

Digital Governance in India: A Study on e-Governance Initiatives with Special Reference to West Bengal

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Abstract:

The present study attempts to depict the e-Governance initiatives in India with special reference to West Bengal. This research adopts a descriptive-cum-analytical approach based exclusively on secondary data. The study reveals that India is steadily advancing towards comprehensive digital governance through a range of national programmes and policy measures. Landmark initiatives such as Aadhaar, the Digital India programme, and the National e-Governance Plan have significantly contributed to the development of a robust e-Governance ecosystem, aiming to enhance transparency, efficiency, and citizen-centric service delivery across the country.

At the state level, West Bengal has also made notable strides in strengthening its digital governance framework. Policies such as the West Bengal Policy on Information and Communication Technology, 2012, and the West Bengal ICT Incentive Scheme, 2012, have laid a strong foundation for expanding ICT infrastructure and services. E-Governance projects like the Banglar Shiksha Portal, Banglar Uchhashiksha Portal, e-Paddy System, e-District Portal, OASIS Portal, GRIPS Portal, and various online admission systems have demonstrated considerable potential in delivering essential public services more effectively and accessibly to citizen.

Keywords: digital India, e-governance, e-governance initiatives in India

Introduction:

In the era of rapid technological advancement, digital governance has emerged as a vital tool for transforming public administration and delivering public services more efficiently, transparently, and inclusively. This paradigm shift leverages Information and Communication Technology (ICT) to bridge the gap between government and citizens, businesses, and other stakeholders (Prabhu, 2015).

In India, the drive towards e-Governance gained significant momentum with the launch of the National e-Governance Plan (NeGP) in 2006, followed by the ambitious Digital India programme in 2015. These initiatives aim to make government services accessible to citizens electronically by improving online infrastructure and expanding internet connectivity, especially in rural and remote areas. Over the years, various central and state-level projects have sought to digitize administrative processes, enhance transparency, reduce corruption, and promote citizen participation in governance. West Bengal, one of India's most populous states, has also made notable strides in adopting e-Governance measures. The state government has implemented several digital platforms and initiatives to streamline service delivery in sectors

such as land records, public grievance redressal, education, health, and municipal services. This paper seeks to examine the development of digital governance in India with a special focus on West Bengal relying solely on secondary data

Numerous studies have explored various aspects of e-Governance initiatives in India and West Bengal, focusing on specific projects, policy frameworks, or sectoral applications (Bhattacharya, 2008; Sanyal et al., 2014; Kar & Das, 2017; Nag, 2020; Karmakar, 2020). However, it has been observed that while these studies often highlight individual schemes or success stories, there is still a lack of comprehensive, updated analysis that situates West Bengal's e-Governance journey within the broader national context.

Moreover, much of the existing literature tends to emphasize either technical aspects or administrative challenges without adequately examining the trends, achievements, and persistent gaps through a comparative lens. Given the rapid expansion of digital services under the Digital India programme, a fresh assessment using secondary data is needed to understand how effectively West Bengal has aligned its e-Governance strategies with national goals and what lessons can be drawn for future improvements.

Therefore, this study seeks to fill this gap by presenting an integrated overview of India's e-Governance initiatives with special reference to West Bengal. It aims to analyse available secondary data to map key trends, identify notable achievements, and critically examine the challenges that continue to impede the realization of inclusive and effective digital governance in the state.

India has recently embarked on the journey from paper-based governance to paperless governance or digital governance to enhance transparency, efficiency and citizen-centric delivery of public service (National e-Governance Plan, 2006). The State of West Bengal in India has also taken a number of e-governance initiatives to simplify the governance process as well as the public service delivery system. The present discussion deals with the different e-government initiatives developed all over India, especially by the Government of West Bengal. The discussion is divided into two sections. Section I deals with an overview of the various e-governance initiatives developed throughout India. It highlights the key projects, policies, and initiatives for enhancing the e-governance process in India. Section II of the discussion focuses on e-governance initiatives in West Bengal. Through this discussion, the researcher has tried to pinpoint the approaches taken up by the Government of India towards e-governance and in this backdrop address the different e-governance initiatives in West Bengal.

