ICT AND E-GOVERNANCE INITIATIVES FOR RURAL DEVELOPMENT IN INDIA

Dr Govind Singh[1], Dr Sanjay Singh Chauhan[2] and Prof Rananjay Singh[3]

[1]Faculty of Engineering and Technology, MGCG Vishwavidyalaya, Chitrakoot, Satna [MP]-485334
[2]Disaster Professional, Chitrakoot Dham Karwi [Uttar Pradesh] – 210205
[3]Department of Agricutural Extension, KAPG Degree College Prayagraj (UP) India-211002

INTRODUCTION

Rural India has long been considered the spine of India's economy. Agriculture isn't just the most important contributing sector to the economy but also ensures food security during a constantly growing and developing country. Beyond food and economics lies another major (although understudied) dimension of sustainability and environmental conservation, of which the agri-economy is the primary stakeholder. Effective and efficient governance may be a key ingredient in ensuring all-round development of rural areas at par with the urban ones. As a result, the need for an all inclusive and sustainable development for rural areas has been felt much more strongly in recent years, bringing issues of rural governance to the forefront of policy discourse in our country. This year the state is marking 75 years of its independence with the 'Azadi Ka Amrut Mahotsav' campaign under which several celebrations and developmental initiatives are being undertaken for 75 weeks ending 15th August 2023. In this context, this piece unpacks the transformation of rural India over seven decades by specifically examining the governance and repair delivery frameworks to trace the progress made so far and the challenges that lie ahead. Strong leadership is essential in reviving rural areas, emphasizing the importance of rural governance. Villages exhibit a diversity of resources and social structures due to uneven socioeconomic development. Due to the diversity and complexity of the rural areas, a standardized approach to governance cannot be applied uniformly across all regions in India.

Therefore, exploring the path to effective governance grouping in villages is a key factor in achieving successful rural governance-revitalization and represents a major challenge. Good governance necessitates the consideration of variations in influential factors and the integration of participatory elements with guiding pathways. Effective governance hinges upon how participation is enabled and procedures are managed, necessitating an understanding of the intricate interplay between social practice and theory, as well as the state and rural society. By exploring these interactions, we can enhance our comprehension of the Indian framework of rural governance, thereby contributing to the cause of rural revitalization. Rural governance efficacy focuses on two primary dimensions. Firstly, it recognizes the significance of the existing governance system, such as the responsiveness of the state to the needs of farmers and grassroots governance facilitated by the autonomy of villagers. It emphasizes the value of strong leadership, participation from multiple grassroots party

REVIEWVER
1. Prof R K Isaac, SHUATS Naini, Prayagraj [Uttar Pradesh]
2. Dr Dinesh Singh, TERI PG College Gazipur [Uttar Pradesh]

organizations, and in-depth analysis at the institutional and methodological levels. Secondly, rural governance efficacy aims to enhance the integration of moral authority, autonomy, and the rule of law in rural governance. This objective is achieved by constructing a new rural governance system and outlining a pathway to successful governance. With rural revitalization being widely acknowledged, scholars have extensively explored the elements and mechanisms that promote effective governance. The studies of rural governance primarily focus on stimulating the intrinsic motivation of the participation of villagers, fostering connections between rural governance elites and the rural society, establishing innovative models of rural collective economies, cultivating sustainable "localized" rural lifestyles and cultures, strengthening the integration of rural industries and new technologies, and achieving the innovation of rural governance frameworks.

The key priority of rural governance lies in ensuring active participation and engagement of the people. Through the application of participatory rural development, successful interactions among key governance actors can foster endogenous activation based on local networks, mobilizing the self-governance of villagers, and empowering farmers to make decisions. A key role in rural areas today is played by elite participation, guiding the path towards sustainable development by actively engaging farmers. Rural organizations play an important role in establishing local industries and promoting rural development.

Information and communication activities are a fundamental element of any rural development activity. Rural areas are often characterized as information-poor and information provision has always been a central component of rural development initiatives. One of the major components and driving force of rural development is communication. Conventionally, communication includes electronic media, human communication & now information technology (IT). All forms of communications have dominated the development scene in which its persuasive role has been most dominant within the democratic political frame work of the country. Information and Communication Technologies (ICTs) play a key role in development & Economic growth of Rural India. Political, Cultural, Socio-economic Developmental & Behavioral decisions today rests

on the ability to access, gather, analyze and utilize Information and Knowledge. ICT is the conduits that transmit information and knowledge to individual to widen their choices for Economic and social empowerment. Information and Communication technologies have become imperative to the progress of rural India. They have become an integral part in the information-flow for catalyzing the development efforts in rural India. ICTs offer several strategies to achieve sustainable rural development. ICTs have been instrumental in empowering the rural India with technologies which help us to reach our goals of sustainable development. Good governance is fundamental and e-governance is instrumental. E-Governance is a tool. No E-Governance tool can be successful without focusing attention to process reforms for good governance. Good governance dictates the design and
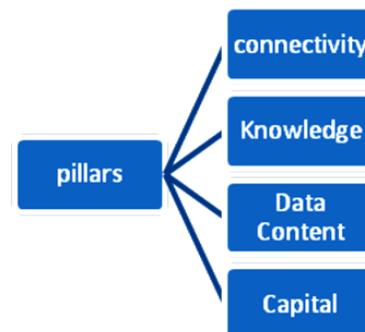
shape of s e-tools for improving governance outcomes and processes. E-Governance can be an effective and efficient tool for good governance if and only if the process reforms have been carried out. Automating complicated government processes will create more problems than it can solve. The emergence of the digital economy has affected both the role and functions of public institutions. While undertaking traditional functions such as defense, law and order, justice, taxation, legislation, regulation, education, health care and social equity, the governments are now required to take new roles of harnessing the power of information technology and leading change. There has been a transformation of the role of the government from a buyer or producer of ICT services to that of a facilitator and a leader.
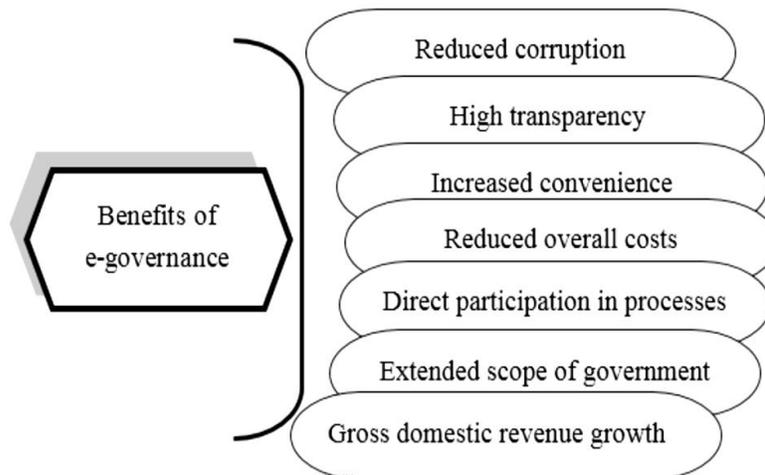
ICT has been instrumental in changing the way in which the government operates through horizontal and vertical interactions and information flows. It has provided unique opportunities to governments in terms of new ways of doing business through E-Government and E-Governance applications. E-Government is about leading the transformation of government to provide efficient, convenient and transparent services to citizens and businesses through the use of Information and Communication Technologies (ICT). E-Government concerns with the transformation of government, modernization of government processes and functions and better public service delivery mechanisms through technology. Citizens are the recipients in E-Government. E-Governance, on the other hand, comprises decisional processes and the use of ICT for wider participation of citizens in public affairs. Citizens are participants in e-governance. The purpose of implementing E-Governance is to improve governance processes and outcomes with a view to improving the delivery of public services to citizens. The United Nations distinguishes between the following areas where governmental operations can be improved by the application of ICT:

