

Digital India Needs Digital Security

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ABSTRACT

Digital India is a campaign being launched by government of India. Digital India includes the various initiatives taken by government through a single programme which aims to target the India for becoming a progressing economy with good governance.

The digital India campaign is a joint venture by department of electronics and information technology as well as with other central ministries which includes various departments and state governments.

The main aim of digital India is to grow the areas of electronic services, products manufacturing as well as job opportunities and much more.

The digital India plans to centralize an aim on

- Digital infrastructure for every citizen
- Governance with services on demand
- Empowerment of citizen in digital form

Hence, an effort has been made in this review paper to recognize the impact of Digital India, also the challenges faced in successful implementation of the programme. The various issues supported by case studies and the possible negative impact which may forth-come in future have also been discussed under each scheme. Digital India if implemented properly will propel the country to new era of growth.

Key Words: Digital India, Governance, Digital Infrastructure

INTRODUCTION

Digital India Programme focuses for the application which deals with citizen centric services. Digital India is an initiative launched on 2 July 2015 by Honourable Prime minister of India Mr. Narendra Modi. The Digital India programme has covered

31 Mission Mode projects (MMP) among which some of them are Digi Locker, MyGov.in, Swachh Bharat Mission, Online Registration System, National Scholarship Portal, Digital India Platform etc.

Digital India Programme focuses on digitization of the whole country into a revolutionary aspect. As Gandhi Ji said "India resides in its villages" and the technology will give an opportunity for the villages to grow. Also PM Modi rightly said in his speech in San Jose "I see technology as a means to empower and as a tool that bridges the distance between the hope and opportunity. Social Media is reducing social barriers. It connects people on strength of human values not identities." Digital India provides a path for the country for its economic as well for its technology growth.

The digital India has already launched several schemes whereas many are on the way to be launched soon as some of which are discussed below: -

Digital locker System: the initiative is taken to minimize the physical use of documents and enabling the use of internet to share documents across various agencies. The service is cloud based operating service and helps the people to reduce the need of physical/hard copy of documents. The scheme enhances the country towards the paperless economy.

One of the major issues to sustain Digi locker is poor rate of adoption as well as if the data is breached thousands of the personal records of the individuals would be released online.

MyGov.in: this is a platform for citizens to engage with government through

“discuss”, “do” and “Disseminate” approach. The users or the citizens are allowed to discuss as well suggest various steps to the government. Overall the portal stands as a platform for exchange of ideas between citizens as well as the government. At present there are more than 1.78 Million users registered on the portal.

Swachh Bharat Mission/Clean India Mission: this mission is accomplished to fulfil the Mahatma Gandhi’s vision of clean India the Abhiyan is a massive movement including the citizens of India to create clean India the various data collected through official sources of government confirming the creation of 40, 84,620 construction of individual toilet also including 2, 34,161 community and public toilets built, making 1,338 open defecation free cities. The vision of this programme is to clean the roads, streets as well as the infrastructure of Indian cities including smaller towns. The Mission would accomplish Open-Defecation Free (ODF) India by 2 October 2019.

Online Registration System (ORS): this frame work links various hospitals across the country for Aadhaar based online registration with appointments with the help of hospital management information system (HMIS) the application is being hosted by NIC (National Informatics Centre). The portal uses e-KYC data of patients Aadhaar No and gives the patient with appointment in respective hospital through unique health identification number (UHID). (Soni, 2015)

National Scholarships Portal: the national scholarship portal serves as a common platform for student’s right from submitting the application to end beneficiary to all the scholarships provided by government of India. (Soni, 2015). The portal lists all the scholarships on a single portal to help the students reduce their time while searching for them through different sources.

Digitize India Platform (DIP): aims to digitalize the records of the country which would facilitate the government agencies to change themselves to digital enterprises. The official records suggest the processing

of 1286946 documents including 31797650 snippets with the help of 503115 contributors.