SECTION I

e-Governance Initiatives in India

India achieved her independence from British colonial rule with several issues and problems. Now, the Government is going to assure its citizens of a high quality of life. Honourable Prime Minister of India, Narendra Modi calls for Minimum Government, Maximum Governance. Dr Jitendra Sing, Union Minister of State (Independent Charge), Department of Science & Technology said that, presented the vision of the present government. The government wants to establish Minimum Government, Maximum Governance. It ensures such a system where

administration and good governance are run without unnecessary interference. Sing also said governance aims to establish a simple way of living for common citizens. This type of governance mechanism would remove the obstacles of common people (Regional Conference, 2023). Countries across the globe focus on digital governance to ensure the governance process simple. The government of India has also given a digital outlook to the governance process to facilitate the lives of common citizens. Honourable Prime Minister Modi gives importance on transparency for ensuring good governance which will be effective through e-governance.

After reviewing the government websites, government and non-government reports, and journals, the researcher shares the achievements of e-governance development in India. India has recently emerged as a leading country in injecting global e-governance initiatives (Department of Electronics & Information Technology, 2014; Kalsi et al., 2009; Shah, 2007). Over the years, Governments (Unions and States) have implemented several e-governance initiatives to strengthen the governance process. This section provides an overview of e-governance development throughout India. It highlights phases of e-governance development, policies, and individual e-initiatives for developing e-governance in India.

Preliminary Stage: We can find the roots of the development of e-governance in India in early 1970s. In 1970 the Government of India established the Department of Electronics. It was the first step in developing the electronics government in India. Subsequently, the Government of India established National Informatics Centre(NIC) in 1976. This initiative marked another significant advancement in expanding the scope of e-governance in India. It was created to offer technology-driven solutions to both the Central and State Governments across various developmental functions. Since the 1980s, it has provided institutional linkage across all the Ministries and Departments of the Union, State Government, Union Territories, and District Administrations of the country. It gears up the total governance process in India from the Central to the local level. It connects the Gram Panchayats, Blocks, Municipalities, and Departments with the State and Central governments. NICNET is called the steering wheel of e-governance applications in India. However, there is a difference between NIC and NICNET. NIC is an institution, and NICNET is a programme. Both aim to achieve better efficiency in the governance process and get the government accountable to the citizens of India. District Information System of the National Informatics Centre (DISNIC) is another important step in the evolution of the e-governance process in India. It was launched to computerize all the country's district offices by providing free hardware and software to the state governments. In summary, some primary steps were taken in introducing the e-governance system in India in its preliminary phase. These steps are: establishment of the Department of Electronics in 1970, the establishment of the National Informatics Centre (NIC) in 1976, the establishment of NICNET in 1977, and the establishment of DISNIC.

Intermediate Stage: On the eve of globalization, India had to rethink its administrative and economic policy. Traditional socialist planning was replaced by the discourse of good governance, which deals with market-based growth and administrative efficiency. The administrative reformation was too much needed for India to be commensurate with the new world order. However, international funding agencies like the World Bank and IMF compelled underdeveloped and developing countries to take initiatives for administrative reforms for good

governance. The discourse of good governance commands accountable, responsive, efficient, and transparent governance. E-Governance enables the ethos of good governance (Bhatnagar, 2012). Understanding the importance of information and communication technology in governance, India succeeded in injecting it into the functioning of government. Before the 1990s, the Government of India took some initial steps to develop e-government. However, in the second phase of the development of e-government, realizing there is no option except ICT-based governance, India has been trying her best to implement e-government better since 1990. In this phase, every department came forward to store data on the computer. The Government of India has constituted a National Task Force on Information Technology and Software Development to formulate the draft national policy on informatics. The policy would enable India to emerge as an information technology superpower in 10 years (1998, Economics Times). The National Task Force recommends an institutional mechanism consisting of central and state governments and IT experts from industry and academics to implement the policy on informatics. A separate ministry for Information and Technology was created in 1999 by the Government of India to execute the IT policies. The Ministry takes a role in enhancing the development of e-governance in India. In this connection, the Ministry looks after to empower citizens through ICTs and promote the inclusive and sustainable growth of electronics. Their multifaceted approach includes developing human resources, enhancing efficiency through digital services, and ensuring a secure cyberspace. The Information Technology Act, which came into force in 2000, is another important e-initiative in India. The act grants legal recognition to transactions conducted through electronic exchange of data, electronic communication, or electronic commerce transactions.