- **e-Government :** This applies to inter-organizational relationships, and includes policy coordination, policy implementation and public service delivery
- **e-Administration :** This applies to intra-organizational relationships, and includes policy development, organizational activities and knowledge management
- **e-Governance :** This applies to interaction between citizens, government organizations, public and elected officials and includes democratic processes, open government and transparent decision-making

ROLE OF GOVERNMENT IN ICT

Good governance, in the broadest sense, seeks to reduce corruption, take minority viewpoints into account, listen to oppressed community voices, and respond actively to community needs now and in the future. The World Bank, an international institution, has become the first to adopt the concept of good governance in lending arrangements for developing countries. To be successful in governance, institutions and processes must be able to meet the needs of all stakeholders in a reasonable amount of time. Every decision-making process and institution must be capable of coming up with solutions

that meet the needs of each community. ICT is the backbone of the development of any nation. It's undoubtedly the nervecentre and backbone for a developing country like India. Realizing the importance of ICTs in rural development in India, several government projects have been implemented to achieve universal access to ICTs. These projects mainly focus on bridging the digital divide between the urban and rural areas of India. The urgency to bridge this divide mainly comes from the fact that in India, the rural areas mostly lag behind the urban areas, when it comes to education, health and infrastructure. This leads to inequality of services and opportunities for the rural population which stops them from contributing to the development of the country. This kind of rural isolation can negatively impact growth and in turn affect the sustainable development of the country. ICTs can help to overcome the various constraints in infrastructure. Through the use of ICTs, people in rural areas can connect easily with the local, regional and national economy. They can make use of the banking facilities and also access the various job opportunities which would otherwise be beyond their reach. ICTs can help to create awareness among the rural public regarding new technologies in agriculture which would help them to contribute to the GDP of the country. The various ICTs can help to spread education among the rural masses and help them to connect easily with their urban peers.

Thus bridging the digital divide not only helps in bridging the infrastructural gap but also to bring the rural population to the forefront. The development-landscape has been transformed by the explosion of ICT, especially the mobile phone technology. This technology has improved the life of the rural population by integrating the once isolated people into the economies and politics. The rural poor typically lack access to information vital to their lives and livelihoods. Building upon the concept of knowledge gaps and information problems, they are two types of information used by the rural poor to priorities their livelihood activities and investment decisions more effectively.

The role of the government in ICT can be distinguished between the following categories :

- **G1 :** Laying ICT infrastructure, producing ICT equipment, financing public R&D
- **G2 :** Creating the macroeconomic environment for growth and innovation in ICT, including fiscal policies (cost, innovation, investment, venture capital), legal and regulatory environment

(competition, independent regulator, rule of law, intellectual property protection) and channeling and mobilizing resources for ICT
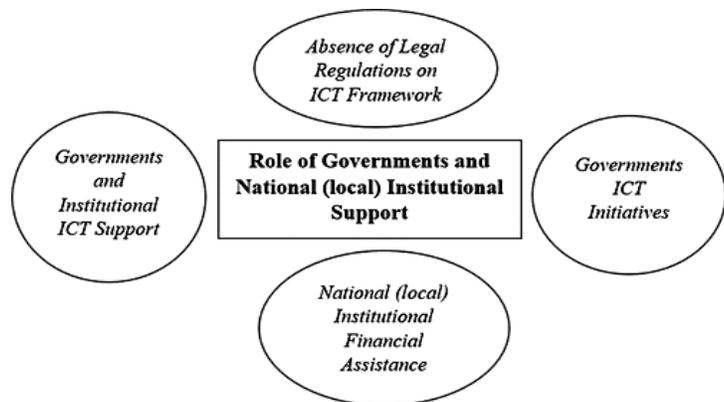
➕ **G3 :** Education policy for the right amount and quality of manpower resources for a network-ready economy – curricula, ICT training facilities, wiring/networking of educational institutions.

| **G1** Command and control | **G2** Partly liberalized/ privatized | **G3** Enabling investment innovation and access | **G4** Integrated regulation, led by socio-economic policy | **G5** Collaborative regulation with metrics-backed decision-making |

➕ **G4 :** Addressing 'digital divide' domestically and internationally, giving signals to markets – articulating a national vision of ICT, according national priority to ICT, undertaking large projects, championing national interests in international forums

➕ **G5 :** e-government like services online, e-procurement, trade facilitation, civil society participation, accelerating the adoption of ICT by government departments and agencies and establishing credibility

To compete successfully in a network-based global economy, governments need to be both leaders and facilitators. The leadership and facilitation roles comprise the following elements

➕ Developing national e-strategy, making ICT adoption and network readiness a national priority, bridging "digital divide" and championing an e-readiness framework

➕ Undertaking innovative projects that make a difference to lead by example, adopting best practices and pushing for their adoption by others and developing public-private-people partnerships

➕ Implementing Right to Information (RTI) and committing to transparency in governmental operations

➕ Reforming government processes covering areas such as revenues, expenditures, procurement, service delivery, customer grievances etc.

Absence of Legal Regulations on ICT Framework

Governments and Institutional ICT Support

Role of Governments and National (local) Institutional Support

Governments ICT Initiatives

National (local) Institutional Financial Assistance

➕ Tracking, storing and managing information, promoting production of national content online and through electronic media

➕ According high priority to protection of individual rights, intellectual property, privacy, security, consumer protection etc. and mobilizing the civil society

- Documenting "best successes" and "worst failures" – benefiting from knowledge
- Developing a supportive framework for early adoption of ICT and creating a regulatory framework for ICT-related activities, e.g. fixed and mobile communication, e-commerce and Internet services
- Promoting innovation and risk-taking through fiscal concessions and availability of venture capital creating an investment climate for domestic and foreign investment in ICT sector
- Promoting ICT training, education and research
- Negotiating and influencing the proper adoption of international frameworks, norms and standards by participating actively in the governance of the global information economy

Rural e-governance includes all those processes through which common people can access confidential data and information about the govt. and its various development projects, programs etc. Thus, we can say that providing govt. services at the doorsteps of the citizen through online mode is known as e-Governance. Following definitions has been given by World Bank, UNESCO and the Council of Europe -

- World Bank explained the E governance as the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and or cost reductions."

