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Technological Extension for E-GOVERNANCE and Rural Development

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TECHNOLOGICAL EXTENSION FOR E-GOVERNANCE AND RURAL DEVELOPMENT
Abstract Digital Technology and Communications are now proven as a transformer in the

Abstract :

Digital Technology and Communications are now proven as a transformer in the era of technologies. This provides a new forum for information-sharing and interaction. It directly has its effect on socio-economic and political activity of all the region of the world. Our Indian economy is based on agriculture, and half of the population is residing in rural parts of India and their isolation from the mainstream adversely affecting the country's growth. The ICT application in the rural area will try to present the services to the people so that they also get connected to the global culture and contribute to the development. ICT stimulates development at a faster rate in some parts of rural India. Most significantly, ICT helps bridge the gap between rural and government growth. Now growth in some rural parts of the country can be visualized with the aid of e-governance and the application of ICT. This paper discusses the advent of Digital Technology and Communications in the rural area and the challenges in implementing ICT.

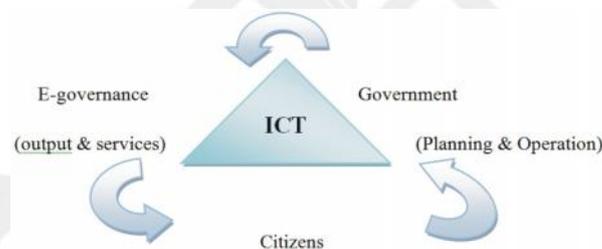
Keywords :

Information and Communication Technologies, Globalization, Development, E-governance.

Introduction :

Digital Technology and Communications has the potential to transform society and also have the potential to accelerate economic growth and social empowerment (Nandi, 2002). [1] ICT application provides flexible assistance and assists in the development of the country. It not only enhances the structure of governance, but it also allows the masses to reach to the government. ICT (Information and Communication Technology)

plays a crucial role in determining agricultural community growth in the rural region. It has provided improved form of communication, efficient storage, retrieval and data processing, and knowledge sharing and usage to its users, be they individuals, groups, companies, organizations or governments. The new structure of governance through ICT enable the government to disseminate its services to rural masses in an effective way. As it not only provide helps in maintaining the data digitally for all but also helps the government in maintaining transparency. Digitalization of data allows the government as well as a citizen to extract information on a single click. It has revolutionized the e-governance. In the globalized and the fast-moving technological world, the development of the country also depends upon the technological advancement in the governance. The e-governance made the system complete and more competent by serving the people through the internet medium and open the new scope of development of the country. In 1990's a global move toward expanded government implementation of IT occurs with the emergence of the World Wide Web. In 70s government recognize the importance of electronics, and Government of India established the Department of Electronics in 1970.[2] In 1977 the government took a significant move towards e-governance and focused on information and communication and resulting National Informatics Center (NIC) was created. The main thrust area of the government was to establish e-governance, and by launching NICNET in 1987, the government added one more chapter to the e-governance. The plan further initiated in the rural context and then government forms a district level office for information system named as to make a district functional in terms of digital, the scheme was District Information System of the National Informatics Centre (DISNIC). Under this scheme at the district level, all the nominated centres will have their hardware and software setup by 1990.[3] The idea of e-governance began with the introduction of government websites in the 1990s but still has some problems for all the advantages ICT provides. The government structure is set, controlled, while the web is dynamic and non-regulated.[4] The development in the Communications and Digital Technologies has expanded information dependency on digital mode and, with the improvement of infrastructure and regulations, government websites have soon evolved into a high potential support system. [5]



(Input Tax) Model of e-governance [6]

Good governance has eight significant characteristics, i.e. Participation, Efficiency, Responsiveness, Accountability, Equity and inclusiveness, Transparency, Effectiveness and, Rule of Law, as in for the effective and efficient governance. [7] In the above figure, it depicts how the interrelationship between citizens and government and accessing the services through Communications and digitalization proves as a significant characteristic of good governance.

