

An insight on transforming India into a knowledge economy with Digital India initiative

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Abstract:

The journey towards a digitally connected began in early 1990's and 2000's with the introduction of a wide range of e-governance programmes. However, its impact and influence was limited. Digital India stands for transforming India into a digitally empowered knowledge economy. Besides it is also an initiative of government of India to integrate various government departments and people of India. It also aims at ensuring that government services are made available to every citizen electronically by reducing paper work. With a clear vision, present government is pushing ahead the concept of digital India initiative to transform the country into a digitally empowered society. With the launch of this initiative, government aims to reach out to citizens in the remotest of locations and also make them a part of India's growth story. As it is believed that technology is a key driver in causing disruptive change, digital tools will certainly empower citizens and prove to be a game-changer. Digital India also provided the much needed thrust to the nine pillars of growth areas namely Broadband highways, Universal access to mobile connectivity and Public internet access programme among others. Digital India would also bring in public accountability through mandated delivery of government's service electronically; Unique ID and e-Pramaan based on authentic and standard based interoperable and integrated government applications and data basis. Besides the source of funding for most of the e-governance projects at present is through budgetary provisions of respective ministries/departments in central or state governments of funds for individual projects for digital India will be worked out by respective nodal ministries/departments. Of late introductions of various schemes by major telecom players such as cutting down cost of data packs have certainly resulted in significant rise in internet users in rural segments. Also in-situ, launching of cheap

and affordable range smart phones has contributed to the cause. In a way untapped potential in rural markets can also be targeted through digital means. The paper focuses on what digital mediums of marketing can be use these digital mediums to expand their consumer base to the less emerged segment of consumers.

Keywords: Digital India, e-governance, public accountability, digitally empowered knowledge, Disruptive change, digital medium

Introduction:

Certainly India is on the cusp of an information technology revolution. In order to transform the entire ecosystem of public services through the use of information technology, Government of India has also undertaken the digital India program with a major vision to transform India into a digitally empowered society as well as knowledge economy. Besides digital India also covers several developmental aspects such as promoting investments, improving ease of doing business, creating IT jobs, providing financial inclusion, encouraging entrepreneurship, promoting literacy, catalyzing growth across all sectors and also encouraging women's participation in professional, economic and social arena. Rural marketing means to develop promote and also create awareness about goods and distribute the same to rural customers. This is generally done to identify and also meet the needs, wants and demands of rural customers and also to extend the outreach of the company to complete the objectives of organization.

Digital India as such is an ambitious project which is the outcome of changes brought by information and communication technology. Digital India is an innovative thought of Mr. Narendra Modi government which is also an initiative of GOI to integrate government departments and people of India. It basically aims at ensuring that government services are made available to citizens electronically by reducing paperwork. The programme weaves together large number of ideas and thought into a single, comprehensive vision so that each of them is seen a part of larger goal. It is co-ordinated by deity and implemented by the entire government both at centre and state. E-commerce is transforming our lives and it is the use of electronic communications and digital information processing technology in business transactions to create, transform and also redefine relationships for value creation between organizations and individuals. The cost of Digital India project is estimated to be Rs.1, 13,000 crore and for digital India initiative, original design and programme content of the e-governance project has been distinctly improved upon. Many strategies have been developed for rural areas as rural market has been an important part of Indian economy. Mindset of people is not same as 20 years before and today in rural areas people are not being seduced by low price strategies and they are also aware of the brand value of a product. In the past 20 years or so rural lifestyle and consumption has also changed a lot and its becoming closer to urban lifestyle in terms of facilities, habits, exposure and consumption.

Vision of Digital India:

The vision of digital India is necessarily centered on three major key areas. They are as follows:

- Digital infrastructure as a major utility which seeks to provide each and every citizen with high speed internet facility, a cradle to grave internet identity, mobile phone and bank account, basic access to common service centre, sharable private space on a public cloud as well as safe and secure cyberspace
- Empower citizens, especially rural citizens by making them digitally literate. This can be done through collaborative digital platforms and also by making available digital resources in their native language with a view to make their participation a true reality. It will also help tap data that which will be freely available on cloud computing platform-independent of an intervention.
- Governance and other services on demand which will be readily available in real time for online as well as mobile platforms seamlessly integrated across various departments and jurisdictions. Besides all citizen documents to be made available on cloud platform, by which as a result citizens will not be asked to produce such documents for availing services. In addition to this, provision of cashless electronic transactions will also help generate business. Geographical information systems (GIS) will also be integrated with development schemes.