- According to international organization, UNESCO, "Governance refers to the exercise of political, economic and administrative authority in the management of a country's affairs, including citizens' articulation of their interests and exercise of their legal rights and obligations. E-Governance may be understood as the performance of this governance via the electronic medium in order to facilitate an efficient, speedy and transparent process of disseminating information to the public, and other agencies, and for performing government administration activities".

- The Council of Europe elaborated e-Governance as "the use of electronic technologies in three areas of public action such as relations between the public authorities and civil society, functioning of the public authorities at all stages of the democratic process (electronic democracy) and the provision of public services (electronic public services).

Through e-governance, information can be distributed to the public in a transparent manner. The most commonly used models can be described as under:

Government-to-Citizen (G2C) – This level of application creates an interface between the government and citizens enabling them to potentially benefit from a large range of public services. This expands the availability and accessibility of the government to an anytime, anywhere mode. This gives citizens the choice of when to interact with the government – 24 hours a day, 7 days a week; from where to interact with the government – service centre, unattended kiosk or from the comfort of one's home; and how to interact – through internet, fax, telephone, email, face-to-face, etc.

Government-to-Business (G2B) – This category of application helps the business community – providers of goods and services – to seamlessly interact with the government. The advantages are it helps to cut red tape, saves time, reduces operational costs, cuts unnecessary delays and eliminates redundant data capture. It also creates a more transparent business environment when dealing with the government. The interactions can be transactional, such as in licensing, permits, procurement, and revenue collection. They can also be promotional and facilitative, such as in trade, tourism, investment and campaigns.

Government-to-Government (G2G) – This kind of interaction is only within the sphere of the government which can be both horizontal i.e. between different government agencies or vertical i.e. between national, 27 provincial and local government agencies. The primary objective is to share information in order to avoid duplication and reduce turn-around time; to increase operational efficiency; and to facilitate better integration on inter-governmental programmes and projects potentially leading to performance improvements.

Government-to-Employees (G2E) – This (G2E) refers to the delivery of services by the Government to its employees (G2E). These types of services primarily relate to human resource areas. Essential Ingredients of e-Government fundamentally, e-Government projects would stand on four key – People, Process, Technology and Resource (PPTR), and in a holistic manner, to achieve the desired results of the project.

Thus "e-Government" or electronic government refers to the use of ICTs by government agencies for any or all of the following reasons:

- Exchange of information with citizens, businesses or other government departments
- Speedier and more efficient delivery of public services
- Improving internal efficiency
- Reducing costs or increasing revenue
- Re-structuring of administrative processes

ICT, PANCHAYATIRAJ AND E-GOVERNANCE

The Information and Communication Technologies (ICT) are being increasingly used by the governments to deliver its services at the locations convenient to the citizens. The rural ICT applications attempt to offer the services of central agencies (like district administration, cooperative union, and state and central government departments) to the citizens at their village door steps.
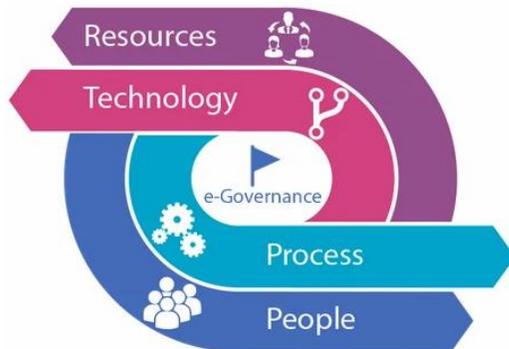
These applications utilize the ICT in offering improved and affordable connectivity and processing solutions. Several Government-Citizen (G-C) e-Government pilot projects have attempted to adopt these technologies to improve the reach, enhance the base, minimize the processing costs, increase transparency, and reduce the cycle times. A large number of rural E-Government applications, developed as pilot projects, were aimed at offering easy access to citizen services and improved processing of government-to-citizen transactions. e-Governance is a use of information and communication technologies with the aim of improving information and service delivery (of government sector), encouraging citizen's participation in the decision making process and making government more accountable, transparent and effective.

Information technologies enhance the transformation of work culture by serving a variety of ends; and better delivery of government services to citizens. It is an e-Governance initiative for the rural sector providing comprehensive software solution attempting automation of Gram Panchayat functions. The Panchayat Raj System is playing an important role in rural development. E-Panchayat is the lowest tier for rural development. Use of Information Communication Technology (ICT) in e-governance/e-Panchayat is providing fast services to the citizens. These tools make delivery of government services to citizens in transparent and efficiency in effective way. The results of previous studies on E-Panchayat show that urban citizens are taking a lot of benefits from these services in comparison to rural population. The rural population is not getting advantages from modern ICT services. There are many reasons for this gap. It has been seen that this difference in utility of ICT services is because of local language problems, lack of awareness of public services and sometimes availability of proper infrastructure. It has been

suggested by several scholars that these problems can be overcome by greater participation of the people in awareness related public functions at Panchayat level through dedicated ICT services that makes them aware about the proper use of available resources. They should be trained in such a way that knowledge about the government services is shared amongst them. Since rural communities are the closest to bottom level problems. Efforts must be made to provide information in local language of the community. It can benefit all participants belonging rural community may it be e-learning too. Services of accessibility empower the rural citizens and their participation can provide innovative solutions to the problems of rural areas and urban-rural gap can be reduced.

The Panchayat Raj System is playing an important role in rural development. E-panchayat is the lowest tier for rural development. Use of Information Communication Technology (ICT) in E-Povernance/E-panchayat is providing fast services to the citizens. These tools make delivery of government services to citizens in transparent and efficiency in effective way. The rural population is not getting advantages from modern ICT services. There are many reasons for this gap. It has been seen that this difference in utility of ICT services is because of local language problems, lack of awareness of public services and sometimes availability of proper infrastructure. It has been suggested by several scholars that these problems can be overcome by greater participation of the people in awareness related public functions at Panchayat level through dedicated ICT services that makes them aware about the proper use of available resources. They should be trained in such a way that knowledge about the government services is shared amongst them. Since rural communities are the closest to bottom level problems. Efforts must be made to provide information in local language of the community. It can benefit all participants belonging rural community may it be e-learning too. Services of accessibility empower the rural citizens and their participation can provide innovative solutions to the problems of rural areas and urban-rural gap can be reduced. To compete successfully in a network-based global economy, governments need to be both leaders and facilitators. The leadership and facilitation roles comprise the following elements :

- Developing national e-strategy, making ICT adoption and network readiness a national priority, bridging "digital divide" and championing an e-readiness framework
- Undertaking innovative projects that make a difference to lead by example, adopting best practices and pushing for their adoption by others and developing public-private-people partnerships
- Implementing Right to Information (RTI) and committing to transparency in governmental operations
- Reforming government processes covering areas such as revenues, expenditures, procurement, service delivery, customer grievances etc.
- Tracking, storing and managing information, promoting production of national content online and through electronic media

