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ICT and e-Governance for Rural Development in India

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Abstract: Developing countries across the world are making attempts to use Information and Communication Technology in order to achieve development goals and India also has attempted to harness ICTs for development. ICT has the capacity to alter the way society functions and is governed. The word e-governance would establish a link between the two. E-governance is described as the use of information and communication technologies (ICT) to deliver government services to citizens**.** India is a populous country where e-governance is fast becoming a buzzword. ICT tools are making public services safer, easier to access and more efficient than ever before. It has actually revolutionized and now we need to be happy for the fact that rural and urban we all are together. Information Technology has made impressive inroads into Indian society and the government alike. It is widely viewed as a tool having tremendous potential to solve various problems facing society and improve the functioning of the government. It is also recognized that the process of induction of Information Technology is not a straightforward task. It needs careful planning, tactful handling and sufficient patience to ensure a smooth transition to the era of Information Technology- led development in India. The main objective of this paper is to analyze the impact of ICT on rural development and in governance. Also, to understand the meaning and importance of ICT. Finally, it discusses the role of ICT in rural development, as well as the potential and difficulties that it presents.
Keywords: ICT, E-governance, Rural, Development, India.

1 Introduction

ICT has taken hold of society in the emerging era of liberalization, privatization, and globalization. In today's world, technology has become vital. ICT is a tool that aids in the completion of a task in a swift and effective manner. Information and communication technology (ICT) is a growth stimulant. The perks of ICT have been recognized by people all around the world. As a result, India, as a developing country, is making strides to create and implement policies that incorporate ICT. The scope and applicability of Information and Communication Technology is extensive. Everyone's life has been influenced by technology. The entire planet has become a global village as a result of it.[1]

1.2 billion People make India the world's largest democracy. India's massive population is also amongst the most diverse.Spread across 28 states and 9 union territories and speaking countless languages and dialects, India is also diverse among socio-economic literacy and urban and rural divide. Governance then is a challenge more today than ever before. How can over 1 billion strong nations be united under the same standards of governance? Watch as ICT lends a hand.

The main objective of this paper is to analyze the impact of ICT on rural development and in governance. Also, to understand the meaning and importance of ICT. Finally, it discusses the role of ICT in rural development, as well as the potential and difficulties that it presents.

2 Roles of Information and Communication Technology in Rural Development

In a developing country like India, where the rural sector employs more than 72 percent of the population and the primary sector remains the primary source of employment, development is primarily linked to the improvement of the rural sector. The Indian government is attempting to devise ways and policies to improve the economic and social standing of rural communities. To achieve all-round economic growth, efforts are being undertaken to extend ICT to the rural part of the

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

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population; only then will true progress be achieved.

Information and communication technology may help rural development in a variety of ways. ICT may aid the rural sector in a number of ways, one of which is that it promotes good governance. Better governance would result from the use of technology, as there would be faster trials, lower processing costs, fewer chances of corruption, increased accountability, and increased efficiency and efficacy. SWANs (State Wide Area Networks) have been built in a number of states to help rural residents gain access to the internet. Rural ICT aspires to bring government services to the doorsteps of the rural populace in a timely and cost-effective manner. These services are offered through more reliable and cost-effective connectivity. The main purpose of these technologies is to offer people with safe and timely access to services. Additionally, efforts are being undertaken to get computers to the local community. Regional languages are also being attempted to be included into the computer system. Since the internet is such a powerful tool, it is critical to provide individuals with easy and quick access to the internet connection. [2]

We are aware that ICT can play a very prominent role in strengthening the development of rural areas. Fusion of information and communication technology (ICT) in remote areas can help not just to accelerate development but also help in filling the bricks in the existing system of projects meant for such areas.The potential for ICT to be used in rural development is enormous, but the government will face certain constraints as well. The concept of rural development is multi- dimensional and multi-faceted and thus, multi- layered are the challenges of rural areas[3]. To be defined more accurately, rural development is basically an approach to enable marginalized, indigent rural people to gain for themselves what they rightfully deserve and need.It is a strategy that helps the poor to seek up proper livelihood and this group includes small scale tenants, farmers and the landless, so transformation of rural areas is fundamental in improving people livelihood. Since agriculture is the basis of rural livelihood in a developing nation like India it is particularly vital to look for connections between agriculture and ICT in rural development. For instance, rural poverty reduction is directly related to increased agricultural productivity. Rural areas are mainly characterized with shortage of basic amenities and infrastructure and low literacy levels. Rural development comprises strategies that focus on better livelihood for people with provisions for access to basic infrastructure and facilities.India is still regarded as a developing nation after many years of freedom.The question here is has the government or public administration been able to respond effectively to the changing requirements of the present century.