Pillars of Digital India

- ❖ Broadband Highways
- ❖ Universal Access to Mobile Connectivity
- ❖ Public Internet Access Programme
- ❖ e-Governance: Reforming Government through Technology
- ❖ e-Kranti - Electronic Delivery of Services
- ❖ Information for All
- ❖ Electronics Manufacturing
- ❖ IT Training for Jobs
- ❖ Early Harvest Programmes

Broadband Highways: This initiative covers broadband for all rural, broadband for all urban as well as national information infrastructure. Bharat broadband network limited acts as the milestone of the program with the help of National Optical Fibre Network project in custodian of Digital India Programme. (Aishwarya & Singh, 2016)

Under this plan the target is to cover 2.5 lakh gram panchayats as of December 2016 estimated amount to be used is 32,000 crore using the virtual network operators. National information infrastructure which covers nation wise coverage holds the timeline for this project to be as of march 2017 estimating the cost of Rs. 15,686 Crore. It would integrate the State-Wide Area network (SWAN), National knowledge Network (NKN) and National Optical Fibre Network (NOFN) along with cloud enabled data centres of nation and state. (Kumar R. , 2015)

Issues May Arise

Fibre Optic Tapping: the technique basically uses a network tap method that is enough to extract signals from an optical fibre cable without breaking the connection. The online services like Pay Gov and various e-portals which contain a highly confidential data would be at a great risk of data theft.

Mass Surveillance And Maintenance: The high cost fibre optic cables which will be laid in earth are susceptible to damage by Animals, Vandalism, Vehicles, Earthquakes and other natural disasters etc. and will require a timely maintenance and funds. It will be going to be a gargantuan task for the Government which will also require a horde of skilled technicians. **Use of unlicensed technology:** Bhaskar Pramanik the Chairman of Microsoft India, has said that "Company is ready with two pilot projects to harness unused spectrum between TV channels in 200-300 MHz range, which is the property of the state-owned broadcaster Doordarshan, to provide free broadband access". (Mitra, 2018) The Advantage of this technology is that it has a range of about 10 km and can provide free internet access to people in remote locations who may not be able to pay for it But on the other side experts feel that this is an unlicensed technology, which hasn't been adopted sizably anywhere in the world, although it may lead to an exponential growth in broadband connectivity in a Country like India. (Mitra, 2018) Still remains an unlicensed technology on which we cannot rely wholly.

Universal Access to Mobile Connectivity: The coverage of this plan includes around 42,300 villages the timeline provided for the scheme is among 2014-18 the cost estimated for the initiative is Rs.16,000 crore. (Kumar R. , 2015)

The Project primarily focuses on the network penetration for 100%. As well as aims to reach every village to be connected through mobile connectivity till end of 2018. The project is headed by the department of telecommunication (DoT). It is one of the portable exhaustive administration venture of India. (Shivesh & Pratap, 2015). The vision of this plan is to increase network penetration and coverage of gaps.

Cons:-

Despite the government's ceaseless efforts to drive the digital revolution, rural India is lacks behind in the Internet usage.

Internet penetration of Urban India was 64.84% in December 2017 as compared to 60.6% last December (Agarwal, 2018). In comparison, rural Internet penetration has grown from 18% last December to 20.26% in December 2017 (Agarwal, 2018). The statistical data shows that rural households are currently not a part of the digital wave, which means that they still do not have access to computers, smart phones also the penetration rate is dragging to increase at a very slow rate, the need arises on how to use the currently available sources wisely.

Public Internet Access Programme: Around 250,000 Common Services Centres (CSC) would be established, one CSC in each gram panchayat would be made available and multi-functional end points for the delivery of government as well as business services.

Total of 150,000 post offices are to be converted to fully fleshed multi service centres. Department of Posts would cooperate to implement this scheme.CSC would provide delivery of several social, financial, healthcare, agriculture related schemes and services to the citizens. The CSC would provide e-Services to remote locations where computer or internet is unavailable or almost absent.

Cons: -

As the Government's ceaseless efforts are making CSCs more workable, multi-functional end-points for delivery of government and business services and DeitY is the Nodal Department to implement the scheme. (Jose, 2017)It will ultimately require more technical and Computer literate staff which would be difficult to recruit in one go on such a large scale. The State law Enforcement Dept. gets the intelligence from the Intelligence Bureau on terrorist and fake currency. Dr Triveni Singh ASP of Special Task Force says that "However, there is no skilled workforce available at both the departments to handle cyber threats". (Nandikotkur, IB to Create Cybersecurity Architecture; Building CyberSec Skills, 2015)

The Cyber investigator and member of Cyber Society of India S N Ravichandran stated that “Fifty percent of Indians are uneducated and ignorant about online transactions, depending on a third party to transact for them”.(Nandikotkur, Digital India Raises Security Concerns, Security Challenges, 2015) Moreover he finds that the key personal information is being leaked to a third party so, what type of security are we talking about?