- According high priority to protection of individual rights, intellectual property, privacy, security, consumer protection etc. and mobilizing the civil society

- Documenting "best successes" and "worst failures" – benefiting from knowledge

- Developing a supportive framework for early adoption of ICT and creating a regulatory framework for ICT-related activities, e.g. fixed and mobile communication, e-commerce and Internet services

- Promoting innovation and risk-taking through fiscal concessions and availability of venture capital; creating an investment climate for domestic and foreign investment in ICT sector

- Promoting ICT training, education and research

- Negotiating and influencing the proper adoption of international frameworks, norms and standards by participating actively in the governance of the global information economy

RURAL E-GOVERNANCE DIMENSIONS

India is predominantly a rural country with two-third population and 70% workforce residing in rural areas. Rural economy constitutes nearly 50% of the National Income. Thus, the rural population's sustained growth and development is critical to the overall growth and inclusive development. Those living in rural areas deserve better living standards for sanitation, housing, piped drinking water, and electricity. Better education, health facilities, skills, jobs, and consumption are considered equally crucial by an archetypal Indian rural household. To address these issues, the efforts are being done by respective Governments in terms of development initiatives, at individual and/ or family and/ or community level, and duly supported by e-Governance measures. The digital-first emphasis brought to the forefront by the Digital India Programme has highlighted the opportunity to catalyse and energise the rural development initiatives. There are several ICT systems which were rolled out to support the Government Schemes and programmes catering to the rural areas. ICT infrastructure was strengthened through rollout of digital connectivity and setting up of Telecentres in villages through which ICT applications would provide services. Rural e-Governance can be measured through the following dimensions:

- **(i) ICT Infrastructure** : It plays a foundational role in the rollout of e-Governance services. The success of ICT and e-governance projects lies in the availability of infrastructure by the Government for public accessibility. These can be measured through the presence of optical fibre backbone, telecom towers and 4G network availability, number of households with mobile connections or personal computers, amount of data consumed, availability of telecentres and kiosks etc.

- **(ii) Access to e-Governance Services**: Availability of the number of e-Governance services for rural areas and the ease of access of such services is an indicator to the success of the digital services. Better accessibility would lower the cost of availing such services.

➕ **(iii) Mobile First** : It is a practice of starting the development with respect to the mobile user or a mobile device first. It favours lightweight and low-bandwidth design that can be responsive based on-screen size and available capabilities. Rural users are more likely to have smartphone than laptops/desktops to access e-governance services.

➕ **(iv) E-Literacy and Awareness** : Level of education complemented by basic awareness of IT skills, awareness of the several e-Governance initiatives and services available.

➕ **(v) Usage Behaviour** : Pattern of usage in terms of consumption or utilization of the services, behavioural change in the rural society in seeking the e-governance services such as e-Health, online education, skills enhancement etc.

➕ **(vi) Localized Content** : Availability of localized content from rural areas for e-commerce, tourism, consumption of content by non-local and external players such as industries. This requires and can be facilitated by each rural unit having their own distinct & configurable website, managed by Village Secretary, such as being created in India for each Gram Panchayat (i.e. Rural Local elected Government comprising set of villages) as a part of National Panchayat Portal sponsored by Ministry of Panchayati Raj, Govt. of India

➕ **(vii) Employment and Productivity** : Generation of alternate source of income through employment locally or remotely, improvement in productivity through information available, innovations at the grassroot level

➕ **(viii) Grievance Redressal** : Ease with which grievance can be raised and resolved

➕ **(ix) Participatory Governance** : Feedback and regular participation in improving governance, shift in policy (devolution of fund, function & functionaries to rural local Government) and implementation by reciprocating to the actual needs of the locality. If devolution is of fair degree, the governance & services of local people is likely to be met by local Government unit and dependence on ICT is considerably reduced since geography gets shirked within a village so is gap between ruler/provider and ruled/consumer. Therefore, participatory & decentralised governance is indirectly reducing ICT intervention from certain perspective in local-to-local context.

➕ **(x) Inclusion** : Inclusive growth by reducing the social and economic inequalities, access to e-governance services by socially backward and marginalized communities, all genders, language, region, disability, age groups or other status. It would encompass financial, business, and
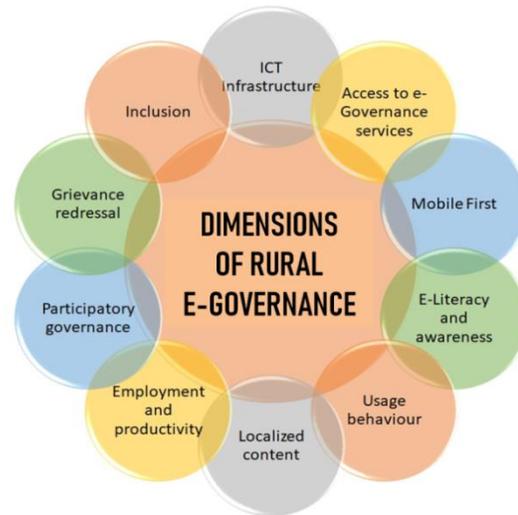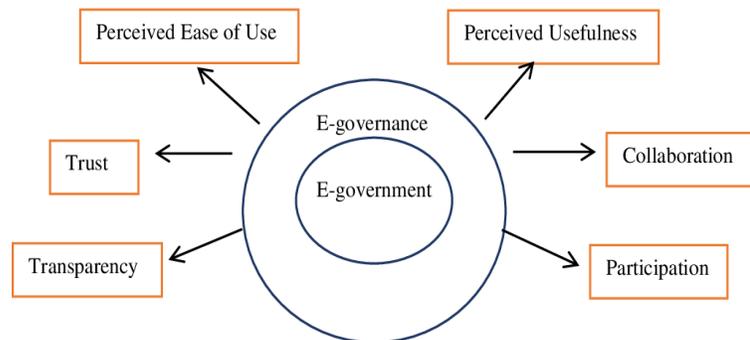
regulatory inclusion. This is to ensure that e-Governance measures ensure balanced transformation of Information ecology of the rural unit with maximum gains.

