



Issue Challenges and Future Prospects of E-Governance in India

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ABSTRACT

E-Governance in India has emerged as a vital mechanism for improving the efficiency and transparency of government services. This paper explores the current state of e-governance in India, focusing on the issues, challenges, and future prospects of this digital transformation. The background highlights the growing importance of information and communication technology (ICT) in public administration and the Indian government's initiatives to implement e-governance through programs like Digital India. The digital divide, especially in rural areas, remains a significant barrier, limiting access to online services. Data security and privacy concerns also pose risks to the successful implementation of e-governance systems. Additionally, inadequate infrastructure and limited digital literacy are major challenges that need to be addressed to ensure inclusive and effective e-governance. The paper suggests that overcoming these challenges requires a multi-faceted approach, including improving digital infrastructure, enhancing digital literacy, and ensuring robust data protection measures. The future prospects of e-governance in India are promising, with potential benefits including more efficient public services, increased transparency, and enhanced citizen participation in governance.

INTRODUCTION

E-Governance, or electronic governance, is an innovative approach to modernizing the public administration system by leveraging technology to deliver government services more efficiently and transparently. In India, the concept of e-governance has gained significant momentum in recent years, driven by the need to make government operations more accessible and accountable to citizens. The Indian government has launched various initiatives, such as the Digital India program, to promote the use of information and communication technology (ICT) in governance. This paper explores the evolution and current state of e-governance in India, with a focus on the issues and challenges that impede its widespread adoption. E-governance aims to streamline administrative processes, reduce corruption, and enhance the overall quality of public services. However, the implementation of e-governance in a diverse and populous country like India faces several hurdles. These include the digital divide, which refers to the gap between those who have access to modern digital technologies and those who do not, particularly in rural areas. Additionally, concerns about data privacy and security, limited infrastructure, and varying levels of digital literacy among the population present significant challenges. The purpose of this study is to provide a comprehensive analysis of these challenges and to explore the future prospects of e-governance in India. By understanding the current landscape and identifying the barriers, the study aims to suggest potential solutions and strategies for overcoming these challenges. The ultimate goal is to make e-governance a more inclusive and effective tool for improving public services and engaging citizens in the governance process.

Types of Interactions in E-Governance

E-Governance involves different types of interactions between various stakeholders in the governance process. These interactions include:

1. **Government to Government (G2G):** This type of interaction uses Information and Communication Technology (ICT) to improve the flow of information and services within and between different government entities. It can occur horizontally (between different government agencies or departments) or vertically (between national, provincial, and local government levels). The main goal is to enhance efficiency, performance, and output within the government.
2. **Government to Citizens (G2C):** This interaction creates a platform for citizens to access a wide range of public services easily and efficiently. G2C interactions aim to make government services more accessible and convenient for citizens, allowing them to interact with the government at any time (24/7), from various locations (like service centers, kiosks, or home/workplace), and through multiple channels (such as the internet, telephone, email, or in-person). The primary purpose is to make the government more citizen-friendly.
3. **Government to Business (G2B):** E-Governance tools help businesses interact more efficiently with the government. The aim is to reduce bureaucratic hurdles, save time, cut costs, and promote a transparent business environment. G2B interactions include processes like licensing, permits, procurement, and revenue collection. They can also involve promoting and facilitating activities

like trade, tourism, and investment, creating a favorable environment for businesses.

4. Government to Employees (G2E): Since the government is a large employer, it needs to communicate regularly with its employees. G2E interactions use ICT tools to make these communications quicker and more efficient, improving the satisfaction levels of employees.

E-Governance in India

India began its journey towards modern governance with the establishment of the National Informatics Centre (NIC) in the 1970s. NIC has played a crucial role in connecting various government departments and managing the information needed for planning and implementing development projects. It has developed comprehensive skills in integrating and networking government offices, enabling a holistic view of e-governance for those involved in these initiatives. This pioneering work over the decades has laid the foundation for the current and future e-governance efforts in India.