E-Governance: Reforming Government through Technology: This plans helped government to reform through the use of re-engineering using information technology.

The guiding principles for reforming of government include:

Form Simplification- This has helped to reduce the unwanted information in the forms and making the user-friendly interface forms.

Usage of integration services and platform such as UIDAI, Payment Gateway etc. would help to deliver services to citizens as well as businesses.

Electronic Databases- this would lead to easy flow of information.

Workflow automation inside government- the automated workflow would enable the citizens to view the transparency in government processes.

Issues:

With no doubts it is a must to have amenity for the emerging digital India which is providing a myriad of online facilities which will help the user to do official, professional etc. work in an easy and nifty manner.

But again it will be a difficult task for Novice and Computer illiterates. The Credential Theft will be always an issue until and unless people are enough aware about the Netiquettes and security rules.

The Government repositories which will store the Digital Data of an individual say certificates, educational degrees, Aadhar Card, Identity documents etc. would always be at the prior target for Hackers and Crackers. If such a breach occurs the

Government will surely face a great financial and reputational loss which may give rise to many outrages as well as disputes.

E-Kranti-Electronic Delivery of Services:

Total of 44 mission mode projects (MMPs) are implemented by the help of state, central ministries, as well as various departments. The services provided by the government focuses to provide complete e-services in sectors such as Health, Education, Passport Seva, Trade, Income Tax (IT), Out of the total 44 MMPs, 13 of them belong to Central MMPs And 17 belongs to State MMPs as well as 14 of the belongs to Integrated MMPs.(Dubudu, 2016)

The various initiatives taken under e-kranti are as:

e-Education- the Plan is to propose to connect all schools through internet, free Wi-Fi is to be provided to around 250,000 schools. Massive Online Open Courses shall be developed for this mission.

Cons:-

Technological Challenges: For e-education to develop resources that meet the user requirement needs to be addressed. (Rana, Rajiv, & Lal, 2014).

Adaptability Struggle: A switch from classroom to online environment would make the entire learning experience different, the resistant to change would not allow the students to adopt to the online learning environment. (Kumar S. , 2015)

Technical Issues: The increase in bandwidth with strong internet connectivity would be required to catch up with online courses, but nation like India ranks 109th in the mobile internet speed as well as 76th for broadband which becomes a major hurdle in e-education. (Mathur, 2017)

Computer Literacy: The Internet usage of rural population is significantly less than the urban population. It's estimated as many as 121 million Indians are logged onto the internet. It is a sizeable number, but still a relatively small proportion of the Country's 1.2 Billion Population. This shows a great disinterest in the usage of Digital Services and their modern quirks by the people.

Digital Divide: The e-Education would prove a digital gap among the citizens as in context of their marks, racial (white, minority) as well as geographical (urban/rural), the e-education would result in dividing the population on bases of the marks as well as many other social context.

Self Motivation: The major challenge for instructors as well as tutors in e-education would be to constantly motivate the students to promote the quest of knowledge in them, as its seen students with distance learning courses the students tends to lose their motivation towards learning. (Isa & Hashim, 2015)

e-Healthcare- this would cover online consultation, medical records as well as online medical supply through the exchange of patient information.

Cons:-

Basically this seems good and helping but practically impossible because Proper examination of the patient is not possible through online consultancy. Real time medication can't be given.

Technology for farmers- includes online cash, loan, relief payment through the use of mobile banking also encourage mobile banking.

Technology For security- emergence of mobile based emergency services and disaster related services for citizens on real time basis.

Technology for Financial Inclusion- would include the usage of mobile banking, micro-ATM programmes as well as CSCs/Post Offices.

Technology for Justice- Criminal justice system would be raised using technology such as e-courts, e-Police, e-Jails, and e-Prosecution.

