Original Research Article

DIGITAL INDIA FOR SUSTAINABILITY

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Abstract: - The word "Digital" has become an integral part of our life. In every aspect there is a use of digital technology whether it is functioning of a Government department, private organization, normal business or a service delivery for common citizen. The 'Digital India' programme was launched by the Hon'ble Prime Minister of India on 1st July 2015 has targeted to make Government services available to citizen digitally and leverage benefit of Information and Communication Technology (ICT). This programme is being implemented to transform India into a digitally-empowered society and a knowledge economy. Digital India tends to make use of the latest technologies like mobile apps, cloud computing and Wi-Fi to improve the governance, for ease of doing business and to deliver effective and efficient services to citizen till the last mile. The Digital India programme is also facing challenges in implementation given the demography and geography of the country. The focus of this research is to find out how Digital India can help in sustainable development and improve the citizen's quality of life.

Keywords: *Digital India, NeGP, e-Governance, Mygov, ICT, IT/ ITeS, e-Services*

Introduction: The 'Digital India' programme was launched by the Hon'ble Prime Minister of India on 1st July 2015 has targeted to make Government services available to citizen digitally and leverage the benefit of Information and Communication Technology (ICT). This programme is being implemented to transform India into a digitally-empowered society and a knowledge economy. Digital India tends to make use of the latest technologies like mobile apps, cloud computing and Wi-Fi to improve the governance, for ease of doing business and to deliver effective and efficient services to citizen till the last mile. Digital India thrust on building the broadband highways, connecting rural areas to internet, improving and addition on mobile network penetration, service delivery through e-Governance, encouraging entrepreneurs from every strata of the society. The Digital India

programme is also facing challenges in implementation given the demography and geography of the country. The focus of this research is to find out how Digital India can help in sustainable development and improve the quality of life of citizen.

Research Methodology: For this research purpose, secondary data analysis has been done to understand the "Digital India" initiative. Secondary data review and analysis comprises collecting information, statistics, and relevant data at several levels is based on the information retrieved from internet, through research papers, published articles, journals, dashboards and websites of various government agencies.

Objective of the paper

1. To study the concept of Digital India programme.
2. To assess the progress of this programme.
3. To identify the challenges faced in implementation of this programme.
4. To analyze role of Digital India programme in sustainable development.

About e-Governance initiatives in India and NeGP: E-governance is defined as delivery of Government information and services to the citizen using electronic means. E-Governance or Electronic Governance stared in India in late seventies focusing on development on development of government application for domains such as research, census, tax, defense and planning. Traditionally services were delivered to a citizen by government agencies in government office. With advent of Information and Communication Technology (ICT) it has become possible to provide to door stop of citizens using various mediums. By using ICT in government services an efficient, speedy and transparent process for spreading information to the citizens and for execution of government administration activities has been initiated.

The process started from automation and computerization at individual office or department level and further extended to State level and National level using connectivity and networking, building systems for information processing and delivering services. This ranges from automating individual departments, electronic handling of files and workflows, public grievance systems, access to entitlements, service delivery for routine transactions like bill payment. These key initiatives focus on enabling the citizen with an interface for providing various government services, and their bettering live hoods.

Before Digital India programme, National e-Governance Plan (NeGP) was launched in May 2006, comprising of 44 Mission Mode Projects. The ultimate objective is to bring public services closer home to citizens, as articulated in the Vision Statement of NeGP[1]- "Make all Government services accessible to the common man in his locality, through common service delivery outlets, and ensure efficiency, transparency, and reliability of such services at affordable costs to realize the basic needs of the common man"

The projects in this category were implemented by the Central Ministries, States, and State Departments to augment and enhance the objectives of NeGP.

Digital India

After the successful implementation of the various e-Governance projects under NeGP, e-Governance in totality was not able to make the desired effect and fulfil all its objectives. Therefore, to transform the public service ecosystem through information technology, the **Digital India programme** was launched with the vision to transform India into a digitally empowered society and a knowledge economy.

The Digital India is a flagship programme of the Government of India is centered on three key vision areas:

1. Digital Infrastructure as a Core Utility to Every Citizen
2. Governance and Services on Demand
3. Digital Empowerment of Citizens

Digital India program focuses on revising existing systems to imbibe a transformational

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[1]http://meity.gov.in/divisions/national-e-governance-plan

impact. The vision is to transform India through infrastructural reforms with focus on internet connectivity in all Gram Panchayats, Citizen Service delivery through Common Service Centers (CSC), Digital Identification, Mobile banking, shareable and accessible Public Cloud and enhanced cyber-security.