Review of literature :

ICT (Digital Technology and Communications) is an integral part of the development of both developing and developed countries. According to views presented by the share in (1993) and Madden et al. (1997) they said that ICT could be a tool for improving living standard in remotes and agrarian areas by disseminating content related to social and educational benefits.[8][9] Bellamy and Taylor (1998) said in their research that ICT could be a significant tool of promotion to progress in rural areas and can alleviate poverty. In the mid 1990's the public sector experienced a significant transformation by introducing ICT. [10] The implementation of ICT in the governance can be justifiable as strengthening

the structures of government and, secondly, building relations with and within civil society. Wilson's (2000) study says that economy like India, ICT proven as an application to improve education, governance, environmental monitoring, health, promotion of human rights, economic development, and other areas. [11]According to Jayaradha and Shantha Kumar (2003), e-governance is the method of providing service and disseminating information to people using electronic means that offers many advantages over the traditional system. [12].According to Dutton et al., (2004) said, if the people of the country have accessibility to service, information and technology, then the country has the potential to transform itself. [13]Satyanarayana J.(2004), published book "E-Government The Science of the Possible", in his book he defined the principles of e-governance and ICT.[14] E-governance modifies the communication system in every sphere and also strengthens the governance system, thus provide better service to the citizens. E-Governance is studied as a high priority agenda in India, as it provides a common platform for the transaction to the "Common Public". According to DrPardeep Mittal, Amandeep Kaur(2013), the emergence of the ICT (Information and Communication Technology) provides a faster and efficient mode of communication and retrieval of data and application of information to its users. E-Governance is a government of India initiative which helps in making India a self-sufficient country in term of Communications and Digital Technologies to its citizens through the Internet. [15]In his research, Dr. V. Ranga Rao (2014) focused on exploring different problems and challenges using data mining techniques within government agencies, suggested a framework for the implementation of e-governance data mining. The e-GDMA (e-government data mining applications) is divided into two categories first is a common application that includes grievance management, citizens ID (Identity), HRM (Human Resource Management)& project management and second is departments specific that include agriculture, health, law transport, education and police. [16] It is also very much essential to strengthen the government organization and fill the technological gaps with advance level of technological aspect which caters the needs of the government organization.

E-governance :

According to the UNESCO, Communications and Digital Technologies for e-governance in public sector's will enhance the delivery of information, the involvement of citizens will increase which leads to the and the decision-making process would be more transparent and effective. There is a new style of management in the e-governance which delivers the information and services to their citizens in an organizing manner which will help in suggesting and deciding policy and investment, provides a new way of accessing education. ICT/e-governance played a significant role in shaping the new form of democracy in India as it enhances the accessibility, cutting down the costs, Lessing corruption, and extends its reach to those areas which were untouched and not served.

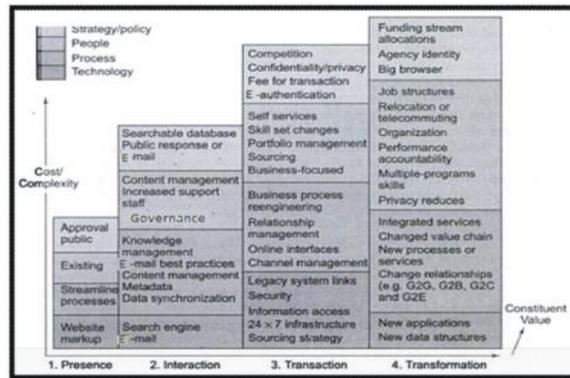
Now let us take a look for a few models for e-governance which will helps in demonstrating the structure of e-governance.

Gartner four-stage model for e-governance (2000)[17]

1. **Web presence :** In the first stage to post necessary information to the public, it is essential to design a website which carries information.
2. **Interaction :** In this stage, users have the flexibility and ability to contact agencies through websites (e.g. e-mail) or do self-service (e.g. download document)
3. **Transaction :** In this stage users including customers and businesses can have the opportunity to complete their transactions online (e.g., license application and procurement)
4. **Transformation :** at this stage government is liable to transform the operational process to provide efficient, integrated and personalized services.

The Gartner Four Phases of e-governance mode is based on a strategy which demonstrates the

progression of e-government in the connected environment and identifies strategy and other factors that contribute to success in each phase.