Several states have also come forward to implement e-governance to the best of their ability. But this picture of the development of e-governance in different states is quite discriminatory. In this perspective, the governments of Kerala, Tamil Nadu, Karnataka, and Andhra Pradesh are far ahead. For instance, some important e-initiatives taken by these states may be described. E-Seva, E-Cops (e-Computerized Operations for Police Services) and CARD (Computer-aided Administration of Registration Department) in Andhra Pradesh, Gyandoot (Purveyor of Knowledge) in Madhya Pradesh, FRIENDS (Fast, Reliable, Instant, Efficient Network for the Disbursement of Services) in Kerala are some successful e-governance initiatives in India. Online booking of railway tickets and missed call-enabled LPG booking are among them. These e-governance initiatives are developed separately and in a scattered way. No coordination has been seen among the e-governance initiatives in India. The National e-Governance Plan (2006) takes a holistic view of the various e-governance initiatives across the country. NeGP was the first national-level plan for the development of e-government.

Penetration/Integration Stage: From the discussion of the previous two stages of the development of e-governance in India, it is clear that the Union and State Governments have taken several initiatives since the 1970s. In short, sustained e-initiatives have been taken at different levels of Government to improve governance process. Some common features can be found in the process of e-governance development in India. Firstly, most of these initiatives involved with computerization of government data. Smooth delivery of public services at an affordable cost was given little importance here. Secondly, e-initiatives were developed in a fragmented way. Every e-initiative is designed to provide a particular service. The e-

governance initiatives needed to follow a holistic view. Thirdly, these e-initiatives have given more importance to the computerization of various Departments of the Governments (States and Union). Hence, e-governance initiatives in India overlook the essence of e-governance i.e. e-Governance must be citizen-centric, simple, accessible, and transparent governance.

The National e-Governance Plan (NeGP, 2006) adopts a comprehensive approach to the development of the e-governance process throughout the nation. An extensive nationwide infrastructure is being developed for an integrated e-governance system, merging individual e-initiatives. The primary goal of e-governance, as stated in the vision of NeGP, is to enhance the accessibility of public services to residents. The National e-Governance Plan (NeGP), consisting of 27 Mission Mode Projects and 8 components, was officially sanctioned by the Government of India on May 18, 2006. In 2011, four projects - Health, Education, PDS, and Posts - were added to the list of 27 Mission Mode Projects (MMPs), bringing the total to 31 MMPs. The Government has endorsed the vision, approach, strategy, major components, implementation methodology, and management structure for NeGP.

The Government of India has approved the e-Kranti programme in its Cabinet meeting held on 25.03.2015. This decision was made due to the shortcomings in the National e-Governance Plan, such as the lack of integration among Government applications and databases, a low degree of government process re-engineering, and the untapped potential of emerging technologies like mobile and cloud. The vision of the e-Kranti programme is to transform e-Governance in order to transform governance. The objective of e-Kranti is to achieve a comprehensive transformation across the government by providing electronic delivery of government services to citizens through integrated and interoperable systems using various methods. This is done with the aim of assuring efficiency, transparency, and reliability of these services at cheap prices.

Digital India, a flagship government program launched on July 1, 2015, by Hon' Prime Minister Shri Narendra Modi, aims to transform India into a digitally empowered society and knowledge economy. It is considered an umbrella program covering multiple Government Ministries and Departments. The Government wants to integrate many ideas and thoughts about e-governance through Digital India Pragremme. Honourable Prime Minister Narendra Modi says Digital India is the dream of the nation. The vision of Digital India is solely connected with empowering the ordinary people especially the poorest of the poor. Government of India initiates to make one person in every family digitally literate through Pradhan Mantri Gramin Digital Saksharta Abhiyaan (PMGDSA). Pradhan Mantri Gramin Digital Saksharta Abhiyaan targets to make six crore people digitally literate, one from each family, in rural areas. It would cover around 40% of rural households by 31st March 2019. The mission of PMGDSA is to make people digitally literate so that they can operate computers, laptops, tablets, and smartphones, which are essential in the modern age (<https://www.pmgdisha.in/>).