List of Mission Mode Projects:

S. No.	Central	State	Integrated
1	Banking	Agriculture	CSC
2	Central Excise & Customs	Commercial Taxes	e-Biz
3	Income Tax (IT)	e-District	e-Courts
4	Insurance	Employment Exchange	e-Procurement
5	MCA21	Land Records (NLRMP)	EDI for e-Trade
6	Passport	Municipalities	National e-Governance Service Delivery Gateway
7	Immigration, Visa and Foreigners Registration & Tracking	e-Panchayats	India Portal
8	Pension	Police (CCTNS)	Financial Inclusion
9	e-Office	Road Transport	Roads and Highways Information System (RAHI)
10	Posts	Treasuries Computerization	Social Benefit
11	UID	PDS	National GIS
12	Common IT Roadmap for Para Military Forces	Education	National Mission on Education through ICT
13	e-Sansad	Health	Urban Governance
14		e-Vidhaan	e-Bhasha
15		Agriculture 2.0	
16		Rural Development	
17		Women & Child Development	

The initiatives under Digital India has been divided into 9 pillars of growth areas:

1. **Broadband Highways:** This pillar has objective for providing broadband connectivity for all Rural & Urban areas covering 2,50,000 Gram Panchayats. A National Information Infrastructure (NII)has been formed under this initiative which integrates the networks and cloud infrastructure providing high speed connectivity and cloud services to various Government department still Panchayat level. NII include networks such as National Optical Fibre Network (NOFN) or Bharatnet, National Knowledge Network, State Wide Area Network (SWAN), Government User Network and Govt. of India's Megh Raj Cloud.

As on now 3.19 Lakh Kms. optical fiber has been laid down across more than 1,25,393 Gram Panchayat with 1,17,614 Gram Panchayats service ready. Megh Raj Cloud is offering services in the form of Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Services (SaaS) and Storage as a Service (STaaS) and hosting various websites, portal and web applications.

2. **Universal Access to Mobile Connectivity**- This pillar focuses on increasing the network penetration and filling void in mobile connectivity covering 55,619 villages by 2018.It will also connect 8,621 villages in north-eastern part of country through 321 mobile tower sites. Mobile phone subscribers have increased 1.5 times now at 1080 million since 2014. Smartphone share of internet traffic reached 46% till 2018.Users for digital transactions at present is close to 90 million, it may increase to 300 million by 2020 adding new users of rural and semi urban regions.

3. **Public Internet Access Programme:** As per objectives of this pillar number of CSCs would increase to 250,000 making it one CSC per Gram Panchayat. 150,000 Post Offices will be converted as multi-service centers.

As of now2.71 lakh CSCs are functional throughout the country. This has provided opportunity of becoming entrepreneurs among underprivileged, marginalized and women at village. More than 46,000 women are operating through CSCs providing digital services such as ticket booking, bill payments, telemedicine and Aadhaar services etc.

4. **e-Governance: Reforming Government through Technology:** The focus area of this pillar is improving the citizen service delivery through e-Governance making form simple, application online, tracking, repositories of document, integration of services and platforms like Aadhaar, mobile seva, and service delivery gateways

Initiatives such as**eSign framework** has enabled citizens to digitally sign a document online using Aadhaar authentication Online Registration System, **DigiLocker** initiative offiers Digital Locker facility aimed at reducing the use of physical documents and has made sharing of verified electronic documents possible across government agencies it also helps citizens to store their important documents like passport, mark sheets and degree certificates etc. digitlally.

5. **e-Kranti - Electronic Delivery of Services:** Mission Mode Projects (44) under e-Kranti are at various phases of implementation for transforming e-Governance through mobile Governance and Good Governance in the service delivery.

National Service Portal (http://services.india.gov.in/) provides 7592 services listed where citizen can search availability of citizen centric services from key domains such as Births, Deaths, Pension and Benefits, Education and Learning, Marriages and Child care, Electricity, Money and Taxes, Jobs, Justice, Business and Self-employed, Health and Wellness, Water and Local services, Law and Grievances, Travel and Tourism, Transport & Infra, Citizenship, visa, passport, Rural and Environment, Science, IT & Communication, Agriculture, Youth, Sports and Culture.

Mobile Seva is another initiative for mobile governance which provides an integrated platform for all Government departments and agencies enabling delivery of public services to citizens and businesses over mobile devices. As of now 4191 departments. are using push sms service, 712servicesare available on the shortcode, 983Live mobile applications are available for download, approximately 11173179transactions have been done using IVRS Services, and approximately 1759766transactions have been done using USSD Services.

6. **Information for All:** Under this pillar focus will be on providing Open Data Platform (http: data.gov.in) datasets in an open format for use, reuse and redistribution and open for citizen access. Government will also engage through Online Messaging and Social media for two way communication and dialogue with citizens.

