E-SERVICES IN RURAL INDIA WITH SPECIAL REFERENCE TO RURAL UTTAR PRADESH

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Abstract: India is primarily a rural country with two-thirds of the rural population. Rural economy accounts for 46 percent of national income. Despite increasing urbanization, more than half of India's population is estimated to be rural by 2050. Thus the growth and development of rural economy is the key to the overall development and inclusive growth of the country. Modern forces of social change have widely influenced the rural way of life in India. Globalization, privatization and economic liberalization have impacted the family and society. The revolution about information and communication technology in the era of globalization and economic liberalization inspired changes in the administrative, economic and social spheres around the world. These technologies have brought a change in the administration around the world. The National e-Governance Plan is an ambitious program of the Government of India, to extend all government services to the common man in its area, to the entire common service delivery outlets, and to ensure efficiency, transparency and reliability on affordable services. The National E-Governance Plan has transformed India into one of the world's largest e-governance laboratories, using experiments at all levels of government to improve governance and civic services. Against this backdrop, present paper attempts to examine Growth of E-Services in Rural India with special emphasiz on Rural Uttar Pradesh.

Keywords: Information and Communications Technology, e-Governance, E-Panchayat, Transparency, Efficiency

INTRODUCTION

The revolution about information and communication technology in the era of globalization and economic liberalization inspired changes in the administrative, economic and social spheres around the world. These technologies have brought a change in the administration around the world. IT Services are undergoing a structural change from server to web\ based services. This will form the major chunk of IT services. Growth in IT services will continue to provide the biggest opportunity, while other sectors of IT software industry will also make a significant contribution. IT services, both export and domestic, will grow rapidly as new opportunities are emerging in management/consulting services, application maintenance and Internet services. The major users of IT services are the government, financial services and banking, manufacturing and retail and distribution. New areas likely to emerge are communication, healthcare and utilities, as these will increasingly be deregulated. However, IT services essentially require high-quality manpower, state of the art skills, world-class telecom and IT-knowledge based environment.

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Information Technology (Siddegowda, Ilango & Devi, 2016) is radically transforming the way of business around the world and the E-commerce industry has completely transformed itself into a digital sector many years past. The E-commerce industry will set a new platform for the development of the business, as E-commerce business has proved itself as part of the new economy and a best way to do business across the world. Mallikarjun Rao (2006) while studying the "factors affecting growth of e-commerce in India" concluded that there was a close association between online purchase and availability of information about the vendors, hence, suggested that more information will increase respondents comfort level for online trade. Gnana (2006) concluded that today e-commerce as an alternative/additional mode is being accepted by many businesses, but the rate of adoption of ecommerce is varying in different industries, for instance, a traditional industry like automotive industry in India is yet to adopt e-commerce in a big way. Ming-Hsien, Chandlrees, Binshan, Hung-Yi (2009) opined that consumers will trust the website if they feel the site keeps a good ecommerce ethical performance, such as, practicing the privacy policies and stating it explicitly, describing products or services in an appropriate way. While analyzing the trends in e-commerce, Rekha (2016) stated that e-buyers need to adapt to a safe mode of on-line payment and use alternative modes of payments, such as, virtual credit cards that involve less risk in diversifying the information for payment. Rashad, Abhinav, Wan, Mahan & Shahriar, (2011) studied the "factors influencing perception of consumers in e-business found that the perception of the consumers influencing their decisions have been addressed in order to understand why the people want to use an online service for perception or discard their purchase. Mustafa (2011) studied the determinants of e-commerce customer satisfaction, trust and loyalty in Saudi Arabia and found that in B2C E-commerce customer loyalty in Saudi Arabia is strongly influenced by customer satisfaction but weakly influenced by customer trust. Khushbu (2012) found that social media platforms do have an impact on business and marketing. Zia (2012) opined that the perception of online shoppers is independent of their age and gender. Muhammed (2013) concluded that very poor positive perceptions about Bosnian companies' web presences and their online activities. Namita and Preeti (2013) concluded that online consumer behavior using factor analysis and the reasons for using online shopping like, trust, information about the product and services, convenience, effortless shopping. You-Qinghe (2014) inferred that online marketers and retailers have to develop appropriate market strategies, make technological advancements and make the correct marketing decisions in order to retain current customers and attract new customers. Afrina (2015) concluded that companies should create innovative customer experiences and specific strategies for media to identify the best path for driving up digital marketing performance. Sumanjeet (2010) examined the state of e-commerce laws in India and expressed that there are many prominent issues which are critical for the success of e-commerce that the present IT Act is weak on several fronts and in the absence of sound legal framework of e-commerce cannot create a success story in India. Indian Government must increase the safe and secure business environment on cyberspace and must protect the interests of Indian software industries, BPO sector and other stakeholders. Rakesh and Khare (2011) examined that that Indian students' intention to buying online is influenced by utilitarian value, attitude toward online shopping, availability of information and hedonic values. Male students have a more positive attitude toward online shopping compared to female students. Gehrt, Rajan, Shainesh, Czerwinski & O'Brien, (2012) studied the "emergence of online shopping in India .Rakesh & Khare (2012) analyzed the "impact of promotions and

value consciousness in online shopping behavior in India" and the study observed that online shopping continues to attract investment from retailers and offers or other promotional methods of e-retailers are not influenced by Indian consumers. Promotions may not be essentially viewed by consumers as an important attribute while purchasing products or services online. Kalia, Arora & Law, (2016) noticed that legal validity of electronic transactions, security, content regulation, intermediary liability and jurisdiction are partially addressed by IT Act, whereas, junk mail and spamming, intellectual property, payment, taxation of e-commerce transactions and consumer protection are unaddressed. This Information is useful for policy and decision makers in government and e-commerce businesses. Chatterjee, (2016) observed that E-Commerce business throughout the world has brought a remarkable change in the business landscape and it also has redefined the business scenario by radically changing contours of space and time and it has reshaped the conception of nature of business management. India having large population with internet users is expected to be one of the major players in E-Commerce environment. Rekha, (2016) examined that surveyed the twelve statements were grouped into four factors i.e., product, convenience, service and online shopping hindrances and the composite score were calculated for each grouping factor. A significant difference is observed in the perception of two groups in case of three set of factors i.e., product, convenience and service. Kalia, Kaur & Singh, (2017) inferred that India is third biggest nation in terms of internet users. India will drive e-commerce in Asia pacific region after China and Indonesia and the study concludes that there will be a prospective growth of electronic commerce in India is extremely positive. Arora & Rahul, (2018) studied that the key components of perceived risk in e-commerce and the impact of perceived risk on online shopping attitude among online women shoppers in India and the study proved that perceived risk is not a significant factor influencing attitude of women shoppers in India. Security risk was marginally significant out of the different types of risks considered in the study.