SECTION II

Section II of the discussion deals with the e-governance development in West Bengal of India. In this connection, there is a need to describe the political history of West Bengal. After independence, the state was politically volatile during the tenure of the Congress Regime and

United Front (Jukta Front) (1950-1977). At this time, the Government could not frame a strong administrative framework and infrastructure for the people's welfare. Public Service Delivery through e-governance was a farthing. The main function of the Government was to maintain law and order and protect the citizens' security in the state. Integrated step towards the people's welfare was actually seen in West Bengal after the installation of the Left Front Government in State power in 1977. After capturing the state power, LFG focused on the rural sphere of West Bengal and introduced the Panchayati Raj system as a Local Self Government. In the preliminary phase, the left ideology-based government successfully performed the necessary duties connected with the three sectors. The Left Front Government showed outstanding performance on land reforms and establishing the local self-government in the rural sphere. But at one time, the Left Front Government lost its validity and acceptability due to tremendous corruption, deep-rotted nepotism, and excessive party loyalty of the bureaucrats. The government lost its dynamicity and mobility and became stagnant. The Government did not try to understand the actual demands of the citizens. Good Governance was a mere daydream. A few steps have been taken to develop an e-governance system. Rather, the Government opposed to introduce information technology for fear of job contraction of unskilled workers. However, some important e-initiatives have been taken during the Left Front Government. The Government has created the Department of Information Technology to look after the development of e-governance. Recently, it is renamed at Department of Information Technology & Electronics. West Bengal IT Policy (2003), under the leadership of former Chief Minister Buddhadeb Bhattacharya, has played an important role in the development of e-governance in West Bengal.

The LFG had ruled the State of West Bengal for 34 long years. In 2011, the All India Trinamool Congress (AITMC), under the leadership of Ms. Mamata Banerjee, party came into power after a landslide victory in the State Legislative Assembly by defeating the ruling LFG. Mamata Banerjee, Honourable Chief Minister of West Bengal has given importance to e-governance. Several e-governance initiatives have been taken for that purpose. According to Government, these e-initiatives would help the state administration in delivering public services to the citizens smoothly. It would also stabilize the state government with a solid base by enhancing capability through the systematic mitigation of various demands of the people. The All India Trinomool Congress led Government replaced the existing IT policy 2003. Instead of that, they have framed a new IT policy which is known as West Bengal Policy on Information and Communication Technology 2012.

In the following paragraphs, the researcher has tried to put forward major e-initiatives which have been introduced by the Government of West Bengal for the smooth delivery of public services in different spheres. Though the researcher has tried to portray a thorough picture in this regard, it is worth mentioning that this e-initiatives is not a complete list. The researcher could not compile all the e-initiatives taken up by the Government of West Bengal in a single frame due to their vastness, scattered nature, overlapping of the subjects in different schemes, complexity regarding the jurisdiction, implementation and cost sharing between the centre and the states in different schemes, etc. Though the researcher could not present a full list of e-initiatives of the State of West Bengal yet from the following list, one can easily guess the present status of e-governance initiatives of the concerned state.

Major e-Governance initiatives in West Bengal

WBSWAN: West Bengal State Wide Area Network (WBSWAN) provides Data, Voice & Video Communication facilities. It connects State Head Quarters, District Head Quarters, Sub-Division Head Quarters through information and communication technology (<https://www.webeltechnology.com>).

WBSDC: SDC of West Bengal serves as the backbone for various e-governance initiatives of the state. The Government of West Bengal has established a State Data Centre (WBSDC) to provide services delivery for G2C, C2G, G2B, B2G, C2B, and B2C. It is situated in Kolkata and serves as hosting e-services, keeping data storage, ensuring security measures, etc.

e-District: e-District is an important Mission Mode Project under National e-Governance Plan in India. Citizens can avail different public services through the e-District Portal by using their personal electronic devices or by visiting any CSC (Common Service Centre) or e-Kiosk. Currently, 26 district-level services, 98 department-level services, 24 development authority services (KMDA, NKDA, ADDA, SJDA), and Development corporation services (The West Bengal Small Industries Development Corporation Limited) have been included the e-District Portal of West Bengal. Among them, the issuance of distance certificates for students, income certificates, local residential (Domicile) certificates, ordinary residential certificates, and delivering the land and land reform services are well functioning.