ICT FOR GOOD GOVERNANCE

Several continuous measures, programs and initiatives aimed at bridging the rural-urban divide have been implemented across multiple levels, with renewed vigour in the last seven years. Beginning with the implementation of the Direct Benefit Transfer (DBT) to transfer monetary benefits directly into the accounts of beneficiaries (mostly rural residents) to opening over 40 crore bank accounts of the unbanked, mostly rural people, under the Jan Dhan Yojana and later combining their synergies under the Jan Dhan-Aadhaar-Mobile (JAM Trinity) to make sure seamless delivery of public services, rural India has been undergoing a silent revolution. Another notable initiative has been the setting up of Common Service Centres (CSCs) under the Digital India Mission, across rural India, to deliver essential public services to rural folk in one place. Currently, over 4,12,000 CSCs are operational in our rural areas. Some other factor are discussed here

❖ The advances in information and communication technologies and the internet provide opportunities to transform the relationship between governments and citizens and business in new ways that contribute to the attainment of good governance. They provide opportunities for people and business to involve in the process of governance at all levels. They facilitate better service delivery to clients, in terms of timelines and quality, thus making governance more efficient and effective. In addition, the use of ICT may lower transaction costs both for citizens and government operations and public services can be made more affordable to the people at large.

Perceived Ease of Use

Perceived Usefulness

E-governance

Trust

Collaboration

E-government

Transparency

Participation

❖ ICT presents many avenues for improving governance. It has opened up new opportunities for governments to manage things differently and in a more efficient manner by utilizing information effectively and re-engineering processes. ICT tools are emerging as important instruments towards the goal of "good governance". Many countries have launched specific initiatives for open government. Freedom of information is being redefined and supported by statutes. India's Right to Information Act 2005 is a prime example in this regard. ICT has facilitated a conscious attempt to place the citizen at the centre of a governance network. Citizens are being perceived as customers and clients rather than beneficiaries. The Internet revolution has proved to be a powerful tool for citizen-centric governance. An important dimension of the Internet potential is the possibility of providing public services anytime, anywhere

❖ A defining characteristic of traditional public sectors has been the existence of a large physical infrastructure. This was to deliver programmes through a network of service delivery points and offices. Physical infrastructure was the most effective way to deliver public services directly to citizens. ICT now allows governments to experiment successfully with new ways of organizing themselves; cost-effective delivery of services is now possible without the service providers and clients being physically close to each other

❖ Large scale implementation of e-governance initiatives can lead to demystification of complicated government processes and empowerment of citizens. It can lead to enhanced government performance and generate a multiplier effect on economic progress. ICT has enabled citizens to demand information and better services from governments. With increased citizen awareness, governments today are under increasing pressure to deliver a range of services – from ration cards, motor driving licenses and land records to health, education and civic services – in a manner that is timely, efficient, economical, equitable and transparent.

❖ The application of ICT to government processes - e-Governance - can have a profound impact on the efficiency, responsiveness and accountability of the government, thereby, on the quality of life and productivity of citizens, especially the poor and ultimately, on the economic output and growth of the country as a whole. Electronic governance goes far beyond mere computerization of standalone back office operations. It is a means to fundamentally change how the government operates and this implies a new set of responsibilities for the machinery of the government.

ICT can act as a catalyst for organizational transformation and change in government by influencing governance in several ways as follows:

a) Managing large volumes of data and work flow connectivity between government operations, departments and agencies and significantly reducing errors;

b) Reaping scale economies and improving efficiency by automation of complicated and repetitive governance tasks and developing standard applications;

c) Reducing personal interface of citizens and business with public service providers, cutting delay, bureaucratic red tape, corruption and harassment and increasing speed of response; and

d) Enhancing transparency and accountability by making information available to citizens through websites, reducing information monopoly, simplifying processes and empowering citizens to put pressure on public officials to deliver performance
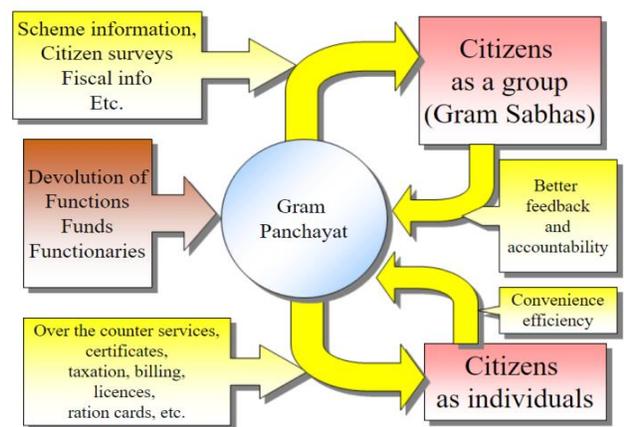
In several sectors of Panchayat Raj Institutions' management, such as accounts, agriculture development, finances, land records, procurement, and so on, ICT plays a significant role. In India, affordable ICTs are critical not just for the ability to transact electronically or to improve the delivery of government and business services to isolated rural and disadvantaged communities, but also for the core goal of empowering people through literacy, education, knowledge, employable skills, poverty reduction, and wealth creation. Various e-Government programmes and applications have been developed for the development of rural areas as a result of the expanding importance of ICT. India has done a remarkable start in terms of using ICT for improving government business. Several states in have been attempting e-governance solutions to improve information management and governance. States have set up Information Technology and Communication (IT&C) Departments to guide and coordinate the implementation of e-governance programmes and projects. These Departments also provide guidance for procurement of hardware and software by government agencies. IT&C Departments have made commendable progress in the development of e-governance applications. These projects have become role models and have been emulated by other states in the country.
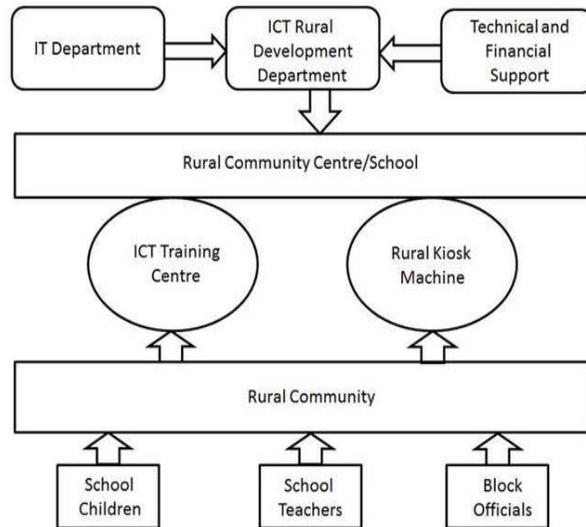
- Strong domain knowledge is critical for the success and sustainability of applications; 80% of projects fail due to poor knowledge content and design in e-applications following from lack of adequate domain support from government departments and agencies at the development stage;

- Lack of ownership and coordination in the government lead to many well crafted e-solutions to languish into disuse; the institutional framework for e-governance needs to be robust and well-defined;

- Everything in government is linked with every other thing; developing and implementing ICT-enabled processes in narrowly defined departmental silos tend to have limited impact on improving governance and limited interest from public sector managers in the medium or long-term;

- Data standards, metadata standards and service delivery definitions are very important for inter-operability; most e-governance applications are not based on defined codes and standards as a result of which they don't lead to the network or linkage economies. A common IT infrastructure and architecture standard is key to ensuring e-development in a coherent and integrated way.

