordan, about the programmes provided by various departments of Ministries and Governmental bodies, including, among other things, information on how to start a new business, manage an existing one, and information on investment incentives, the privatisation programme, and advantages of investing in free zones. Third, Government to Employees (G2E) aims to inform the staff of various Governmental departents in Jordan. (Al-Jaghoub, et al., 2010)

Awareness and Usage of e-Governance Services:

An AAU (Al-Ahliyya Amman University) Amman, Jordan, had a sample of 1200 students representing various departments receive the survey. There were responses to all 1200 questionnaires for a response rate of 100%. Because the questionnaires were filled out and the data was gathered when the researchers were present during lectures, there was a certain level of response. This figure is considered above average, given that answers to non-incentive-based surveys typically range from 20% to 30%. Using a mix of descriptive analysis and factor analysis, two parametric statistical techniques, we examined the data from the questionnaire replies. The nearest option from a long list of choices was to be chosen by the students. Each of these factors was assessed using a Likert scale with a maximum of five points (One being not important and five being very significant) (ibid).

For readers interested in the technical details, we note that a factor analysis technique was used to find potential categories. Three steps were taken to perform the factor analysis, A matrix of correlation coefficients was produced for each potential combination of the variables.

The factors were then extracted from the correlation matrix using major factors analysis; The factors were rotated to boost correlations between the variables and some characteristics and decrease the relationship with others using Varimax Kaiser Normalization, which preserves independence among the mathematical components. Which elements persisted in the analysis was determined by the Eigenvalues. Factors with an Eigenvalue of less than one were discarded using Kaiser's criterion.

Computer and Internet Use:

The sample includes everyone using computers, with an Internet connection, the model features, consisting of college undergraduates regularly using the internet for educational and other purposes and have access to both.

The significance of where and why you use the internet: Most participants in the sample mention using computers at home, work, or school. One hundred per cent of those who use computers do so at home; sixty-two per cent do so at school; fourteen per cent do it at their place of employment.

Internet attitudes, cost, and other issues: There are many justifications for avoiding utilising the Internet. According to Table 6 below, the most significant factor is "Not enough time," and the most negligible considerable factor is "Don't use computers" (ibid).

TABLE No.:1.6: **Reasons for not using the Internet-Jordan**

Reasons for not using the Internet	%
Not enough time	17.9
Phone bill too high	15.1
Internet charge too high	12.3
For security reasons	7.4
Concerned about kids	2.6
Don't use computers	0.0

(Sources: Al-Jaghoub, S., et al., 2010)

The most common uses of the Internet were for surfing and leisure, followed by emailing and receiving, getting information, shopping, and paying bills online.

Using online government services: Regarding the familiarity with e-Governance in Jordan, 75% of the respondents were unaware of the services offered by the e-Governance or its website. Furthermore, more than 5% of the participants in the survey never signed in to an e-Governance website or received any information.

Checking traffic fines was the most utilised service while renewing family documents was the least used option. Many real service consumers are particularly keen to have an Internet-based delivery method, as seen in Table 7:

TABLE No.:1.7: e-Governance services in Jordan

e-Government used services	%
Information about checking traffic tickets	81.3
Information about the weather	51.1
Renew passport	39.4
Renew ID card	28.4
renew a drive's license	18.9
Paying bills	17.2
Information about car tax	16.8
Apply for job	10.1
Renew health card	8.1
Pay taxes	7.9
Tax refund	7.3
Income tax settlement	7.1
Tax situation	6.5
Renew family document	1.6

(Sources: Al-Jaghoub, S., Al-Yaseen, H., & Al-Hourani, M., 2010)

During focus group talks, it was concluded that the issue was the worry about the security of providing information online. In general, people don't trust internet platform for cash transactions. The citizens of Jordan have a large usage for online entertainment. For instance, only 16% of the sample engaged in internet buying. In such a society, using e-Government services is still difficult and requires careful effort (ibid).

1.7.2: e-Governance in Iraq:

Introduction:

The processes of the Government of Iraq could significantly change if viable e-Governance is implemented therein. The Iraqi e-Government can aid in extending the opportunities for residents and business people to engage in the country's knowledge-based new economy. However, it is necessary to restructure the administrative structure of the government as well as the administration of Government operations and information acceptable to realize the full potential of e-Governance. Due to the present problems the country is experiencing, such as security and corruption, Iraqi e-Governance confronts significant challenges in laying the right foundations. e-Governance elements to lessen financial and administrative corruption in Arab nations. An absence of scientific research has attempted to address or provide a solution for Iraqi e-Governance projects in light of all these issues.

There haven't been many studies on e-Governance in Iraq. Therefore, this study is one of the few to do so. It outlines the electronic Government in Iraq, its services, and the difficulties in creating it (Mohammed, M. A., Aboobaider, B. M., Ibrahim, H., Abdullah, H. A., Ali, M. H., Jaber, M. M., & Shawkat, A., 2016).