OBJECTIVE OF THE PAPER

The objective of the present paper purports to examine Growth of E-Services in Rural India with special reference to Rural Uttar Pradesh.

DATABASE AND METHODOLOGY

The paper is based on secondary data collected and pertinent literature, observations and discussions which have been gathered from various conferences, workshops, consultations etc. The data collected through secondary sources have been arranged and compiled in tabular form. The paper includes the information available in Internet, published and documented reports of Indian Govt and State Govt, Books, Journals, etc.

CONCEPT OF E-GOVERNANCE

Electronic governance or e-governance is defined in varieties of ways. E-governance is about improving the way governments work, sharing information and delivering services to internal and external customers. E-governance refers to the use of information and communication technology (ICT), such as providing services to citizens through e-governance, wide area networks, mobile phones, etc., the ability to change relationships with customers, businesses and others keep it as government weapons. Christopher Baum has defined e-government as the transformation of internal and external relations of the public sector through net-enabled operations, information technology and communication to optimize government service delivery, constituency participation and governance (Kumar, 2004). E-governance is defined as the application of electronic means of (1) interaction between government (citizens) and government and businesses, as well as (2) simplifying internal government operations and democratic, government and business aspects (Backus, 2003). W'O Okot-Uma stated that "e-governance wants to move forward with the aim of realizing processes and structures and enhancing good governance to exploit the potential of information and communication technologies at various levels of government and the public sector" (Kumar, 2004). The term 'e-government' refers to the use of ICT by government agencies to transform relationships with citizens and businesses (Venkat, 2003; Barthwal, 2003). There are different interpretations of e-governance. This means that there is a seamless interface between government and civil administration and nothing but good governance. 'E' is only a device. E-governance is to help increase the use of information technology and enhance the lives of citizens. E-governance enables active citizen participation to inform citizens, represent citizens, encourage them to vote, and encourage their participation (Patel, 2001).

Rural ICT solutions are typically offered through Internet portals hosted on a delivery web server to provide access to citizens through cheap Internet mediums. The information flow between the delivery server and other departments is accomplished through intranet / LAN connectivity with the servers of those departments. Often, due to no computerization of the back-end system, transactions are exchanged manually and response data is manually keyed through nodes on the delivery server. It can be seen that end-to-end connectivity between central service providers and citizens is accomplished through multiple stages by combining multiple agencies. These steps, the technologies and agencies involved in providing services, are presented in Table-1.

Stage	Connectivity	Technology	Agency
1.	Related Departments to Central Servicing Agency	Manual or WAN / Intranet / LAN of individual departments	state and district administration
2.	Central Servicing Agency to Delivery Server (web server)	LAN with or without Intranet	Coordination committee offering the service
3.	Deliver Server (web server) to Internet Service Provider (ISP)	Leased or Dedicated line / VSAT	Service deployment agency
4.	Central Servicing Agency's ISP to Rural –ISP	ISP dedicated lines / BSNL / VSNL / Private Telecom	Internet Service Provider(s)
5.	Rural - ISP to Rural Kiosks*	Dial up line / Wireless (WiLL)	Service Delivery Agents (Village Panchayats, Private Entrepreneurs)

Table: 1 Stages of Information Processing in Rural Applications

Source: Rama Rao, 2004

E-governance can be classified under different models based on the nature of interactions and the agencies involved in the interactions. These are Government to Citizen (G2C), Citizen to Government (C2G), Government to Government (G2G), Government to Business (G2B), Government to NGO (G2N) (Sachdeva, 2003). In the G2C model, the government interacts with the citizen to provide information and various services. Information about government services is published on web sites and citizens can get information about job creation procedures. Citizens can download a variety of application forms for a variety of services, such as filing tax returns and renewing licenses. A large number of government departments provide many facilities and services at one place through Internet portals. Citizens can also submit applications and make online payments. Important examples in this regard are: e-education, e-medicine, e-registration, e-transportation and so on. E-governance can also be classified into two groups based on policy formulation and implementation. The purpose of e-governance is to use ICT to streamline administrative processes and enhance public service delivery.

Meaningful e-government development has added value to government functions because (1) it empowers people and enhances their capabilities; (2) It empowers people to participate effectively in the political and economic development process; and (3) it combines the values of inclusive governance and democratic institutions. There are three main forms of participation: (1) economic participation with opportunities to use their abilities and gain income to increase their choice; (2) political participation and rule of law; and (3) social and cultural participation. E-government, democracy and e-participation are the foundation of e-democracy. Governments will play an important role in the development of the on-line world. They need to incorporate and adapt strategies and technologies that will expand participatory democracy. To ensure the effective functioning of e-government, 15 guiding principles have been suggested by international agencies. These include priority of development needs, efficiency and effectiveness, availability of resources, skills and organizational culture, coordination, legal framework, ICT infrastructure, political leadership and long-term political commitment, public participation, development planning, partnership, monitoring and evaluation, perception and values, access and skills, privacy and security. These principles highlight the imperative of improving efficiency and effectiveness in governance, besides ensuring accountability and transparency in the delivery of public goods and services to citizens. E-government also focuses on the principle of putting people first and thus, the government can strengthen the bond with its citizens through simplifying the delivery of services to the people to provide greater access to information; increase government accountability by making its citizens more transparent; and promote people-centered dialogue to reduce corruption and allow people to interact with policy and decision makers. The key variables of the framework depicted in Chart 1 are: ICT initiatives, community participation and traditional knowledge systems (TKS), associated with others using the systems approach, each of which is defined. ICT initiatives can benefit all components of rural development (RD) directly or indirectly. Direct ICT initiatives for rural development refer to the front-end use of computing, networking, and Internet technologies for rural communities. Examples

are data-base systems, web portals or community service centers at the block or village level to address local concerns, local governance issues, and land record management, supply-chain management, enhancing rural markets or agricultural processes, and so on. Indirect ICT initiatives for the rural sector will use ICT in the background as a tool for education, weather forecasting and so on.

