



Rural Development through the E-Governance in India

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Abstract

Rural Development and e-governance stand as two pillars crucial for addressing the multifaceted challenges faced by the predominantly agrarian and geographically dispersed population of India. In India, where most of the population lives in rural areas, e-governance must be available. The ultimate goal of e-governance is to provide SMART (Simple, Moral, Accountable, Responsible, and Transparent) government services. It encompasses not only the electronic exchange of information between citizens and the government but also between different government entities. ICT plays a key role in e-governance, so it becomes essential that ICT reaches the rural masses. Rural development has emerged as a critical focus area for policymakers in India.

The main objective is to establish a good relationship between e-governance and Rural Development initiatives, aiming to create a synergistic paradigm for inclusive growth. This paper reveals and discusses different successful e-governance programmes implemented in different states in India. Successful e-governance initiatives in rural India, such as Gyandoot, Bhoomi, E-choupal, E-post, and E-panchayats, demonstrate the potential of ICT to bridge the digital divide and enhance the quality of life for rural citizens. These initiatives facilitate better agricultural practices, market access, education, healthcare, and administrative services, thereby empowering rural citizens and fostering participatory democracy. E-governance reduces inefficiencies, enhances service quality, promotes transparency, and builds trust between the government and its citizens, ultimately contributing to rural development. Further, this paper deals with the challenges and suggestions for implementing e-governance in rural areas of India.

Keywords: E-Governance, Rural Development, Gyandoot, Drishtee and Akashganga.

Introduction

Rural development and e-governance are two crucial pillars for addressing the multifaceted challenges faced by India's predominantly agrarian and geographically dispersed population. With a significant portion of its citizens residing in rural areas, the country recognizes the imperative to bridge the developmental gap between urban and rural landscapes. In this context, integrating e-governance initiatives into rural development strategies emerges as a transformative force capable of fostering inclusive growth and ensuring that the benefits of technological advancements reach every corner of the nation.

E-Governance refers to the application of Information and Communications Technology (ICT) to government functions and processes to achieve efficient, transparent, and accountable governance. It involves the use of electronic means to facilitate the exchange of information, improve service delivery, and enhance the interaction between government and citizens, businesses, and other government entities.

The primary purpose of e-governance is to ensure the welfare

of citizens by safeguarding their legal rights and ensuring equitable access to public services and economic benefits. E-Governance aims to make government operations more efficient, transparent, and accessible, thereby improving the overall quality of governance.

Key Goals of e-Governance

- Better service delivery to citizens
- Increased transparency and accountability
- Empowerment of people through access to information
- Improved efficiency within government operations
- Enhanced interaction with businesses and industry

E-Governance facilitates interactions between different stakeholders in governance, including Government to Citizen (G2C), Government to Business (G2B), Government to Employee (G2E), and Government to Government (G2G) interactions. These interactions aim to make government services more friendly, convenient, transparent, and cost-effective.

E-governance is a transformative approach to managing government operations electronically, leveraging information and communication technology (ICT) to enhance citizens' and government interaction. In rural India, where a significant portion of the population resides, implementing e-governance is crucial for fostering good governance, improving administrative efficiency, reducing corruption, and increasing transparency.

The ultimate goal of e-governance is to provide SMART (Simple, Moral, Accountable, Responsible, and Transparent) government services. It encompasses not only the electronic exchange of information between citizens and the government but also between different government entities. This transformation aims to make government services more user-centered, ensuring better delivery of services, improved interactions with businesses, citizen empowerment through access to information, and more efficient government management.

Despite the potential benefits, the implementation of e-governance in rural areas faces several challenges, including illiteracy, IT illiteracy, language barriers, lack of awareness, resistance to change, and inadequate infrastructure. Addressing these challenges requires concerted efforts to improve literacy rates, develop ICT infrastructure, and create more inclusive and accessible e-governance projects.

Successful e-governance initiatives in rural India, such as Gyandoot, Bhoomi, E-choupal, E-post, and E-panchayats, demonstrate the potential of ICT to bridge the digital divide and enhance the quality of life for rural citizens. These projects provide valuable services, from land record management to agricultural information and direct market access, showcasing the transformative power of e-governance in rural development.

Information and Communication Technology (ICT) has made it possible for people to communicate more quickly, access data more quickly, and use information more effectively. E-Governance makes government services available to citizens and businesses in a simple, effective, and open manner. The lack of awareness of the benefits of e-governance in developing nations like India, where literacy is poor and many people live below the poverty line, is a major obstacle to implementing e-governance operations. For rural development in India, this article focuses on the problems and prospects of e-governance as a tool, with a particular emphasis on information technology (IT).

