

DIGITAL INDIA PROGRAMME – ISSUES & CHALLENGES

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Abstract : Development of ICT has led to the transformation of how government functions and provides its services to its citizens. In most of the developed countries e-governance has been implemented and exclusively used. In the light of this, Central Government of India has come up with a very ambitious programme “Digital India” with a tag line, “A programme to transform India into a digitally empowered society and knowledge economy”; which aims at transparent governance, saving time in providing services to its citizens, reduction in corruption, convenience, empowering citizens and economic growth.

It is a dream project of the Indian Government to remodel India into a knowledgeable economy and digitally empowered society, to ensure that government services are made available to citizens electronically by improving online infrastructure and by increasing internet connectivity. There are many problems in the way of its successful implementation like- digital literacy, poor infrastructure, low internet speed, lack of co-ordination among various departments, issue pertaining to taxation etc. These challenges need to be addressed in order to realize the global as well as domestic challenges that might hinder the successful implementation of the program and suggest some feasible remedies to deal with the same.

The paper also highlights the opportunities that would pave the path for achieving the program’s aim of making India the preferred choice for digital activities by both global and domestic investors and how far the ‘Digital India’ model can prove to be an attraction for the investors in the sectors which are yet to achieve their full potential in India.

Index Terms - Digital India, e-governance, Digital empowerment, Government projects, Digital Infrastructure

I. INTRODUCTION

Digital India Programme is a flagship programme of Indian Government and was launched by the Central Government of India on July 1st, 2015. Digital India is one of the digital initiatives taken by the Indian Government which are expected to cut dependency on bureaucratic processes, decrease corruption and help cut down time in taking public services to the citizens of the country.

The aim of Digital India Programme is to provide the citizens with such digitally and electronically advanced means so that the rural areas are connected to the urban areas through network devices and services. To accomplish the vision, steps are being taken to improve the digital infrastructure in the country and to increase the access to network devices through increased bandwidth and advanced technologies. Initiatives are also being taken to increase the digital literacy of the population so that the majority of citizens become capable of operating digital gadgets and equipment.

The program targets to make government services available to people digitally and have the benefit of the newest information and technological innovations. It aspires to transform India into a digitally empowered society and knowledge economy through infrastructural reforms; such as high-speed internet in all gram panchayats, life-long digital identification for citizens, mobile banking for all, easy access to Common Service Centres (CSCs), shareable private spaces on an easily accessible public cloud and cyber security.

The focus is to bring transformation to Realize:



The program is projected at Rs. 1.13 trillion which will prepare the country for knowledge based transformation. The entire duty of implementing Digital India Campaign is of the Department of Electronics and Information Technology (DeitY). In co-operation with different Central Ministries/Departments and State Authorities, the DeitY is co-ordinating and organising approaches of different actions under Digital India, which can be closely monitored by monitoring committee on Digital India led by PM itself.

Companies all over the world desire to invest in Digital India Programme, as a growth opportunity. Hence, an attempt has been made in this paper to understand Digital India – as a Campaign where technologies and connectivity will come together to make a revolutionary amendment in all aspects of governance and improve the quality of life of citizens.

II. OBJECTIVE OF THE STUDY

1. To understand the Digital India Campaign and Programme.
2. To understand the objectives of this programme.
3. To assess the importance of this programme.
4. To find out the challenges outfaced in implementation of this programme.
5. To outline possible solutions and innovative ideas to achieve the vision of a Digital India.

III. RESEARCH METHODOLOGY

The study is exploratory and descriptive in nature. The secondary data is used for the analysis of the problem. Sources for the secondary information are originated from the various sources like, Research Papers, Books, Newspapers, Journal, Magazines article, Media Reports and Digital India website etc.

IV. LIMITATIONS OF THE STUDY

1. The study is based on published data.
2. Secondary data may be lacking in accuracy.
3. Every care has been taken to allure qualitative and correct information.
4. Time constraint.