In this context, the use and application of ICT is seen much as a paradigm shift to the traditional approaches in the execution of government strategies. As the meaning suggests ICT has enabled the rendering of government policies and services to the public using electronic means. Recent innovations in ICT have strengthened the broad based development. It has the potential to assist underprivileged individuals gain social and economic empowerment. It can help the penurious in overcoming the powerlessness despite the existence of inequality in traditional assets like educational opportunities, finance or land etc. The scope of information and communication technology has the capability of transforming the business relationships of the poor producers who can directly quote their deserved demands. ICT advancements can also help in promoting government responsiveness towards the rural areas and marginalized people as connectivity through internet, telephones, televisions and the radio enable the voices of the excluded to be heard.In rural areas, people are mostly isolated from the ongoing Information revolution. A number of researchers on Information and communication technology for rural development help us in having a proper perspective on various aspects of the subject such as social exclusion or the digital divide. The capabilities or the capacity to use ICT is seen as a freedom and it is very relevant in terms of rural areas.

3 Importance of ICT on Rural Development

Encourage positive social change: One of the primary causes for the unequal distribution of economic benefits between the haves and have-nots is a lack of access to knowledge.ICT plays a significant role in bridging this divide and uniting urban and rural India. In any development process, having access to information is critical.ICT's latest advancements have tremendously aided the flow of information and knowledge.It extends beyond a person's social and economic status. ICTs are now generally acknowledged as a vital instrument for addressing development challenges, which leads to social transformation and, in turn, national economic development. For instance, rural products like handicrafts and agro based products can be advertised via the internet to the global consumers. [4]

Assuring a higher standard of living: It has significant commercial, social, and educational advantages. ICT improves rural India's livelihood possibilities through increasing the usage of government services. Information and communication technology helps to access markets, health services and education. This gradually leads to betterment in the quality of life. Example: Doctors and paramedic staff from the villages can access information about health schemes and seek advice about

2 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

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

4 Sanghi, Sunita and Khurana, Sakshi. 2017."Rural Transformation and Digital Technology ".Kurukshetra: A Journal on Rural Development. Vol. 65,No.10, pp.19-24

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ailments they cannot diagnose or treat from the experts across the globe.

Increasing rural communities' access to information: ICT projects might be created to give individuals in village's access to information about their rights that they are unaware of. Information regarding entitlements, as well as the availability of different government programmes and extension services, would improve the rural population's quality of life.

Putting Rural Development Plans into Action: The primary impediment to widespread ICT adoption in rural India is that the information content is often irrelevant to the people for whom it is designed. These are developed by the people in cities. This may therefore be commercially not viable or have limited utility.Demand-driven information communication services are where ICT plays a critical role.ICT addresses information gaps and blockages by augmenting the decision-making abilities of the rural poor as well as research institutes in every rural community.The problem can be solved by developing content in the local language after taking into account the socio-economic atmosphere of the region. [5]

Increasing People's Involvement in the Nation-Building Process: Communication technologies motivate people and encourage their active involvement in a country's development process.ICT is recognised as one of the significant factors in modernizing agriculture, generating healthy and skilled people for industry, and bringing about effective involvement in nation-building activities in a developing country like India.

4 ICT and Rural Development: Growth and Opportunity

Developing countries across the world are making attempts to use Information and Communication Technology in order to achieve development goals and India also has attempted to harness ICTs for development. ICT applications can add efficiently to the existing socio-economic, political and government spheres. In rural areas poverty is one of the major areas and it has multiple dimensions. Being destitute does not essentially mean dearth of basic resources but in other words, lack of ICTs can also lead to poverty. So for making the rural areas developed the rural farmers with the access to information must be brought out of poverty. It is inevitable that through the use of ICT the rural people can voice their problems and communicate better. Moreover, access to ICTs can equip the people of rural areas with skills which can help in upgrading their overall well-being. ICTs can help them in gaining skills through various sources including internet and mobile phones. [6]

Interestingly, the scope of ICT is no longer confined to only information and communication sectors, it has penetrated all sectors and fields. Rural tourism can also be promoted through websites and it will have a global reach. Following are some of the possible ways highlighting the role of ICT promoting rural livelihood in the country. Distance learning in rural areas can be made possible through ICT as quality of education can be enhanced drastically at reduced cost. ICT should be integrated properly in the curriculum as well as for training of teachers as they are considered to be the knowledge multipliers.For bridging the gap in terms of reach of educational facilities to the poor and impoverished, acquisition of technological skills in all spheres of education must be made.[7]

Introduction of ICT for open and distance learning can be considered as a step towards bridging the social and educational gap that is prevalent especially in rural areas. Studies indicate that ICT in education has helped poor people in rural areas in ameliorating their socio-economic condition. It is a common notion that ICT and its benefits are only affordable to the affluent and they can take the advantage be it education or development in any other sector. So the local government must initiate entrepreneurship and investment required for sustaining development for marginalized people as well.