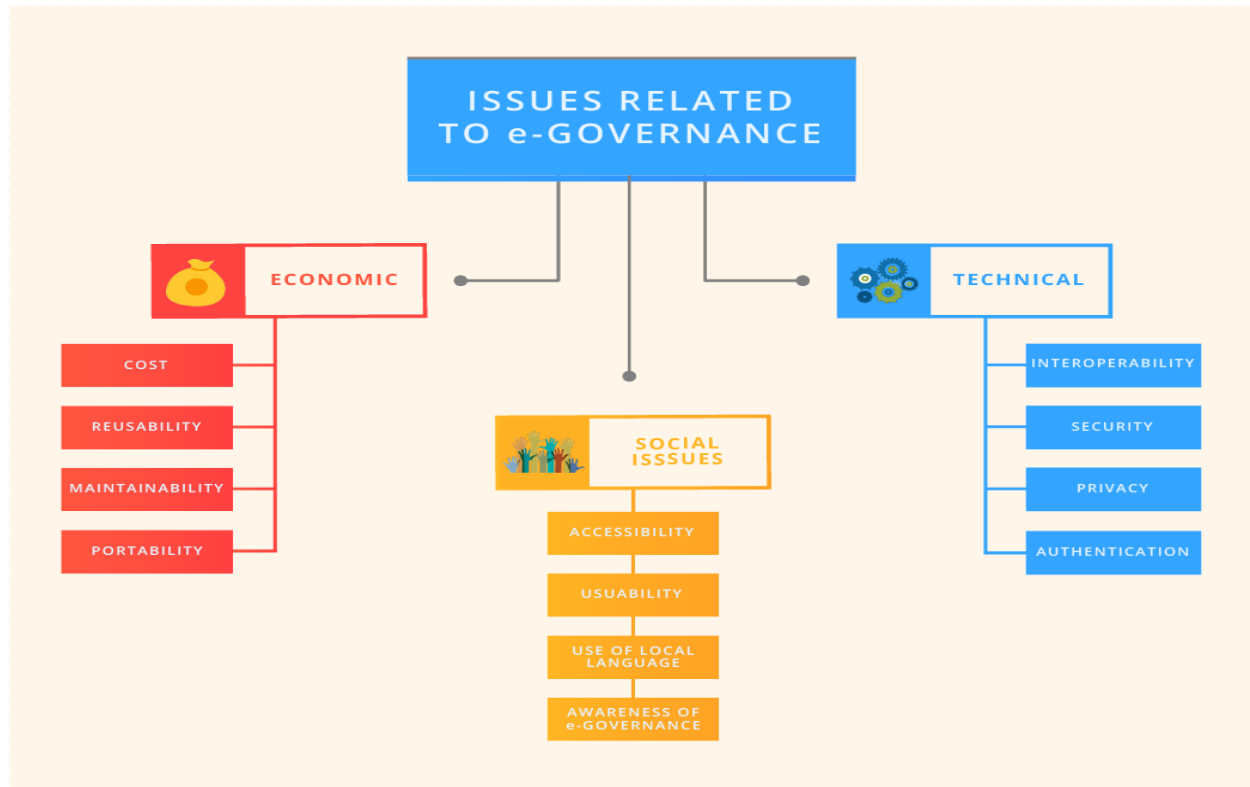
Current status of the Digital India Program:

The Digital India programme was launched over a year ago in 2015. The program has now moved from the planning phase towards execution and significant progress has been made in implementation of the various initiatives. However, some challenges have been faced during the execution which needs to be addressed. The Digital India programme is focused on fulfilling three vision areas through 9 “pillars” or focus areas, which lay down objectives in areas such as skill development, e-governance, mobile / broadband connectivity, etc. These 9 pillars are supplemented by initiatives that are operating at various levels. All the initiatives have been launched and are in various phases of implementation while significant progress has been achieved on some of these initiatives, such as Smart Cities, Jandhan, PAHAL, etc. in the last 6-12 months.