Detailed Description:

In 2004, the Iraqi Ministry of Science and Technology (MST) executed a contract with an Italian firm to structure the Iraqi e-Governance project. During that time, the Government of Iraq began utilising e-Governance technology. The project was composed of three steps, as; First Project: creates the infrastructure of information technology and supplies services to the Ministry of Science and Technology staff. (Two years project); Second Project: provides two kinds of services for the team in all ministries of Iraq and the commerce section. (Five years project); Third project: plans to supply services to Iraqi citizens.

The initial electronic Government initiative in Iraq was a modest e-traffic system effort. The Iraqi Government ultimately agreed to create an electronic government initiative in 2010, connecting the five most essential ministers to the prime minister's office.

The e-Government committee was founded in 2009 by the Council of Ministers, with the Ministry of Science and Technology serving as the committee's chair. Since then, the committee has provided each Ministry with an e-Governance office. The Iraqi government pays more attention towards the e-government, which was made first in 2009 by an international conference concerning e-Iraq in Baghdad. Ultimately, in 2011, Iraqi e-government executives and UNDP made the second forum to assess the project and to create new plans for this project.

Additionally, UNDP trained 200 Iraqi e-government instructors; their job was to educate in all the e-government centres in Iraq to make 10000 educators. These trainers must instruct the Government's employees and people in every state. Lastly, in 2012 the board of e-Governance made the second international conference of e-Iraq, which the prime minister of Iraq supported. More than 300 people from Iraq and many staff of UNDP came to this conference (ibid).

e-Governance achievements:

Iraqi e-government has many significant achievements, like the e-health system, e-Education system, e-Municipal system, e-personal record and e-form. Most of these projects are launched in the portal of Iraq, which is called the e-Iraq Portal (ibid).

Iraq e-Governance Portal:

Iraqi portal has provided service to the citizen, business, government, and non-government sectors. Moreover, this portal offers discussion forums, inquiries/comments, and so on and also there are many links for Iraqi ministries in the portal. The e-Iraq portal can be accessed online, outside or inside Iraq (ibid).

e-Health:

Iraqi hospitals will adopt ICT to provide electronic services to their patients. Strategy and roadmap for the Iraqi e-Health vision have been formulated as follows:

"Provide excellent health services, efficient and effective for all through the integration of primary health care via the applications and information technology standards and telecommunications developed that can be easily accessed and which focuses on the citizen" (ibid).

e-Education:

The strategy and road map of the Iraqi e-education vision the Iraqi has formulated as follows:

The use of ICT to enhance effectiveness & efficiency of the sector, based on the optimal use of resources through the appropriate educational environment for students, and ensure the development of the skills of teachers, and to provide educational opportunities for all. The project is to check and evaluate the result of the exams; Information system of attendance in Baghdad; The gate of e-curriculum for students; The e-System of hiring teachers; The project of increasing the awareness level of prominent ministry managers (ibid).

e-Municipal:

This system contains public services to Iraqi people online. Any citizen can use the e-Municipal through the login to the system. Moreover, till now, e-Municipal in Iraq has provided just two services, such as granted land and water subscriptions (ibid).

The Iraqi government pays close attention to e-Governance systems to offer its citizens e-services in various areas. However, Iraq's government needs more effort to improve these services. These services include e-payment for tax and rent and e-bill for water, electricity, phone and internet.

Therefore, the Government should do its best to solve the problem of e-Government, like the issues of electronic information sharing among its agencies. In addition, the Iraqi Government sector should give more attention to e-paying to quickly collect the fee from customers for both government and citizens. Moreover, they should provide more security for online payment. Therefore, this is a new challenge for Iraq Government nowadays, and they should pass it to develop its e-Government projects. The Government can also use many technologies to support its e-Government systems, such as data warehouse, cloud computing and mobile applications. Nowadays Iraqi government has faced finical issues; thus, cloud computing can be helpful to help Government to adopt technology at a low cost. Further studies should focus on e-participation, its impact and how we can increase to support policy and decision-making (ibid).

1.7.3: e-Governance in Vietnam:

Introduction:

In October 2000, the Vietnamese Government laid the groundwork for speeding up its efforts to incorporate IT into state administration, approving the project "State Administrative Management Computerization, Period 2001-2005," and an Executive Board was established to oversee its performance. To advance efforts to build e-Governance through more administrative changes, the prime minister also put forth a detailed plan for administrative management reforms from 2001-2010.

The creation of e-Government has been influenced by both the Party (CPV)-established IT Steering Committee, whose main working is overseen by the Ministry of Post and Telecommunication (Khuong, M. V., et al., 2005).

e-Government Initiatives and Implementation:

Vietnam's e-Governance initiative was formally launched in 2001 with three major tasks:
Automating Government management, particularly at federal & Province levels; putting connected computers with Internet access in Government buildings; and giving government workers IT training; Creating Government Internet sites; Putting prototype e-Governance initiatives in banking, customs, and taxation into effect (ibid).

Government Websites:

There are roughly 30 websites for the Federal Government and about 60 for the provincial Governments. In addition, an e-Government portal has been established, specifically by the e-Government Steering Board. (ibid).

Prime considerations in e-Governance:

Experts were polled and asked to rank each of the five criteria on a likert scale.