Objective of the Present Study

The specific objectives of the study are

- i). To study the E-Governance Initiatives for Development of Rural India
- ii). To analyse the Issues and Obstacles of E-Governance in India

Methodology

This paper is based on secondary data. It employs the descriptive technique and relies on secondary sources such as books, research articles, journals and media stories, the Ministry of Rural Development's websites, and various government documents.

The "e" in e-Governance stands for 'electronic'. Thus, e-governance is associated with carrying out the functions and achieving the results of governance through the utilization of what has today come to be known as ICT (Information and Communications Technology). Countries worldwide are increasingly opting for 'e-governance' because governance

has become more complex and varied in the last few decades and more importantly, citizens' expectations from government have increased manifold. ICT facilitates efficient storing and retrieval of data, instantaneous transmission of information, processing of information and data faster than the earlier manual systems, speeding up governmental processes, taking decisions expeditiously and judiciously, increasing transparency and enforcing accountability. It also helps in increasing the reach of government—both geographically and demographically.

Rural e-Governance Initiatives

E-Governance projects in Indian states

Andhra Pradesh: E-Seva, CARD, VOICE, MPHS, FAST, e-Cops, AP online—a one—stop Shop on the Internet, Saukaryam, Online Transaction processing.

Bihar: Sales Tax Administration Management Information.

Chhattisgarh: Chhattisgarh Infotech Promotion Society, Treasury office, e-linking project.

Delhi: Automatic Vehicle Tracking System, Computerisation of RCS office website, Electronic Clearance System, Management Information System for Education.

Goa: Dharani Project.

Gujarat: Mahiti Shakti, request for Government documents online, Form book online, G R book online, census online, tender notice.

Haryana: Nai Disha.

Himachal Pradesh: Lok Mitra.

Karnataka: Bhoomi, Khajane, Kaveri.

Kerala: E-Srinkhala, RDNet, Fast, Reliable, Instant, Efficient Network for the Disbursement of Services (FRIENDS).

Madhya Pradesh: Gyandoot, Gram Sampark, Smart Card in Transport Department, Computerization MP State Agricultural Marketing Board (Mandi Board).

Maharashtra: SETU, Online Complaint Management System—Mumbai.

Rajasthan: Jan Mitra, Raj SWIFT, Lokmitra, Raj NIDHI.

Tamil Nadu: Rasi Maiyams-Kanchipuram; Application forms related to public utility, tender notices and display.

West Bengal: Vehicle Registration, Land Records, Birth and Death Registration, Computerization of Health Records, Payment of Excise Duty, Sales Tax and Local Tax, Electronic Bill Payment of Water and Electricity.

Uttara Pradesh: Lokvani, e-Suvidha, Bhulekh, Treasury Computerization, PRERNA: Property Evaluation and Registration Application

Uttarakhand: Kisan Soochna Kutirs (KSKs), Village Information Centre (VICS), Computerization of Land Record Department.

Punjab: SUWIDHA (Single User Window Disposal Help Line for Applicants), SUBS (Suwidha Backend Services), SSIS (Social Security Information System) WEBPASS (District Passport Application Collection Centre)

E-Governance and Rural Development

Computerised Rural Information System Project (CRISP)

It aimed at facilitating the District Rural Development Agency [DRDA] in monitoring the exercise of poverty alleviation programmes through a Computer-based Information System. To date, four versions of CRISP application software packages have been developed. Rural Soft 2000 allows online monitoring of processes right from the desktop of monitoring agencies at Centre and State and enables a common man to access information using a browser-based interface provided by the software.

National E-Government Action Plan (2003)

The National E-Government Action Plan suggested a list of core policies:

- Overall vision, mission strategy approach.
- E-Governance technology architecture, framework and guidelines.
- Human Resource Strategy.
- Policy for front-end facilitation counters, kiosks, and integrated service centres.
- Policy on back-end department automation.

State Wide Network Area Project (SWAN)

This project aims to provide a high-speed, high-connectivity network connecting offices at block level for faster access to Government services.

Government of India: Initiatives of E-Governance in Rural Areas

e-Choupal: Agriculture is the backbone of India. Indian farmers have to depend on many agents, right from the process of procuring raw materials to selling their produce. Each agent will add his/her profit margin, thereby increasing the cost of the product. Some agents even try to block the market information. To protect farmers from such practices, the International Business Division of Indian Tobacco Company (ITC-IBD) came out with an e-government initiative called e-Choupal (which means a village meeting place). e-Choupal is useful not only to agricultural products but also for selling home appliances and consumer goods.

Each e-Choupal is equipped with a PC, internet connection, printer and Uninterrupted Power Supplies (UPS). In case the power supply is erratic, a solar panel is provided and if internet connectivity is not up to the mark, then a Very Small Aperture Terminal (VSAT) connection is provided along with another solar panel to support that. There are 6,500 E-Choupals today. Indian Tobacco Company Ltd. is adding 7 new e-Choupals a day.