Advanced planning of common IT infrastructure standards can result in shortened development time and system compatibility.
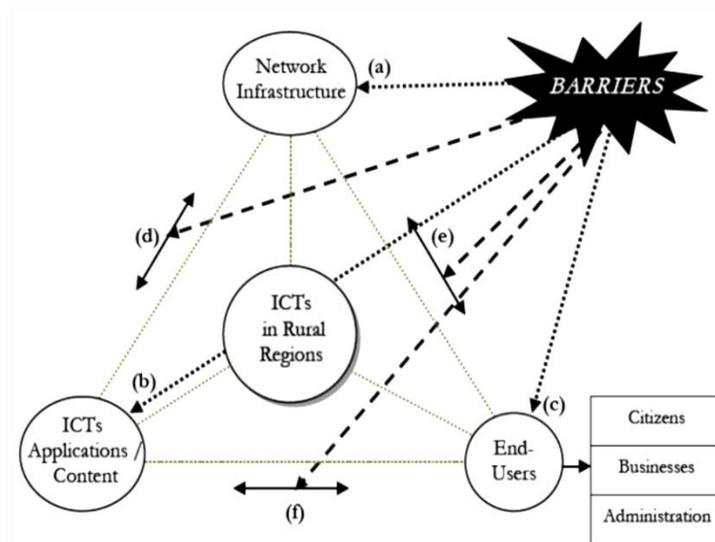
➕ Support infrastructure is critical for e-governance implementation; the reliability and reach of electric power, telecommunication links and broad band connectivity are critically important;

➕ Top-down approaches hardly sustain; involvement of all key stakeholders is crucial; localization of e-governance and ownership at the local level is a must for sustainability;

➕ It is very difficult on part of governments to recruit and retain quality professionals with ICT expertise in view of much better prospects in the private sector; thus public-private partnership models need to be explored in addition to providing pay and allowance to ICT professionals in government on par with the private sector;

➕ General ICT literacy with local language content and application are essential elements of the climate for effective e-governance and its acceptance;

➕ Development and implementation champions - ICT leaders are necessary in government to deal with resistance to implementation and change and forging public-private partnerships;

➕ Resistance to the use of ICT in the government sector is large; well-designed and consistent change management programmes can address the mindset block issues effectively;

➕ Involvement of the civil society including academia from development to implementation stages helps in enhancing acceptability of e-applications by employees and social groups; and

➕ Training, awareness building, and social mobilisation to create constituencies of ICT-propelled transformation in government and to facilitate the acceptance of new tools and methods by various sections are very important.

REFORMS FOR E-GOVERNANCE

❖ Using e-governance tools for good governance requires certain fundamental reforms. We need a new institutional framework – a framework of "networked" or "joined-up" government based on the foundation of simplified, reformed and connected horizontal processes and appropriate regulations. The institutional structure of government, which has so long been based on a hierarchical model, needs a thorough overhaul. Good governance requires a systems approach wherein various facets of government are linked to each other in an organic way.

❖ E-Governance requires a range of new rules, policies, laws and legislative changes to address e-activities including electronic signatures, electronic archiving, freedom of information, data protection, computer crime, intellectual property rights and copyright issues. Dealing with e-governance means signing a contract or a digital agreement, which has to be protected and recognized by formalized laws. Digital laws are yet to be fully developed. Establishing protection and legal reforms will be needed to ensure, among other things, the privacy, security and legal recognition of electronic interactions and electronic signatures. Hence, the government needs to

tackle the design and development of key public infrastructure – physical, administrative, legal etc. - which will guarantee secure transactions between organizations and individuals.

❖ A major challenge of any e-governance initiative is the lack of required ICT skills in government. This is a particular problem where the chronic lack of qualified staff, frequent turnover of contract IT personnel, and inadequate human resources training are endemic. The availability of appropriate skills is essential for successful e-governance implementations. e-Governance requires hybrid human capacities: technological, commercial and management which can be procured at market cost. Technical skills for installation, maintenance, designing and implementation of ICT infrastructure, as well as skills for using and managing online processes, functions and citizens, are necessary. Typical government salary structure should not be applied to key ICT professionals in government when the market provides far greater opportunities. To address human resource development issues, management initiatives are required focusing on staff training, seminars, workshops etc. in order to create the basic skills for handling e-governance. Public-private partnership models appear to be a partial solution.
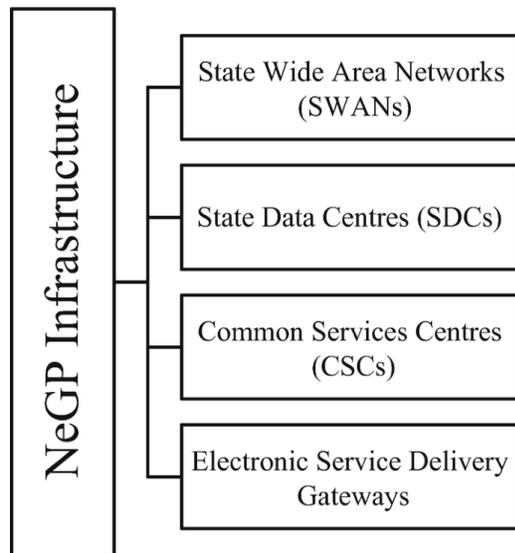
NATIONAL E-GOVERNANCE PLAN (NEGP)

Change management issues must be addressed as new work practices, new ways of processing and performing tasks are introduced through ICT. Correctly designed e-government projects, supported by change management, not only save costs and improve service quality, they also revolutionize and reinvent government processes and functions. Employee resistance to change is still the biggest barrier to successful change.

Illustration: Rural India & E-Governance Initiatives
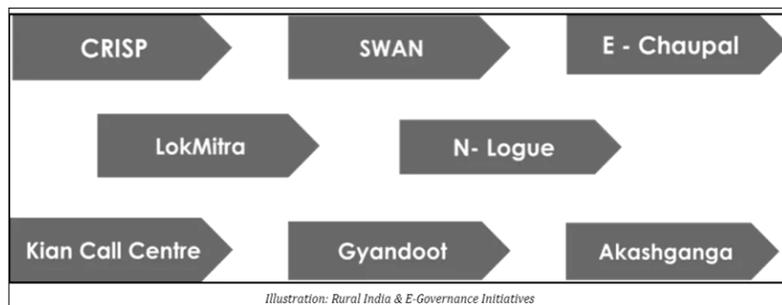
Employees fear changes in general and ICT applications, in particular as they believe that ICT would replace them and contribute to loss of jobs. Moreover, it is very difficult in a short time to turn off

traditional methods of working and learn new ones. Addressing resistance successfully means ensuring the existence of incentives for employees to learn and change and the establishment of well-structured plans that embrace employee participation throughout all stages of a change process.