Vietnam's foundation for e-Governance was deemed to be ill-planned overall. Its planned vision for using e-Governance as a tool to reinvent Government was highly lacking, and its awareness and knowledge of e-Governance applications were also regarded as lacking. It was seen to have a solid commitment to electronic government, a moderate posture on the government's agenda and budget levels, and inadequate regulatory backing. Vietnamese leaders judged their nation weak in terms of competence. Regarding its national IT infrastructure and IT penetration, Vietnam received a mediocre rating for connectivity. Concerns about how well the steering committees oversee and carry out e-Governance development projects have been raised (ibid).

In concluding remarks, Vietnam presents enormous potential for the growth of e-Governance. In recent years, it has experienced a sharp increase in Internet penetration. In addition, the nation does well on the parameters of education and literacy in human capital. The fact that Vietnam spends 7.3 % of its GDP on IT is encouraging presently. According to Government sources, country intends to invest VND 6.5 trillion in e-Governance between 2006 and 2010. (ibid).

1.7.4: e-Governance in Pakistan:

Introduction & Description:

The ministry of Information Technology, Pakistan had created the following projects under e-Governance (www.egovernment.gov.pk). Haj Applications processing Online; Prime Minister's office automation; Automation of Assembly at National and Senate level; Automation of District Bar Association with Online Access; e-Enablement of the Patent Office, Karachi; Press Clubs automations; All Government Officers training on IT skills; Information Technology online Support to various Provincial Government offices.

The Punjab province e-Governance portal's user satisfaction rating is evaluated regarding various factors. The primary factor for online consumers' ongoing behaviour toward retaining and establishing devoted, long-term clients is "e-satisfaction," defined as the impact and feeling an online user has towards using e-Services. The seven factors that have been identified are computer nervousness while online on the Punjab e-Governance website; customer expectations, trust, accessibility, awareness, quality.

The Pakistani public's satisfaction with their e-services was shown to be highly influenced by several factors, including accessibility, awareness of e-services, quality of e-services, and consumer expectations of the Pakistan Punjab e-Governance portal.

This study will aid in correctly redefining and re-identifying the factors that lead to e-satisfaction by e-Government planners and policymakers. Previous research on Satisfaction with e-Governance initiatives in Pakistan is minimal. As a result, our research is among the first to assist academics and practitioners in Pakistan in holding discussions on the topic (ibid).

1.8: BENEFITS OF e-GOVERNANCE:

It refers to Governmental improvements made feasible by creative information and communication technology. As a result, e-Governance can result in the following:

1.8.1: Improved Access to Information and Quality:

Information and Communication Technology makes information on many Government sectors available in real-time and with accuracy. Before moving on to more specialized knowledge, performance reports, public databases, decision-making processes, etc., information on fundamental elements of governance, such as forms, regulations, rules, and procedures, would first be made available. Online and centralized citizen-services assisted by the computerization of back-end systems would immediately result in time, effort, and financial savings. By adopting a lifecycle approach or providing people with the public services they would require from birth to death, the e-ultimate Government's purpose is to involve citizens (NISG Handbook, 2015).

1.8.2: Simplicity, Efficiency and Accountability in The Government:

Utilizing ICT for Complex Business Processes and Governance Laws and regulations would change due to re-engineering. The same procedures would be eliminated along with complex processes and organizational structures. As a result, long-term Government operations would become more accessible, and better policymaking aptitudes and enhanced Government effectiveness would help create an atmosphere where a more answerable political system would rule. The result would be increased output and efficiency in all industries (ibid).

1.8.3: Extended Reach of Governance:

The swift development of inter-personal skills and their use in Governance will aid in accessing the functions of Government to the citizens' homes. Many Government services could be delivered more quickly if the telephone network were expanded, mobile phone technology advanced quickly, the internet was widely used, and other communications infrastructure was strengthened. Better citizen engagement in the governing process would result from this expansion of the Government's demographic and geographical reach (ibid).

1.8.4: Enabling Environment for Promoting Economic Development:

Governments may enhance the business environment by employing technology to simplify contact with businesses and reduce the administrative burden of adhering to regulatory obligations. As with e-procurement, which boosts competition and market participants in the public sector, the economy is directly impacted (ibid).