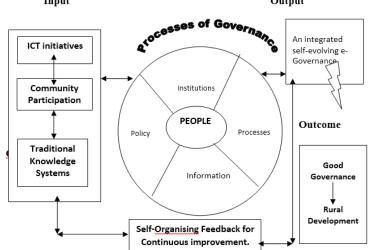


Chart: 1 Proposed 'TKS Based G2CG' e-Governance Framework for Rural Development Input Output

In the rural context, all ICT initiatives, direct or indirect, have to be designed using an integrated and self-developed approach. The role has increased focus and expectations that information and communications technology-based technology platforms such as websites and wikis, social media, interactive geo mapping, and SMS and voice-based reporting can play into increased accountability, participation, and transparency in public administration (Avila, et al., 2010; Davis, 2004; Pina, et al., 2009).

There is pressure on the public bureaucracy to adapt and more openly improve ways of interacting with citizens through the adoption of Web based technologies. The differences between public expectations and perceived government performance, the role of the mass media, political scandals, lack of transparency, and corruption contributed to the decline of public confidence in government over the last two decades (Nye, 1997; Sirker & Cosi, 2007). Numerous studies have indicated that public investment in services has resulted in insufficient returns. Improved processes of governance and increased public confidence in governments are linked to increased accountability towards citizens through two-way interactions between governments and citizens (Avila, et al., 2010; Joshi, 2010; Mc Gee & Gaventa, 2010).Greater access to information and transparency has been seen as a way to increase trust in governments through improving accountability of government services and empowering citizens with e-governance (Demchak, Friis, & La Porte, 2000). E-government can be interpreted in various ways. The definition of e-government differs from "translating the experiences of private sector e-commerce to the public sector", from real governance issues such as "online participation in shaping, arguing and implementing public policies" (Pina, et al., 2009).

The E-Governance framework encompasses ICT, rural development, use of Internet, availing of information and e- services (Chart 2).

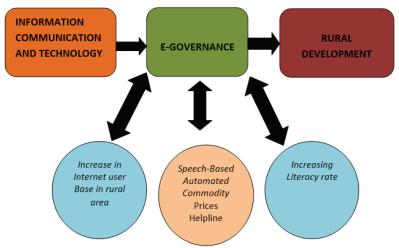


Chart: 2 E- Governance Framework

E-SERVICES IN INDIA

The "governance" of a nation is defined as the manner in which power is exercised in the management of a country (World Bank, 1994). In a liberal democracy, there is a concept of accountability inherent in the context of 'power'. The powers should be exercised in such a way that it is accountable to all citizens and their needs. It cannot be ensured that the powers of governance are highly centralized and work for the benefit of a select few. So, decentralization becomes an essential part of the governance of a country if the government of a country is to be based on the principles of equity and justice. Furthermore, the agreement that decentralization is an evolution is accepted across the political spectrum (Bardhan, 1996, Manor, 1999). The aspiration of these local identities can be fulfilled only when they have a political voice. They can achieve this political voice through decentralization of power. In the current globalization phase, governance framework aims at 'Good governance'. The government of India gives a definition of 'Good governance' as having certain universally accepted features like exercise of legitimate political power, formulation and implementation of policies and programmes that are equitable, transparent, non-discriminatory, socially sensitive, participatory and above all accountable to the people at large (Government of India, 2002). People centred services implicitly expect government support. Good governance integrates government system seamlessly (Satyanarayana, 2004) to meet these expectations. In Indian context, people demand localized services and policy is framed through the 73rd and the 74th Constitutional Amendments to bring about decentralization of power to the

local self governments (Mishra, 2004). It is increasingly felt the ICT enabled government processes would bring in the desired result in managing decentralization (Prabhu, 2004, Bhatnagar, 2004). 'Good governance' which is a part of the current governance framework involves the de-centering of the state (Chandhoke, 2003). It is essential that government system which are subsets of governance systems need to adapt to this new environment of a decentralized governance structure. This adaptation process calls for process re-engineering at all levels of the government systems wherein the structures at the national, state, district and the local levels determine their responsibilities towards the delivery systems. Therefore, e-Government systems need to be studied with decentralization as one of its outcomes.

It is increasingly realized that ICT enabled government processes will bring desired results in the management of decentralization (Prabhu, 2004, Bhatnagar, 2004). Good governance, which is a part of the current governance structure, includes the center-setting of the state (Chandhoke, 2003). It is necessary that government systems that are subsets of governance systems must adapt to this new environment of a decentralized governance structure. This optimization process calls for process re-engineering at all levels of government systems, with structures at the national, state, district, and local levels determining their responsibilities towards delivery systems. Therefore, e-government systems need to be studied with decentralization as one of its consequences. A consistent endeavour has been created to embrace the enabling ICT e-government system in India. There is a plethora of pilot projects undertaken over the years through various models (Bhatnagar, 2004). It has been the priority of the Government of India to identify projects and have the ability to bring them on mission-mode. In the context of rural development paradigms, e-governance schemes are offered through 100,000 citizens services centres (MIT, 2006). In the current context of governance, priority is being given to citizen-centric services. Amendments to the Panchayat Act enable the local institution to take decisions. This situation calls for a collaborative effort between the government, civil society, and the market. The role of public-private-partnership and the provision of a suitable place for civil society to raise local demands on government systems are essential elements of current governance systems. We can trace the origins of e-governance in India to the Indian government's computerization initiative in the 1970s, although the focus at the time was primarily on automating and interconnecting some important government offices and functions. Being this pre-internet era, the main focus was on enabling connectivity and rapid information-sharing within the government. The establishment of the National Information Center in 1977 for the development and management of information systems for government in India was one of the first steps to lead India to the era of e-governance. However, it was the Internet and telecommunications revolution during the 1990s that forced the Indian government to find avenues for the delivery of citizen services through IT solutions. This decade saw several e-governance initiatives at the national, state, district and even block levels in the country.

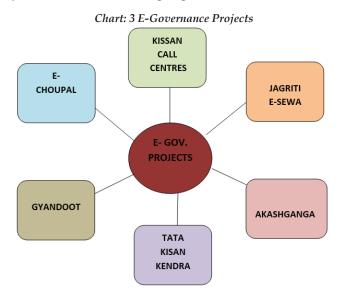
The development of the use of information technology (IT) has made it possible for public services to cover the country by computer networks. There are efforts to improve e-governance and promote e-governance to make it citizen friendly. With the passage of time, the adoption of electronic governance or governance is expected to eliminate corruption to a great extent, and has become an effective tool, inter alia, in efficient administration. Among

them, the railways, judiciary, post offices and income tax have already taken some steps. More steps are on the way. For example, online railway reservation (www.irctc.co.in) has become hassle free. The Information Technology Act, 2000 was enacted to "provide legal recognition for transactions conducted by electronic data interchange and other means of electronic communication", commonly called "electronic commerce", in which paper-based methods. Options include use to facilitate communication and storage of information, electronic filing of documents with government agencies and amending the Indian Penal Code, Indian Evidence Act, 1872, Bankers Books Evidence Act, 1891 and Reserve Bank of India Act, 1934 and related matters or for accidental treatment. "Thus, the focus of this Act is on electronic commerce and electronic records. The Act contains provisions for digital signatures and electronic records, retention of electronic records, legal recognition of digital signatures and electronic records, regulation of certified authorities, Cyber Regulation Appellate Tribunal etc. To facilitate the implementation of e-governance projects at various levels across the country, an overall legal framework is required.

