

Digital India - Challenges Faced by IT Sector

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Abstract: Digital India programme is an initiative by the government of India to bring about a transformation in the nation and restructure all the government services, making them accessible by all, over the Internet. Its 9 pillars cover various facilities provided by the government under various schemes to the masses, and make them available over the cloud. However, the campaign as a whole faces various challenges, especially in the IT sector. The vision of Digital India, its 9 pillars and the challenges that can hinder the progress of the campaign are worth studying.

Keywords: Digital India, 9 Pillars, NDLP, IT, Internet, e-Kranti, e-governance.

I. INTRODUCTION

We are closing towards a world, which will be digitally connected in every possible aspect. The next decade will be dedicated to the advancement in the application of IT services in every field, and accomplishment of the aim of connecting every single person to the World Wide Web, and help the layman make the most out of the digital services available. Digital India is a programme to transform our nation into a digital empowered society and knowledge community [1].

As estimated, the programme will be implemented in phases from 2014 till 2018 and will be developed further pertaining to the results received at the end of the programme. The implementation will involve a mutual cooperation between The Central and State Governments, Department of Electronics and Information Technology (DeitY) and will impact ministry of communications & IT, ministry of rural development, ministry of human resource development, ministry of health and others[1]. The existing/ongoing e-Governance initiatives would be revamped to align them with the principles of Digital India, and the government is planning to strengthen National Informatics Center (NIC) by restructuring it to support all central government departments and state governments.

II. SCOPE AND VISION

The vision of this programme is 'To transform our nation into a digital empowered society and knowledge community' encompassing three areas: universal access to digital infrastructure, government services, and citizen empowerment. This vision is further encompasses the need to include electronics manufacturing and job creation as well [2]. Thus, the programme aims to make technology the central hub to drive the needed change in sectors that can be drastically helped and improved with the help of IT.

The scope of the campaign can be summarized in following points:

- To bring about a transformative revolution, that is to realize:
‘IT (Indian Talent) + IT (Information technology) =
IT(India Tomorrow)’[3].

- To restructure, revamp and re-implement existing services and schemes in a synchronized manner.
- To fuel an umbrella programme that covers multiple government departments and ministries and to provide a common platform to all the services provided by each for easy distribution.
- To fuel the progress of the nine pillars as envisioned under the programme.

III. 9 PILLARS OF THE PROGRAMME

The campaign will be realized with its 9 pillars that cover all the ideas and thoughts and weaves them into a single and comprehensive vision. Each of these pillars stand on its own, but is also a part of the larger picture. These are:

A. Broadband Highways

In simple terms, this refers to providing broadband services to all sections of society. This even includes every remote corner of India. So basically, broadband highways are divided into three subcomponents viz. Broadband for All Rural, Broadband for All Urban and National Information Infrastructure. This intends to provide Broadband in 2.5 lakh gram panchayats by 2016, Virtual Network operator and smart building in cities and National Information Infrastructure by March 2017. The total estimated cost is Rs. 47, 686 Cr. [15]

B. Universal Access to Mobile Connectivity

This initiative focuses on network penetration by covering rest of 42,300 villages by FY 2014-2018. Estimation for this purpose is Rs. 16,000 Cr. [15] [4]

C. Public Internet Access Programme

Common Service Centres (CSCs) and Post Offices in the remote pockets will be strengthened as a part of the campaign, providing viable, multi-functional end-points for delivery of government and business services. [14]

D. e-Governance: Reforming Government through Technology

- This includes providing simplified forms, online repositories for important certificates and documents, Integration of services and platforms, automated government workflow and public grievance redressal and etc. To achieve all these, the expected cost is Rs. 4750 Cr. [4]

E. e-Kranti - Electronic Delivery of Services

There are 31 Mission Mode Projects under different stages of e-governance lifecycle. Later, 10 new MMPs were added. e-Kranti basically aims at bringing an overall revolution (Kranti) by providing e-education (which also includes free WiFi for schools and colleges), e-Healthcare, online consultation, Online cash, technology for farmers, e-courts, e-police, e-prosecution and so on.[15][4]

F. Information for All

This point refers to online hosting of information and documents. It also implies that the government shall proactively engage through social media. For this purpose, the already existing resources would be utilized and there would be a need of some additional resources as well. [4]