5 ICT Projects for Rural Development in India: Case Studies

We have noticed most of the people in rural India remain isolated from the information revolution. It is quite common that villagers face hurdles, harassment and discomfort and have to travel miles to get any of the official work done. In spite of this, there is no guarantee that work will be done. In such cases, introduction of ICT can offer increased transparency, mitigate corruption, and strengthen responsiveness on the part of the public officials. Following are the ICT related projects in Rural India:

E- Panchayat

In terms of technology, the e-panchayat system is a web-based program service provider. It offers all stakeholders with

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

6 Ansari, Jamshed. 2016. "Dreaming a Digital Rural India".Kurukshetra: A Journal on Rural Development. Vol. 64,No.8, pp.18-22

7 Social Watch India, Citizens Report on Governance and Development, New Delhi: Social Watch India, 2004.

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digital services at the Panchayat level. Rural residents, elected authorities, gram panchayat officials, governments, and knowledge workers are all stakeholders. It should not, however, be regarded just as an ICT-enabled governance system providing on-demand public services. It promotes the virtues of good governance and helps to deepen democratic values in the society .It fosters a sense of empowerment among village residents. It provides a framework that guarantees people's basic right to information is easily accessed. The remit of local government has been expanded. E-governance implementation has already begun. Under the National E-Governance Plan (NeGP), the Indian government has committed to build 1 lakh common service centers around the country to make all government services available to the ordinary man in his neighborhood. It strives to assure the efficacy, openness, and security of such services at a low cost in order to meet the fundamental requirements of the ordinary man who is cut off from the rest of the world owing to the digital divide.[8]

The Indian government has now started the process of providing computers or access to computers with broadband connectivity to all Gram Panchayats. Over the next three years, all panchayats at all levels must have computing devices and internet access. The first step would be to use the kiosks that are being set up as part of the NeGP shared service centers programme.It is recommended that independent service providers be hired for the remaining Panchayats. A bidding procedure would be used to choose the service providers.It is also intended to provide all Panchayats with the required software and training to manage e-governance in order to improve service delivery to residents.

The capacity building of Panchayati Raj Institutions' functionaries is yet another vital aspect of e-panchayats.The infrastructure that will be built through e-panchayat will be used to educate elected officials about their roles and duties.It would also provide students with practical understanding of the initiatives executed by panchayats or statutory bodies.

E- Mitra

E-Mitra is an initiative by the Rajasthan state government. It started a project in 2002 to deploy the information technology enabled benefits.[9] Jan Mitra is a multi-element platform that allows residents of Rajasthan to obtain required information from any government agency.It helps the government by alleviating the burden of attending every cell. It has slashed the length of time people have to wait for services and has resulted in individuals being more comfortable.

Lok Mitra is an urban electronic governance initiative that began in the city of Jaipur in 2002 and allows residents to pay their bills online and save time.The Government of Rajasthan integrated both Lok Mitra and Jan Mitra under a new title E-Mitra. It started operating in 2005. It ensures transparent, accountable and responsive governance.

Bhoomi

In 2000, the government of Karnataka took a bold step to digitize the entire land record system in the state under the Bhoomi project. For the first time in India land records were digitized and made available for the public to access them from any revenue office in the state. Over 2 crore land records called RTCs (Records of Rights, Tenancy and Crops) were collected from 10,000 locations spread across Karnataka and they were entered into a database. It was the biggest data entry operation for that time. The BHOOMI project stood for another key feature: unlike most digital data users like us are familiar with, these records were all in the local language of Kannada. It took over 1 year and nearly 1000 trained IT staff to digitize each land record. Today , nearly 203 database servers are present across Karnataka that means farmers can access his papers not just from his own taluka but from any other concerned office across the state.All it takes is a fee of INR 50 and what once took months can be done in just a few days or even hours.[10]

Due to this computerization, we get our documents on the day we make the request or the next day at the most.Records from all the villages are available here. This also helped in minimizing the land disputes.Thanks to BHOOMI, close to 1 lakh RTCs are issued in a month.The model became so successful that since 2008 the Karnataka government has stopped using manual RTCs altogether. BHOOMI is now a pioneering technology project that has been replicated by many other states in India like Uttar Pradesh and Maharashtra. But perhaps its biggest success is its integration with Indian banks.Nearly 80 percent of farmers need these land records for agricultural loans. Now, with the help of BHOOMI data banks can process these loan applications faster than before. From a tedious process to a simple click and print model, BHOOMI has transformed one of the most complex public services into an effortless, easy to use digital service.

An empirical assessment was conducted as part of the World Bank's Governance Knowledge Sharing Program in Washington, DC, to emphasize the benefits that Bhoomi center customers receive.A sample survey of citizens who used Bhoomi kiosks and a control sample of citizens who used non-computerized land record services was conducted.Stratification was done at two levels for the Bhoomi user sample: district and taluk.Bijapur, Koppal, Hassan, Udipi, and Mandya are the six districts chosen to represent Karnataka's geographic areas.Two Bhoomi kiosks were chosen from among the kiosks functioning in each district by sampling (weighted by intensity of use).The taluks where Bhoomi kiosks had not been set up were included in the non-computerized facility user sample.Udupi taluk, Ankola taluk in Uttar Kannada, Gokak taluk in Belgaum, and Channapatna taluk in Bangalore rural were picked through random selection.