The National E-Governance Plan (NeGP) was launched on May 18, 2006 with the objective of a comprehensive e-governance strategy and program for India. NeGP aims to lay the foundation for and encourage the long-term growth of e-governance in India, thereby creating governance and institutional mechanisms and establishing infrastructures and policies.

E- GOVERNANCE INITIATIVES

Significant progress has been made in the implementation of the core and support components. Major achievements are highlighted in chart 3:



STATE WIDE AREA NETWORKS (SWANS)

The government has approved a plan to establish a State Wide Area Network (SWAN) across the country. Under this scheme, technical and financial support is being provided to the States / UTs for the establishment of SWANs to connect all the States / UTs to the block level through District / Sub-Divisional Headquarters. To monitor the performance of SWAN, the Department has mandated Third Party Auditor (TPA) agencies by the States / UTs.

STATE DATA CENTRES (SDCS)

State Data Centers (SDCs) are being implemented across the country to provide common IT infrastructure for hosting government applications. SDC is one of the three basic structures structured under NeGP, enabling the web to be enabled anywhere, anytime. The SDC is envisaged with the objective of providing a common enabling infrastructure to the States / UTs to integrate services, applications and infrastructure to provide efficient electronic delivery of G2G, G2C and G2B services. Substantial progress has been made in the SDC project.

COMMON SERVICE CENTRES (CSCS)

Common Service Centre scheme approved by the Government of India in September 2006 to set up 100,000+ (one lakh) internet enabled centers in rural areas under Public Private Partnership mode (PPP) under National e-Governance Plan (NeGP) is being implemented. The Common Services Center (CSC) is proposed to be a delivery point for rural citizens of India at their doorstep for government, private and social sector services. The State Governments like Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Jharkhand, Kerala, Maharashtra, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal have issued Government Orders / Notifications to the various departmental heads / District Level authorities/ Stakeholders for use of CSC to deliver various G2C Services. The various G2C Services offered are: Agricultural services, RTI Services, NREGA MIS Data Entry service, Postal Products, Land Records, Issuance of Birth and Death Certificates, Utility Services, Electoral Services, Transport Services, Grievances, e-District Services etc. There were more than 3 lakh Common Service Centres in India as on March, 2017. About 80 percent village panchayats had the facility of CSCs. In the state of Uttar Pradesh, there were 41675 functional CSCs (Table 2).

	Total No. of Registered CSC	No. of Registered CSC at GP Level
Uttar Pradesh	71096	45051
Maharashtra	33863	21878
Rajasthan	30436	15038
Bihar	23901	19000
Madhya Pradesh	21543	14995

Table: 2 State wise Registration of CSCs in India (As on 31 July'2017)

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West Bengal	18458	14269
Gujarat	18062	14845
Chhattisgarh	12342	8725
Tamil Nadu	12244	6452
Jharkhand	11125	8635
Odisha	9573	7645
Haryana	9264	6221
Karnataka	7147	3047
Punjab	7031	4991
Andhra Pradesh	6105	4063
Uttarakhand	5904	4637
Tripura	5895	3464
Assam	3241	2417
Kerala	2794	2094
Himachal Pradesh	2748	2379
Jammu & Kashmir	2246	1039
Others	2378	1603
Union Territories	2943	193

Source: Anand Raj Soni, 2017

AADHAR CARD - UID:

The UID citizen card is a tool of electronic identification and authorization of equal importance, whatever method of electronic communication is used, and the government has already indicated a preference for 'smart cards'.It is felt that a single UID will suffice any document for a citizen to carry a license, wallet, PAN card and identity card to various organizations or places of work. UID will remain one from birth to death. This will help the government in census, certificate and placement etc. The progress of Aadhar is shown in Table-3.

Sl. No.	Items	Status as per 2016	Status as per 2017	Status as per 2018
1	Total No. of AADHAR Generated	104 crores	119 crores	122 crores
2	Percentage of Adult Population on ADHAR	86.6%	99.9%	100%
3	Total mobile SIMs issued using AADHAR EKYC	Implemented from September, 2016	32 crores	59.19 crore

Table-3 Progress of Aadhaar

Source - https://twitter.com/_Digital India

DAIRY INFORMATION SYSTEM KIOSK

Milk production is important for India. The Indian Institute of Management, Ahmadabad (IIMA) recognized the opportunity to build this infrastructure. A number of pilot projects were undertaken by IIMA to upgrade the applications at these centers and connect to the Internet to access a specialized dairy portal with content distributed in the local language. The project has been developed through extensive collaboration with cooperative dairy unions of Gujarat. The DISK application targeted at the emerging dairy sector for two milk collection societies has been tested by the e-Governance Center of the Indian Dairy Management Institute, Ahmadabad. The project has two basic components - an application running in the rural milk collection society, which can be provided with internet connectivity and a portal at the district level that caters to the transaction and information needs of all members. DISK has helped in automation of milk procurement process in 4,500 rural milk collection societies and pilot trials have been conducted in two cooperative villages of Amul Dairy in Kheda district. Software called Akash Ganga has been developed with special features to enable quick collection of milk and faster delivery of payments to dairy farmers.

E-SEVA

Launched on the 25th of August, 2001, electronic seva (e-Seva) is the improved version of the TWINS project launched in 1999, in the twin cities of Hyderabad and Secunderabad. Currently there are 32 e-service centers spread across the twin cities of Hyderabad and Secunderabad, which operate from 8:00 A.M. to 8:00 P.M. every day and from 9:30 A.M. to 3:30 P.M. between the holidays. .Citizens can pay utility bills, trade license benefits and government affairs transactions at these facilities. Although the e-Seva received a lukewarm response from the citizens, the initiative has raised tremendous confidence along the way and has collected a good collection so far. The government has started the project in other parts of the state including rural areas. Like West Godavari district. Customized services such as issuing certificates and land records, online market rates, tele-agriculture, general accounts of SHGs are provided.