National ID and e-Governance initiatives in India

The main data requirement for efficient e-Governance in India is the National Citizen ID Card. This card should be multipurpose, secure, and authentic, similar to a personal photocopy of the individual. It should include multiple forms of verification, such as a photograph, biometrics (like fingerprints and iris scans), and a digital signature. With a population of one billion people, India needs to ensure that this card is provided to citizens in a cost-effective way. Therefore, it's crucial to choose the right technology for creating the card and to quickly decide how to issue it online. This challenge should be addressed by a consortium of public and private industries, along with academic institutions and the government. Currently, the government is considering a bill to introduce the multipurpose Citizen ID card. Some state governments have already made significant progress in using IT in governance, integrating IT-based government services, and delivering them electronically. Here are some examples:

Initiatives Taken by the Different States/UTs under e-governance

Several Indian states and Union Territories have launched various initiatives to enhance departmental automation, user charge collection, delivery of policy and program information, and provision of entitlements. Andhra Pradesh has implemented e-Seva, CARD, VOICE, MPHS, FAST, e-Cops, and AP online, offering a one-stop-shop on the Internet along with Saukaryam and online transaction processing. Bihar has introduced the Sales Tax Administration Management Information system. Chhattisgarh has established the Chhattisgarh Infotech Promotion Society, a Treasury office, and an e-linking project. In Delhi, initiatives include the Automatic Vehicle Tracking System, computerization of the RCS office website, an Electronic Clearance System, and a Management Information System for Education. Goa launched the Dharani Project, while Gujarat developed Mahiti Shakti, which includes services like online requests for government documents, form books, GR books, census information, and tender notices. Haryana initiated Nai Disha, and Himachal

Pradesh set up Lok Mitra. Karnataka's projects include Bhoomi, Khajane, Kaveri, Mahiti, and a Smart Card System. Kerala introduced e-Srinkhala and RDNet, as well as the FRIENDS network for fast, reliable, instant, and efficient service disbursement. Madhya Pradesh implemented Gyandoot, Gram Sampark, Smart Cards in the Transport Department, and the computerization of the MP State Agricultural Marketing Board (Mandi Board). Maharashtra developed SETU and an Online Complaint Management System in Mumbai. Rajasthan's projects include Jan Mitra, RajSWIFT, Lokmitra, and RajNIDHI. Tamil Nadu introduced Rasi Maiyams in Kanchipuram, providing public utility application forms, tender notices, and display. In Arunachal Pradesh, Manipur, Meghalaya, Mizoram, and Nagaland, the Community Information Center and Meghalaya website offer forms related to social welfare, food civil supplies, consumer affairs, housing, and transport.

State wise Computer and Internet Users in India

In India, different states and Union Territories have varying levels of computer and internet access among households. In Jammu & Kashmir, out of 2,015,088 households, 169,267 (8.4%) have computers, and 58,438 (2.9%) have internet access, leaving 1,108,30 (5.5%) without internet. Himachal Pradesh has 1,476,581 households with 124,033 (8.4%) having computers and 41,344 (2.8%) with internet, while 82,689 (5.6%) lack internet access. Punjab has 5,409,699 households, with 692,441 (12.8%) owning computers, 292,124 (5.4%) having internet, and 400,318 (7.4%) without internet. Chandigarh has 235,061 households with 78,040 (33.2%) having computers and 44,191 (18.8%) with internet, leaving 33,849 (14.4%) without. In Uttarakhand, of 1,997,068 households, 219,677 (11.0%) have computers, 60,906 (3.2%) have internet, and 155,771 (7.8%) are without internet. Haryana's 4,717,954 households include 622,770 (13.2%) with computers, 250,052 (5.3%) with internet, and 372,718 (7.9%) without. NCT Delhi has 3,340,538 households with 972,097 (29.1%) having computers and 887,935 (17.6%) with internet, while 384,162 (11.5%) lack internet. Rajasthan has 12,581,303 households, with 868,110 (6.9%) owning computers, 226,463 (1.8%) with internet, and 641,646 (5.1%) without. Uttar Pradesh's 32,924,266 households include 2,666,866 (8.1%) with computers, 625,561 (1.9%) with internet, and 2,041,304 (6.2%) without. Bihar has 18,940,729 households, with 1,344,785 (7.1%) having computers, 170,466 (0.9%) with internet, and 1,174,319 (6.2%) without. Sikkim has 128,131 households, with 14,735 (11.5%) owning computers and 4,228 (3.3%) with internet, leaving 10,507 (8.2%) without. Arunachal Pradesh has 261,614 households, with 21,452 (8.2%) having computers and 5,232 (2.0%) with internet, while 16,220 (6.2%) lack internet. Nagaland's 399,965 households include 35,997 (8.9%) with computers, 6,799 (1.7%) with internet, and 28,797 (7.2%) without. Manipur has 507,152 households with 45,644 (9.0%) having computers, 10,650 (2.1%) with internet, and 34,993 (6.9%) without. Mizoram has 221,077 households, with 33,604 (15.2%) having computers and 5,527 (2.5%) with internet, while 28,077 (12.7%) lack internet. Tripura has 842,781 households, with 60,680 (7.2%) having computers, 8,428 (1.0%) with internet, and 53,095 (6.3%) without. Meghalaya's