G. Electronics Manufacturing

Target NET ZERO Imports is a striking demonstration of intent. It focuses on building semi-conductor fabrication plants; manufacturing set-top boxes, VSATs, mobiles, consumer & medical electronics, smart energy meters, smart cards, micro-ATMs and similar products.[15][4]

H. IT for Jobs

The aim is to train nearly 1 crore people from smaller towns & villages so that they can work for IT sector, 3 lakh agents to run viable businesses delivering IT services, 5 lakh rural IT workforces over 5 years and BPO in every North-Eastern state.[15]

I. Early Harvest Programmes

This section focuses on some programmes/services that are to be delivered soon. This includes the IT Platform for Messages, Biometric attendance, Wi-Fi in All Universities, School Books to be eBooks, Public WiFi hotspots, SMS based weather information, disaster alerts, National Portal for Lost & Found children. [4]

IV. CHALLENGES

A. Internet Access - Broadband and WiFi

This will be one of the most important challenges that threaten the very vision of the programme - How will we provide Internet Access to each and every person, especially those living in the remote corners of our nation, where even the basic amenities like electricity are still a challenge. Efforts have already begun with free as well as low cost broadband services have been provided to the citizens residing in the metropolitan areas as well as 2.5 lakh villages[5], but the rest 3.88 lakh villages are till date unaware of Internet and its usage. Moreover, the quality of the broadband that is being aimed should be feasible enough and usable.

B. Cloud and storage solutions (Database & Server overloads)

Considering an average of 1 GB of data to (corresponding to the personal profile of the user, and all the documents that can be stored) be stored over cloud per person, and with a total population of 1.252 billion[6], the total server space needed amounts to approximately 1.252 billion GB or 1,252,000,000 TB of total data space requirement. An object storage service might cost up to ~\$0.20/user per

month [7]. Thus, In Indian Rupee, it sums up to 16,776,800,000,000 or 16,1776 billion INR of total cost, per month. With 1.4 lakh crore INR allotted to Food Subsidy in Union Budget of 2016, with food being a necessary need, allotment of that much server space poses a grave threat to the accomplishment of the vision of Digital India.

C. Literacy and Awareness

According to the latest statistics by DEF (Digital Empowerment Foundation), digital literacy is almost non-existent among more than 90% of India's population[8]. Thus, the task of empowering the masses with the help of ICT will be left redundant if the end users aren't skilled enough with basic knowledge of digital services and if they aren't made aware about their long term advantages.

D. Reliability and Efficiency

Setting up a digital environment making the masses aware of the services is of no use if the services being offered aren't reliable enough. The Digital India mission faces a challenge in a very crucial aspect - Efficiency and Reliability of the disbursed services.

E. Employment Challenges

Over 94 percent of India's working population is part of the unorganized sector [9]. This unorganized sector refers to all unlicensed, self-employed or unregistered economic activities such as farmers, handicrafts and handloom workers, rural traders, etc. A shift from this unorganized sector to organized sector will again need a nationwide revolution, with more number of jobs and opportunities to each skilled individual. Considering the current rate (16 lakh certified candidates out of 55 lakh registrations [10]) of Phase 1 of NDLM in two years, the aim of providing mass employment in IT sector, in spite of opportunities may challenge the completion of the programme.

F. Security Challenges

Data generation can be believed to be in direct proportion to the number of users of that particular service. This means, more the adoption of services offered under Digital India, more and more will be the amount of data generated. In order to ensure a properly structured and maintained database of all the beneficiaries, Cyber security and wellness should be addressed at policy as well as architecture level. The challenge is to educate the do's and don'ts of cyber security, as well as ensure that the solutions are designed with top-notch, solid and intelligent detection systems that take care of threats to the personal data and take appropriate actions as and when necessary.

G. Availability of Resources

In order to make India a global manufacturing hub, the government has kept the objective of Net Zero Import by 2020.

The challenge that Digital India faces in this context is to make sure all of the resources utilized during the programme should be assembled in the nation itself, and are of industry standards, qualifying all the requirements that are necessary to give the programme the shape it was intended to be in. Thus, it becomes imperative to

encourage public-private partnerships in all necessary fields, which is not a simple task.