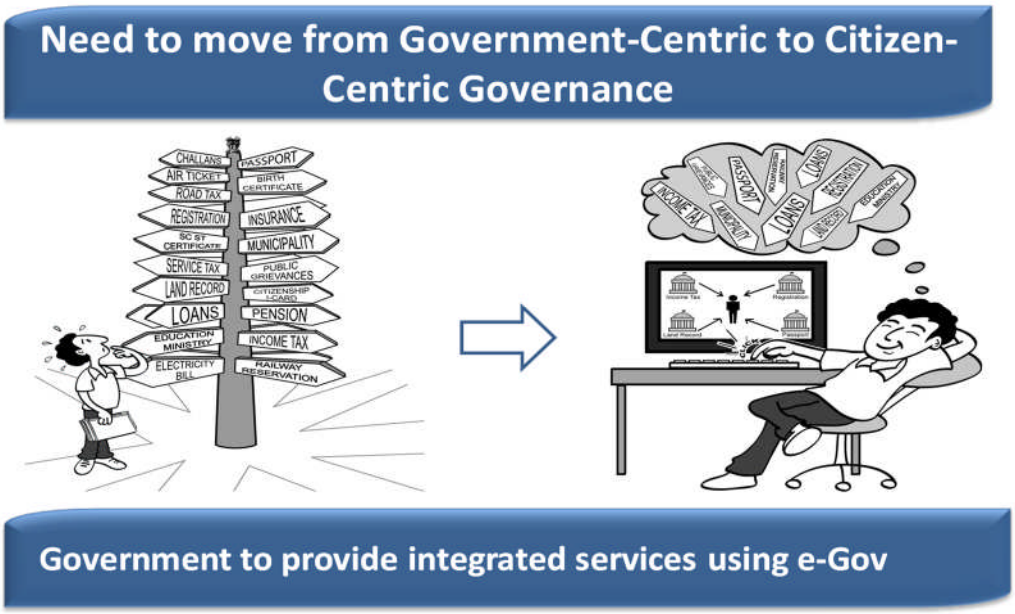
1.8.5: Enhancing Transparency and Accountability:

The publication of government debates and minutes, budgets, expense reports, results, and justifications for significant decisions—as well as, in some circumstances, the ability for the public and press to track online applications—all contribute to improved decision transparency (ibid).

1.8.6: Improving Service Delivery:

The traditional method of delivering government services is inefficient, opaque, and unsatisfying to both individuals and companies. By putting government services at citizens' fingertips through integrated service delivery platforms, e-Governance reduces red tape and boosts service quality in terms of speed, content, and accessibility (ibid).

Figure No.:1.7: Government Services for e-Governance



(Source: NISG Handbook, 2015)

1.9: ISSUES AND CHALLENGES OF e-GOVERNANCE IN INDIA:

Several issues are constraining the introduction of e-Governance in India. These fall into three categories (Saini, P., 2016)

1.9.1: Issues of e-Governance in India:

1.9.1.1: Social Issues:

Different languages:

People speak different languages in India. They speak other languages and have different customs. Most e-Governance applications are in English, making it extremely difficult to develop projects in this area (ibid).

Low literacy:

India has a meagre literacy rate. Illiterate people cannot use the e-Governance programme; as a result, the project will not be fully utilised and successful (ibid).

Low IT literacy:

India has a poor literacy rate; even literate individuals are not very versed in IT (ibid).

Services are not Accessible easily:

Although the number of Indians using the internet is increasing, a large segment of the population cannot participate in e-Governance activities for various reasons, such as inadequate ICT and gadgets (ibid).

Lack of integrated services:

The majority of e-Governance services provided by the Government lack any integration. The reason is a breakdown in communication between several Government agencies (ibid).

Lack of Awareness among People:

The majority of Indians are unaware of the advantages of e-Governance services. The Government is not concerned with raising awareness about e-Governance operations (ibid).

Huge Population:

The enormous population of India poses a significant obstacle to the effective implementation of e-Governance. The difficulties include building a database, counting the people, and regularly maintaining it (ibid).

1.9.1.2: Economic Issues:

Cost:

Due to India's status as a developing nation, the cost is the main barrier to adopting e-Governance. The majority of people are considered to be poor. Implementation, operation, and evolutionary maintenance tasks cost a lot of money (ibid).

Maintenance of Electronic Devices:

IT innovation happens very quickly. Additionally, updating our current system quickly is challenging. The continuously evolving technical environment makes it difficult to maintain electronic equipment (ibid).

Low per Capita Income:

Because of India's meagre per capita income, the average public cannot afford the government's internet services (ibid).

1.9.1.3: Technical Issues:

Privacy and Security:

The security and privacy of a person's personal information provided to get Government services are one of the challenges facing e-Governance applications. A lack of security requirements may constrain the growth of e-Governance projects (ibid).

Multimodal Interaction:

The user can interact with a system in various ways thanks to multimodal interaction. For example, if users of an e-Governance application can access it on multiple devices, that application will be practical (ibid).

Interoperability:

It is one of the critical challenges with e-Governance; ministry and department cooperation are challenging, and it has become a barrier to processing and exchanging data (ibid).

Authentication:

Knowing who should utilize the services is crucial to prevent private competitors from abusing them. In the meanwhile, the digital signature is crucial in ensuring authenticity (ibid).

1.9.2: Challenges of e-Governance in India:

Trust:

Users of new software and Government trust can be used to define faith. The use of new software suggests that consumers of any software or technology must feel confident, at ease, and in trust. Trust in the Government is still another crucial factor. People who use e-Governance services now have limited faith in its advancements. Furthermore, any other entity may engage in unethical operations to get money, valuable information, or even personal data, among other things. Additionally, important information is occasionally ignored or left out in Government offices, which seriously undermines residents of all economic groups' confidence in e-Governance (Nagaraja K., 2016).