538,299 households include 40,911 (7.6%) with computers and 8,074 (1.5%) with internet, leaving 32,836 (6.1%) without. Assam has 6,367,295 households, with 592,158 (9.3%) having computers, 101,877 (1.6%) with internet, and 490,282 (7.7%) without. West Bengal's 20,067,299 households include 1,665,586 (8.3%) with computers, 441,481 (2.2%) with internet, and 1,224,105 (6.1%) without. Jharkhand has 6,181,607 households, with 426,531 (6.9%) having computers, 92,724 (1.5%) with internet, and 333,807 (5.4%) without. Odisha has 9,661,085 households, with 492,715 (5.1%) having computers, 135,255 (1.4%) with internet, and 357,460 (3.7%) without. Chhattisgarh has 5,622,850 households, with 258,651 (4.6%) having computers, 67,474 (1.2%) with internet, and 191,177 (3.4%) without. Madhya Pradesh has 14,967,597 households, with 883,088 (5.9%) having computers, 209,546 (1.4%) with internet, and 673,542 (4.5%) without. Gujarat has 12,181,718 households, with 1,071,991 (8.8%) having computers, 377,633 (3.1%) with internet, and 694,358 (5.7%) without. Daman & Diu has 60,381 households, with 5,615 (9.3%) having computers, 1,691 (2.8%) with internet, and 3,925 (6.5%) without. Dadra & Nagar Haveli has 73,063 households, with 6,064 (8.3%) having computers, 2,046 (2.8%) with internet, and 4,018 (5.5%) without. Maharashtra has 23,830,580 households, with 3,169,467 (13.3%) having computers, 1,382,174 (3.8%) with internet, and 1,787,294 (7.5%) without. Andhra Pradesh has 21,024,534 households, with 1,766,061 (8.4%) having computers, 546,638 (2.6%) with internet, and 1,219,423 (5.8%) without. Karnataka has 13,179,911 households, with 1,687,029 (12.8%) having computers, 632,636 (4.8%) with internet, and 1,054,393 (8.0%) without. Goa has 322,813 households, with 100,395 (31.1%) having computers, 40,997 (12.7%) with internet, and 59,398 (18.4%) without. Lakshadweep has 19,703 households, with 1,509 (14.1%) having computers, 332 (3.1%) with internet, and 1,177 (11.0%) without. Kerala has 7,716,370 households, with 1,219,186 (15.8%) having computers, 486,131 (6.3%) with internet, and 733,055 (9.5%) without. Tamil Nadu has 18,493,003 households, with 1,960,258 (10.6%) having computers, 776,706 (4.2%) with internet, and 1,183,552 (9.4%) without. Puducherry has 301,276 households, with 40,974 (13.6%) having computers, 18,077 (6.0%) with internet, and 22,897 (6.4%) without. Andaman & Nicobar Islands have 93,376 households, with 8,217 (8.8%) having computers, 3,268 (3.5%) with internet, and 4,949 (7.6%) without. Across India, there are 246,692,667 households, with 23,189,111 (9.4%) having computers, 7,647,473 (3.1%) with internet access, and 15,541,638 (6.3%) without internet.

Internet and Mobile Association of India (IAMAI) Report "Internet in India 2015"

The Internet and Mobile Association of India (IAMAI) released a report titled "Internet in India 2015" on November 17, 2015. This report examined internet usage across various devices (such as mobile and desktop), different regions (including rural and urban areas), and among diverse demographic groups. A key finding is that India's internet user base was projected to reach 402 million by December 2015, making it the second-largest in the world after China. This figure represents a 49 percent increase from the previous year. At

this rate, India was expected to surpass the USA in the number of internet users, becoming second only to China. As of now, India has about 375 million internet users, while China leads with over 600 million. The growth of internet users in India has accelerated significantly: it took more than a decade to grow from 10 million to 100 million users, three years to reach 200 million, and just one year to go from 300 million to 400 million users. Currently, 71 percent of India's internet users are male, while 29 percent are female. Internet usage among males is growing at a rate of 50 percent, while female usage is growing at 46 percent. Notably, the highest growth among female internet users has been observed in non-working women.