Significance of overview of Digital Infrastructure in India:

The Information Communication and Technology (ICT) sector forms an essential part of the digital infrastructure requirement to ensure availability of telecom, broadband, computers and software across the country. While with increasing reach and affordability, ICT has evolved as a basic infrastructure, India’s ICT readiness has remained low, ranking 131 in the ICT Development Index in 2015. The Digital India program aims to increase reach of digital infrastructure through an extensive broadband and mobile network in order to enable electronic delivery of government services to citizens. To enable this vision, the development of a strong digital and telecom infrastructure backbone is critical. The government has taken several

initiatives to improve the digital infrastructure in the country which are in various stages of implementation. These initiatives extend beyond physical infrastructure and also address software and security infrastructure as all the three aspects are required in tandem to ensure the success of Digital India.



Above image showing issues related to e-governance

Major Objectives of the present study:

1. To give an overview of digital India
2. To study the major opportunities of Digital India programme for people of the country
3. To know various challenges faced by Digital India programme in its implementation
4. To understand the key pillars of Digital India programme
5. To analyze the successes of digital India program till date
6. To understand the key takeaways with respect to digital infrastructure

Overview of Digital India Programme

Essentially a good governing body requires a good communication platform to communicate with stakeholders efficiently and effectively. Communicating as such has become a big challenge for GOI with widespread geography, enormous linguistic and cultural diversity as well as massive population. The way of communication has transformed a lot from postal and telegraph era to print and broadcasting media to the era of digital communication. However the efficient and effective way to communicate with the citizen's of the world's largest democracy with

population of 1.2 billion is only possible through connecting with everyone on a digital platform. Though India is considered as IT hub and powerhouse of the world, there is huge digital divide. Digital India is an umbrella mission covering many departments as it weaves together large number of ideas and thoughts into a single, comprehensive vision so that each of them is seen as part of a larger goal. Weaving together makes the mission transformative in totality. Digital identity infrastructure works on creating provision to a robust, reusable ID to those who do not have any formal ID document, improving targeting and delivery of services, clean up existing databases from ghosts and duplicates and also reduce cost of delivery of services. Aadhaar is a platform for financial inclusion is an ambitious program of digital India to open bank accounts using Aadhaar wherein linking of Aadhaar to existing bank accounts through Aadhaar payment bridge (APB) which simplifies disbursement of funds and uses only one account for all disbursements. Transactions are done through Aadhaar enabled payment system (AEPS) which is inter-operable, portable anytime and anywhere.

Today, world has transformed from a knowledge savvy to tech knowledge savvy. If we think of something then it is available in one click. In this regard, digital

India is a step by the government to inspire and connect Indian economy to such a knowledge savvy world. The program targets to make government services available to people digitally and also enjoy the benefit of newest information and other such technological innovations. It also brings out various schemes like e-health, digital locker, e-education, e-sign etc as well as nationwide scholarship portal. Besides the program strives to provide equal benefit to the user and service provider and the consumers will be benefitted by way of saving time, money, physical and cognitive energy spent in lengthy government processes. Digital India would also ensure to bring in public accountability through mandated delivery of government's services electronically; Unique ID and e-Pramaan based on authentic and standard based interoperable as well as integrated government applications and data basis. Digital India however aims to remove digital gap between rural and urban India.