V. LITERATURE REVIEW

Seema Dua (2017) mentioned in her paper '**Digital India: Opportunities & Challenges**' the mission of digital India is facing serious challenges in implementation. She believed that Digital India campaign can't be successful until there is massive digital literacy among the citizen, development of infrastructure in rural and remote areas, improved skill in cyber security and effective participation of various departments and demanding commitment and efforts.

According to **Kaul and Mathur** (2017) paper titled '**Impact of Digitalization on the Indian economy and requirement of Financial Literacy**', 'Digitalization helps to bring transparency in the system and more transparent are the flow of funds in the economy, less is the problem of tax evasion, parallel economy etc. But with all these benefits available, it also makes it necessary for the people to have basic financial knowledge and a push towards the importance of the financial literacy. With the help of which they can protect their money in situations like inflation, depression and know about different financial products and services to save it for their better future.'

Suman Rani (2016) concluded in her paper '**Digital India: Unleashing Prosperity**' that the digital India project provides a huge opportunity to use the latest technology to redefine India the paradigms of service industry. She also highlighted many projects which require some transformational process, reengineering, refinements to achieve the desired service level objectives.

Rahul Midha (2016) recognized in his paper '**Digital India: Barriers and Remedies**' that digital India as a great plan to develop India for knowledge future but he also expressed his doubt regarding implementation due to inaccessibility and inflexibility to requisite which can lead to its failure. He admitted that though digital India programme is facing number of challenges yet if properly implemented it can make the best future of every citizen.

Gupta and Arora (2015), paper titled '**Digital India: A Roadmap for the development of Rural India**', studied the impact of digital India project on India's rural sector and found that many schemes have been launched in digital India to boost agriculture sector and entrepreneurship development in rural areas. Digital India programme has also set the stage for empowerment of rural Indian women.

VI. VISION AREAS OF DIGITAL INDIA

The Digital India Programme is centred on three key vision areas:

1. Digital Infrastructure as a core utility to every citizen-

This vision leads to the fulfilment of the following needs-

Digital Infrastructure as a core utility to every citizen

High-speed internet as a core utility	Cradle-to-grave digital identity which should be unique, life-long, online & authenticable	Participation in digital and financial space through mobiles & banking	Easy access to Common Service Centre (CSC)	Shareable private space on a public cloud	Safe and secure cyber-space
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2. Governance and Services on demand-

This vision leads to the fulfilment of the following needs-

Governance and Services on demand

Seamlessly integrated services across departments or jurisdictions	Availability of services in real time from online & mobile platforms	All citizen entitlements to be portable and available on the cloud	Digitally transformed services for improving ease of doing business	Making financial transactions electronic & cashless	Leveraging GIS for decision support systems & development
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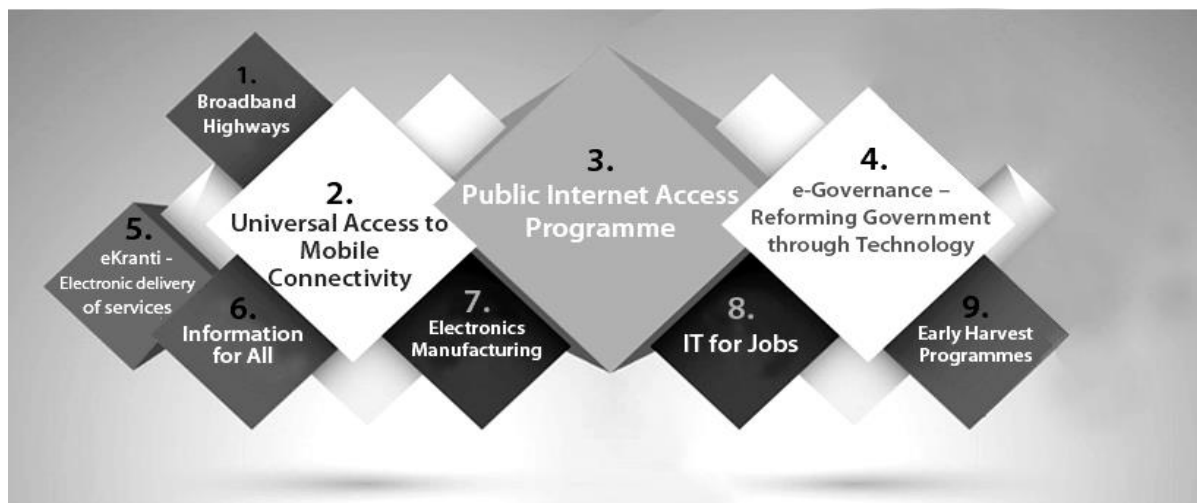
3. Digital Empowerment of Citizens-

