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Vision of Digital India: Dreams comes True

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"Digital India – the dream project of the government and a blessing for the citizens, could help in connecting the dots of various projects, past and present, to bring India to a global platform. It will help in moving with the universal trends of digital innovation and create positive impact in the lives of people - rural and urban, young and old." In this article we discussed key features, impact and challenges of Digital India programme.

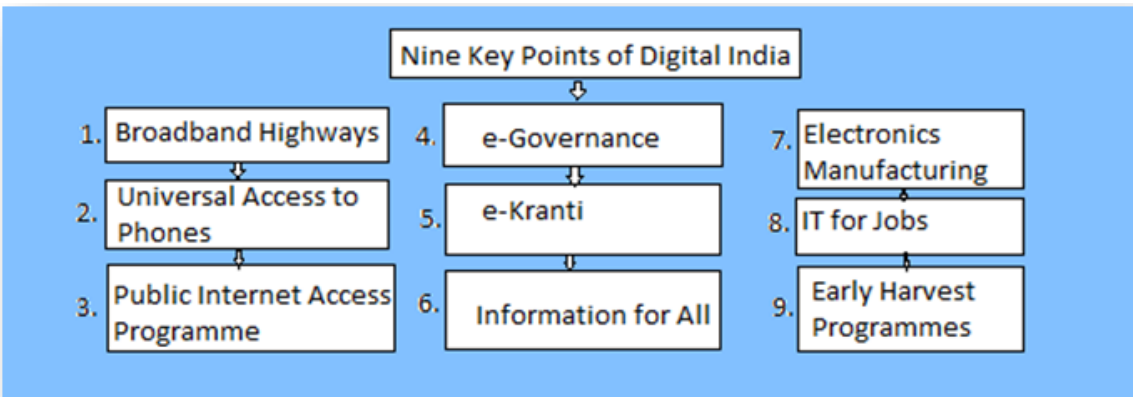
I. Introduction

"Digital India" Programme launched by The Honorable Prime Minister Narendra Modi on 1st July 2015. The "Digital India" initiative aims at availing digitizing of various individual projects of all central government and ministries like education, health services and other services, that can be delivered to citizens using Information and Communication Technology (ICT) by joining all the areas of India including the Gram Panchayats at high speed internet through broadband connectivity, in order to focus on the e-governance till 2019. It can also be viewed as the next step of already running National e-Governance Plan. In this program government will prefer to adopt Public Private Partnerships (PPP) wherever feasible for execution of this initiative. For the smooth execution of this program, government will enhance National Informatics Centre which is responsible to carry IT projects in government departments. For faster design, develop and implement various e-Governance projects, in at least 10 key ministries positions of Chief Information Officers (CIO) will be created and necessary senior positions within the department will be created by Department of Electronics and IT (DeitY) for managing the initiative. It is rightly said by the honorable Prime Minister of India, Narendra Modi that Information Technology plays important role to make India a digital country, in his words:

India Today (IT) + Information Technology (IT) = India Tomorrow (IT)

Nine Pillars of Digital India

At the launch ceremony of Digital India Week by Prime Minister Narendra Modi, top CEOs from India and abroad committed to invest Rs 4.5 lakh crore towards this initiative. The CEOs said the investments would be utilitized towards making smart phones and internet devices at an affordable price in India which would help generate jobs in India as well as reduce the cost of importing them from abroad. 9 Key points of Digital India Programme are as follow.



1. Broadband highways

The government with the vision of "Digital India" has allocated `5 billion to build high speed broadband highways connecting all the villages, government departments, universities, R&D institutes, etc. The digital development sees broadband as a key driver in addressing the challenges in the Millienium Devlopment Goals primarily through fibre networks. The National Optical Fibre Network (NOFN) project, funded by the Universal Service Obligation Fund, has set the stage for providing broadband access to the country's 250,000 gram panchayats by 2016. 1 This `200 billion project involves laying 600,000 km of fibre across the country.

BSNL, RAILTEL (telecom arm of the Indian Railways), and Power Grid Corporation are the three PSUs responsible for this mammoth task. The participation of private players is very important for faster rollout of optic fibre networks across the length and breadth of a vast country like India. The competition from private players will not only bring efficiency into the processes but also helps in bringing down the price of high speed digital services. Moreover, the innovation in marketing, operations and business process proven by private players can help in faster and greater adoption of high bandwidth services in the remote and rural areas.

2. Universal Access to Phone

- The initiative is to focus on network penetration and fill the gaps in connectivity in the country.
- All together 42,300 uncovered villages will be covered for providing universal mobile connectivity in the country.
- DoT will be the nodal department and project cost will be around Rs 16,000 Cr during FY 2014-18.