Digital Divide:

There is still a significant divide between those who utilise and those who do not use e-Governance services, even in the age of science and technology. Cause of India's meagre per capita income, the average public cannot afford the government's internet services. In contrast, a particular segment of the population extensively uses e-Governance services. But only when this gap is closed can the advantages of e-Governance be equally leveraged (ibid).

Cost:

One of the complex tasks for the government is funding the execution of e-Government initiatives, which must incur high costs. For example, UK and Singapore are other industrialized nations that spend 1% and 0.8% of their respective GDPs, respectively. On the other hand, India barely spends 3% of its GDP; thus, the Government should encourage officials, administrators, and regular citizens to use e-Governance services while being cautious about using public funds on these kinds of initiatives (ibid).

Privacy and Security:

It is a significant e-Governance difficulty. Only when personal information, financial services, and medical care are secured will more individuals be willing to trust them. Therefore, to protect the interests of all classes of people, security standards and protocols must be used while implementing e-Governance projects; otherwise, citizens would lose faith in and confidence in e-Governance (ibid).

Infrastructure:

India must establish e-Governance as much as possible. Electricity, the internet, and a lack of technical flexibility will impede the development of e-Governance. There should be adequate basic amenities available in underdeveloped nations to support e-Governance (ibid).

1.10: RECOMMENDATIONS FOR WAY FORWARD FOR e-GOVERNANCE:

It is crucial to satisfy the rising expectations and needs of tech-savvy individuals, especially millennials, in this digital age. The Government needs to change its strategy and strive to go digital now that the Digital India programme has made significant progress. The Government needs to work hard to reinvent how it provides services and embrace technology. To maximize the return on its ICT investments, the Government must also strengthen its institutional and organizational capacities. The government acknowledges the potential of data, the cloud, and social technology to alter governance. However, in light of growing concerns about data privacy and the increasing frequency of cybersecurity breaches worldwide, it is imperative to rigorously address privacy and security concerns (PwC Report, 2017).

The following is a list of some of the most crucial policy, implementation, and technological recommendations for the Central and state governments:

1.10.1: Go Digital:

For accessing different public services on the move, citizens increasingly use mobile devices. Additionally, boosting interconnectivity and improves user experience, increasing citizen involvement through integrating online services with governance (ibid).

Digi-Infrastructure:

Various Governments should improve the distribution of automation infrastructures, such as fibre optics, telecommunication towers. The implementation of appropriate regulatory reforms, rewards for private actors, exploitation of current facilities, and ease of doing business are required to make this happen (ibid).

Mixed Channel Support:

By offering services not only through mobile devices but also through other channels, including bank branches, the internet, CSCs, and post offices, we can improve user experiences and accessibility. Additionally, it will be advantageous to provide integrated, user-friendly mobile platforms to retail locations so that residents and institutions may access G2C, B2C, and other services (ibid).

Low Capital Investment:

For central and state IT initiatives to become low-capital investment projects, they must be guided and supported. One tactic suggested in the sample RFP is to avoid purchasing computing, storage, and network equipment. According to the MeitY-specified security and cloud procurement standards, this needs to be purchased as platform-as-a-service or infrastructure (ibid).

Data Security:

On their servers, Governments keep critical data and information. With the frequency of cyberattacks increasing, the Government needs to safeguard citizen data and assure them of information security. Additionally, the Government should communicate with educational institutions about the dangers and best practices for cyber security when conducting electronic transactions (ibid).

Big Data Analytics:

ML and Big-data analytics could be used to understand better citizen and institution behaviours and service consumption trends in critical sectors, including health, education, fraud analysis, money leaks, cybercrime, and other domains (ibid).

Location-Based Services:

Obtaining local coordinates and offering people customized services for an immersive experience will be the next big step in digital technology. For example, providing real-time traffic updates or assisting someone who has recently migrated to a city with registering for power, gas, or electricity connections (ibid).

1.10.2: Regulating Regulations:

The essential need is for departments, ministers, and regulatory organizations to work together more effectively to advance the Digital India projects.

Cyber Security:

Data leaks and cyberattacks can be mitigated with solid secrecy and data protection rules. Changes at the strategy level are essential to support digital dealings and calm worries about data protection. The legal structure governing digital payments must be tightly coordinated with the objective of the Government, which is the widespread use of digital payments (ibid).

Private Sector Participation:

For the private sector to fully participate in various initiatives and contemplate joining the Government's application ecosystem, the Government must establish the necessary policy framework.

Project Governance:

The MeitY may include a clause of deemed approval of deliverables if Government project heads do not respond within a predetermined amount of time following the submission of deliverables by an implementation agency to reduce the delay in e-Governance projects from the Government's perspective (ibid).

1.10.3: Development of Human Resources:

Digital Literacy:

Digital literacy is the first step in utilizing digital services. The massive network of post offices must be used for the Digital India initiative's marketing, publicity, and promotion. Spreading awareness of digital services can be accomplished by using the "train the trainer strategy." Additionally, all parties involved in this effort, including the Central and state governments, industry associations, etc., must collaborate to ensure efficient operation (KPMG, 2018)

Capacity Building:

The development of skills is essential for the success of Digital India. All elementary schools, community institutions, and universities should have this in their curricula. The curriculum should be monitored to maintain current with the most recent technological developments. Conducting capacity-building programmes for residents from all walks of life can improve their digital quotient and inclusion, especially for seniors and rural people (ibid).