'e-Choupal' services today reach out to over 4 million farmers growing a range of crops-soybean, coffee, wheat, rice, pulses, shrimp-in over 35000 villages through 6100 kiosks across 10 states (Madhya Pradesh, Haryana, Uttarakhand, Uttar Pradesh, Rajasthan, Karnataka, Kerala, Maharashtra, Andhra Pradesh and Tamil Nadu).

Drishtee: Drishtee is a rural model of distribution and promotional network for consumer goods and basic services. Information is provided to the users in the form of services via internet. Drishtee made a presence in Dhar, Seoni and Shahdol districts in Madhya Pradesh, Sirsa district in Haryana and Jalandhar district in Punjab. A village entrepreneur is trained to handle the software that works on MS SQL Server at the backend and runs on ASP, Java script, VB Script at the front end. The hardware includes a web server, a district server, kiosks and dial-ups. The district server regularly gets connected to the web server and performs updates. The database of kiosk gets updated whenever the kiosk gets connected to the district server or the web server. Soochanalarayas or centres have been established to cater to 25-30 surrounding villages and buildings of Gram Panchayats.

Akashganga: Akashganga uses ICT to facilitate rural milk producers by integrating all the operations of rural co-operative society right from milk procurement to accounting. The first pilot model of the Dairy Information System Kiosk (DISK) is currently under implementation at Uttarsanda Dairy Cooperative Society in Gujarat. Each farmer is given a plastic identification card. When farmers arrive at the Raw Milk

Receiving Dock (RMRD) counter, his/her identification is updated in the PC. The milk is emptied out in a steel trough kept over a weighbridge and the weight of the milk is displayed as well as entered into the PC. One operator is required for filling of e-Governance Community Management System cans and another for measuring fat content and updating the PC. The infrastructure used to carry out these operations includes weighing balance, microprocessor, printer, milk analysers and a display. Akashganga has evolved through Experience, R&D and Proven Technology put together. Akashganga has evolved in last 20+ years with continuous upgrades; and have become strong brand that customers and people in dairy industry recall more by its brand name rather than Shree Kamdhenu Electronics Pvt Ltd. Over last 2 decades, Akashganga has extended its reach to 8000+ Milk Collection Points with its fully integrated solution covering micro level requirements of Primary milk supply chain.

Gyandoot: Gyandoot has been established as community-owned, technologically innovative and sustainable information kiosks in a poverty-stricken, tribal-dominated rural area of the state of Madhya Pradesh. The server system runs on Windows NT with Internet Information Services (IIS) server; client PCs run Windows 98. Information kiosks have dial-up connectivity. The server hub is housed in the computer room in the district panchayat. Kiosks have been established in the village panchayat buildings. Typically, villages that function as block headquarters or hold weekly markets in tribal areas, or located at major junctions, were chosen for setting up kiosks. The entire network of 31 kiosks cover 311 panchayats (village committees), over 600 villages and a population of around half a million (i.e. about 50% of the entire district).

Rural Access to Services through the Internet (RASI): Sustainable Access in Rural India (SARI), now renamed as RASI, provides internet and voice connectivity to the villages of Madurai district in Tamil Nadu. The project has 100 internet kiosks in more than 100 villages. Current network technology is based on the CorDECT that was jointly developed by the TeNet group at IIT Madras, Analog Devices Inc. and Midas at Chennai. A CorDECT access centre is located roughly 25 km from the kiosks. Internet facility is provided with the help of Wireless Local Loop (WLL). Each kiosk is connected to the website containing information relating to revenue, registration, rural development, education, health, agriculture and animal husbandry. The major source of income for the operators has been computer education for children.

Tata Kisan Kendra (TKK): Tata Chemicals Ltd. came out with TKK to help farmers in states of Uttar Pradesh, Haryana and Punjab. The TKK tracks key parameters relevant to farmers, such as soil, groundwater and weather on a real-time basis with the help of Geographic Information Systems (GIS). The GIS software provides spatial information regarding roads, rivers or buildings. It works by imposing layers of data in digitised maps with information about administrative, socio-economic and physical setup. Satellite image processing can help detect unproductive farming practices, track the progress of insect attacks across states, get crop estimates or update maps. Currently, there are 11 main kiosks and around 300 franchisees. TKKs is looking to set up 40 more kiosks and 800 franchisees to serve 48,000 villages.

LokMitra: The LokMitra project was developed by the National Informatics Centre (NIC) in Himachal Pradesh, in order to provide easy access at remote areas and to redress

complaints. The LokMitra Intranet in Hamirpur district consists of two Pentium III based servers, with four Pentium III-based client systems. The servers and the clients are connected on a LAN. The hub is placed in the Deputy Commissioner's office. The client systems are used by the officials from concerned departments for answering the complaints and queries received and for updating with information. The LokMitra software interface is web-enabled, user-friendly and has two modules: one for the citizen information centres and the other for the control room.