GRAM SAMPARK

Gram Sampark is a major ICT product in the state of Madhya Pradesh. A complete database of resources, infrastructure, beneficiaries of government programs and public grievances available in all 51,000 villages of Madhya Pradesh can be obtained by visiting the website www.mp.nic.in/gramsampark. The village sect consists of three sections - Gram Paridarya (Village Scenario), Samasya Nivaran (Grievance Redressal) and Village Prahari (Village Sentinel). An eleven-point monitoring system has been put in place to monitor village-wise programs every month.

GYANDOOT

The Gyandoot project was started in January, 2000 by a committed group of civil servants in consultation with various gram panchayats in Dhar district of Madhya Pradesh.

Gyandoot is a low-cost, self-sustainable and community-owned rural intranet system (Soochnalaya) that caters to the specific needs of village communities in the district. Thirty-five such centers have been established since January, 2000 and are managed by selected and trained rural youth from the unemployed educated youth of the village. They run Sohanlalayas (organized as kiosks) entrepreneurs (Soochaks). User fees are levied for a wide range of services, including applications for services related to agricultural information, market information, health, education, women's issues and land ownership, sequestration and poverty alleviation. The kiosks are connected to the intranet via dial-up lines, which are soon to be replaced by wireless connections using CorDECT technology. Soochanalayas is equipped with a Pentium multimedia color computer with dot matrix printer. The user interface is menu-based with information presented in the local Hindi language and features of the Gyandoot software are constantly being updated (Gorla, 2008).

LOK MITRA

The Lok Mitra Project was formally dedicated to the people on 8 May, 2001 as a pilot phase in Hamirpur, Himachal Pradesh. Services offered include information about vacancies, tenders, market rates, matrimonial services, village e-mail. Lok Mitra INTRANET, set up in District Hamirpur, consists of two Pentium-III-based servers (under WindowsNT), with 4 Pentium-III-based client systems and a router, to be used in a separate room in a hub, using the hub. Is done by Deputy Commissioner Office, Hamirpur was named Lok Mitra Sunalaya. A total of 25 panchayats have been identified for the establishment of citizen information centers. The project has been expanded to all states and is a major draw in India.

MAHITI SHAKTI

Launched in 2001, Mahati Shakti, www.mahitishakti.net portal acts as a single window through which all aspects of the functioning of the civil government, ranging from obtaining various benefit schemes and ration cards to getting approval for old age pension. Anyone who wishes to avail the benefit has to go to his/her nearest designated STD/ISD kiosk, submit the necessary documents to the Info Kiosk owner and fill in the required form online. For online submission of application, the Info Kiosk owner charges Rs. 10 for the application form and Rs 20 for submission.

BHULEKH

Bhulekh provides all types of information related to business or agricultural land to the owner or buyer. National Informatics Center (NIC) A website has been developed which is very well known and known as www.bhulekh.up.nic.in. All types of land and property information to NIC through the use of internet. Each tehsil of the state of Uttar Pradesh uploaded all its land records according to the villages, taluka war, Namwar, Khasra number wise, Khata war and Khatauni war. Bhulekh.up.nic.in comes under the Rule of Records (ROR) and Right to Information means that every common citizen has every right to get all kind of information in his query. Bhulekh Portal provides land record information of land property. The portal contains various forms and applications related to land deals, information about land value etc. There are a lot of governance projects run by the state and central government. India is poised to achieve e-governance. Despite these efforts, the worst record-keeping state in e-governance is Uttar Pradesh, when rated on ICT policy and vision and their priorities for e-governance. UP It is one of the largest and most populous state in the country. It requires enormous efforts to implement and support projects / applications across the state.

BHOOMI

Bhoomi is an initiative of the Government of Karnataka to computerize land records. The record of 6.7 million farmers dealing with 20 million records in the state of Karnataka has been computerized. The Department of Revenue, Government of Karnataka along with NIC implemented computerization of land records. A farmer needs his official land record for many purposes such as to obtain loan on crop from any financial institution or any legal dispute, etc. First problem with manual system such as registers of land records properly. Not maintained, or not very well led to computerization. Any farmer can now easily get a record of his land from a land record kiosk. In addition, if farmers are requested for mutations on the land record, they receive an acknowledgment number. Therefore, now farmers can track the process of mutation at available touch screen kiosks and also report to higher authorities in case of any delay. Thus, it leads to transparency.Seeing the success of the land, other states like Andhra Pradesh, Haryana, Madhya Pradesh have also implemented a similar system.

E-CHOUPAL

India has witnessed large scale industrialization in the last decade but agriculture is still a major occupation in India. Farmers are often exploited by unfair intermediaries at every level involved in the process of selling their produce to the end consumer. Such intermediaries or agents add their profit margin; try to hinder the market information. In order to cater to such problems, the International Business Division of Indian Tobacco Company (ITC-IBD) initiated a step called e-Choupal (which means a village meeting place). Under this initiative various e-Choupals were set up in around 6500 villages by 2012 and each e-Choupal was equipped with a PC, internet connection, printer and Uninterrupted Power Supplies (UPS). Through this, managers in ICT-IBD could get cheaper raw materials directly from the farmers and farmers could take advantage of this due to no intermediary involved. The Indian Tobacco Company Limited has added 7 new e-Choupals a day and plans to scale 20,000 e-Choupals to cover 100,000 villages in 15 states, serving 15 million farmers by 2020 (Salute and Kohl, 2011). The implementation bottlenecks in the project are shown in table-4

Project	Operational Bottlenecks	Economic Bottlenecks	Personnel Bottleneck
E-Choupal	Infrastructure provided to "sanchalak" was outdated.	Lack of financial resources to procure infrastructure.	Challenges with regard to provision of technical education to freshers in rural areas.
Gyandoot Power breakdown interrupts working and network gets disconnected.		High operation costs due to multiple services rendered.	Difficulty in getting technically skilled youth in remote areas.

Table-4 Bottlenecks in E-Choupal and Gyandoot Projects

Source: E-Government Milestones in Rural India: Eagro Aspects. Salkute, Kohle (2011)

KISSAN CALL CENTRES

The language changes after every 50 km in India. These call centers are specifically conducted in constant language to respond to the issues raised by farmers. The scheme was launched during April, 2002 by the Department of Agriculture and Cooperation, Ministry of Agriculture. The scheme was launched to distribute the farming villagers about telecom infrastructure. As most of the villagers are not aware of the latest technological developments in the country, these centers are specially designed to create awareness among the farmers. Toll free numbers are being provided to farmers, as services are to be given free of cost to all the needy. So the Agriculture Department and the Line Department, SAUs, ICAR organizations are being directed by the Ministry of Agriculture to promote the toll free numbers of KCC. Promotional materials include posters, charts, training and demonstration programs etc.