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

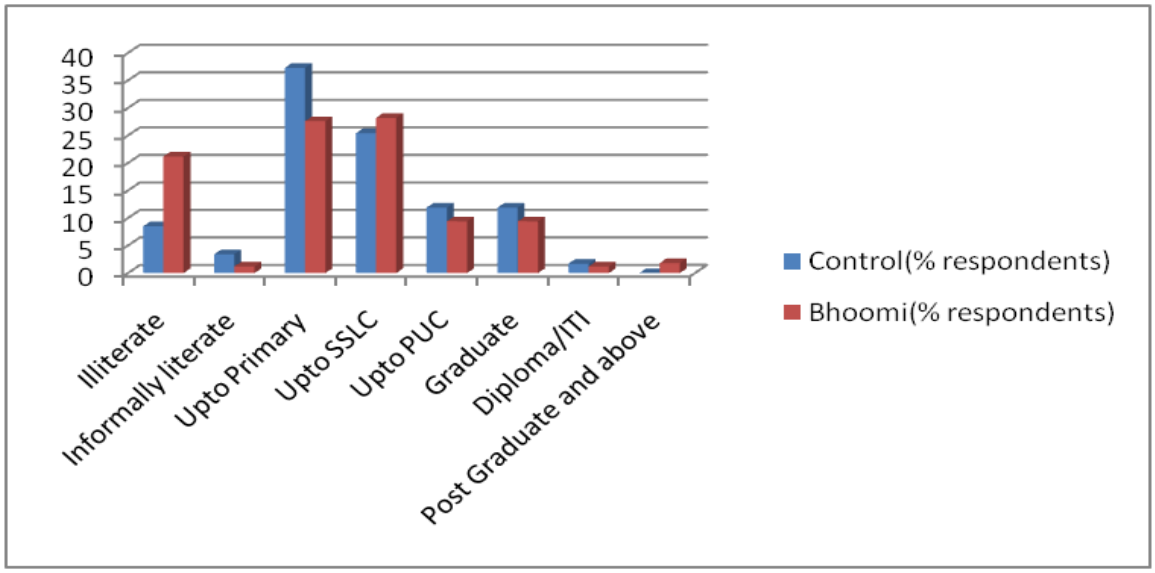
9 Mittal, Sanjiv. 2017." E-governance in Rural India". Kurukshetra: A Journal on Rural Development. Vol. 65,No.10, pp.5-17

10 Prasad, Ravi.2019. “Empowering citizens through e- services”. Yojana: A Development Monthly.Vol.63,pp.7-10

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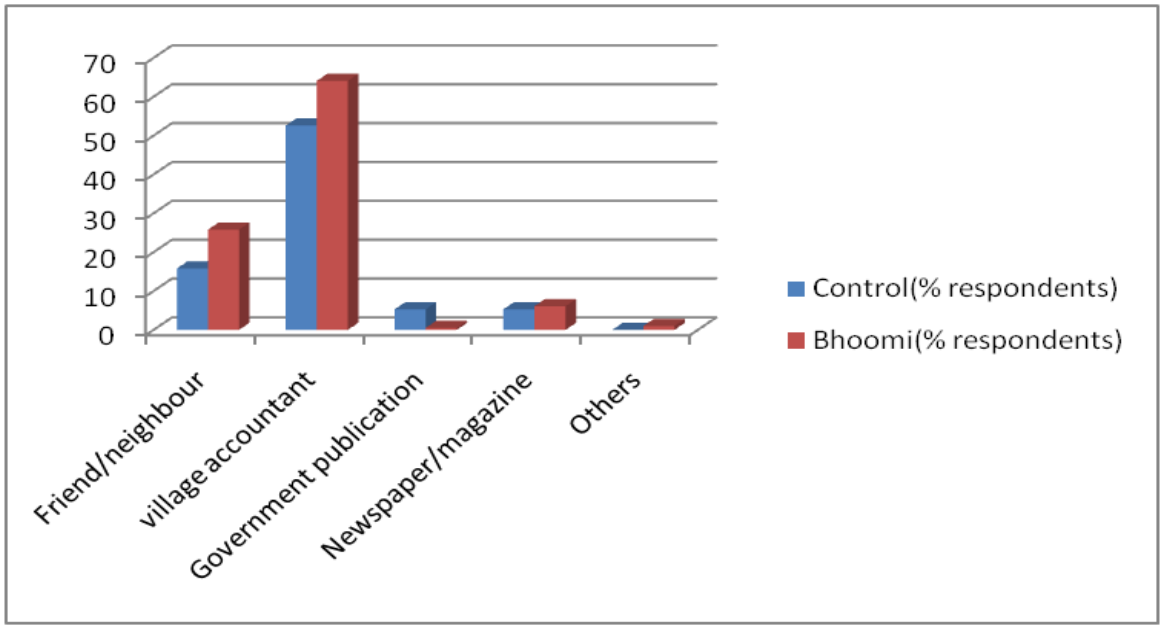
Several interviews with officials who are putting Bhoomi kiosks in place were conducted in order to analyze the operational benefits that service providers will get from the new facility.The results were utilized to calculate the value of the Bhoomi initiative's benefits.

Table 1: Educational background of respondents.



The respondents' profile (see Table 1) reveals the wide range of people who use land records. A substantial percentage of the Bhoomi sample respondents came from homes with illiterate primary wage earners.[11]

Table 2: Source of awareness of Bhoomi kiosks.