Cons:-

The most advance and developed countries can't implement this technique and it will be difficult task for India because: some the victim's or criminals are shy in facing camera like the rural women population. Emotions can't be understood. Simple lawsuits can be managed but the

whole firm which is guilty cannot be given punishment merely on the online platform without considering all facts and evidences which seems a bit impossible in online judgments all these e schemes require special technicians and staff which can operate these services well. It is like educating the whole system again and raising their computer literacy.

Technology For planning- This would include the use of GIS based decision making plan for project planning, design as well as development.

Technology for Cyber Security- The Establishment of cyber security co-ordination centre would lead to safe and secure cyber space within the country.

Cons:-

Though it is a very good way of delivering the services but the biggest hurdle in the E-Kranti may be the Psychology of some Indians who are Resistive to Change. The Indian population is a cluster of different cultures and traditions that do not goes in the same direction always. So there are people who will be welcoming E-Kranti and some will not because they want the work to be done in the same way as it was being done before. The Computerization and IT are very dynamic fields that keep on changing every minute. To match the pace with the Challenging and Changing technology the staff, Government, people etc. would surely require to update their systems and themselves too. Reliability on new technology and web services: It will be extremely difficult for most of the people to build up trust on something that is virtual, dynamic, digital and vulnerable to Digital crimes. It will raise the question of protection and privacy issues in the mind of the users. Past incidents like Aadhar Breach, Petya ransom ware attack, Mirai Botnet Malware attack etc. have destroyed the trust of Public at some extent on Digital Platform.

Information for All: This would allow the free open and easy access to information for citizens. Government plans to engage itself

through the use of social media and web based platforms. The MyGov.in is one of the examples for the same. The government will use online messaging technique to citizens on special occasions under this scheme. The scheme focuses to increase the active participation of citizens with government through digital means. The government would provide internet hosting of data through this scheme.(Patel, 2015).

Cons:-

Platform is trying to connect citizens to the government. It will facilitate

2 way communications and will try to bridge people directly to government. The increase in Cyber/Digital crime in India in last few years has shown a sky-rocketed growth which is a great theft to the various databases that holds information of millions of people. Hackers often passively monitor the routine activity of any target on the web and on a certain point of time they execute the attack to steal credentials and other personal information.

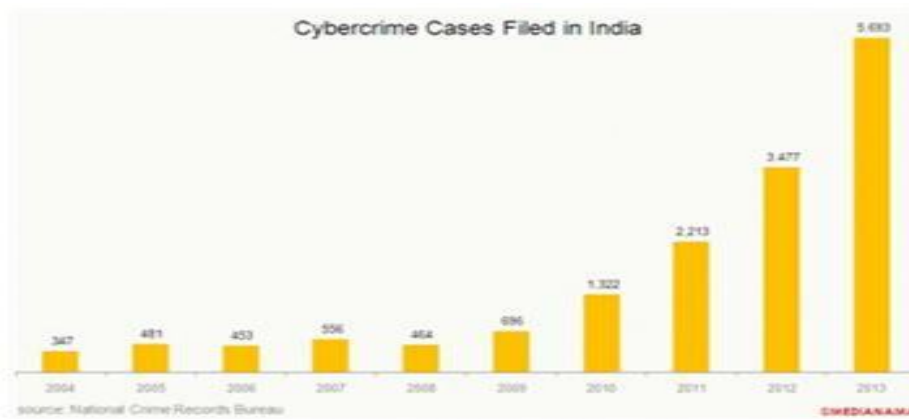


Figure 1: Cybercrime Cases Filed In India. Source: (Pahwa, Indian Government Agency received almost 100k cybercrime complaints till september 2014, 2014)

