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Digital India: Opportunities and Challenges

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***Abstract*— The society and individuals who acquire skills and increase their technological information are able to analyze the data generated and acquire information of digital environment to enter into a higher economic stratum. The one who enhance the skills are vibrant and inspirational in society while those who remain illiterate digitally are being pushed down the ladder and have to invest hard in terms of money and knowledge for their successive and progressive growth. To get along with the advancement and enhancement of technology the political system has to adjust itself and proceed in tandem dynamically. The adaption of encouraged technological advancement in the field of computer systems and relative areas has given immense impetus to economical growth of company. Digital India programme is an effort in this idea. The presented work reviews the programme and various issues that have addressed along with the implementation and challenges.**

***Keywords*—Digital India;Digital India opportunities; Digital India challneges**

I. INTRODUCTION

Being a new productivity platform digital economy is regarded as the third industrial revolution by some experts. Also famous with the term "Internet Economy" or "The Internet of everything",the digitization of economy is expected to generate new opportunities of growth in market, jobs as well as mankind. The momentum given by Digital India to the technological progress is indeed noticeable. The vision of Digital India will give imperative speed to propel the country to a higher level of growth. The government is trying to digitally empower the people of remote areas as well as villages via high speed internet services. Considering the various aspects of Digital India the supply side management as well as the operating model of the proposed system requires a thoughtful planning and progressive implementation to ensure immense and envisaged impact.

II. ELEMENTS OF DIGITAL INDIA

A. Demand Side Management

Demand side management involves efforts to ensemble the information and the content for various fields for which digitization has to be done. Few of these areas include education sector, health sector, administration ,transportation and yet more that is a part of day to day life.

B. Supply Side Management

The supply side can be studied under three sets of initiatives.

First is infrastructure which includes digital infrastructures, telecom infrastructure and IT infrastructure. The digital infrastructure requires to be well placed along with other two. For this the telecom infrastructure forms the base on the top of which we need IT infrastructure in the forms of apps and software.

The second set includes the content that has to be in relevance with the citizens and the real time requirement.

The third element which supports the supply management of digital in a country like India is capacity.

An overview of these three is given as follows:

As a utility Digital infrastructure seeks to provide a high speed internet facility, a cradle to grave internet identity, the access to common service centre, the private space that is shareable on public cloud, mobile phones and bank account information and the cyber space availability provided it should be safe and secure. All these services should be rendered to the citizens for their usability. Various governance and services are available in real time for online and mobile platforms that seamlessly integrate with other departments and jurisdictions to support the demands. All the necessary documents of citizens are made available on the cloud platform which frees the citizens from producing hard copies of documents for availing the services. The provision of cashless electronic transfer will help to generate business along with the former provided services. GIS is to be integrated with the development schemes to empower specially the rural citizens by providing them digital literacy. This can be achieved by associating digital platforms and digital resources in their native language so as to support and present participation as a reality. It will help tap into the data that will be freely available on the cloud computing platform—independent of an intervention.

Unless we have all these three sets of elements i.e. infrastructure, content, capacity of the telecommunication in country, we will not be able to meet the required and expected rate of supply as per demand. These three elements have to be separated since they all lie under

different departments and have different sets of issues. The issues of concern includes policies as well as operational characteristics of each element. Today not only the government but also the private sector provides for telecom infrastructure whereas the government is to provide the right policies in addition. Advancement in technology provides us with a vision which brings all the elements together and then paves a way for road maps. The full fledged examples includes broadband, mobile, digital identities and much more. Quantifiable objectives and mile stones have been delivered with the programs like Bharat Net. and National Optic Fibre Network. The mobile payments through kick-in apps associate the operators with the banks. This shows that for the next level of digital transformation to happen, the content, the applications, and the capacity need to join hands and get along together.

The automation of the work flow with the use of digital means decides the true value of letter. The process has to be effective, transparent and much faster in order to be called "Digital"

III. PILLARS OF DIGITAL INDIA

There are various **pillars** that provide opportunities to escalate public behavior and expectation by implementing the concept and the innovative idea of digital economy. Few such add-on pillars include:

1) Broadband Highways
2) Universal Access to Mobile connectivity
3) Public Internet Access Programme
4) e-Governance-Reforming Government through Technology
5) e-Kranti-Electronic delivery of services
6) Information to all
7) Electronics Manufacturing
8) IT for Jobs
9) Easy Harvest Programme

1) Broadband Highways: It has three sub projects: Broadband for All - Rural, Broadband for All - Urban and National Information Infrastructure (NII)

- Broadband for All-Rural : This is to be achieved by covering about 2,50,000 village Panchayats that are targeted under the National Optical Fibre Network (NOFN) by nodal department (DoT) by December 2016.
- Broadband for All-Urban: Virtual Network Operators are be used for service delivery and communication infrastructure would be mandated in urban areas for flourishing the sevices .
- National Information Infrastructure: NII would merge the network and cloud infrastructure to provide high speed connectivity and cloud platform to government departments up to the panchayat level.

2) Universal Access to Mobile connectivity: It emphasizes on penetration of network to the remote areas thus filling connectivity gaps among rural and urban population.

3) Public Internet Access Program: This programme has two sub components: Common Service Centres and PostOffice as multiservice centres

- Common Service Centres: Number of CSS will be increased and there will be one CSS in each gram panchayat. CSCs will be made multi-functional for the delivery of government and business services.
- Postoffice as multiservice centre: About 150,000 Post Offices will be converted into multi service centres.