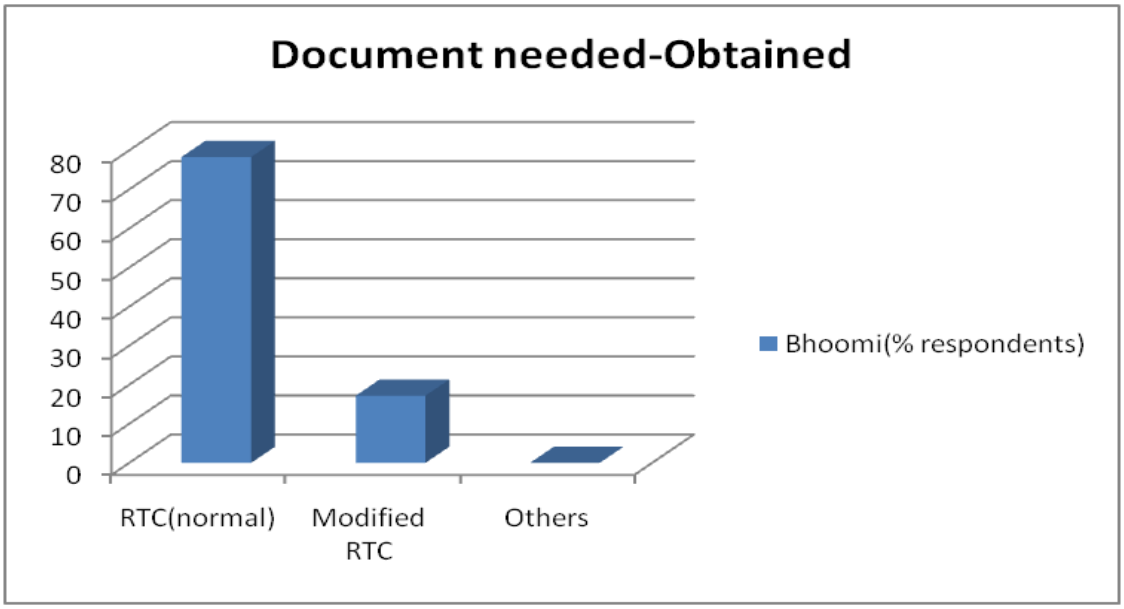
Bhoomi kiosk users learned about this service through many sources of information (details in Table 2). The majority of respondents learned about the Bhoomi project from the village accountant in both control (53%) and Bhoomi (64%) groups. A lesser percentage of respondents (16 percent in the control group and 26 percent in the Bhoomi group) said they learned about Bhoomi from friends and neighbors, while only a small percentage said they learned about it from newspapers and

11 http://landrecords.karnataka.gov.in

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magazines.[12]

Table 3: Type of information/document obtained by Bhoomi users.



The visitors to the Bhoomi kiosks came for a variety of reasons. The majority of customers went to Bhoomi facilities to obtain RTCs in order to apply for loans.

To encapsulate, there were two types of benefits accruing to Bhoomi users: tangible and intangible benefits. Tangible benefits can be shown in the number of days saved on repeat visits and the amount of money spent on bribes.On the other hand,Intangible benefits include shorter queues, fewer officials to meet, error-free documentation, prompt resolution of complaints, and improved employee behavior.[13]

Lokwani

Lokwani is another e-governance initiative launched by the Sitapur District Administration in conjunction with the National Informatics Centre in Uttar Pradesh (NIC).It allows individuals to contact government officials without the need to personally visit a government office[14]. The Lokwani network stretches over Sitapur's six tehsils and blocks.Information on different government programmes,allotment of foodstuffs, allotment of funding to panchayats, land registry, applications, lists of old-age retirees, lists of fellowship applicants, and other services are supplied through the kiosks.

Gyandoot

It is a Madhya Pradesh government pilot e-governance project. This project began in Dhar district of Madhya Pradesh in January 2000 and 12,000 villages of the district were chosen to carry on this mass level information revolution. Gyandoot has won International acclaim including the Stockholm Challenge award for the year 2000. In this, an internet network connected 21 important centres in 5 blocks of the area. These computers installed in the gram panchayat (village self- governing bodies) have been named Soochnalayas (Information Centers). It provides user charge based services to the masses.This scheme is named as Gyandoot (Messenger of Knowledge).[15]

Each Soochnalayas effectively caters to approximately 15 gram panchayats and about 25-30 villages. It provides easy access to over 5 million villagers to the latest mandi rates.It also provides information regarding government welfare schemes, land records and other documents. Also we send applications to the block and district level authorities through these computers to get caste certificate, domicile certificate and income certificate. It is also linking the people and district officials to registering any kind of complaints through email. The District Collector monitors all the complaints and takes action on it.