N-Logue: N-Logue Communications Pvt. Ltd. provides telecom and internet services in small towns and rural areas of India. For operational purposes, N-Logue divides the country into service areas corresponding approximately to a taluka (Tehsil). Eighty-five per cent of taluka headquarters in India have optical fibre today which acts as the backbone for telecom and internet connectivity. N-Logue ties up with several content providers such as state government, rural development ministry, agricultural ministry and fertiliser/pesticide manufacturers. N-Logue employs WLL technology as the basis for its village-level communications. The CorDECT technology used operates on the same principles as regular wireless technology, providing internet access at 35-70 kbps to 1 Gbps. The subscriber set can transmit both voice and data signals simultaneously to an access centre which must be located within a 25 km distance.

Bellandur Project: Bellandur Project is a gram panchayat e-government solution. Working closely with the panchayat members and village residents, the software was designed to suit the needs of panchayat administration. Bellandur Rational Unified Process (RUP), a set of software engineering tools, enables a phased and interactive approach to e-government. At present, the panchayat office has three computers, one for each of the bill collectors. All the district offices, taluka offices and gram panchayats are connected. The committee meetings are aired on cable television.

Kisan Call Centers: This is mainly to respond to the issues raised by farmers instantly in the local language on a continuous basis. The Department of Agriculture & Cooperation, Ministry of Agriculture launched this scheme in April 2002 with a view to leverage the extensive telecom infrastructure in the country to deliver the extension services to the farming community. But most of the farmers are not aware, so there is a need to improve the awareness among farmers of Kisan Call Centres (KCC)-particularly its cost-free services through toll-free telephone so as benefit needy farmers. Therefore, Ministry of Agriculture has developed plans to strengthen the communications of KCC through the Agriculture and Line departments, SAUs, and ICAR organizations. They also exhibit publicity material (posters, charts, banners etc.) of toll-free numbers in all programs viz., training, demonstration etc.

Obstacles of Rural E-governance in India

E-Governance: Major Challenges in India Poor people and poor infrastructure are major challenges in countries like India. It poses a major challenge in reaping the full benefits of service provision under e-governance. Certain challenges are as follows:

While rural e-governance in India holds significant potential, it is important to acknowledge and address several obstacles and challenges that may impact its effectiveness. Some of the key obstacles include:

- i). **Digital Divide:** The digital divide remains a significant challenge in rural areas, where limited internet connectivity, lack of access to devices, and low digital literacy levels hinder the widespread adoption of e-governance services.
- ii). **Infrastructural Constraints:** Inadequate infrastructure, including poor electricity supply and unreliable internet connectivity, can impede the seamless implementation of e-governance initiatives in rural regions.
- iii). **Limited Technology Infrastructure:** Many rural areas lack the necessary technology infrastructure, such as computer labs, to support e-governance initiatives. This hampers the ability of residents to access online services.
- iv). **Low Digital Literacy:** A significant portion of the rural population may have low levels of digital literacy, limiting their ability to navigate online platforms, understand complex procedures, and utilize e-governance services effectively.
- v). **Language Barriers:** Many e-governance platforms are primarily designed in English, which may pose a barrier for rural residents who are more comfortable with regional languages. Language diversity needs to be addressed to ensure inclusivity.
- vi). **Lack of Awareness:** Limited awareness about available e-governance services and their benefits can lead to low utilization. Adequate awareness campaigns are essential to educate and inform rural communities about the advantages of digital services.
- vii). **Privacy and Security Concerns:** Rural residents may have concerns about the privacy and security of their personal information when using online platforms. Building trust in the security of e-governance systems is crucial for user acceptance.
- viii). **Resistance to Change:** There may be resistance to adopting new technologies and digital processes in some rural communities due to traditional practices, cultural factors, or a lack of understanding about the potential benefits.
- ix). **Limited Service Customization:** Some e-governance platforms may not be tailored to the specific needs and contexts of rural areas, limiting their effectiveness. Customization is crucial to ensure that services align with the unique requirements of rural communities.
- x). **Interoperability Challenges:** Lack of interoperability between different government departments and systems can hinder the seamless flow of information, impacting the effectiveness of e-governance initiatives.
- xi). **Economic Barriers:** The cost associated with acquiring and maintaining digital devices, such as computers and smartphones, may be prohibitive for certain sections of the rural population, especially those from economically disadvantaged backgrounds.
- xii). **Limited Human Resources and Training:** The lack of skilled human resources to manage and operate e-governance systems, along with inadequate training programs, can hinder the successful implementation of digital initiatives in rural areas.
- xiii). **Power Dynamics and Inclusivity:** In some cases, power dynamics within rural communities may result in unequal access to and control over digital resources, potentially excluding certain marginalized groups from benefiting fully.

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