This vision leads to the fulfilment of the following needs-

Digital Empowerment of Citizens				
Universal digital literacy	Universally accessible digital resources	Availability of digital resources / services in Indian languages	Collaborative digital platforms for participative governance	Citizens not required to physically submit Govt. documents / certificates

Digital India is an umbrella programme that covers multiple Government Ministries and Departments. It waves together a large number of ideas and thoughts into a single, comprehensive vision so that each of them can be implemented as part of a larger goal.

In this programme, nine projects, also known as nine pillars of Digital India Programme, have been undertaken. These are as follows:



The Digital India Programme aims at pulling together many existing schemes. These schemes will be restructured, revamped & re-focused and will be implemented in a synchronized manner.

Initiatives undertaken by the government to build ICT infrastructure for Digital India:

S.N.	Initiative	Description	Current Status
1.	BharatNet	Aims to provide broadband access to 250,000 Gram Panchayats (GPs) through a network of Optical Fiber Cable	<ul style="list-style-type: none"> • 1,44,430 km of optic fiber laid; OFC connectivity to 62,943 GPs. • Initial target: Broadband to 150,000 GPs by Dec 2015. • Revised Target: Broadband to 100,000 GPs by March 2017. • Non-involvement of states in the initial phases has led to hurdles, especially Right-of-Way issues, in laying of OFC.
2.	Smart Cities	Creation of 109 smart cities (target revised from 100) by 2022. INR 5 billion allocated to every city over 5 years for this purpose	<ul style="list-style-type: none"> • 60 cities have been chosen to be covered under the Smart Cities mission. • Allocation of INR 32 billion in union budget 2016-17. • Budget allocation of INR 70 billion done at the time of launch, but revised to INR 1.4 billion in the 2015-16 union budget due to non-deployment of funds.
3.	Common Service Centers (CSCs)	CSCs are centers through which e-governance and related services will be made available to villages	<ul style="list-style-type: none"> • Over 1,70,000 CSCs are operational across India. • 2,50,000 GPs to have one CSC each (at least). • Village Level Entrepreneur (VLE) model being followed to empower locals; nearly 240,000 VLEs have been appointed.

4.	Digitization of Post Offices	Digitization of post offices including setting up centralized data centres, networking of all post offices and enabling digital payments	<ul style="list-style-type: none"> All 25,297 departmental post offices have been computerized. 238 million postal bank accounts have been digitized. 155,000 post offices (130,000 in rural areas) to be digitized by March 2017.
5.	Universal Access to Mobile	Aims to provide mobile access to more than 55,600 villages that do not have mobile coverage	<ul style="list-style-type: none"> 55,669 villages to be covered by March 2019. 8,621 villages in the North East to be connected by September, 2017. Accessibility of villages and sparse population make it commercially unviable.
6.	Public Wi-Fi Hotspots	Creation of public Wi-Fi hotspots in India to enable citizens to access content without depending on mobile data	<ul style="list-style-type: none"> India currently has over 31,000 Wi-Fi hotspots. Over 100 hotspots to be made operational at various railway stations by March 2017. India should have 8 million Wi-Fi hotspots to meet the global average of one hotspot for every 150 people.
7.	India Stack	It is a set of open APIs that enables development of payment-enabled applications, using Aadhaar as the base for authentication	<ul style="list-style-type: none"> Rapid adoption of the JAM (Jandhan-Aadhaar-Mobile) trinity has enabled customer identification and access, based on which several other digital transactions can be carried out. The open API ecosystem combined with the digital literacy mission can go a long way in creating apps that are customized to suit local needs.
8.	National Cyber Coordination Center (NCCC)	The Ministry for electronics and IT has planned to set up a center to safeguard India's cyberspace against potential threats	<ul style="list-style-type: none"> Process has been fast tracked; RFP expected to be finalized by December 2016 – January 2017. NCCC expected to entail an investment of INR 9 billion.