Gartner's model of E-governance (Source : Gupta, Kumar & Bhattacharya, 2003)[18]

UN's five-stage model (2001)

The United Nations and American Society for Public Administration (UNASPA, 2001) [19] suggested an e-government model with five stages which are as follows:

1. **Emerging Presence** : web source should be there to provide, few independent government websites provide access to precise but limited and static information.
2. **Enhanced Presence** : specialized and dynamic information is to be provided by the government website with regular updates.
3. **Interactive Presence** : Websites of government serve as a gateway for linking users and service providers to create an interface at various and sophisticated levels.
4. **Transactional Presence** : Safe and viable transactions are also necessary if users are to have the ability to complete and secure transactions, obtaining passports and updating birth and death records through a single government website etc.
5. **Seamless or fully integrated system** : Governments use a single, unified website to provide a one-stop platform for users to complete transactions easily and access all sorts of services available.

Types of Government Interaction in e-governance

To reach out with the every areas government framed different levels of interaction to reach to the masses.

- **G2G** : Government to Government
- **G2C** : Government to Citizen
- **G2B** : Government to Business
- **G2E** : Government to Employee

E-Governance in the rural context :

To achieve the goal of making India fully digital rural development is a significant chapter in the sense of the percentage of population residing in rural India is comparatively high and to achieve the goal of digitalization. Rural development and sustainability in rural area can only be achieved by improving the potential of the rural areas by providing them or connecting them with the Information and Communication Technologies (ICT). It requires an integrated structure for ICT projects in rural areas so that we can provide information and feedback that can amicably combine community needs and other stakeholders together.

ICT Services for the Rural population :

Application and attempt of ICTs in rural context plays a crucial role in rural economic development are widespread in developing countries, there are benefits from examining implementations across various countries and continents. [20] In the rural context, the ICTs are being used for informational purposes- used to disseminate non-customized (static) information such as weather forecasts, healthcare bulletins, govt. Schemes, and agricultural practices, contact information etc. secondly it is also being used for the transactional purpose in which exchange of specific information or money between two entities such as e-mail, short message service (SMS), e-commerce, ATM's etc. are included, and the most important which is related to the vision of Indian government to make the rural society self-sufficient in itself. Examples include providing land records, processing Aadhar cards, issue of Birth/Death certificate etc. briefly we can say that the government initiative to create a development aspect in the rural area by using ICTs are diverse in nature and the government introducing more and more plans to mitigate the problem related to the rural society and the rural people can also get benefited with the new Digital Technology and Communications.

Digital India Programme for Rural Development :

Government of India was officially launched digital India mission on July 01, 2015, aiming to complete the mission by 2019 by making India digitally sound. The Digital India Advisory Group, which is chaired by the Ministry of Communications and IT monitored and controlled the scheme. The programme is an inter-ministerial program in which all the departments and ministries devote their services to public healthcare, education, legal services, etc. under this programme government of India integrates department and people of India digitally which can provide a better infrastructure for the development of the country. The digital India initiative aims at improving the connectivity infrastructure and ensuring that government services are made accessible electronically to people. Rural areas with high-speed internet networks are part of this ambitious digital India program. Simple access to government facilities via CSCs, the availability of high-speed Internet to every person can revolutionize the lives of rural communities across India. There are three main components of modern digital India. These include:

- Digital infrastructure
- Digital service delivery
- Digital literacy

Status of e-Governance in India (Rural) :

E-governance not only strengthening the governing system but also provide flexibility and transparency to its citizens by providing services at a single platform. There are few successful stories related to e-governance, that how the Digital Technology and Communications boost the development in rural areas.

Gyandoot :

The Intranet-based web portal of Madhya Pradesh government, launched in the Dhar district in January 2000. The fundamental concept of this project is to provide e-governance services that include online application registration, rural e-mail facilities, village auction site etc. It also provides services such as tariffs on Mandi (farm products market) information, redressal online public grievance, caste & income certificates and rural market (Gaonka Bazaar) services. It was considered as one the successful in the early years of its implementation. The project received the Stockholm challenge Information technology award in 2000 for public service.[21]

Drishtee :