Major opportunities of Digital India programme for people of the country

Some of the major opportunities of digital India programme for people of the country besides facing many challenges in its implementation are as follows:

1. Digital India has brought in public accountability through mandated delivery of government services electronically
2. The program also tries to put an end to corruption system which has already become a main feature of the country
3. Digital India programme aims to reduce paper work which will certainly help to save trees and protect environment
4. National Scholarship portal, an ambitious project under digital India will put have end to scholarship process right from submission of student's application, verification, sanction and disbursement of money to end beneficiary for all scholarships provided by government of India

5. Digital India certainly benefits citizens of India residing in rural areas in terms of improving their knowledge using internet facilities in day to day life
6. Each person will be having a bank account of his own
7. Government to enable devices, applications, systems, infrastructure and data that is smart (optimal and effective), secure and cost-sensitive (flexible to change for any new technology migration)
8. Enable availability of government data and service; hence facilitate innovation by bringing several opportunities to general public. Example: Farming, education, Health care etc
9. Empower citizens of India with data and information which is available with government across all departments. Information to be digitalized with various government services that which are accessible online anywhere, anytime on any device.

Various challenges faced by Digital India programme in its implementation

As a new initiative it is quite obvious that the programme will face many challenges. Some of the major challenges which might create problem in its implementation are as follows:

1. In terms of culture, tradition, aesthetics India certainly is a diversified country. Each state as such has its own specific language, custom, food habits, laws and tradition. Digital India program thus aims to integrate the entire country digitally. Complete integration of technology and language is probably one of the main challenges the mission would rather face in its implementation
2. Also in different states internet protocol depends on what kind of hardware and software they do implement and chances are also that it might lead to connectivity glitches. Hence there must be some sort of directive to standardize all types of software protocols
3. The main aim of digital India is to transform the country into a digitally empowered knowledge economy and it's not an easy task. It certainly needs co-ordination and co-operation from all government departments. However departments without smooth teamwork between themselves, the mission would never be able to be implemented to its full strength
4. Public internet access is one of the major pillars of Digital India programme. But in India, poverty and illiteracy both stand as major obstacles in internet access. High illiteracy rate however acts as a major road block in expanding the reach of internet
5. Today we dwell in a world where cyber-crime and internet are inseparable entities. The entire architecture should necessarily be designed in such a way that there is proper authentication done w.r.t all documents put online by citizens and it is also

available to right users at any point of time they are in need of it with right authentication. In order to ensure cyber security country should have privacy norms

6. National optical fiber network certainly ensures that broadband reaches in every accessible areas of the country. However to reach broadband connection country wide is not an easy task to execute

Major Challenges faced in implementation of Digital India and way forward initiatives:

The Digital India program faces a number of challenges that need to be addressed. These include:-

- 1. Delay in development of infrastructure:** One of the biggest challenges faced by the Digital India programme is the slow progress of infrastructure development: The Bharat Net project was approved in October 2011, with a two year implementation target. As of 2016, less than 40% of the target has been achieved. Spectrum availability in Indian metros is about a tenth of the same in cities in developed countries. This has put a major roadblock in providing high speed data services. Public Wi-Fi penetration remains low. Globally, there is one Wi-Fi hotspot for every 150 citizens. For India to reach that level of penetration, over 8 million hotspots are required of which only about 31,000 hotspots are currently available. While the project has seen delays, the exercise needs to be reinforced with both funds and involvement of senior government functionaries towards making it happen on a 'war footing'
- 2. Rural connectivity:** For Digital India to have a large scale impact on citizens across the nation, the digital divide needs to be addressed through last mile connectivity in remote rural areas. Currently, over 55,000 villages remain deprived of mobile connectivity. This is largely due to the fact that providing mobile connectivity in such locations is not commercially viable for service providers.
- 3. Development of the application ecosystem:** For digital technology to be accessible to every citizen, significant efforts are needed to customize apps and services to cater to local needs. Finding vendors who can provide such applications has become a challenge.
- 4. Policy framework for Digital India:** Challenges in policy, such as taxation, right of way, restrictive regulations etc. are major roadblocks in realizing the vision of Digital India. Some of the common policy hurdles include the following: Lack of clarity in FDI policies; for instance, have impacted the growth of e-commerce. Transport services like

Uber have had frequent run-ins with the local government due to legacy policy frameworks which have not become attuned to the changing business landscape.