3. Public Internet Access Progrmme

- The two sub components of Public Internet Access Programme are Common Service Centers and Post Offices as multi-service centers.
- Common Service Centers would be strengthened and its number would be increased from approximately 135,000 operational at present to 250,000 i.e. one CSC in each Gram Panchayat. CSCs would be made viable, multi-functional end-points for delivery of government and business services. DeitY would be the nodal department to implement the scheme.
- A total of 150,000 Post Offices are proposed to be converted into multi service centers. Department of Posts would be the nodal department to implement this scheme.

4. E-Governance

The National e-Governance Plan (NeGP) has been formulated by the Department of Electronics and Information Technology (DeitY) and Department of Administrative Reforms and Public Grievances (DARPG). The e-governance project works in both centralized and decentralized way. The centralized way focuses on inter-operability of various e-governance applications and ensures optimal utilization of ICT infrastructure and resources while allowing for a decentralized implementation model. There are many different initiatives from central government as well as state-governments under the NeGP project to ensure government services are available to citizens electronically.

- Pensioners' portal, a web-based portal called Pensioner's Portal has been created for the redressal of pensioners' grievances. It also provides information to pensioners on retirement and pension-related issues.
- The Digital Chip Maker Intel along with the government unveiled a digital skills training application in 5 Indian languages,2 which includes modules on digital literacy, financial inclusion, healthcare and cleanliness. Intel will work with the Indian government to create digital literates across 1000 panchayats, a move that will impact five million citizens by the end of 2015.

5. e-Kranti

The e-Kranti project provides electronic delivery of services to the citizens. The government has allocated `5 billion for the e-Kranti project which includes many sub-level projects discussed below:

Technology for Education – e-Education	• All Schools will be connected with broadband. Free wifi will be provided in all secondary and higher secondary schools (coverage would be around 250,000 schools). A programme on digital literacy would be taken up at the national level. MOOCs –Massive Online Open Courses shall be developed and leveraged for e-Education.
Technology for Health – e-Healthcare	• E-Healthcare would cover online medical consultation, online medical records, online medicine supply, pan-India exchange for patient information. Pilots shall be undertaken in 2015 and full coverage would be provided in 3 years.
Technology for Farmers	• This would facilitate farmers to get real time price information, online ordering of inputs and online cash, loan and relief payment with mobile banking.
Technology for Security	• Mobile based emergency services and disaster related services would be provided to citizens on real time basis so as to take precautionary measures well in time and minimize loss of lives and properties.
Technology for Financial Inclusion	• Financial Inclusion shall be strengthened using Mobile Banking, Micro-ATM program and CSCs/ Post Offices.

Technology for Justice	• Interoperable Criminal Justice System shall be strengthened by leveraging e-Courts, e-Police, e-Jails and e-Prosecution.
Technology for Planning	• National GIS Mission Mode Project would be implemented to facilitate GIS based decision making for project planning, conceptualization, design and development.
Technology for Cyber Security	• National Cyber Security Co-ordination Center would be set up to ensure safe and secure cyber-space within the country.

6. Information for All

- Open Data platform and online hosting of information & documents would facilitate open and easy access to information for citizens.
- Government shall pro-actively engage through social media and web based platforms to inform citizens.MyGov.in has already been launched as a medium to exchange ideas/ suggestions with Government. It will facilitate 2-way communication between citizens and government.
- Online messaging to citizens on special occasions/programs would be facilitated through emails and SMSes.
- The above would largely utilise existing infrastructure and would need limited additional resources.

7. Electronics Manufacturing

Target **NET ZERO** Imports is a striking demonstration of intent.
This ambitious goal requires coordinated action on many fronts

- Taxation, incentives
- Economies of scale, eliminate cost disadvantages
- Focus areas – Big Ticket Items FABS, Fab-less design, Set top boxes, VSATs, Mobiles, Consumer & Medical Electronics, Smart Energy meters, Smart cards, micro-ATMs
- Incubators, clusters
- Skill development
- Government procurement

There are many ongoing programs which will be fine-tuned.
Existing structures are inadequate to handle this goal and need strengthening.

8. IT for Jobs

- 1 Cr students from smaller towns & villages will be trained for IT sector jobs over 5 years. DeitY would be the nodal department for this scheme.
- BPOs would be set up in every north-eastern state to facilitate ICT enabled growth in these states. DeitY would be the nodal department for this scheme.
- 3 lakh service delivery agents would be trained as part of skill development to run viable businesses delivering IT services. DeitY would be the nodal department for this scheme.
- 5 lakh rural workforce would be trained by the Telecom Service Providers (TSPs) to cater to their own needs. Department of Telecom (DoT) would be the nodal department for this scheme.