E-DISTRICT

E-District is one of the 31 Mission Mode Projects under National e Governance Plan (NeGP) with the DIT, Government of India being the nodal ministry. This project aims at providing support to the basic administrative unit i.e. District Administration by undertaking backend computerization to enable electronic delivery of high volume citizen centric government services which would optimally leverage and utilize the three infrastructure pillars of State Wide Area Networks (SWAN), State Data Centers (SDC) and Common Service Centers (CSCs) to deliver services to the citizen at his doorsteps. The services under E- district are shown in table-5.

Sl. No.	Service	Sub-Service	
		• Caste	
		• Income	
1	Certificate	• Domicile	
	Certificate	• Birth	
		• Death	
		• Handicap	
		• Widow	
2	Pension	Old Age	
		• Handicap	
3	Employment	Registration	
	Revenue Court	Cause List	
4		Case Tracking	
		Order Generation	
	Dues and Recovery	RC Citation	
5		Recovery Recording	
		Recovery Status	
	Ration Card	New Ration Card	
6		Ration Card Updation	
0		Ration Card Surrender	
		1. Duplicate Ration Card	
7	Complaint	Complaint Registration	
	Complaint	Complaint Tracking	

Table-5 Services under e- District

E-PROCUREMENT

Ministry of Commerce and Industry (Department of Commerce) has been designated as the nodal ministry for the implementation of e-procurement. e Procurement (e-GP) is one of the Mission Mode Projects (MMPs). The E-Procurement MMP's vision is to "take a national initiative to implement procurement reforms through the use of electronic government procurement to make public procurement more transparent and efficient in all areas".

E-COURTS

The E-Court Mission Mode Project (MMP) was conceptualized with a view to transform the Indian judiciary using technology. The project was developed after a report submitted by the e-committee under the Supreme Court on the National Policy and Action Plan on the implementation of information communication tools in the Indian judiciary. The Indian government is using IT to facilitate governance. The IT industry is doing something to help in the form of day-to-day public-private partnerships.

TATA KISAN KENDRA

In Uttar Pradesh, Haryana and Punjab, Tata Chemical Limited launched Tata Kisan Kendra (TKK). Geographical Information System (GIS) helps TKK to track basic areas related to farming such as soil, groundwater and weather. The new software called GIS informs about roads, buildings and rivers. Data is a form of digital maps and provides information about socio-economic, administrative and physical sets. With the help of satellite, images are being processed which further helps in detecting pest attacks and crop estimates across the state. The satellite further helps map upgrades and unproductive farming detection. There are about 800 franchisees and 40 more kiosks to serve in 48000 villages.

E-POST

Internet and email are a core part of e-governance. The e-post service was started on 30 January, 2004 by the Secretary of the Department of Posts. But these facilities are not available in rural areas. Keeping this in mind, the Department of Posts introduced the e-post facility. It is a very simple service where people can send messages anywhere in India. In this, a person to send a message, In this a person who has to send the message simply approaches the post office, where the person scans the handwritten or printed document and sends it via email to the nearest destination post office. There the printout of the document is taken out, sealed in an envelope and delivered at the destination address. The document can be in any language. A fee of Rs. 10/- per A4 page is charged. For encouragement to the corporate customers post office gives them special e-post rates and other value additions. For Corporate customer e-post costs Rs. 6 per page of A4 size & for bulk it costs Rs. 5/ - per page. This service tries to bridge the digital divide.

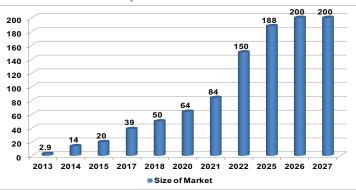
E-COMMERCE

The E-commerce business is expected to form the largest part of Indian economy with a value of approximately USD 100 billion by 2020. The size of the E-commerce industry was estimated to be Rs. 2,110 billion by 2016 as per Digital Commerce Report, 2015. The industry was worth Rs. 351 billion in 2011 and grew at a CAGR of 37 percent to touch Rs. 1,257 billion in 2015 (UN ,2017). India is the fastest growing market for the e-commerce sector. Revenue from the sector is expected to increase from USD 39 billion in 2017 to USD 120 billion in 2020, growing at an annual rate of 51 percent, the highest in the world. Consumers benefit from e-commerce for the convenience of accessing it anytime and from anywhere with internet access.

E-commerce in the goods category in India has grown at a compound annual growth rate (CAGR) of 57% in last seven years, and is expected to grow by 18.6% till 2022. The online retail market in India is estimated to be worth USD 17.8 billion in terms of gross merchandise value as of 2017. As of July, 2018, the number of transactions in e-commerce retail was 1-1.2 million per day and on e-commerce platforms was 55-60 million per month. The growth engine has been smart phones, with only or primarily online retailers or e-tailers witnessing their sales mix shifting heavily into Smartphone

and electronics, supported by direct partnerships with brands (Completion Commission of India, 2020).

Growth of e-commerce in India is shown in Table-6. There has been enormous growth in e-commerce in India during the period of 2013 to 2020. The size of e-commerce market in India was estimated to be 64 US\$ billion in 2020. It is likely to increase by more than 3 times in 2027.





Source: India Brand Equity Foundation, 2020

Emerging vertical specific e-commerce companies in India are shown in Table 6. E-commerce companies have mushroom in India during the recent past in view of increasing demand of e-business and emerging high potential of e-commerce. Travel, transport, real estate, fashion, furniture, food and grocery are some of the major sectors of e-retailing companies. Even companies like Uber and Ola in transport sector are doing good business without their investment and owning their own vehicles. The Zomato, Big Basket, Food Punda are Swiggy are the major online food retailers while e-grocery is the major online grocery companies. Amazon and Flipcart are the global companies doing e-business in retail sector.

Verticals	Leading companies
Online Travel	Makemytrip.com, yatra.com, cleartrip.com, goibibo.com
Online Real Estate Magicbricks.com, 99acres.com, commonfloor.com, Housing.com	
Online Fashion	Jabong.com, Myntra.com, Zovi.com, yepme.com, limeroad.com, Fabfurnish.com, Pepperfy.com,
Online Furniture urbanladder.com	
Online Education	Purple Squirrel Eduventures , Plancess.com
Online Food and Grocery Zomato.com, Foodpanda.in, TinyOwl.com, BigBasket.com, Grofers.	