Upgrading Academic Curriculum:

Emerging technologies should be incorporated into technical institute curricula nationwide, and colleges should set up dedicated innovation labs to give students the necessary hands-on experience. Unfortunately, most academic institutions' curricula do not cover AI, data analytics, the Internet of Things, robotics, blockchain, and e-Governance. To ensure that students are knowledgeable about these themes at a graduate level, the vivid topics need to be covered in greater depth in academic curricula (ibid).

Greater Autonomy for Academic Institutions:

The existence of numerous regulatory organisations with various functions somewhat constrains India's academic institutions. Multiple rules governed by these regulatory bodies deny educational institutions the much-needed autonomy they require to create their original curriculum and make their own decisions. A greater degree of independence for technical institutes would provide them more freedom to set research norms, keep the curriculum current with the industry, and encourage an academic research culture (ibid).

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ANNEXURE - I

An essential list of e-Governance initiatives in use in Gujarat State is included in Annexure I.

S. No.	e-Governance Program	Details	Current Status
Gujarat Informatics Limited (Nodal agency for IT implementation)			
1.	eGram	Essential services related to panchayats will be offered in the first phase, and computerized panchayats with a population of over a thousand (10,774) will be computerized.	4,826 of the 5,875 Village Panchayats with infrastructure are currently operational.
2.	Gujarat Portal	Gujarat has established a single point-of-entry website to provide citizens and businesses with online information and transaction services.	The departments post their information online, and several educational, interactive, and payment services are being developed around the state.
3.	e-City	City Civic Centers or Jan Seva Kendras are planned as part of this concept, focusing on Gujarat cities. These facilities offer a variety of services for the public, including tax collecting, certificate and authorization letter issuance, complaint handling, information distribution, and tendering.	Gujarat Informatics Ltd (GIL) has started replicating the Ahmedabad Municipal Corporation's successful implementation and operation in the other six Municipalities. Surat, Vadodara, Rajkot, Jamnagar, Bhavnagar, and Junagadh.
4.	IWDMS (Integrated Workflow & Document Management System)	The system has automated Gujarat Sachivalaya's workflow and integrated it with other integral departments'	Being expanded to all other departments after being implemented at the CM Office
5.	E-databank	The main goal is to gather data from numerous government agencies based on customer needs and effectively disseminate it through a single window.	For this service, 50 from 10 departments have been finalized as part of Phase-I. The process flows for all 50 services have been finished. The portal's prototype has been demonstrated.

6.	e-Dhara, Land Records Online	Complete computerization of all Land Records and creation of an open, customer-focused service delivery model. Additionally, a variety of reports can be produced for departmental needs.	The Taluka Headquarters makes a digitized copy of the village forms 6, 7, 8-A, and 12 (Record of Right) available to the public in each Taluka.
7.	e-Nagarpalika	Municipalities must be fully computerised and offer a service like birth & death registration, solid waste management, property tax invoicing and collection process, trading licenses service, water billing and collection, tendering process, public grievances, etc.	Of 141 municipalities, 91 have fully embraced e-government, and the remaining 50 are implementing it.
8.	Gyan Ganga	The project intends to provide rural Gujaratis access to education, veterinary care, health counselling, and agricultural skills in their community.	Around 200 kiosk information centres are in operation, and the project has already begun in seven of the original sixteen locations. Within the next two months, work will start on three more projects. When finished, the project is expected to have covered around 3,000 settlements.
9.	Mahitishakti	It includes establishing information access centres with kiosks or computers for information access. At www.mahitishakti.net, information is available both on a browser and the internet. The application contains online applications for the Old Age Pension Scheme and the Ration Card for citizens.	80 Mahiti Shakti Kendras (MSKs) have already been established, 76 of which have been operating successfully. There is information accessible about ongoing programmes, including those run by the District Rural Development Agency and the District Planning Board. A query-based method is available for the web-enabled Gujarat Geographic Information System (GGIS), which provides information about the resources in terms of 95 parameters for each village cluster in the district.