The recently formulated National e-Governance Action Plan of India attempts to address many of the key issues of e-Governance in India with a view to harnessing the power of ICT to improve governance for the common citizen. The National e-Governance Action Plan demands wide-ranging reforms in governance processes. Simple automation of processes does more harm than benefit. The syndrome of "garbage in – garbage out" will operate if complicated processes are automated without simplification and establishing their usefulness for the people. Thus, process reforms hold the key to successful e-Governance. The National e-Governance Plan (NeGP), takes a holistic view of e-Governance initiatives across the country, integrating them into a collective vision, a shared cause. Around this idea, a massive countrywide infrastructure reaching down to the remotest of villages is evolving, and large-scale digitization of records is taking place to enable easy, reliable access over the internet. The ultimate objective is to bring public services closer home to citizens, as articulated in the Vision Statement of NeGP.

NeGP Infrastructure
- State Wide Area Networks (SWANs)
- State Data Centres (SDCs)
- Common Services Centres (CSCs)
- Electronic Service Delivery Gateways

Harnessing the power of ICT for e-governance has the power of transforming government and making knowledge-based good governance a reality. While the challenges faced by governments are colossal, the new technologies provide tremendous opportunities for enhancing the power of governments to handle data, take better informed decisions, and provide transparent, cost-effective and accountable solutions and services to citizens and business. Good governance requires process reforms and input-output-outcome-impact tracking. Automation of reformed processes and tracking systems can assist in the delivery of good governance to citizens in developing countries. As good governance is the single-most important factor for socio-economic development and poverty reduction, e-Governance can make a distinct impact on the development scenario, especially for the poor and weaker sections of society, including women. There is an urgent need to address the issues of using new technology for transformation of governance and leapfrogging development.

❖ AADHAAR-DIGITAL BIOMETRIC IDENTITY INFRASTRUCTURE

The Aadhaar System is built on a sound strategy and a strong technology backbone and has evolved into a vital digital identity infrastructure. Aadhaar, being a unique digital ID – provides a powerful platform for authenticating a resident anytime and anywhere which is in line with the vision of the UIDAI. The purpose of Authentication is to enable residents to prove their identity and for service

providers to confirm that the residents are 'who they say they are' in order to supply services and give access to benefits.

❖ DIGITAL LOCKER

DigiLocker is a key initiative under Digital India, the Indian Government's flagship program aimed at transforming India into a digitally empowered society and knowledge economy. DigiLocker ties into Digital India's vision areas of providing citizens a secure document access platform on a public cloud. Targeted at the idea of paperless governance, DigiLocker is a platform for issuance and verification of documents & certificates in a digital way, thus eliminating the use of physical documents. DigiLocker has helped in bringing paradigm shift towards paperless governance i.e. it helped citizens and departments to shift from paper based processes to paperless process thereby helping to contribute to Hon'ble Prime Minister's vision of Digital India. These digital documents are legally valid documents under the Indian Information Technology Act 2000. Furthermore, under Rule 9 A of "The Information Technology (Preservation and Retention of Information by Intermediaries Providing Digital Locker Facilities) Rules, 2016" issued documents available via Digital Locker are to be treated at par with original physical documents.

❖ OPEN DATA - BRIEF OF NATIONAL DATA SHARING & ACCESSIBILITY POLICY (NDSAP)

The Union Government through Ministry of Science and Technology has formulated the National Data Sharing and Accessibility Policy (NDSAP), while Ministry of Electronics & Information Technology (MeitY) is the nodal Ministry to implement the policy. The Department of Science and Technology under Ministry of Science and Technology has formulated the NDSAP through close collaboration with other line Ministries and MeitY by creating "data.gov.in" through National Informatics Centre (NIC). The NDSAP had identified MeitY as the nodal Ministry for the implementation of the policy through NIC, while Department of Science and Technology continues to be the nodal department on policy matters. The policy was notified by the Department of Science and Technology

❖ GOVERNMENT PROCUREMENT - GOVERNMENT E-MARKETPLACE (GeM)

Government created one stop Government e-Marketplace (GeM) to facilitate on line procurement of common use Goods & Services required by various Government Departments / Organizations / PSUs. GeM will enhance transparency, efficiency and speed in public procurement. It will also provide the tools of e-bidding and reverse e-auction as well as demand aggregation to facilitate the government users to achieve the best value for the money.

❖ MOBILE GOVERNANCE - MOBILE E-GOVERNANCE SERVICE DELIVERY GATEWAY

The MSDG delivers Government services over mobile devices using mobile applications installed on the user's mobile handsets. MSDG provides different set of mobile based services to the backend departments and citizen. As MSDG is developed based on IIP/IIS (Interoperability Interface Protocol / Interoperability Interface Specifications) standards of government of India, it provides seamless

integration with backend department through existing NSDG/SSDG e-Gov exchange infrastructure. Backend departments will be connected to MSDG for mobile based services.

❖ STATE DATA CENTRE

State Data Centre (SDC) has been identified as one of the important element of the core infrastructure for supporting e-Governance initiatives of National e-Governance Plan (NeGP). Under NeGP, it is proposed to create State Data Centres for the States to consolidate services, applications and infrastructure to provide efficient electronic delivery of G2G, G2C and G2B services. These services can be rendered by the States through common delivery platform seamlessly supported by core Connectivity Infrastructure such as State Wide Area Network (SWAN) and Common Service Centre (CSC) connectivity extended up to village level. State Data Centre would provide many functionalities and some of the key functionalities are Central Repository of the State, Secure Data Storage, Online Delivery of Services, Citizen Information/Services Portal, State Intranet Portal, Disaster Recovery, Remote Management and Service Integration etc. SDCs would also provide better operation & management control and minimize overall cost of Data Management, IT Resource Management, Deployment and other costs.

❖ MYGOV 2.0 : A PLATFORM FOR CITIZEN ENGAGEMENT IN GOVERNANCE

The citizen-centric platform empowers people to connect with the Government & contribute towards good governance. My-Gov as a Government of India's Citizen Engagement Platform collaborates along multiple Government bodies/ Ministries to engage with the citizens for policy formulation and seeking the opinion of people on issues/ topics of public interest and welfare.

❖ JEEVAN PRAMAAN

Jeevan Pramaan is a biometric enabled digital service for pensioners. Pensioners of Central Government, State Government or any other Government organization can take benefit of this facility. Jeevan Pramaan uses the Aadhaar platform for biometric authentication of the pensioner.

❖ OPEN FORGE PROJECT

Open Forge is Government of India's platform for open collaborative development of e-governance applications. Through this platform, the government wants to promote the use of open-source software and promote sharing and reuse of e-governance related source code. In 2015, the Department of Electronics & IT, Government of India rolled out the "Policy on Collaborative Application Development by Opening the Source Code of Government Applications", which provides a framework for archiving government custom developed source code in repositories and opening these repositories for promoting reuse, sharing, and remixing. By opening the source code, the Government wants to encourage collaborative development between Government departments / agencies and private organizations, citizens, and developers to spur the creation of innovative e-governance applications and services.