- 5. Contracting:** Implementation of the Digital India program has been hampered by contracting challenges such as the following: Several projects assigned to PSUs are delayed given challenges related to skills, experience and technical capabilities. Several RFPs issued by the government are not picked up by competent private sector organizations since they are not commercially feasible.
- 6. Digital literacy:** Reports suggest that, as recently as 2014, nearly 70% of Indian consumers indicated that lack of awareness was the main reason for not using internet services. Non availability of digital services in local languages is also a major concern.
- 7. Data security:** With the proliferation of cloud-based services like DigiLocker, data security has emerged as a major challenge. The recent data breach in August 2016, in which debit card data for more than 3.2 million subscribers was stolen, highlights the importance of implementing foolproof security systems.

Key Pillars of Digital India Programme

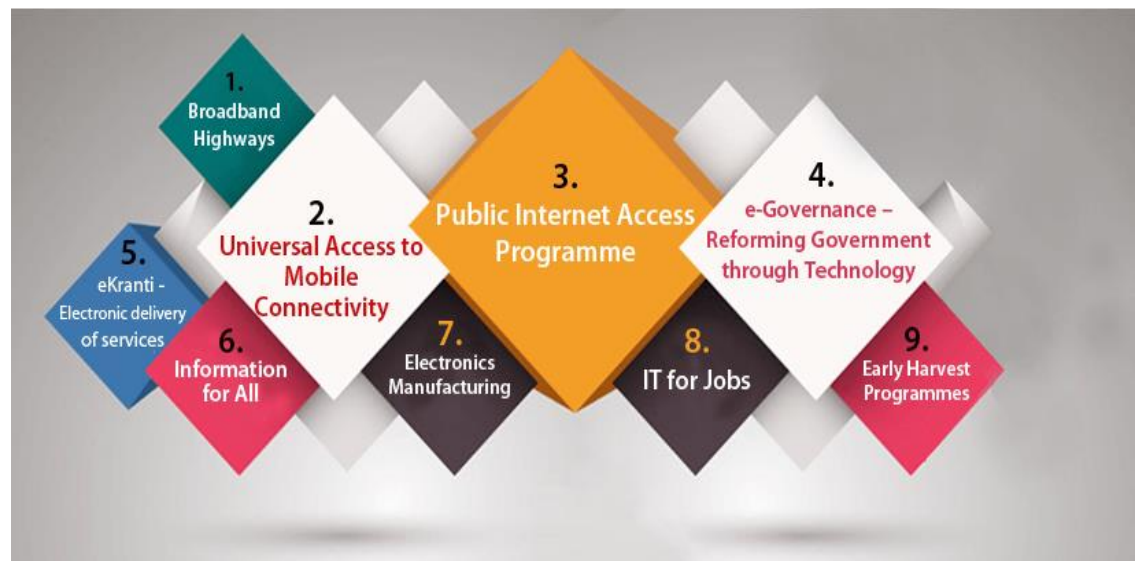


Figure showing Nine Pillars of Digital India Programme

Detailed descriptions of all the key pillars of digital India programme are as follows:

1. **Broadband highways:** In rural areas, broadband highways would be implemented through department of telecommunications (DoT) with capital expenditure of Rs. 32,000 crores. The rural broadband highways intends to cover 2, 50,000 gram panchayats of which 50,000 would be covered in the first year which remaining 1,00,00 each would be covered in the upcoming years. Focus in urban areas would be on changing rules towards efficient development of respective broadband highways. By developing virtual network operations for service delivery along with mandating communication infrastructure in new urban development and buildings.
2. **Universal access to mobile connectivity:** The major initiative of this program is to focus on network penetration and also fill the gaps in connectivity across the country. Universal access to mobile connectivity would be implemented through Department of telecommunications(DoT)with capital expenditure of Rs. 16,000 crores and also coverage of about 42,300 villages uncovered across the country so far
3. **Public Internet Access Programme – National rural Internet mission:** Two sub components of public internet access programme are common service centres and post offices as multi service centres. In the long run Post Offices would be converted into Multi-Service Centers. Implemented through department of posts (D/o Posts), it intends to cover 150,000 post offices within a span of two years.
4. **eGovernance: Reforming Government through Technology:** Government would take up Business Process Re-engineering (BPR) using IT to improve transactions including form simplification and reduction, online applications and tracking, developing interface between departments, use of online repositories like school certificates and voter identity cards,

integration of services and platforms like UIDAI, payment gateway, mobile platform and EDI.