10.	Sales Tax and Treasury	The online treasury and sales tax services cover pensions, LC, stamp administration, payments, books, deposits, and EMD.	Used by all departments, it enables prompt input of all accounting information and simple on-demand report preparation.
11.	Talimrozgar	A website called www.talimrozgar.org was created with information about all job seekers registered with the many employment exchanges.	A comprehensive database is accessible at the site for both employers and job seekers, with the option of online registration. In addition, all employment exchange centres are connected.
12.	TeleFariyad	The public in Gujarat has access to a simple method of grievance settlement through the "Chief Minister's Call Center." which provides a legal complaint hotline at 1505 and minimizes bureaucracy by turning a paper-based procedure into a web-based application.	The District GSWAN centre is where complaints are received. They are transmitted and compressed to Gandhinagar's Chief Minister's Office. Complaints are received, recorded, and forwarded to the appropriate Heads of the Department for resolution using the current infrastructure of GSWAN.
13.	GSWAN	The principal network for phone, data, and video communications in Gujarat is called GSWAN	Connecting Gandhinagar with all government offices in all districts and talukas
14.	SICN Sachivalaya Integrated Communication Network	CCTV, Inmarsat phones for communications, a modern 5100 subscriber EPABX, a video conference facility connected to the EPABX with a multi-conferencing unit, and data link architecture.	It has been finished and is still very much in use, with a daily call volume of 1,25,000 calls made within the network, 60–70,000 calls made outside the web, and 40,000 calls received on average.
15.	SWAGAT (State-Wide Attention on public Grievance by Application of Technology)	Every fourth Thursday, a complaint-redressing system designed in Gujarat allows the Chief Minister to connect directly with citizens. WAN technology and digital management are combined in SWAGAT.	Since its adoption in 2004, the achievement has been enormous.

16.	Centre of Excellence	The Center offers the government's workers cutting-edge information technology training and support infrastructure. All government departments may get to it quickly located inside the Udyog Bhavan.	Launch of Phase-I of the E-databank, publishing eGov@Gujarat bulletins, lecture series on various IT topics, provision of Module-I and Module-II education.

Department of Settlement and Land Records			
17.	Computerization of Kami jati Patrak	After the initial study, the village Form I shows the regions of the revenue survey No. If any survey number has any defaults or unpaid revenue, the area after measurement with any adjustment is shown in Kami jati Patrak. The district office amends records, and the map is updated. The identical KJP and the revised map are given to the village accountant for correction.	For the District Inspector of Land Records (DILR), KJP software is used in several districts, offering solutions for land mutations.
18.	Computerization of Cadastral Maps and GIS-based system	With the support of the Bhaskaracharya Institute for Space Applications and Geoinformation, all maps will be digitized and digitally saved (BISAG)	Large-scale mapping and digitalization are under process.
19.	City Survey Record Computerization	A method for computerizing urban land records, often known as cities or towns, contains data on property ownership and other attribute information, the property's spatial range, and the upkeep of a spatial and tabular database.	NIC has developed an extensive software programme for the Urban Land Records System, which will be used by 66 City Survey Offices dispersed over 25 districts in Gujarat State. In addition, the software is being used at test offices in the Sabarkantha and Ahmedabad districts. The software, which also supports local languages, generates the PROPERTY CARD for the proprietor.

Registration and Stamps			
20.	Computerized Registration of Documents	Calculation of stamp duty based on provided criteria	Use GSWAN
21.	Registration of Documents ReD	Computerization of the entire Registration Act process for document registration	Since May 1st, 2005, 25 SRO in the 7-corporation region have been automated. Electronic processes are used for registration, photo capture, scanning, and other tasks.
Revenue Department			
22.	LRMIS	The Land Records Management Information System (LRMIS) allows for issuing land record extracts, title mutations, and the compilation of notices and reports, among other things.	e-Dhara kendras, specifically constructed centres, are being used to implement the programme at all 225 Taluka offices. In addition, the e-Gram initiative is expanding to the Panchayat level in several districts.
23.	PCIS	Urban areas' Property Card Information System for property cards	Currently being implemented in all 7 Corporation district offices
Transport Commissionerate			
24.	Registration	Outsourced for computerization of the car registration process	implemented in seven offices, but Vahan offers additional services, including permits and fitness certifications.
25.	Smart Chip License	Citizens receive smart card-style licenses for greater security and identification from qualified agencies.	Currently discontinued in favour of adopting Saarthi after being used successfully in 23 out of 25 workplaces
26.	Website	Forms, instructions, and departmental information are available online.	Effectively being used
Directorate of Agriculture			
27.	Krishi Mahotsav	The department organizes a one-month programme for farmers, and Krishi Rath travels to every location to provide training, issue health cards, and address issues.	It displays all the details on Krishi Rath's location and the potential dates for covering different places.

28.	Farmers Insurance	Using a G2G application, data is displayed about farmers' accidental death claims and the status of their claims.	implementation done in a few districts
29.	Crop Cutting Experiment	extensive database containing all state-wide crop yield statistics	contains sensitive information and is being introduced progressively
30.	Agriculture Portal	Complete digitalization of all agriculture department processes, focusing on internal services.	The TSP-NIC identified 33 modules, and work is being done to develop these.
Directorate of Animal Husbandry			
31.	Livestock census information system	Centralized database of all livestock currently in existence, disseminated to the village level	Being rolled-out
Director of Municipal Administration			
32.	e-Governance Application	"Consists of seven modules: 1. Property & Other Tax 2. Death/Birth Certificate 3. Certificates/Licenses 4. Accounting 5. Solid Waste Management 6. Public Grievances 7. Town planning & Building Plans."	being integrated across all municipalities, a municipality is said to be e-governed if any five modules are operational.
High Court of Gujarat			
33.	Automation of High Court	Fully automated High Court processes, including producing certified copies of decisions and orders.	The litigant public and the legal community are given access to case information and case-related services locally and online.
34.	District Court Information System	Computerizing district court operations and establishing a shared link with the High Court	There are presently 17 district courts in operation, as well as a metropolitan court and a municipal civil court.
State Election Commission			
35.	Nagarpalika Election 2006	G2G web-based intranet tool for simplified election tracking of newly constituted Municipalities	NIC developed and maintained the application, which offers a thorough analysis of the election events every day, even down to the local level.