Drishtee.com is a service provider based in India that was established in 2000 to meet rural India's needs through village kiosks run and operated by local entrepreneurs. Such kiosks are built

using a model of franchise and partnership. Drishtee offers various types of services that include computer education, government services, health, banking, e-commerce, microfinance and so on. Drishtee 's primary goal is to empower rural communities by promoting local entrepreneurship.[22]

Bhoomi :

It is a government of Karnataka initiative for keeping the land records in a computerized way which help the farmers in different ways like it will keep the record of Rights Tenancy & Crops (RTC) - needed by the farmer to obtain bank loans, settle land disputes etc. This has also ensured greater accountability and efficiency, a substantial reduction in farmers' corruption, abuse and oppression. The initiative has benefited from 20 million records of rural land representing 6.7 million farmers. [23]

Agrisnet :

Agriculture Resources Information System Network (AGRISNET) is a project sponsored by the Government of India's Ministry of Agriculture to establish a robust online knowledge platform for farmers with appropriate information. The project 's aim is to follow an extensive approach to ensuring technical accessibility at agricultural department offices up to block level in all states and union territories. Till now AGRISNET Project fund is released to Andhra Pradesh, Arunachal Pradesh, Assam, Chattisgarh, , Mizoram, Nagaland, Orissa, Puducherry, Punjab, Sikkim, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal, Bihar, Goa,Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Manipur and Uttarakhand.[24]

Digital green :

This is a project started in 2006, a Microsoft research project to test the role that technology plays in agriculture. Agricultural information is disseminated over digital media. Under this project there a digital database has been developed for farmers.The recordings are transmitted via village cable network to individuals or small groups using computers, DVD players, and television, and communities.[25]

IFFCO Kisan :

To connect rural areas with the art of technology and information government has initiated IFFCO Kisan. It helps in providing information to the rural masses in different language through helpline number in different languages. Farmers may also speak to the experts on a specific subject via special 'phone-in' programmes.Green SIM Helpline @ 53435, Kisan Call Centre @ 1800-180-1551. [26]

iKisan :

It is a Nagarajuna group initiative which helps in providing solutions related to agriculture to farmers. iKisan is a one-stop solution provider for farmers in providing information on fertilizers, pesticides and other related information like market updates and weather forecasts, crops, crop management techniques.[27]

eKrishi :

The communication network established under eKrishi is utilized to educate farmers, providereal-time information on prices, arrivals and issue disaster warning and weather forecast. To informed and to take decisions of their own and to monitor the sale of their products and bringtransparency in the Madhya Pradesh State Agricultural Marketing Board has improved eKrishi portal. [28]

KCC :

The Kisan Call Centre utilizes telecom infrastructure to provide customized information onvarious aspects of agriculture in the local language using toll-free number 1800-180-1551. [29]

Challenges in ICT based service delivery in rural India :

1. Illiteracy among the rural population
2. Lack of awareness and the usage of ICT among the rural population.
3. Lack of Infrastructure hampers the reliability of the services.
4. Lack of trainer and trained Kiosk operators in the rural area.
5. ICT based courses are not available to rural students.
6. Community-based participation (which fully understands and delivers the user needs) is not encouraged.
7. Lack of policies, strategies, schemes, monitoring and control that ensure cross-sectoral and multi-stakeholder involvement.
8. Language of the deliverance of the Services among the rural masses is not available, using local language, and it affect their long-term sustenance due to low interest in their usage.
9. Irrelevant Content development is also one the reason to add value to the content of the subject PPP (public-private partnership) model should introduce and adopted while framing the content up to the deliverance.

Conclusion :

To summarize, E-Governance refers to the use of Information and Communication Technology by the public sector to enhance the delivery of information and communication network services, promote local citizens' participation in decision-making processes and make government more responsive and accountable. Aim of achieving e-governance and changing India's economy will not be achieved by setting up the computerized offices, as it requires the accountability of the rural masses from the initial phase of constructing up to implementing. It will need a necessary change in work culture and goal orientation and concurrent change in the existing processes. With population growth, the problems are growing and, on the other hand, more than half the population resides in rural areas. It is very important to address the issue relating to rural areas. And we can claim that none of the problems gets solved with the introduction and adoption of ICT in rural areas. So we can say that ICT plays a vital role in defining the rural area with technological advancement.

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