E-Choupal

12 http://www.bhoomi.karnataka.gov.in

13 http://www.bhoomi.karnataka.gov.in

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

15 Kaul, Vijay. 2015."Harnessing Digital Technologies for Empowering India".Yojana: A Development Monthly. Vol. 59,pp.19-23

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ITC (India Tobacco Company) is a significant private sector company in India, and e-choupal is an effort by ITC limited agriculture business division launched in June 2000. It's a programme that connects farmers with marketplaces and provides them with information and techniques which enhances their productivity and low transaction cost. It is a meeting where farmers can deal directly with a processor and get a good offer for their produce. E- Choupal model is positioned as an alternative to traditional mode (mandi) of procurement of farm produce. IT'S Choupal Sagar was founded in Madhya Pradesh in 2005 to replace age-old kiranas or retail businesses in rural India. Each choupal sagar hypermart has fertilizers to hair oil, tractors to needles, this store sells it all. It is linked with an e-choupal portal.[16]

Friends

The Kerala Government's Information Technology Department, in partnership with the Kerala State Electricity Board, Kerala Water Authority, BSNL, Revenue Department, Civil Supplies Department, Motor Vehicles Department, Universities, and local bodies, has implemented this initiative. FRIENDS [17](Fast Reliable Instant Efficient Network for Disbursement of Services) was designed to be a one-stop **s**hop for citizens to do government-related transactions with convenience, comfort, and speed. All of the government's bills and dues are collected here under one roof.The project's most notable aspect is its successful integration of information technology and logistics for citizen services.Thiruvananthapuram was the first city to adopt it in June 2000, and then in other districts in 2001- 2002.The counters are prepared to handle around 1000 different sorts of bills from various departments. FRIENDS collect rents, fees, penalties, and taxes payable to numerous government ministries and agencies on behalf of millions of customers.[18]

E-Seva

This initiative has been started with a simple concept of providing a number of services to the public at one place, otherwise called an all-in-one service for government citizen interactions. It was a small pilot project started in Andhra Pradesh. There were counters where the citizens could pay the electricity bill, water and telephone bill, payment of property tax, birth or death certificate through a single window of access. This was to be the first of its type public service endeavor. E-Seva exemplifies transparency, effective governance, efficiency and convenience as a result of the application of technology. The e-seva project's main feature is that all services are offered to consumers/citizens via the internet by connecting them to relevant government agencies and providing online information at the time of service delivery.[19]

6 ICT and Governance

What does it mean to govern a country like India? It means providing essential services like infrastructure, healthcare, education, transportation, livelihood and communication etc to all citizens in an equal and efficient manner. It means providing transparency and openness in all issues related to public welfare. It also means ensuring no Indian is left behind when it comes to getting their basic rights, but there are many impediments to even providing basic services in a country like India. [20]

For instance, there is a Ramanagar Taluk (tehsil) in Karnataka, it is home to mulberry farmers who have cultivated these lands for generations. Today the farmers have one common problem here. A farmer named Shivaduriah says my brother and I co-own 6 acres of land.I wanted single ownership of 3 acres belonging to me. Land has to be marked and registered in my name so that there was no future litigation with my brother. We applied for registering the land, did the documentation and took possession. In order to do any transaction related to his land, farmers like Shivaduriah need documents like RTC(Records of Rights,Tenancy and Crops).But getting these official certificates is not always trouble- free.The documentation was done manually and we were at the mercy of the Secretary . He used to make us run from pillar to post.We had to track him down in the village or taluka offices. It took around 15 days to trace him to process the RTC.After the RTC the process was detained in the surveyor’s office with unconvincing excuses like the application is lost and cannot be found. Shivaduriah brings to light India's biggest challenges in governance like dearth or inadequate access to services, lack of efficiency and absence of transparency in procedures. [21]But the situation is not so clean because Indian governance is slowly but surely shedding its old ways and making the delivery of public services a high- tech affair.

At the turn of the millennia, India was experiencing a boom in the information technology sector. It was then that the idea

16 Kalkoti, Gopal. 2016. “Information & Communication Technology: Income Avenues to Rural Farmers". Kurukshetra: A Journal on Rural Development. Vol.64,No.4 ,pp.13-15

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

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

19 Sanghi, Sunita and Khurana, Sakshi. 2017."Rural Transformation and Digital Technology ".Kurukshetra: A Journal on Rural Development. Vol. 65,No.10, pp.19-24

20 Barthwal, C. P. 2003.Good Governance in India. New Delhi:Deep and Deep Publications Pvt. Ltd

21 Biju, M. R. 2007.Good Governance and Administrative Practices. New Delhi:Mittal Publications

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began to gain momentum. Good information and communication technology make governance effortless, swift and more efficient. In 2006 Government of India launched National e-governance Plan (NeGP), the backbone of the NeGP was the Department of Electronics, Information&Technology or DEITY. Under this the citizens can access government services over the internet. It provides a broad view of e-governance activities across the country, bringing them together under a unified vision. Around this idea, a massive country wide 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 to the citizens at the grassroot level. According to the NeGP website, "Providing all government services available to the average person in his area through general service delivery outlets, ensuring efficacy, transparency, and reliability of such services at a reasonable cost to meet basic needs of the general populace" .[22]