Mobile Users in India

India has seen a significant increase in mobile internet users. In December 2014, there were 173 million mobile internet users, which grew to 213 million by June 2014. Of these, 128 million were from urban areas, and 45 million were from rural regions. It's expected that the number of mobile internet users in India will reach 314 million by 2017. India ranks among the top three countries in terms of internet users, mobile phone users, and social media users. Despite having 352 million internet users, India's internet penetration is only 27%, compared to 51% in China and 87% in the USA. The growth of mobile internet users in India is driven by the government's Digital India initiative, collaboration among various stakeholders in the mobile internet ecosystem, and innovative services offered by mobile-based service providers. The Digital India program aims to provide internet access to all by building infrastructure, delivering government services online and via mobile phones, promoting digital literacy, and enhancing electronic manufacturing capabilities.

METHODOLOGY

This research uses a secondary data analysis approach to explore the issues, challenges, and future prospects of e-governance in India. Secondary data refers to information that has already been collected and published by other researchers, organizations, or government bodies. This method allows for a comprehensive examination of existing knowledge and insights on the topic. Previous academic papers, books, and articles were consulted to gather information on the current state of e-governance in India. This includes examining historical data, trends, and the evolution of e-governance initiatives over the years. Official reports and publications from Indian government agencies, such as the Ministry of Electronics and Information Technology, were analyzed. These sources provided valuable data on government programs like Digital India, policies, and statistics related to e-governance. Specific case studies of e-governance projects and initiatives in different parts of India were reviewed. These case studies offered practical examples of how e-governance is being implemented, highlighting both successes and challenges. Information on the digital divide, internet penetration, and infrastructure availability was collected from various sources, including industry reports and surveys conducted by research organizations. The study also included an analysis of

literature on data privacy and security issues, focusing on the risks and challenges associated with digitizing government services.

RESEARCH RESULT AND DISCUSSIONS

E-Governance: Challenges in India

Implementing e-governance in India faces numerous challenges, which can be categorized into environmental and social challenges, economic challenges, and technical challenges.

A. Environmental and Social Challenges

India's cultural and linguistic diversity poses a significant challenge for e-governance projects. With many different languages spoken across the country, creating e-governance applications that are accessible to everyone is difficult, especially since many are currently available only in English, which may not be widely understood. Additionally, the country's low literacy rate is a barrier, as illiterate individuals cannot use e-governance applications effectively. Even among those who are literate, there is often a lack of familiarity with Information Technology (IT), leading to low IT literacy. This lack of awareness about how to use IT tools and platforms hinders the success of e-governance initiatives. To overcome these challenges, it's essential to educate the Indian population about the benefits and usage of IT. Government websites and e-governance applications need to be user-friendly, ensuring that even non-expert users can navigate them easily. Making these platforms more accessible and understandable can help more people utilize e-governance services.

Despite the growing number of internet users, a significant portion of India's population still lacks access to e-governance services due to limited availability of Information and Communication Technologies (ICT) and devices. The government must provide internet access through public terminals as part of their efforts to ensure universal access. Additionally, transitioning from traditional paper-based systems to web-based ones can be challenging due to resistance from citizens, employees, and businesses who are accustomed to older methods. Educating the public about the benefits of the new system can help reduce this resistance.

India's large population is another major challenge in implementing e-governance projects. While a large population can be an asset, it also complicates efforts such as establishing unique identities for individuals. Although the Indian government is working on providing unique identities to its citizens, maintaining and updating a comprehensive database of the entire population is a daunting task. Moreover, many e-governance services offered by state or central governments are not integrated, leading to a lack of communication and coordination between different government departments. This disconnection can result in inefficiencies, as information relevant to one department may not be accessible or useful to another. Finally, a significant challenge is the lack of awareness among the Indian people about the benefits of e-governance services. Even the government often does not focus enough on

educating the public about these services, which leads to a lack of engagement and utilization. Raising awareness and educating the population about the advantages and uses of e-governance is crucial for the successful implementation of these projects.

B. Economic Challenges

In developing countries like India, the cost of implementing e-Governance is a significant challenge, especially since many people live below the poverty line. The lack of political interest in e-Governance further complicates the situation. Implementing, operating, and maintaining these systems involves substantial expenses. It's crucial to keep these costs low to ensure a good cost/benefit ratio. E-Governance applications should be platform-independent, meaning they can work on any hardware or software. This flexibility allows different administrators to reuse the applications. However, rapid changes in Information Technology make it challenging to update existing systems quickly. The systems must handle new needs and support various devices with different characteristics. Ongoing maintenance is essential to keep these systems functional over time, especially in a fast-changing tech environment. India's per capita income, which measures the average income per person, is relatively low compared to other countries. This low income level means that many people cannot afford the online services provided by the government, posing a challenge for e-Governance implementation. Additionally, the country's Gross Domestic Product (GDP), a measure of its economic strength, is limited. This financial constraint makes it challenging to fund and maintain e-Government projects effectively.