4) e-Governance-Reforming Government through Technology: The use of IT to untangle and make the government processes more well organized is necessary to make the delivery of government services more effective across various government domains and therefore is needed to be implemented in all Ministries/ Departments.

5)e-Kranti-Electronic delivery of services: The aim of this program is to make all Government services available to the common man in his locality, via common service delivery outlets, and keep a check on the efficiency, transparency, and reliability of the services at minimum costs to realize the basic needs of the common man.

6) Information to all: The datasets will be released in an open format by the ministries/departments, online data which would lead to easy access to information for citizens. Government will be proactively engage through media and internet with the citizens.MyGov.in, is a step in this direction. On special occasions, citizens will receive emails and messages from government.

7) Electronics Manufacturing: The basic emphasis of this pillar lies in encouraging electronics manufacturing in the country with a target of NET ZERO Imports by 2020.The electronic goods demand is increasing at Compound Annual Growth Rate (CAGR) of 22% which is expected to reach 400 Billion USD by 2020. In order to put India at a high rank on the list of places to invest, Indian government is putting several efforts to promote manufacturing and investment.

8)IT for jobs: This pillar focuses on training and upgrading the skills which will aid in availing employment opportunities in the IT/ITES sector. Special programmes are to be organized for youth living in villages/rural areas and northern states. There is a target of training about one crore students living in small towns & villages for the jobs in IT sector in over 5 years.

*9) Easy Harvest Programme:*The projects which are to be implemented with short timeline are included in this category.It involves services like public wifi spots, replacing the school books by e books,use of smart classrooms to aid in lectures,providing IT platform for message exchange,sms based alerts for disaster management and weather forcasting,providing search portals for lost and found children nationwide.This is not limited to mentioned programmes but much more of daily necessity can be included in the easy harvest programme.

IV. CHALLENGES

There are several questions that hit our mind when we think of "Digital India". There are challenges around change management as the government has been working in a particular way and suddenly we want them to work in completely different environment. We need them to do certain tasks like to put information online, to respond to grievances and criticism. It is difficult for people who are not used to function in this manner. Another challenge is to make them understand and educate them on the advantages that digital will bring in running the environment. A possible solution to this can be given by opening up multiple information and communication channels for the masses. An example that suits this context would be MyGov which is an innovative platform to built partnership between citizens and government with the help of technology for growth and development of India.

Few challenges of Digital India programme include as following:

1) Implelemtation: The implementation program is designed entirely as a top level model on the technical front. Implementation becomes a major issue since there is hardly any guidance on how to implement the same technology on various ground levels to make it a success. Most of the nine pillars of the programme are directly related to high-consumers and almost 70% of the rural population in India will not be able to avail the benefits of digitization.

2) Deployment of Wi-Fi centres and hotspots: BSNL's mass deployment of Wi-Fi hotspots across the country is indeed a appreciable effort but it requires investment of efforts in terms of money, labour and time. If the Government pushes BSNL to ensure atleast on hotspot per village, wonders can be experienced with fruitful and positive outcomes nationwide. However if the selection of location for setting up hotspots can be extended to areas mostly populated by tribals, backward caste, minorities and geographically difficult areas then the impact can bring a new era of technological revolution in our country.

*3) Improvement in IT literacy rate:*Technology is lame until its accessible and usable, therefore, improving IT literacy is very improvement because entire mass who is going to use internet and the services provided by digital India program should know how to secure their online data. The security of data over internet can be achieved by providing proper usability guidance of antivirus software and its role in securing the records should happen simultaneously.

*4) Security:*With so many people connected to large number of networks the data security issue will become one of the priority among the challenges of Government in implementing Digital India programme. Since all the departments like income tax, LIC, election commission, passport department etc will have ample sensitive data of citizens thus there is high possibility of security breaches once majority of the population becomes digitally literate. The herculean task of securing all the W-Fi hotspots has to be taken into consideration seriously. The antivirus product for the home users, small and medium business, and corporates has to be offered to provide complete protection to the networks and successfully materialize the dream of ideal Digital India.

a) Data vulnerability: Since every citizen of the country would avail the services provided by digital programme, all the personal data including bank details, income tax details, PAN details will be available online and thus might be vulnerable if it is not secured properly. In case this is breached then any individual would lose the privacy of data and would be compromised. Proper measures and security checks should be implemented to secure the private data over the net.

b) Excessive server hits: Once the majority of population start using online services, then parallely the number of hits per day on the government portal servers will increase. Thus it would be a limitless procedure and the IT team needs to gear up to be prepared enough to tackle and minimize the situation of crash.

c) Man in the middle attack: The question of security further flies to the cyber-attack where malicious intruder acts as an actor into the conversation between two parties, imitates both parties and gains access to the information exchange between them. Such a attack is called Man in the Middle attack and allows data intercepts meant for someone else without knowledge of either party involved.

V. CONCLUSION

Digital India is indeed an appreciable effort by the government of India which will accelerate the growth and development of the country and will surely provide a strong backbone to economy. But technology advancement is another improvement of science that can be both boon and curse to society. Yet another issue that has to be addressed is the challenges that come around while availing the opportunities along with the implementation of the innovative ideas. The work discussed few of such challenges and can be explored in future to much more wider aspects in the terms of accessibility and security that's on the gunpoint of the breaches that will go along as far as the technology keeps on growing.

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