Table: 6 Emerging Vertical Specific E-Commerce Companies in India

E-PANCHAYATS

E-government is a multifaceted and complex concept. The key element in the ICT tools of e-governance is to make operational activities transparent with customers and the business community and interlink between administrations. The success of e-government initiatives and processes are highly dependent on government's role in ensuring a proper legal framework for their operations/services (Dhillon and Laxmi, 2014). Panchayats are local village based self government. Since most of India's population lives in villages, panchayats play a major role. The government thus felt the need to improve and replace it, and so e-panchayat was started. In fact the e-Panchayat was identified as the Mission Mode Project (MMP). In this Gram Panchayat, 2,50,000 Panchayati Raj Institutions, blocks and district councils were identified which were to be linked with ICT. NIC developed e-Panchayat for Hyderabad in Andhra Pradesh. All the information of gram panchayats was collected and based on that, e-panchayat was started. The e-panchayat consisted of 30 modules with around 150 sub-modules. These modules were also based on providing information to villagers on various products like agriculture, irrigation, fisheries etc. and other problems related to loans from industries, housing, water etc. It was also related to various other services like property tax, registration and issue of death and birth certificates, payment of old age / widow and disabled pension, approval for residential purpose etc. An important module in this was grievance redressal where any grievance could be lodged and subsequently monitored for redress. Thus the project complements all aspects of the functioning of the panchayat including planning, monitoring, implementation, budgeting, accounting, social audit and delivery of civic services (Abraham et al., 2011). The architecture of e-Panchat can be a web-based en-tier. It will act as an application service provider for all Panchats level digital services to all stakeholders (citizens). The elected representatives, gram panchayat officers, government and knowledge workers are the stakeholders. At the panchat level, general customers can get a lot of information through the available e-panchat. So that this level can significantly save communication costs as well as ensures standardization and excellence of e-governance services (Mooji and Josh, 1999).

The 73rd amendment of the constitution is a watershed development that can actually affect the role of Panchayati Raj Sansthan in self-governance. Rural local governments (referred to as panchayats) are given a wide range of powers and duties related to rural development, implementation of anti-poverty programs, employment generation, rural marketing, social and political empowerment of weaker sections of society, and soon. Panchayats are instrumental in mobilizing housing and other agencies to design and implement rural development initiatives that are more conducive to local needs payment gateway for citizens, e-sign facility for panchayat officers, SMS and email alerts. State governments have also taken initiative to set up to facilitate the development process and provide easy access to information to citizens to e-Panchayats. States like Gujarat, Andhra Pradesh, Himachal Pradesh, Tamil Nadu, Kerala, Karnataka and Haryana set up Panchayat portals to provide information about development schemes like National Rural Employment Guarantee Act, organizational / departmental establishment, developmental policies, and annual reports. Has Notification, evaluation

report of development programs, status of development plans, revenue etc. Panchayats taking place at the interface of rural citizens and governance structure are an effective vehicle to inspire large scale ICT culture at the grassroots level. It is with this broad view that the Ministry of Panchayati Raj, Government of India formulated a plan to enable ICT of all panchayats in the country on a mission mode approach.

The purpose of the e-Panchayat mission mode project is to address all aspects of functioning of Panchayats from internal core functions such as decentralized planning, budgeting, accounting, implementation and monitoring etc. to service delivery like certificates, licenses etc., to Panchayats. Being the foundational unit for the planning and implementation of a large number of schemes and services, this initiative will go a long way in improving public service delivery through PRI with better results. It has been observed that exposure visits are one of the most effective ways for elected representatives of Panchayati Raj institutions. Representatives of the people as well as the officers can be learned working of Gram Panchayats and management of e-resources. There is a wide potential to maximize risk visits by systematically developing such demonstrative panchayats as panchayat study centers, where exposure visits from elected representatives and panchayat officials can be carried out in an orderly manner. This can essentially become an integral part of the capacity building strategy to develop functional performance / immersion sites for excellence in panchayat functioning.

The state government has also collaborated with UNICEF, WWF, Jal Aid and Tata trusts to provide technical assistance to selected gram panchayats in the state. The Ministry of Panchayati Raj, Government of India provided funds for the establishment of State Panchayat Resource Centers within the State Rural Development Institute. The institute will be responsible for strengthening the identified model panchayats to become a motivational knowledge center, i.e. a panchayat study center; Identifying champions and using them in the training of PRIs; Develop appropriate field visit programs / protocols and coordination of exposures to visiting teams of instructors from within and outside the state.

E-SERVICES IN UTTAR PRADESH

Uttar Pradesh is one of the largest and most populous states in the country. It requires enormous efforts to implement and support projects / applications across the state. The government has undertaken several projects to solve all the problems described in my paper. Information and communication technology has facilitated the design of solutions to deliver government services for social development at the gates of the rural poor. Successful ICT projects are involved in the design process, with all stakeholders such as government officials, legislators, regulatory agencies, citizens, voluntary organizations, technology consultants and vendors, academics, researchers, funding agencies and the media. Most of this was accomplished using the public-private-partnership (PPP) model. The benefits derived from such projects were very significant.

Uttar Pradesh has established leadership in several e-governance initiatives. E-governance projects in the state cover the entire area of the interface - G2G, G2C,

G2B, G2E and G2S. Under the e-governance scheme, the government department has applied applications such as: land records, medical-health, secondary education, food-civil supplies, labor, social welfare, road transport, property registration, agriculture, treasury, municipal, gram panchayat, commercial taxes, police and employment exchange. The following are some important projects in Uttar Pradesh (Chart 5).