C. Technical Challenges

Interoperability, the ability of systems to work together, is crucial for e-Governance applications. New and existing systems need to function together seamlessly. E-Governance projects must be designed to scale from the start, as they are intended to serve every citizen. Multimodal interaction, which allows users to access systems through various devices, is important for effectiveness. Privacy and security of personal data are major concerns in e-Governance. Protecting sensitive information like income and medical history is essential. A lack of security standards can hinder the development of e-Government projects. Defining the scope of e-Governance applications clearly from the beginning is vital for successful implementation. Technology evolves rapidly, and governments may not be able to afford new servers and systems frequently. It's safer and more reliable to use established technologies and products rather than the latest ones. While corporate networks operate on controlled and reliable infrastructure, government networks need to reach all areas, including remote and challenging locations. Wiring up all villages in the country can be expensive. Therefore, e-Governance systems should use wireless networks, like existing cellular networks, to reach remote areas despite geographical challenges.

Analysis of Digital Initiatives and its Influence on Government Service Access

1. **Expansion of Service Accessibility:** Digital initiatives like the Digital India program are significantly expanding access to government services, especially in rural and underserved areas. These initiatives aim to bring essential services closer to the people by leveraging digital technologies. The development of online portals and mobile applications allows citizens to access services like applying for certificates, paying bills, and checking application statuses from their homes. This reduces the need to travel to distant government offices, which can be a major barrier in rural areas. Common Service Centers are established in remote areas to provide digital access to government services. These centers act as a bridge between the government and rural populations, offering services such as digital literacy training, document processing, and utility payments.

2. **Bridging the Digital Divide:** Digital initiatives play a crucial role in bridging the digital divide by addressing disparities in technology access and usage. The Digital India program focuses on improving digital infrastructure, including the expansion of internet connectivity and the establishment of Wi-Fi hotspots in rural areas. Enhanced connectivity helps bridge the gap between urban and rural areas by providing access to online services. Training and awareness programs are essential components of Digital India. These programs aim to educate people in rural areas about how to use digital tools and access online services. By increasing digital literacy, these initiatives empower citizens to take full advantage of e-Governance.

3. **Improving Efficiency and Reducing Barriers:** Digital initiatives are streamlining government processes and reducing barriers for citizens. Digital platforms streamline application processes and reduce paperwork, making it easier for people in rural areas to interact with government services. This helps to eliminate the need for multiple visits to government offices and reduces the chances of errors in paperwork. Digital platforms enhance transparency by allowing citizens to track the status of their applications and transactions. This visibility reduces corruption and ensures that services are delivered more efficiently.

4. **Challenges and Areas for Improvement:** Despite the positive impacts, there are challenges that need to be addressed. While efforts are underway to improve connectivity, some remote areas still face infrastructure limitations that hinder their access to digital services. Ongoing investment in infrastructure is necessary to ensure that all areas benefit equally. Even with training programs, some individuals may struggle with technology due to a lack of familiarity or resources. Continued efforts to make digital literacy programs more accessible and tailored to local needs are important. Ensuring that all government services are integrated into digital platforms and are user-friendly is essential. Inconsistent service availability or poorly designed interfaces can limit the effectiveness of e-Governance.

CONCLUSION AND RECOMMENDATIONS

E-Governance improves the interactions between government-to-government (G2G), government-to-citizen (G2C), government-to-business (G2B), citizen-to-government (C2G), and business-to-government (B2G) by using information and communication technology (ICT). This approach not only shares information about government activities but also encourages citizens to take part in the decision-making process. In recent years, various state governments in India have initiated IT projects to improve government services for citizens. Despite challenges like poor infrastructure, poverty, illiteracy, and language barriers, India has several award-winning e-governance projects. Effective promotional schemes by the Indian government also help provide quality services, indicating significant potential for the development of e-governance across different sectors. As the use of information technology rapidly grows, the Indian government is making various efforts to offer services through e-Governance. Although the government invests heavily in these projects, they are not successful everywhere in India. Challenges such as lack of public awareness, language differences, and concerns about personal data privacy hinder the success of e-governance initiatives. The government needs to raise awareness among the public about e-governance activities so that more people can benefit from these services. Public participation is crucial for the successful implementation of e-governance in India.

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