9. Early Harvest Programmes

IT Platform for Messages	• A Mass Messaging Application has been developed by DeitY that will cover elected representatives and all Government employees. 1.36 Cr mobiles and 22 Lakh emails are part of the database.
Government Greetings to be e-Greetings	• Basket of e-Greetings templates have been made available. Crowd sourcing of e-Greetings through MyGov platform has been ensured. E-Greetings portal has been made live on 14th August 2014.
Biometric attendance	• It will cover all Central Govt. Offices in Delhi and is already operational in DeitY and has been initiated in the Department of Urban Development. On-boarding has also started in other departments.
Wi-Fi in All Universities	• All universities on the National Knowledge Network (NKN) shall be covered under this scheme. Ministry of HRD is the nodal ministry for implementing this scheme.
Secure Email within	• Email would be the primary mode of communication. Phase-I upgradation for 10 lakh employees has been completed. In Phase II, infrastructure would be further upgraded to cover 50 lakh

Government	employees by March 2015 at a cost of Rs 98 Cr. DeitY is the nodal department for this scheme.
Standardize Government Email Design	• Standardised templates for Government email are under preparation and would be ready by October 2014. This would be implemented by DeitY.
Public Wi-fi hotspots	• Cities with population of over 1 million and tourist centres would be provided with public wi-fi hotspots to promote digital cities. The scheme would be implemented by DoT and MoUD.
School Books to be eBooks	• All books shall be converted into eBooks. Min. of HRD/ DeitY would be the nodal agencies for this scheme.
SMS based weather information, disaster alerts	• SMS based weather information and disaster alerts would be provided. DeitY's Mobile Seva Platform is already ready and available for this purpose. MoES (IMD) / MHA (NDMA) would be the nodal organizations for implementing this scheme.
National Portal for Lost & Found children	• This would facilitate real time information gathering and sharing on the lost and found children and would go a long way to check crime and improve timely response. • DeitY/ DoWCD would be the nodal departments for this project.

Estimated Cost and Impact of Digital India

Overall Costs of Digital India

- Rs 100,000 Cr in ongoing schemes (only DeitY, DOT & not incl. those in other line Ministries)
- Rs 13,000 Cr for new schemes & activities

Impact of Digital India by 2019

• Broadband in 2.5 lakh villages, universal phone connectivity
• Net Zero Imports by 2020
• 400,000 Public Internet Access Points
• Wi-fi in 2.5 lakh schools, all universities; Public wi-fi hotspots for citizens
• Digital Inclusion: 1.7 Cr trained for IT, Telecom and Electronics Jobs
• Job creation: Direct 1.7 Cr. and Indirect at least 8.5 Cr.
• e-Governance & eServices: Across government
• India to be leader in IT use in services – health, education, banking
• Digitally empowered citizens – public cloud, internet access

Other Impacts of Digital India

The Digital India project provides a huge opportunity to use the latest technology to redefine the paradigms of service delivery. A digitally connected India can help in improving social and economic condition of people living in rural areas 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 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.

1. Economic impact:

According to analysts, the Digital India plan could boost GDP up to $1 trillion by 2025.7 It can play a key role in macro-economic factors such as GDP growth, employment generation, labor productivity, growth in number of businesses and revenue leakages for the Government. As per the World Bank report, a 10% increase in mobile and broadband penetration increases the per capita GDP by 0.81% and 1.38% respectively in the developing countries. India is the 2nd largest telecom market in the world with 915 million wireless subscribers and world's 3rd largest Internet market8 with almost 259 million broadband users.9 There is still a huge economic opportunity in India as the tele-density in rural India is only 4510 where more than 65% of the population lives. Future growth of telecommunication industry in terms of number of subscribers is expected to come from rural areas as urban areas are saturated with a tele-density of more than 160%. The digital platform can enable more creative and service-oriented business models that create employment opportunities. The Digital India project itself will create employment opportunities for 17 million11 people directly or indirectly which will help in fighting against unemployment problems in India. Government has planned to give IT training to 100 million students in smaller towns and villages as employment opportunity in IT sector is very high in India.