VAHAN: VAHAN, also known as the Vehicle Registration System, is a project taken up by the Ministry of Road Transport and Highways, Government of India, to establish a national database for all registered vehicles. The Government of West Bengal's Transport Department has successfully completed the VAHAN project, which includes an e-services application for citizens to make online vehicle tax payments and handle various vehicle registration processes, such as new registrations, transfers of ownership, address changes, NOC requests, and duplicate RC issuance.

e-Corners: The Government of West Bengal developed Tathya Mitra Kendra to provide the same e-services. Tathya Mitra Kendra is now renamed as Banglar Sahayata Kendra (BSK). To make online services available to every citizen free of cost, the state government has set up Banglar Shayata Kendra (BSK) all over the state (Memo No-352-CS/2020 dated 14/10/2020). The State Government funds the entire BSK project. Citizens do not need to pay fees to the Kendras to get online services and information regarding public services or government schemes. Accordingly, all the state government departments are trying to render all their digital and online services through these centres to the public.

GRIPS: The Department of Finance, Government of West Bengal has created Government Receipt Portal System [GRIPS] in 2012 vide notification No. 8298-F(Y). Now, GRIPS (<https://wbifms.gov.in/GRIPS/homeG2.do>) is an internet-based platform provided by the Government of West Bengal (GoWB) to facilitate tax and non-tax payments made by various depositors such as traders, entrepreneurs, companies, and residents. GPIRS offers round-the-clock electronic services for depositing funds into the State Government Account using internet-based payment technology. It improves the government transaction system. Currently, 22 departments/directorates are connected with GRIPS to receive deposit payments.

iFMS: For better administrative, fiscal & budgetary control over the receipts and expenditure of the state, the Government of West Bengal has restructured the entire cycle of its fund management system by introducing Integrated Financial Management System(<https://ifms.raj.nic.in>) in 2014. iFMS is a web-based application which came into force on and from 01.04.2014. iFMS integrates all Departments, Directorates, Regional, District, and block offices including Drawing & Disbursing Officers, Treasuries, Public Account Administrators, and employees. It provides an online, real-time monitoring platform 24*7 for all of its stakeholders including citizens.

Banglarbhumii: Banglarbhumii Portal has been developed by the Department of Land & Land Reforms, Government of West Bengal to align with the NLRMP project. Banglarbhumii provides land-related services through online mode. Mutation, conversion, issuance of ROR certificate, paying land revenue, etc. are being performed by the Banglarbhumii web portal. The portal contains citizen login facilities. Citizens can create personal user id and password and get land-related services through the Banglarbhumii Portal. West Bengal State Wide Area Network (WBSWAN) connects Land Registration and Land & Land Reforms offices of the state of West Bengal to make the Banglarbhumii project a grand success.

WBSEDCL: West Bengal State Electricity Distribution Company Limited (WBSEDCL) has developed a web portal (<https://www.wbsedcl.in/>) for delivering e-services to the citizens. Consumers can pay their electricity bills, apply for new connections, enhance their power load, and launch complaints through this web portal. The portal aims to promote power distribution services.

Duare Sarkar: Duare Sarkar (Government at Doorstep) is an innovative initiative taken up by the Government of West Bengal, which has been continuously serving the people of the state since December, 2020. The motto of Duare Sarkar is to supply various public services to the citizens at their doorstep. In this connection, government staff would reach the citizen's doorstep, collect the application form, and deliver the services within a specific time. The total process of Duare Sarkar is standing upon the information and communication technology. The applications from the citizens are being registered into the Duare Sarkar web portal (<https://ds.wb.gov.in/>). Public servants are bound to deliver the concerned services to the citizens within a specific time period or accountable to give reasons for not delivering the concerned services.

Online Scholarship: Government of West Bengal provides different scholarships to the various categories of the students to pursue their higher studies. These are: Nabanna Scholarship, Swami Vivekananda Scholarship, KanyashreePrakalpa, SC, ST, OBC Scholarship (OASIS), Aikyashree Scholarship for Minority students, etc. Different web portal has been created to deliver the different scholarships. Nabanna scholarship is given from the Chief Minister's Relief Fund. It is also known as Chief Minister's Scholarship. Student belonging to below poverty line and passed 10th/12th/ UG/PG examinations with 50% marks can get 10,000/- for their higher studies through the web portal <https://cmrf.wb.gov.in>. Swami Vivekananda Merit Cum Means Scholarship is very popular scholarship scheme for the students studying at XI, XII, and higher education courses. Meritorious students belonging to economically backwards families, who is studying at these courses can get a 1000/- to 2500/-