Central MMPs	State MMPs	Integrated MMPs
 e-office MCA21 Pension Income Tax(II) Banking UID Posts Passport Cental exice & customs Immigration, 	State MMPs Agriculture e-District e-Panchayat Commercial Taxes Health PDS Road Transport Police(CCTNS) Land Record(NLRMP) Education	 e-Biz EDI for Trade e-Court CSC E- Procurement India Portal National e- governance Service Delivery
Visa and Foreigners Registration & Tracking Insurance	 Treasuries Computerization Employee Exchange Municipalities 	Gateway

Chart 5 E- Governance Projects in Uttar Pradesh

Source: Arti Singh, 2014

JAN SUVIDHA KENDRA

The Jan Suvidha Kendra (JSK) was first started in Jhansi district of Uttar Pradesh, and since then it has been replicated in many other districts. It was launched in the public interest on 10th June, 2017 in the Collectorate campus, Jhansi. The project has led to the creation of a platform for contact less, quick, responsive, cost-time-labor saving, easily accessible 24X7 service for speedy and qualitative disposal of public grievances. The four most important requirements essential for any e-governance initiative to be successful are Reliability, Explicability, Sustainability and Security. The Jan Suvidha Kendra (JSK) was first started in Jhansi district of Uttar Pradesh, and since then it has been replicated in many other districts. It was launched in the public interest on 10th June, 2009 in the Collectorate campus, Jhansi. The project has led to the creation of a platform for contact less,

SRISHTI

The Sristi project was launched by the Uttar Pradesh government. The government gets a lot of help in getting information like location i.e. Block, Tehsil / Taluka, District, Division and State etc. In the project, several tables and graphs are created by different departments to understand the development related issues and decisions are taken accordingly. Geographic information systems (GIS) have in recent years introduced a powerful tool to represent complex data on maps. If thematic maps are drawn for regional comparisons taking MIS data, the power of GIS can be subjugated.

E-SUVIDHA

E-Suvidha provides an interface for the citizen to interact with government departments. The Government of Uttar Pradesh has decided to create and develop an electronic connection between the common citizen and government departments. The project is called e-Suvidha under NIC. Government Society is registered under the Societies Registration Act, 1860. The e-Suvidha envisages implementing an Information Technology Enabled Public Utility Interface in the State of Uttar Pradesh and initially in Lucknow City and selected Technology Enabled Public Utility Interface. E-Suvidha has projected to implement an Information Technology enabled Public Utility Interface across the state of Uttar Pradesh and to begin with initially in the city of Lucknow and selected Technology enabled Public Utility Interface across the state of Uttar Pradesh and to begin with initially in the city of Lucknow and selected Technology Partners through Open Tender for providing Total Solution Based Package Comprising of Hardware, Software and Connectivity for Deployment, Customization and Successful Implementation of e-Suvidha on Build Own Maintain Transfer (BoMT) financial model basis. In e- Citizens can avail any service from any of the eSuvidha Service Centers across any counter without any jurisdictional limit. All e-Seva service centers accept all types of payments including credit cards. Technology plays a unique and interesting role in replacing accountability and transparency initiatives. Online and mobile technology tools are transforming the transparency and accountability sector. A number of initiatives including complaints mechanisms, public information / transparency campaigns and public expenditure monitoring are based on ICT platforms (Avila, et. al., 2009). Many websites act as portals where citizens can list their complaints related to the performance and administration of their government. Citizens have better access to information through technologies and new ways of participating (Avila, et al., 2009). The concept of citizen journalism and digital democracy is fast emerging and citizens are demanding public online rights of the private sector.

LOKVANI PROJECT

Lokvani is a Hindi word that means "voice of the people". The government started the project to provide information like birth certificate, death certificate, income certificate, land records and job opportunity creation under a single window. It gives security and opportunities for quick development. Lokvani is a public-private partnership project that started on 9 November 2004 in Sitapur district of Uttar Pradesh. After the success in Sitapur, the project was replicated in all 70 districts of Uttar Pradesh.

KHAJANE

This is a comprehensive online treasury computerization project of the Uttar Pradesh government. The project has resulted in computerization of the entire treasury related activities of the state government and the system has the ability to track every activity correctly with the approval of the state budget.

E-PANCHAYATS:

Under a pilot project, the Uttar Pradesh government has identified 20 gram panchayats to develop panchayat study centers in the state. Of them, 11 gram panchayats are from the eastern region, 5 gram panchayats in the western region, 3 gram panchayats in the central region and 1 gram panchayat of Bundelkhand (Table 7).

Sr. N.	District	Development Block	Village Panchayat
1	Fatehpur	Vijayipur	Laukiyapur
2	Balrampur	Haraiya	Shiva Nagar
3	Sravasti	Hariharpur Rani	Jarkusha
4	Bahraich	Chittaura	Deeha
5	Sidharth Nagar	Bhanwapur	Hasuri Ausanpur
6	Chandauli	Sadar	Sikari
7	Chitrakoot	Karvi	Khohi
8	Sonbhadra	Chopan	Chopan
9	Agra	Barauli Ahir	Kalal Khedia
10	Pratapgarh	Sadar	Badanpur
11	Moradabad	Moradabad	Bagarpur
12	Bijnore	Kotwali	Puraini
13	Gorakhpur	Gagha	Hatwa
14	Hapur	Garhmukeswar	Bahadurgarh
15	Sant Kabir Nagar	Semariyanwa	Jagdishpur
16	Ayodhya	Masaurha	Paliya Shalivadi
17	Sitapur	Kasmanda	Patarkala
18	Farukhabad	Rajepur	Amritpur
19	Kushi Nagar	Fazilnagar	Bhanpur
20	Lucknow	Mohanlal Ganj	Lalpur

Table: 7 Selected Village Panchayats in Uttar Pradesh

Source: Directorate of Panchayati Raj, Government of Uttar Pradesh

CONCLUSION

E-government, democracy and e-participation are the foundation of e-democracy. Governments will play an important role in the development of the on-line world. They need to incorporate and adopt strategies and technologies that will expand participatory democracy. To ensure the effective functioning of e-government, 15 guiding principles have been suggested by international agencies. These include development needs, efficiency and effectiveness, resource availability, skills and organizational culture, coordination, legal framework, ICT infrastructure, political leadership and long-term political commitment, public participation, development planning, partnership,

monitoring and evaluation, prioritization of perception and values, access and skills, privacy and security. These principles highlight the imperative of improving efficiency and effectiveness in governance, in addition to ensuring accountability and transparency in the delivery of public goods and services to citizens. E-government also focuses on the principle of putting people first and thus, the government can strengthen bonds with its citizens through simplifying the delivery of services to the people to provide greater access to information, increase government accountability by making its citizens more transparent, promote people-centered dialogue to reduce corruption and allow people to interact with policy and decision makers.

E-governance is the key to success for good governance. It facilitates citizens to benefit from the services provided by the government. The percentage of persons using the Internet in India has increased significantly. E-governance is the application of ICT. The purpose of e-governance is to help strengthen government administration towards effective administration and to better manage social and economic resources for development. There are a lot of governance projects run by the state and central government. India is poised to achieve e-governance.

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