H. Timely Completion

The Digital India plan was approved by the Cabinet on August 20, 2014[11] and was successfully launched on 1 July 2015[12]. However, the progress of the campaign will be stumped if above mentioned barriers hinder the growth and implementation of the intended services. The first phase of the campaign is estimated to be completed by end of 2017. This estimation can be proven wrong due to political conflicts between ministries and lack of coordination. If not completed in the proposed time interval, the services can be rendered useless.

V. CURRENT SCENARIO

In spite of so many challenges staring at the vision of Digital India, a good deal of progress has already been made, that can be supported by the following points:

- 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 [4].
- DigiLocker, a secure cloud based platform for storage, sharing and verification of documents & certificates is already in full swing.
- eSign – An initiative to eradicate forgery and fraudulent signature, the eSign framework would allow citizens to digitally sign a document online using Aadhaar authentication.
- Swachh Bharat Mission (SBM) app - To further the Swachh Bharat mission, the government has launched this app and would be used by people and Government organizations.
- Next Generation Network (NGN) – This is a BSNL initiative which looks to replace 30 year old exchanges, with this new IP-based technology to manage all types of services like voice, data, multimedia/ video and other types of communication services.
- Wi-Fi hotspots - BSNL has undertaken large scale deployment of Wi-Fi hotspots throughout the country for Internet access on smartphones while on-the-go. The initiative has already kicked off with the government offering free Wi-Fi at tourist places like Taj Mahal, and spots at Shimla too.[13]

VI. FUTURE

Even if the programme is plagued with numerous challenges, especially in the IT sector, the future of the campaign as a whole seems fairly bright. Although it may take more time than what was speculated during the formulation of the draft, it can give power of ICT in the hands of the rural masses, and those living in the remote corners of our country, which will help us develop and be on par with the rest of the world with respect to efficient utilization of Internet and its innumerable services.

VII. CONCLUSION

Digital India aims to encompass all those facilities and services which would otherwise have lead to inefficient utilization of our country's available resources, especially manpower. The dream of every skilled aspirant is the dream of the nation as a whole, and this campaign will help them realize the same by giving them more number of opportunities. Given right attention and ensuring none of its aspects are unseen, the nation can be truly digitized and the vision of Digital India, to convert the nation into a digitally empowered society and knowledge community can be fulfilled.

REFERENCES

1. What is Digital India? - Available: <http://www.cmai.asia/digitalindia/>
2. NCAER, Digital India - Scope and Challenges. Available: http://www.ncaer.org/event_details.php?EID=138
3. Biswa Prakash Nayak, Digital India Week. Available: <https://www.linkedin.com/pulse/digital-india-week-indian-talent-information-technology-nayak>
4. Nine Pillars of Digital India. Available: <http://vikaspedia.in/e-governance/digital-india/nine-pillars-of-digital-india>
5. Facts About Digital India Initiative. Available: <http://top10wala.in/facts-about-digital-india-initiative-advantages/>
6. Demographics of India, Wikipedia. Available: https://en.wikipedia.org/wiki/Demographics_of_India
7. Andrew Boring's answer on 'How do you calculate server costs per user?', Quora. Available: <https://www.quora.com/How-do-you-calculate-server-costs-per-user>
8. Background, Digital Empowerment Foundation. Available: <http://defindia.org/national-digital-literacy-mission/>
9. Labour Structure in India, Wikipedia. Available: https://en.wikipedia.org/wiki/Labour_in_India
10. NDLM Training stats, NDLM. Available: <http://ndlm.in/>
11. Digital India: Technology is central to enabling change, Netpehchaan. Available: <http://netpehchaan.in/resources/digital-india-technology-is-central-to-enabling-change.html>
12. Digital India, Wikipedia. Available: https://en.wikipedia.org/wiki/Digital_India
13. Digital India: 10 important initiatives launched by Narendra Modi today, BGR. Available: <http://www.bgr.in/news/digital-india-10-important-initiatives-launched-by-narendra-modi-today/>
14. Digital India, Press Information Bureau. Available: <http://pib.nic.in/newsite/efeatures.aspx?relid=115276>
15. Digital India – An e-Vision. Available: <http://www.expressinglife.in/2015/03/digital-india-e-vision.html>