While providing numerous opportunities for better governance, globalization and ICT have also brought in many new challenges for governments. These pertain to creating networks and an environment for absorption and growth of information technology, bridging the digital divide, management of laws and regulations, knowledge management, and capacity building for information management. While new technologies have the potential of improving governance, they are by no means sufficient for good governance. Governments need to understand, manage and lead change effectively. There is a need for building capability of the state and its apparatus to adapt to the new realities and exploit the opportunities for development and poverty reduction presented by globalization.

Through e-governance, government services are made available to citizens in a convenient, efficient, and transparent manner. The three main target groups that can be distinguished in governance concepts are government, citizens, and businesses/interest groups. The use of ICT in public administration combined with organisation changes and new skills in order to improve public services and democratic processes and strengthen support to public policies. The use by the government of Web-based Internet applications and other ICTs, combined with processes that implement these technologies to Enhance the access to and delivery of government information and services to the public, other agencies, and to government entities; or Bring about improvements in government operations that may include effectiveness, efficiencies, service quality, or transformation.

CONCLUSION

The e-Governance or electronic governance means utilization of ICT (Information and Communications Technology) to carry out the functions and achieve the results of the governance. Governance has become very complex and the increasing expectations from the Government are the reasons for opting for e-governance. Under the banner of e-governance, the use of ICTs helps the rural people to perform their public affairs, efficiently utilize public resources so that they can ensure the rights of the citizens of the nation. It is the use of Information and Communication Technology (ICT) by the government to provide and facilitate government services to its citizens 24 hours a day, seven days a week. The four main stages of e-governance are presence, interaction, transaction and transformation. It involves digitizing and automating various government activities, such as service delivery, communication, decision-making, and citizen engagement. E-Governance aims to improve the efficiency, transparency, accessibility, and accountability of government services and interactions with citizens

Bringing the people in the rural region in the mainstream of the digital technologies to access and adopt modern technologies is a major concern now. Rural Development implies both, the economic development of the people and greater social transformation using electronic governance (e-governance). The goal of e-governance is to ensure that people participate in the political process through electronic channels like email, websites, SMS connectivity, and others while facilitating and improving the quality of governance. The main disadvantage of e-governance is the loss of

interpersonal communication. Interpersonal communication is an aspect of communication that many people consider vital. Technology has its disadvantages as well. Specifically, the setup cost is very high and the machines have to be regularly maintained. The major cause of failure of e-governance may be weak technology or digital infrastructure with unreliable internet connectivity, digital divide, financial/economic constraints, cultural-socio-behavioral constraints, unreliable political climate, handicapping policies or legal frameworks, donor-reliant programmes, lack of unified standards for public connectivity etc

REFERENCES

1. Pamdey P K and Goswamy Birendra (2022). Rural Devolvement through E-Governance Initiatives with ICT an overview for Citizen Centric. International Journal of Innovative Research in Science, Engineering and Technology (IJIRSET), Volume 11, Issue 10, pp.12887-12889

2. Choudhary Anika (2021). ICT and e-Governance for Rural Development in India, WRP. Sci. J. 4 , No. 2 , 21-31 (2021), URL : www.naturalspublishing.com/files/published/ 7ezk65417q9458.pdf

3. Chinnadurai, M and Ashok, K. (2018)."Multi-Pronged approach to bridge the urban-rural divide". Yojana: A Development Monthly. Vol. 62, pp.55-58

4. Kant, Amitabh. (2018). "Development through Digitization".Yojana: A Development Monthly. Vol. 62, pp.7-10

5. Dhanai, Rekha and Negi, R. (2017). "Digitization and Possibilities for Rural Development''. Kurukshetra: A Journal on Rural Development. Vol.65, No.5, pp.25-27

6. Srivastava Suhasini (2017). Role of ICT in E-governance and Rural Development : An Indian Scenario, Learning Community: 8(1): 11-15, April, 2017, URL : https://ndpublisher.in/admin/ issues/ LCV8N1c.pdf

7. Mehta, Ranjeet (2016)."Maximum Governance: Reaching out through E-Governance".Yojana: A Development Monthly. Vol. 60,pp.16-19

8. Bhatia, Ambika & Kiran, C (2016). "Rural Development through E-Governance Initiatives in India" , IOSR Journal of Business and Management, Special Issue, , Special Issue, AETM, e-ISSN: 2278-487X, p-ISSN: 2319–7668. URL : http://dx.doi.org/10.9790/487X-15010010161-69

9. Panneervel, P. (2005). E- Governance: A Change Management Tool. Jaipur: Rawat Publications

10. Parashar, Anshu. (2018). "Role of ICTs in Rural Development". Kurukshetra: A Journal on Rural Development, Vol.66, No.7, pp.35-40

11. Prasad, Ravi (2019). "Empowering citizens through e-services". Yojana: A Development Monthly.Vol.63, pp.7-10

12. Saikia, Siddhartha. (2019)."Connectivity: Transforming Rural India". Kurukshetra: A Journal on Rural Development. Vol. 67, No.5,pp.29-32

13. Mahto, Lalan (2015). "Empowerment through E-Panchayat". Kurukshetra: A Journal on Rural Development. Vol. 64, No.1, pp. 25-28

14. Kumari, Soni (2016). "Digitally Connecting Rural India". Kurukshetra: A Journal on Rural Development. Vol.64, No.4, pp.5-8

15. Kumar, Santosh (2017). "Technology: Empowering the Rural Society". Kurukshetra: A Journal on Rural Development. Vol. 65, No.10,pp.54-55

16. Mittal, Sanjiv (2017). "E-governance in Rural India". Kurukshetra: A Journal on Rural Development. Vol. 65, No.10, pp.5-17

17. Naidu, Venkaiah (2017). "The Story of a New India". Yojana: A Development Monthly. Vol. 61, pp.7-9

18. Rai, Omkar (2017). "Transforming India into a Digitally Empowered Society". Yojana: A Development Monthly. Vol. 61, pp.40-42

19. Web portal of Department of Information Technology, Government of India, URL: www.mit.gov.in/content/national-e-governance-plan

20. Portal for Public grievance, Dept. of Administrative Reforms and Public grievances, Govt. of India, www.pgportal.gov.in/AboutUs.aspx

21. Web portal of Department of Information Technology, Ministry of Communication and Information Technology, Govt.of India, www.csc-india.org/Welcome/Home/tabid/617/language/ en-GB/Default.aspx

22. Web portal of infoDev, The World Bank, www.infodev.org/en/Page.About.html

23. Sharma, Prachi (2017). "Digigaon: Connecting Rural India''. Kurukshetra: A Journal on Rural Development, Vol.65, No.5, pp.29-32

24. Lenka, Dibakar (2019). "ICTs for Empowering Rural Youth".Kurukshetra: A Journal on Rural Development. Vol. 67, No.3, pp.35-39

25. Sharma, Deepak, Malik, Kamini and Verdhan, Jay (2019). "Empowering the marginalized through Digital Platforms". Yojana: A Development Monthly.Vol.63, pp.51-53