ICT has the capacity to alter the way society functions and is governed. The word e-governance would establish a link between the two. E-governance is described as the use of information and communication technologies (ICT) to deliver government services to citizens. People's needs will be met in a well-thought-out, convenient, and open manner.It benefits the government, the residents of the country, and corporate organisations. It is a two-way communication system in which the use of technology will help both the ruling body and the ruled. The Government of India recognises the potential of e-governance, as evidenced by the 11th Report of the 2nd Administrative Reform Commission, entitled "Promoting E-governance- The Smart Way Forward."E-governance has received a significant amount of funding. As a result, it is critical that services are provided as soon as possible and in a systematic manner. Transparency, timely delivery of services, check on corruption, trimming administrative costs, improved feedback, and the resolution of grievances are some of the benefits that e- governance offers. The government can build offices online, saving money on administrative costs.The main objective of e-governance is to provide citizens with timely and efficient services so that the relationship between the government and the citizens is nourished.

E-governance is the creator of transparent governance with increased efficiency and more responsibility along with accountability. [23] It is a system by which each citizen can make contact with the government.E-governance will promote and simplify governance for all parties, government, residents, and businesses through a webpage that will house all applications, laws, events, and other information **24 hours a day,** 7 days a week. It has been considered as an ideal tool to accelerate the development process in developing countries all over the world. The promise of improved standard of living is the driving force behind the various e-governance initiatives being launched by these countries. The reach of e-governance initiatives in these countries, however, varies greatly. Various factors influence the choice of implementing e-governance, these may be economic, social or geographical. This often leads to the phenomenon of a “digital divide ". In no case is the digital divide greater than in the case of isolated rural villages. The digital divide might be better referred to as the " e- gap". To fill the "e-gap”, the operational problems that exist on the ground will first have to be solved. Some of these problems that require sudden action are technically trained manpower for operating the computer. Also energy (electricity) for handling the setup and connectivity for internet/ intranet access is required.[24]

E-governance uses the tools of Information and Communication technology to make government services SMART where each letter represents the following:

S means Simple
M stands for Moral
A is Accountable
R means Responsive
T stands for Transparent

Following are the ICT tools used in e-governance like computerization across each district in India this includes end to end computerization solutions from hardware to software. In addition to this, reliable Tele and mobile connectivity and a strong digital network to connect every e-governance portal to use across India is required. Lastly, IT enables a workforce of public servants who can facilitate the delivery of e-governance services. [25]

In the early days of NeGP, India had to build its ICT capability from the grassroot level. Fortunately, it had some resources which were already in place.The NICNET was established in 1987 by the National Informatics Center. It was designed to be a national satellite based computer network. Once NICNET was launched it undertook one of the most ambitious ICT

22 Chaudhary, Simmi. 2019. “Digital empowerment through ‘Maximum Governance, Minimum Government’. Yojana: A Development Monthly.Vol.63,pp.22-24

23 Silcock, L.’what is E-Government? ', Parliamentary Affairs, Vol. 54, No.1, 2001, pp.88-101.

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projects computerizing each district in India.With initiatives to bring digital platforms even to India's rural and remote areas, there is a new wave of ICT enabled governance sweeping India and its even reaching farmers like Shivaduriah in Ramanagar taluk (tehsil). Thanks to initiatives like BHOOMI and through such digital revolution, Indian governance could be transformed.

India with its record breaking population and staggering diversity is an ideal country for e-governance where the tools of Information and Communication Technology are helping the country to transform into Digital India. Lot of work has been done at present on various aspects of Digital India, especially computerizing the government and making the government using digital means to make government easily accessible to the people[26]. No way has ICT and e-governance been more successful as in the Indian railways. The Indian railways is the lifeline of the country. Everyday close to 23 million people travel in trains.It is one of the busiest and oldest train networks in the world. For decades, after independence, the Railways continued to serve travelers in the same old ways. Anyone wanting to book train tickets would have to visit the Railway station, stand in long queues where services were often slow or they would have to get bookings done by the touts/ brokers who charged extra.This process was time consuming but in 2002 all that changed. Indian Railways got a digital makeover. Thanks to Indian Railway Catering and Tourism Corporation Limited or IRCTC. All ticketing systems were put on to digital platforms. [27]The ticket counter was replaced by computers and smart devices, paper tickets were replaced by e-tickets and all payments could be done through secured online transactions.

In the last decade, many public services have gone digital from paying income tax to paying electricity and water bills. From applying to universities, to applying for bank loans, from availing urban services to agrarian ones, India is embracing the idea of e- kranti. But there is one major obstacle to this.[28] In a country where illiteracy rates are high and digital literacy is extremely slow, can India dream of an Information Technology revolution where no one is left behind.