per month for educational purpose. Student can apply this scholarship through the web portal <http://www.svmcm.wbhed.gov.in>. Girls' students (13-18 years old) of the state are getting Rs 500/- (per year) and Rs. 25000/- (one time) through KanyashreePrakolpa. The girl students are getting this scholarship through the web portal <http://www.wbkanyashree.gov.in>. Online Application for Scholarship in Studies is known to the students as OASIS scholarship. Students belonging to SC, ST, OBCA & OBCB can get pre-matric and post-matric scholarships through the web portal <http://oasis.gov.in>. Aikyashree is another initiative to assist the economically disadvantaged students belonging to minority communities (Muslims, Sikhs, Parsis, Buddhists and Christians). Students can avail this scholarship by using the web portal <http://www.wbmdfscscholarship.in>.

Online Paddy Procurement System: The Department of Food and Supplies, Government of West Bengal has introduced Online Paddy Procurement System through which an e-paddy market has been created. The farmers can sell their paddy in a fair price through this e-market portal (<https://epaddy.wb.gov.in>). The portal enables farmers to register themselves, update profiles, fix the schedule for selling paddy, check payment status, etc.

CMO's Grievance Redressal Project: In contemporary discourse, public grievance redressal stands out as a cornerstone throughout the globe. In conformity with the global trend, Government of West Bengal launched a comprehensive online ICT based Public Grievance Redressal System in June, 2019. It is developed to ensure accountable, responsive, transparent public service delivery. As of 6th March, 2024 27,78,185 grievances have been lodged through the CMO's Grievance Redressal portal and 25,53.535 grievances have been redressed.

Banglar Shiksha Portal: The Department of School Education, Government of West Bengal has developed School Management System through a web form called BanglarShiksha (<https://banglarshiksha.gov.in>). It was inaugurated by the former Education Minister of the State on 26th February, 2019. By using the portal one can get student-teacher profiles, school curriculum including e-textbooks, student results, etc. The portal generates a unique ID code for each student, which is valid throughout their school education. The portal is also linked up with other education related service portals such as Mid-Day Meal Scheme, Sabooj Sathi Scheme, Scholarship, Integrated Online Management System (iOSMS), pension, etc.

Janma-MirtyuTathya: The Government of West Bengal has launched a single-window portal for online registration of births and deaths, which is commonly known as Janma-MirtyuTathya Portal (<https://janma-mrityutathya.wb.gov.in/>). The portal came into force on and from 5-05-2022. Before the introduction of this e-initiative, registration of birth and death was maintained manually according to the Section 8 of the RBD Act, 1968 in West Bengal. Recently, the family members or the concerned hospital of the new born or the deceased can initiate the deaths and births registration process within 20 days of the incident by using the Janma-MirtyuTathya Portal. Then, the competent authority issues the certificate after verifying the documents. The aim of the portal is to provide flawless births and deaths certificate to the concerned family members and to preserve said documents in digital format.

Conclusion:

In conclusion, the e-governance initiatives undertaken by both the Government of India and the Government of West Bengal have significantly advanced the shift toward digital governance, aiming to enhance administrative efficiency and public service delivery. National programs such as Aadhaar, Digital India, and the National e-Governance Plan have been instrumental in driving this transformation across the country. Similarly, state-level initiatives, including the West Bengal Policy on Information and Communication Technology (2012) and the West Bengal ICT Incentive Scheme (2012), have played a pivotal role in strengthening e-governance in the state. Platforms such as the Banglar Shiksha Portal, Banglar Uchhashiksha Portal, e-Paddy System, e-District Portal, OASIS Portal, GRIPS Portal, and Online Admission System have demonstrated notable success in improving access to public services. However, both central and state e-governance systems remain in a transitional phase, corresponding to the second stage of e-governance development as outlined by Layne and Lee (2001). India still has considerable progress to make before reaching the third and fourth stages, characterized by vertical and horizontal integration, with horizontal integration representing the ultimate goal. Therefore, policymakers should prioritize strategies to achieve integrated e-governance. It is important to note that this analysis is based solely on secondary data from official web portals, which may not fully capture the on-ground effectiveness of these initiatives. An empirical study is necessary to assess the real-world performance of India's e-governance-based public service delivery system.

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