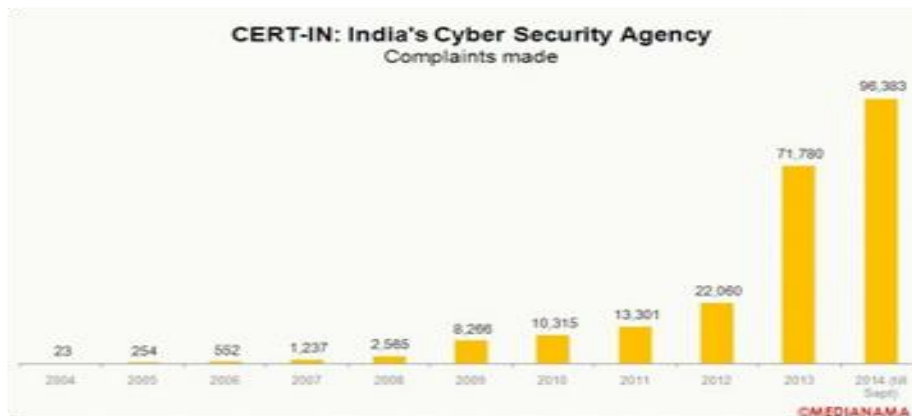


Figure 2: Complaints received by CERT-India Source: (Pahwa, Indian Government Agency received almost 100k cybercrime complaints till september 2014, 2014)

CERT-India received 96,383 complaints b/w January and September 2014. The 10,709 complaints reported per month, which is 79% higher than 5982 complaints/month in 2013. (Pahwa, Indian Government agency received almost 100k cybercrime complaints till September 2014, 2014).To cope up with this threat Digital

India must provide security features associated with the apps and websites need to invest \$4 Billion in PPP mode to combat cybercrime. India needs to spend at least \$4 billion in public-private partnership (PPP) mode to address Cybercrime related challenges at both individual and Organizational levels. The investment

amount of \$4 billion could be spread across upgrading technology, training cyber professionals, counselling of victims, creating cyber cells and others. From a security point of view India must need to spend at least \$15 per citizen on homeland and border security on public-private partnership basis with total expenditure amounting to \$15 billion by 2019.

Electronics Manufacturing: Pillar focuses on promoting the manufacturing process of electronic items within the country with the target of zero import to be accomplished till 2020 and shall be co-ordinated to provide clarity on taxation, incentives, incubators, clusters, skill development and government procurement.

Cons:-

Negligence of Agriculture (agro based economy): The most adverse impact of the Make in India campaign will be reflected on the agriculture sector. From a well-known fact that Indian Territory is having a 61% cultivable land it can be assumed that, the introduction of industrial sectors, factories the agro based economy of India will be trembled at somewhat extent. (Singh, 2015)

Manufacturing based Economy: One of the world's largest economies is the Indian economy. Mainly constitutes of 3 sectors which are agriculture, industry, and services. Currently the Indian economy majors up from the service sector which is contributing up to 57% of the GDP. With the commencement of 'Make in India' the economy will be likely to rely wholly on the manufacturing and exporting and on the other hand the import industry will remain static. This is going to be a great loss for the other economic sectors and would automatically reduce the advancement of Make in India. (Singh, 2015)

IT Training for Jobs: This pillar focuses on the training of 1 Cr students from smaller town and villages for jobs in IT sector in the duration of 5 years under department of electronics and information technology. (Kumar R. , 2015)

Includes setting up of BPO in north eastern states to enable the growth in ICT in such states. 3, 00,000 agents to be trained to run viable businesses rendering IT services under DeitY.

5, 00,000 rural workers would be trained under telecom providers under Department of Telecom (DoT) under 2 years of timeline.

Early Harvest Programmes: The motive of this project is to provide Wi-Fi in all universities estimated budget for this plan costs Rs. 790 Cr.

To Provide secure email within government- phase 1 completed with 10 lakh employees whereas phase 2 is completed for 50 lakh employees latest by march 2015 costing Rs. 98 Cr.

The motive is to provide public Wi-Fi hotspots to the cities whose population is above 1 million and tourist centres to be provided by public Wi-Fi hotspots for the promotion of digital cities. The scheme is under DoT and MoUD.

CONCLUSION

Digital India will be aided by myriad of social networking platforms which will disseminate information speedily and also it will open more innovative opportunities in future. On a concluding note, it can be smartly stated that with no doubt Digital India is a phenomenal project by our Honourable Prime Minister. It would be an opportunity for everyone. It is an expectation, which if given time and proper execution will surely flourish like a spring flower and will provide the Nation with the expected fruit.

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