7 Challenges

Everything has a price tag, and information and communication technology for the rural sector is no exception. While technology delivers strong job prospects and good e-governance, it also brings increased susceptibility, inequality, danger, and societal instability. When a large portion of the population is uneducated, it is a massive problem for the government to provide ICT to the rural population, most of them don't have access to the internet, there are gigantic gaps that have to be filled. According to studies, using ICT to offer services shows societal gaps and does not always act as a motivating element.ICT in government may exacerbate the problem.Lack of adequate infrastructure, language barriers, capacity building, and the presence of inaccurate and incomplete information, computer facilities, and poor telephone connectivity. In an attempt to connect society through technology, society is occasionally divided as a result of technology[29].According to a World Economic Forum report, India has the widest digital gap.Another important flaw in the Indian instance is a lack of responsibility; simply launching services will not serve the country until accountability is ensured. ICT-based growth can only be achieved if it is suited to the demands and requirements of the local community.People from the ground level should be included in the formulation and implementation of ICT policies since they are the most informed about the needs of the people. This strategy will increase job opportunities and ensure that the rural folk are included in the development process.

One of the main reasons why rural areas have not reaped the benefits of ICT is because jobs in this sector typically require proficient English speakers, and rural communities with limited access to education are left behind. Indeed, as computerization advances, many workers will lose their jobs.Because the vast bulk of the workforce is left behind, they become jobless, resulting in decreased income and a poorer standard of living. ICT has immense potential for improving the lives of rural residents, but it has so far failed to achieve what it is capable of. As the rural poor lack sufficient expertise for industrial or the tertiary sector it is at a disadvantage. Inadequate electricity supply and constant power breakdowns is another major issue in rural areas. There are less active users as the number of people engaged in using ICT in rural areas is small and suffer from connectivity issues. Also there is a dearth of technical resources for supporting rural people as not many people want to work in the rural areas where there are shortages of facilities and prosperity. Lastly, lack of timely intervention or implementation of funds for technological growth at the grassroot level is also there.

8 Ways of Overcoming the Challenges Faced By Information and Communication Technology

26 Jain, R. B. 2001."Towards Good Governance: A Half Century of India's Administrative Development. "International Journal of Public Administration, Vol. 24,No.12, December

27 Sharma, Rajiv and Arora, Ramesh. 2010. Good Governance Stimuli and Strategies. Jaipur:Aalekh Publications

28 Vedashree, Rama. 2018."Secure Digital India".

Yojana: A Development Monthly. Vol. 62,pp.26-28

29 Sharma, Balendu. 2020." Sturdy Progress in Rural e-Governance".Kurukshetra: A Journal on Rural Development. Vol. 69,No.2, pp. 17-21

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In a developing country like India, the role of government can play the primary role of presenting a vision to the future by implementation of ICT so that all sectors can benefit from it. It is pertinent to develop the existing infrastructure and logical network and at the same time improved interconnections at regional and national level are also required. There must be a robust process in place to handle public complaints and inquiries. Citizen ideas must be taken into account in order to learn from previous initiatives and move forward.It is a wise step on the part of the government, as e-governance is crucial for economic progress in the digital age. E-governance, like every other government flagship programme, will transcend all impediments and weaknesses and prove beneficial to society.[30]

The challenges of ICT can be handled in following ways: Firstly, designing interfaces for letting access to information to illiterate rural masses and making them self-sufficient. Secondly, development of internet access lines and networks. Thirdly, increase in the extension of telecommunication networks in rural areas. Fourthly, improvement of strategies for elimination of illiteracy. Fifthly, increase in the number of ICT access providers in rural areas. Also, development and establishment of telecentres is required. In addition to this increased investment and funding in the ICT sector is also the need of the hour. Lastly, there is a need for training of technical activists in rural areas.[31]

9 Conclusions

Indian society has been transformed by the digital revolution.It has enhanced the rate and range of employment and production.The economy's functioning has been altered by computerization and automation.Electronic services are displacing manual services.The market and society have been engulfed by information and communication technology (ICT).The influence has been both positive and negative.The trained and knowledgeable workforce has mostly prospered from the transition.Majority of the rural population which is still unskilled and uneducated lag behind.

India is a populous country where e-governance is fast becoming a buzzword. ICT tools are making public services safer, easier to access and more efficient than ever before. So what can India look forward to on the path of e-governance, foremost is digital literacy which means making every indian citizen aware of how basic ICT tools can be used to access public services. For this, India has launched the National Digital Literacy Mission. Till date over 15 lakh candidates have been enrolled and over 10 lakh have completed their training.
In rural development, ICT has the potential to strengthen the role of each government pillar. It can help the public, residents, businesses, and other agencies interact more quickly, transparently, accountable, efficiently, and effectively. ICTs can overcome many infrastructural constraints which are needed to provide services in rural areas. Through this people in rural areas can connect with the local, regional and national economy and can access markets, banking, financial services and employment opportunities[32]. ICT also serves as an instrument to create awareness. Media plays a major role in telling stories and spreading information in the remotest areas. It has the potential to offer rural people a voice in the social and political life of the country.

To encapsulate, ICT has actually revolutionized and now we need to be happy for the fact that rural and urban we all are together. Information Technology has made impressive inroads into Indian society and the government alike[33]. It is widely viewed as a tool having tremendous potential to solve various problems facing society and improve the functioning of the government. It is also recognized that the process of induction of Information Technology is not a straightforward task. It needs careful planning, tactful handling and sufficient patience to ensure a smooth transition to the era of Information Technology- led development in India.

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