Furthermore all databases and information would be made through electronic medium going away from the existing manual mode. Focus would also be on workflow automation inside government systems. Public Grievance Redressal would be automated using IT so as to analyse data to identify and resolve persistent problems, largely process improvements. These measures which are critical for transformation would be implemented across government

5. **eKranti: Electronic Delivery of Services:** The present ongoing programme (NeGP) would be revamped to cover various elements to bring eKranti. This would include fostering technology in the areas of planning, agriculture, education, health, financial inclusion, justice and security. The technology for planning would include GIS based decision making and National GIS Mission Mode Project.
In the domain of agriculture, development of technology for farmers would result into real-time price information, online ordering of inputs (e.g. fertilizers) and online cash, loans, relief-payments along with development of mobile banking. In the domain of education, some of the measures that would be taken include connecting all schools with broadband, free Wi-Fi in about 250,000 schools, digital literacy program and development of pilot massive online open courses.
6. **Information for All:** The pillar of ‘information to all’ would encompass making information online and hosting websites and documents. This would result into an easy and open access to information by the public in general along with development of open data platforms. As usual, the Government would pro-actively engage through social media and web based platforms to inform citizens. The platform ‘MyGov.in’ would foster 2-way communication between citizens and government. Also, it would enable sending online messages to citizens on special occasions/programs.
7. **Electronics Manufacturing: Target NET ZERO IMPORTS by 2020:** In India, the existing structure needs strengthening in order to boost electronic manufacturing; the target being ‘NET ZERO Imports’ in this domain in the days to come. This would be an ambitious goal which would require coordinated action on many fronts like taxation, incentives, economies of scale, and eliminate cost disadvantages. The areas under focus would include items like FABS, Fab-less design, Set top boxes, VSATs, Mobiles, Consumer & Medical Electronics, Smart Energy meters, Smart cards and micro-ATMs. At present, there are many ongoing programs in the domain of electronic manufacturing which will be fine-tuned with measures such as development of incubators, clusters, and focus on skill development along with measures such as Government procurement.
8. **IT for Jobs:** The objectives of this pillar is to train people in smaller towns and villages for IT sector jobs, setting up of BPO in each of the North-East State in order to foster ICT enabled growth, train service delivery agents to run viable businesses delivering IT services,

and to train rural workforce to cater to their own needs and hence create a telecom ready workforce. These initiatives would be implemented mainly through DoT and DeitY.

9. **Early Harvest Programmes:** Some of the immediate measures which can be realised soon are covered in this pillar of 'early harvest programmes'. These would be the measures such as creating IT platform targeted to elected representatives along with all the Government employees covering 1.36 Crore mobiles and 22 Lakh emails through development of a mass messaging application.

Other measures would primarily include technological improvements such as Government greetings would now be e-Greetings, implementation of biometric attendance in all government offices, Wi-Fi in all universities, secured emails within government, standardized government email design, public Wi-Fi hotspots, school Books to be eBooks, SMS based weather information, SMS based disaster alerts and a national portal for lost-&-found children.

Success of digital India program till date

Some of the major success of digital India program is as follows:

➤ **E-Pathshala: Transforming Learning through Technology**

The Ministry of Human Resource Development introduced the e-Pathshala programme to promote 'learning on the go' among students, teachers and parents. Through this initiative, free access to NCERT books is available to students of classes 1 to 12. These books are available in both Hindi and English.

➤ **eBiz platform**

The initiative, driven by the Department of Industrial Policy and Promotion (DIPP), seeks to provide comprehensive Government-to-Business (G2B) services to business entities with transparency, speed, and certainty. The aim is to reduce several levels of points of contact between business entities and government agencies, establish single-window services and reduce the burden of compliances.

➤ **My Gov platform**

This is a platform for citizens to exchange ideas and suggestions with the government. Through this initiative, the government receives feedback, inputs and ideas from people regarding policy decisions and new initiatives like Digital India, Swachh Bharat, Make in India, among others.