Initiative was taken to train 10 million people in towns and villages for IT sector jobs within 5 years. It aimed to train 0.3 million agents to run viable businesses delivering IT services. Additionally, the project involved training of 0.5 million rural IT workforce in 5 years. To achieve the target of zero imports of electronics- Government aimed to put smart energy meters, micro-ATMs, mobile, consumer & medical electronics.

Government aimed to improve processes & delivery of services through e-Governance with UIDAI, payment gateway, EDI and Mobile platforms, School certificates, Voter ID cards were to be provided online.

This service aimed to deliver electronic services to people which deals with health, education, farmers, justice, security and financial inclusion.

Hosting data online and engaging social media platforms for governance was the aim of the government. A website, MyGov.in, was launched by the government. People can send in their suggestions and comment on various issues raised by the government.

Government planned to set up Wi-Fi facilities in all Universities across the country. Email was to make the primary mode of communication.

VII. BENEFITS OF DIGITAL INDIA PROGRAMME:

It is a scheme to empower people of the country. It will give many opportunities to use the latest technology by providing access to health, education, administration, banking, corporate, governance, financial services etc. It will help in improving the social and economic condition of people living in the rural areas. Main benefits of this programme are-

1. The digital India mission would lead to inclusive growth by enabling access to education, healthcare and government services to all the citizens of the country through common service delivery outlets.
2. Digital India Plan increases GDP to 1 trillion by 2025. It also generates employment, GDP growth, increased labour productivity and entrepreneurship.
3. Online availability of data will lead to more transparency.
4. India is a huge market for internet and mobile connectivity. The 3rd largest market in internet users and the 2nd place in wireless subscribers, still there are a big scope in Indian digital market.
5. E-Governance will help in reducing corruption.
6. Digital India project will provide real time education. Smart and virtual classroom will help to take challenges where there is lack of teachers.

7. Digital locker facility will help citizen to digitally store their important documents like Pan Card, passport, mark sheets etc. It will help in decreasing documentation and paper work.
8. m-Health can promote innovation & increase the reach of healthcare services. On line medical access with more features help in fighting from poor doctor ratio.
9. This will lead to a cashless society.
10. Agriculture sector contributes 16% in GDP while almost 51% in employment. It help our farmers to know-how in various agricultural activities like crop choice, weather, seed variety, plant protection and market rate information.
11. The programme would generate giant demand for IT, electronics and telecommunication personnels.
12. e-Sign will help electronically signed the documents and national scholarship portal help the students.
13. According to World Bank report a 10% increase in mobile and broadband penetration increases per capita GDP by 0.81% and 1.31% respectively in developing countries. So, it can play a key role in GDP growth.
14. Reduce corruption, quick working, reducing paper work and increased efficiency of business.