2. Social impact:

Social sectors such as education, healthcare, and banking are unable to reach out to the citizens due to obstructions and limitations such as middleman, illiteracy, ignorance, poverty, lack of funds, information and investments. These challenges have led to an imbalanced growth in the rural and urban areas with marked differences in the economic and social status of the people in these areas. Modern ICT makes it easier for people to obtain access to services and resources. The penetration of mobile devices may be highly useful as a complementary channel to public service delivery apart from creation of entirely new services which may have an enormous impact on the quality of life of the users and lead to social modernization. The poor literacy rate in India is due to unavailability of physical infrastructure in rural and remote areas. This is where m-Education services can play an important role by reaching remote masses. According to estimates, the digital literacy in India is just 6.5%12 and the internet penetration is 20.83 out of 100 population.13 The digital India project will be helpful in providing real-time education and partly address the challenge of lack of teachers in education system through smart and virtual classrooms. Education to farmers, fisher men can be provided through mobile devices. The high speed network can provide the adequate infrastructure for online education platforms like massive open online courses (MOOCs). Mobile and internet banking can improve the financial inclusion in the country and can create win-win situation for all parties in the value-chain by creating an interoperable ecosystem and revenue sharing business models. Telecom operators get additional revenue streams while the banks can reach new customer groups incurring lowest possible costs. Factors such as a burgeoning population, poor doctor patient ratio (1:870), high infant mortality rate, increasing life expectancy, fewer quality physicians and a majority of the population living in remote villages, support and justify the need for tele medicine in the country. M-health can promote innovation and enhance the reach of healthcare services. Digital platforms can help farmers in know-how (crop choice, seed variety), context (weather, plant protection, cultivation best practices) and market information (market prices, market demand, logistics).

3. Environmental impact:

The major changes in the technology space have not only brought changes to the economic system but are also contributing to the environmental changes. The next generation technologies are helping in lowering the carbon footprint by reducing fuel consumption, waste management, greener workplaces and thus leading to a greener ecosystem. The ICT sector helps in efficient management and usage of scarce and non-renewable resources. Telepresence in work environment as well as home helps in creating a virtual environment for face to face conversations and minimizes the need for travel. Similarly, the flexible work environment where work from home and bring-your-own-device (BYOD) are permitted, can significantly reduce their carbon footprint and operational costs by not only reducing the electronic waste in the form of laptops, desktops, etc. but also by reducing the need of large fixed office space for businesses. A program in the UK found that an employee can save 1,175 driving miles each year, amounting to a 364.5kg reduction in carbon emissions when he works from home 1.5 days per week. M2M enabled devices and technologies like smart meter, smart grid, smart logistics and smart building help in many different ways by efficient energy management. Cloud computing technology minimizes carbon emissions by improving mobility and flexibility. The energy consumption can be decreased from 201.8 terawatt hour (TWh) in 2010 to 139.8 TWh in 2020 by higher adoption of cloud data centers causing a 28% reduction in carbon footprint from 2010 levels. Digital media for paper intensive services such as governance, ticketing, newspaper, etc. could not only result in efficient delivery of services but at the same time would lower the use of paper, thus preventing deforestation.

Challenges

Digital India initiation also face some challenges like: Privacy Protection, Data Protection, Cyber Law, Telegraph, E-Governance and E-Commerce Etc. Recently, ninth India Digital Summit was been hosted by the Internet and Mobile Association of India (IAMAI) in New Delhi on Jan.2015 to discuss the plans of Digital India Initiative. There the increment in mobile wallets in India for payment and e-commerce infrastructure was been discussed by a panel, as over 60% of Indian citizens still deal in cash and don't have bank accounts, so in order to establish digital transaction mobile wallets are very essential. Rajan Anandan, Managing Director at Google India, said: "Enabling content consumption in local Indian languages can greatly push the Internet consumption up." Bipin Preet Singh, Founder and CEO at MobiKwik, said "Consumers can overcome the trust factor in online payments," Aloke Bajpai, Co-founder and CEO of meta search site ixigo.com, said: "While the growth in desktop is almost zero, it's terrifi c on mobile," "It is not only mobile fi rst anymore but mobile only soon. Will have to see whether to work any further on evolving our desktop experience." Dhruv Shringi, CEO of Yatra.com, said: "The next thing to aim for travel companies is personalization of travel purchases such as hotels and holiday packages as also using predictive computing to understand and predict consumer behaviour and reacting to it."

II. Conclusion

Digital India is a large umbrella program which will restructure and re-focus several existing schemes to bring in a transformative impact. The Digital India vision aims to transform our country into a digital economy with participation from citizens and businesses. This initiative will ensure that all government services and information are available anywhere, anytime, on any device that is easy-to-use, seamless, highly-available and secured. The Digital India program is just the beginning of a digital revolution, once implemented properly it will open various new opportunities for the citizens. It is one of the highly ambitious programs of Indian government, and is directly monitored by Hon'ble Prime Minister of India. The program is a multi-ministry program, with the involvement of central cabinet ministers, state governments etc. Various grand companies like Microsoft, Google and Fujitsu will also agreed be partner and help the success of Digital India initiative. While there are many obstacles in the path of Digital India program, one major of which is electricity. But this problem will soon be solved as there will be pressure on local leaders to get electricity in their village when Digital India program will be running in the nearby villages. Also, it will open gates for employment as Telecom Minister Ravi Shankar Prasad said while addressing students at Shri Ram College of Commerce:

"IT gives employment to about 30 lakh people. Once Digital India becomes reality, we can give jobs to five crore plus people."

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