➤ **Jeevan Praman**

The Jeevan Praman programme enables pensioners to conveniently submit their life certificates online through this portal. The certificates are stored in the Life Certificate Repository and available to pensioners and Pension Disbursing agencies.¹⁷

➤ **Digital Locker System**

DigiLocker is a key initiative under Digital India. This programme is targeted at paperless governance and is a platform for issuance and verification of documents and certificates digitally. A dedicated cloud storage space is given to all those who register for the Digital Locker account. To make it an easy process, this storage is linked to their Aadhaar (UIDAI) number.

Organisations that are registered with Digital Locker can push electronic copies of documents and certificates (e.g. driving license, Voter ID, School certificates) directly into the citizens' lockers. As per the official website, there are 39, 64, 008 registered users and 50, 47,204 uploaded documents.

Key takeaways with respect to digital infrastructure:

Development of digital infrastructure is certainly a key and critical component of Digital India programme. However to further enable development of digital infrastructure, following measures need to be considered:

- 1. Uniform policies for deploying telecom and optic fibre infrastructure:** A uniform RoW policy across all states with a reasonable cost structure is required along with a single window mechanism for granting RoW permissions. PPP models need to be explored for sustainable development of digital infrastructure, as has been the case for civic infrastructure projects like roads and metro project. In addition, the government should make efforts to make additional spectrum available to telecom service providers for deployment of high speed data networks.
- 2. Encourage collaboration with the private sector:** Effective collaboration with the private sector is critical to the development of the digital infrastructure. Innovative engagement models that ensure commercial viability needs to developed jointly through consultation with industry bodies. This will encourage private sector participation and ensure a better response to infrastructure RFPs. In addition, startups need to be incentivized for the development of the last mile infrastructure and localized services and applications.
- 3. Rural infrastructure development:** Existing government infrastructure assets (e.g., post offices, government buildings, CSCs) should be further leveraged for provision of digital services. In rural and remote areas, private sector players should be incentivized to provide last mile connectivity. USOF can be effectively used to incentivize and create a viable business model. The deployment of funds so far has been erratic and not been used to effectively to fund the cost of infrastructure creation in rural areas. Currently, the fund has over INR 451 billion in reserves which can be used to finance rural digital infrastructure growth in India through direct investment or certain subsidies
- 4. Use of complementary technologies:** Satellite communication solutions could be used to speed up broadband access in rural and remote areas. For instance, banks can use VSAT technology to connect remote ATMs, remote branches that need instant access to customer data. It could be used as a last mile connectivity solution in rural areas which lack telecom networks. Another example could be of the navigational system NAVIC (Navigation with Indian Constellation), which can have applications in terrestrial, aerial and marine navigation, disaster management, vehicle tracking and fleet management, integration with mobile phones, precise timing, mapping and geodetic data capture, terrestrial navigation aid for hikers and travelers and visual/ voice navigation for drivers.

Conclusion:

To ensure smooth implementation of e-governance in the country and also to transform the entire ecosystem of public services through efficient use of information technology digital India has been introduced. There is no better way to promote inclusive growth other than through empowering citizens of the country. A digitally connected India can help in improving social and economic condition of people through development of non-agricultural economic activities apart from providing access to education, health and financial services. However, it is important to note that ICT (Information and Communications Technology) alone cannot directly lead to overall development of the nation. The overall growth and development can be realized through supporting and enhancing elements such as literacy, basic infrastructure, overall business environment, regulatory environment, etc. The Digital India program is just the beginning of a digital revolution, once implemented properly it will open various new opportunities for the citizens.

The Digital India programme aims at pulling together many existing schemes. These schemes will be restructured, revamped and re-focused and will be implemented in a synchronized manner. Many elements are only process improvements with minimal cost implications. The common branding of programmes as Digital India highlights their transformative impact. While implementing this programme, there would be wider consultations across government, industry, civil society, and citizens to discuss various issues to arrive at innovative solutions for achieving the desired outcomes of Digital India. DeitY has already launched a digital platform named as “myGov” (<http://mygov.in>) to facilitate collaborative and participative governance. Moreover, several consultations and workshops have been organized to discuss the implementation approach of the vision areas of Digital India.

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