Sales Taxes Department			
36.	Professional Tax Payer's Database	a complex system for creating a database of 10 lakh professional taxpayers and collecting the professional tax at all of the state's sales tax offices.	Being implemented
Finance Department			
37.	PF Management System	Fully automate the General Provident Fund's computer systems.	With the help of the Accountant General office in Rajkot, DPPF reconciles the GPF account data from 25 district treasuries and two pay & account offices. As a result, a total of 69,000 PF slips were printed during the years 2002–2003.
38.	Pension Case Status Online	Verifying the status of a pension application submitted to the department is simple.	Available on GSWAN
Panchayat Rural Development Department			
39.	District Panchayat Accounting System DPAS	For the accounts department of the District Panchayat, Gujarat State's NIC developed the DPAS software. This programme assists in effectively overseeing how various funding intended for the improvement and development of rural people are used.	It has been tested and is formally launched in Gandhinagar by the Development Commissioner of Gujarat.
40.	Gram Panchayat Accounting system	Internal application for Gram Panchayats' financial administration and oversight	The application is ready, and the pilot is being launched in Gandhinagar
41.	Provident Fund Software	Computerization of the Provident Fund maintained by the Gram Panchayats	Implemented at all District Panchayats

42.	Panchayat Portal	This portal aims to communicate information on Panchayat Department activities, such as the numerous programmes offered to village residents, their budget, grants obtained for them, grant expenditures, district- and taluka-specific information, etc.	NIC has identified seven modules, and their development is almost complete.
Police Department			
43.	FIR online	Citizens will complete the entire FIR filing process online.	Being established
44.	CCIS	When deployed, comprehensive software with seven modules automates all police tasks and builds a digital record of all information.	The District Headquarters is only responsible for maintaining FIR lodging and, to a lesser extent, Personnel Information.
45.	Jail Information System JIS	supports the state's jail administration in managing the meagre resources in the jails.	Already implemented
Directorate of Employment & Training			
46.	Employment Exchange Management System	To better serve the youth who are unemployed	All 45 locations have implemented the Talim rozgar programme, and online registration is also available.
Department of School Education			
47.	Mamlatdar Offices Reporting System	Utilised resource management at several Mid-Day Meal Scheme locations	Successfully utilized in workplaces where access had been enabled through GSWAN
Food & Civil Supplies Department			
48.	GRCC – Gujarat Ration Card Computerization	Issuing electronic ration cards to citizens and fully automating the ration card procedure at the Gram Panchayat level.	All Taluka offices have adopted it, which is now being expanded to include Gram Panchayats.
49.	monitoring the price of edible oil and essential commodities	A government official monitors pricing on a daily and monthly basis.	On GSWAN now

Department of Health and Family Welfare			
50.	**Integrated Disease Surveillance**	Data on new cases and fatalities are gathered weekly from remote units, Corporation Hospitals, and Medical Colleges for 16 designated diseases (Hospitals attached to it). Weekly data entry takes place at the district level; then, it is sent to Gandhinagar's central server for examination.	Implemented
51.	**Pharmacist Registration and Monitoring System (PHARMS)**	The Gujarat State Pharmacy Council (GSPC) registers pharmacists, gathers data on their job and education, and records the addresses of both their homes and places of business.	Online registration, renewal, and re-registration are now available. In addition, using PHARMS, the yearly reports for the Indian Pharmacy Council are also created.
Directorate of Scheduled Castes			
52.	Computerization of schemes and services	Various modules: housing, certificates, scholarships, medical assistance, etc.	Being implemented
Gujarat State Disaster Monitoring Department			
53.	Monsoon Reporting System	Online data collection for monsoon monitoring from all points in the state is made more accessible with an application.	Being implemented
54.	Scarcity Monitoring System	To enhance the management of shortage, weekly taluka-specific statistics are generated and posted on the intranet.	Being implemented
Roads & Building Department			
55.	The department's entire operational processes have been computerized.	Numerous apps are available online, but the most crucial ones are Schedule of Rates, Contractors Registration, Staff Training College, Capital Project, Quality Control, Asset Management, Electrical Circle, Mechanical Circle.	Being implemented at the sub-divisional level and the divisional level

Legal Department			
56.	Legal – IITS (Legal dept's Integrated Information Technology Solution)	Includes several components, such as the CIO (Court Fees) Module, the Charity Commissioner and Wakaf Board Module, the Legal Case Management System Module, the Civil Opinion Module, the Establishment & Administration of Judiciary Module, and Other Modules.	Being implemented