VIII. CHALLENGES

The Digital India Programme is an ambitious project of the Government of India. The Digital India Programme 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 BharatNet project was approved in October 2011, with a two year implementation target. As of 2016, under 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

IX. CORPORATE SUPPORT AND INVESTMENT IN DIGITAL INDIA PROGRAMME:

When this programme was launched many private companies announced to invest in that. By the end of the day (1st July, 2015), they had announced planned investments of Rs. 4.5 trillion and hires of 1.8 million people, over the next 5-10 years. Reliance Industries Ltd (Mukesh Ambani) announced to invest Rs. 2.5 trillion as part of the initiative, adding that his company would roll out broadband networks across all states; Jio is also its part. Aditya Birla Group (Idea Cellular Ltd) announced to invest additional \$7 billion in next 5 years in electronics manufacturing and development of smart cities and 100 Acres Digital Township in Mumbai. Bharti Airtel Ltd announced to invest in excess Re. 1 trillion towards additional infrastructure and taking 4G to the masses, among other things, in next 5 years. Vedanta Resources Plc and Sterlite Technologies Ltd, announced to invest Rs, 40,000 crore for LCD panels manufacturing in India, project will generate 50,000 employment and cut down electronics imports worth Rs. 20,000 crore. Many foreign companies San Jose, California, Facebook's CEO, Mark Zuckerberg expressed their support for Digital India. Google committed to provide broadband connectivity on 500 railway stations in India. Microsoft agreed to provide broadband connectivity to 5 lakh villages in India and make its cloud hub through Indian data centres. Qualcomm announced an investment of \$150 million in Indian start-ups. Oracle plans to invest in 20 states and will work on payments and smart city initiatives. Reliance Group will invest 10K crore for telecom space & cloud computing.

X. CONCLUSION

The Digital India program is now in the second year of its existence and several of the flagship projects under the program have now moved from the planning phase to the execution phase. The progress made in these projects and across the three vision areas of Digital India has started to show an impact on the lives of citizens and on businesses. Several

applications and services that have been developed have seen significant adoption. The cloud storage service, DigiLocker, is now being used by four million users. The MyGov application which provides a platform for citizens to interact with the government is used by over one million users to interact with the government.

While infrastructure build-out under the BharatNet program has progressed at a moderate-to-slow pace, the last 12 months have witnessed an explosive growth in data services on the back 4G services that have been launched across the country by telecom service operators. With ~350 million users, India now represents the second largest internet user base in the world. This provides a significant opportunity to transform the lives of the citizens through digital technologies.

The Digital India program is likely to benefit citizens over the next few years by generating employment opportunities, increasing speed and quality of service delivery and enhancing social and financial inclusion. Businesses will benefit by realizing higher productivity, an improved ease of doing business and a boost in innovation and investments. The adoption of next generation technologies under Digital India such as tele-presence will help reduce costs and also have a positive impact on the environment.

While the usage of smart phones and the internet has increased, digital literacy and awareness is still low and is an area that requires enhanced focus. The government has initiated several programs like the National Digital Literacy Mission (NDLM) and Skill India program to increase IT awareness and literacy. To further strengthen the development of infrastructure, services, capacity building and enhance their impact, the government needs to take steps across multiple functional areas, some of which are summarized below:

1. Increase availability of digital infrastructure at rural and remote locations: The speed at which digital infrastructure (especially fiber networks) is being developed needs to be increased. Existing government infrastructure assets (e.g., post offices, government buildings, CSCs) should be further leveraged for provision of digital services at remote locations.

2. Improve digital literacy: Digital literacy needs to be increased by providing institutional trainings in schools, colleges and universities; accelerating partnerships with global technology leaders and using the workforce trained under Skill India to impart trainings. An integrated approach between Digital India and Skill India needs to be constructed to design programmes and impart training.

3. Create awareness on the benefits of Digital services: The government should increase awareness regarding the value add of technology to increase technology adoption. The benefits of technology such as increase in the standard of living of the weaker sections of society and enhancing financial inclusion should be communicated to citizens.

4. Provide incentives for greater participation from private players and start-ups: Private sector players should be incentivized to develop infrastructure, provide services and promote digital literacy as part of the Digital India program. Start-ups should be involved to create and customize apps to local needs to increase adoption of digital technology.

XI. SUGGESTIONS

Development of digital infrastructure is a critical component of Digital India. To further enable development of digital infrastructure, the following measures should 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 be 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 incentivise 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 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 travellers and visual/ voice navigation for drivers.

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