There 266,320 resources of 144 departments available as open data sets. MyGov.inlaunched on 26th July, 2014 has

become a powerful medium to share new ideas and suggestions with Government. There are 809 tasks and 799 discussions on various current issues going on in this portal.

7. **Electronics Manufacturing:** This focuses on promoting electronics manufacturing in India having target of NET ZERO Imports by 2020. Focus areas are of manufacturing of micro-ATMs, Set top boxes, Smart cards, VSATs, Mobiles,FABS, Fab-less design, Smart Energy meters,Consumer & Medical Electronics, Incubators, clusters, Government procurement and R & D in electronics.

   In telecom sector, 72 new mobile manufacturing units started production and created 1 lakh direct and 3 lakh indirect jobs. India's mobile manufacturing capacity has increased to 11 Crore mobile handsets from 6 Crore mobile handsets in 2014-15. LCD/LED TVs production growth is 38%, Mobile handsets to 83% and LED products to 65% from 2014. Investments in electronic manufacturing has increased to Rs. 1, 27,880 Crore from Rs. 11,000 Crore in June 2014. Government-e-marketplace portal launched for procurement of goods and services by Government organization has now 34,656 Buyer Organizations, 215,035 Sellers and 894,514 Products registered on the portal.

8. **IT for Jobs:** This pillar focusses on providing training to the youth in the IT/ITeS sector with specific activities on training in smaller towns and villages, Northeastern States-BPOs, Training Service Delivery Agents, training on Telecom and Telecom related services for jobs.

   As per NASSCOM projections for IT/ ITeS sector will be create2.5 - 3 million new jobs by 2025. 1,70,000 new jobs were added in 2016-17,Indian technology startups employed 95,000-100,000 IT professionals in more than 4,750 startups in 2016. Randstad, a recruitment firm projected a cumulative growth rate of 9% job growth in the IT/ ITeS market. Team Lease report mentions that startup sector in e-commerce and technology hiring has increased by 2%, with 14.94% job growth projections. CSCs has generated 10 lakh employment by way of local level VLEs. India BPO promotion scheme of Government aim to provide employment to 1.45 lakh persons in the small towns.

National Digital Literacy Mission also known as Digital Saksharta Abhiyan (DISHA) has been rolled out with a vision that by 2020 at least one person in every family will be digitally literate and Anganwadi, ASHA workers along with authorized ration dealers across the country will be provided digital literacy including 6 crore rural households. Approx. 8.2 million people have been given training to use digital devices for availing services which aims to improve livelihoods and access e-governance services.

9. **Early Harvest Programmes:** Under this pillar initiatives which can be launched in quick time like SMS, e-Greetings/ Wi-fi, Biometric attendance, email in government organizations, eBooks, Weather info, lost and found child portal where identified for implementation.

   Initiatives like, MyGov portal, Swachh Bharat Mission (SBM) (Clean India) Mobile app, eBasta, sms and greetings to citizen have been launched successfully.

Digital Inclusion status under Digital India

Digital India program is transforming the country's digital profile significantly. Some of the indicators are:

- **Bharat Net:** Network of Optical Fibre to connect villages of India has grownrapidily3.19 lakh kms of optical fiber has been laid across more than 125,393 Gram Panchayatas compared to 358 kms of optical fibre laid in 2014.

- **Phone Users:** The number of mobile phone users has increased to 118 Crore from 95 Crore in June 2014.

- **Aadhaar Holders:** 121 Crore Aadhaar cards have been issued as compared to 63 Crore in 2014.
- **☐Common Service Centers:** Common Services Centers providing digital services to common people in villages increased to 2.37 lakh from 83,000 in June 2014.
- **MyGov:** Platform created for participative governance (mygov) now has over 7937.73 thousand registered users.
- **Digi Locker:** Digi Locker to provide online document safe storage to citizen has2.03 Crore registered users. More than 350 Crore digital documents have been issued by the Government departmentsusing this facility.
- **Jeevan Pramaan Portal:** Portal to provide ease to pension holders has 253.62 lakh registered pensioners.
- **Scholarship Portal:** Online scholarship has 140.60 lakh have registered applications.
- **Online Hospital Appointment:** Online registration services has been started in 190 major hospitals and total 23.32 lakh appointments have been taken online through this portal with approx. 2600 registrations per day.
- **eNAM**: Online National Agriculture Market has been created for farmers to get the best price for produce, approx. 1.51 lakh farmers and 585 mandis across are registered on this portal.
- **Computerization of Land Records:** Land records computerization is been done in 31 states and Union Territories. Record of Rights (RORs) have been made online for 22 States/UTs and Bhu-Naksha/ Map digitization has been done for 15 States/UTs.
- **Digi Dhan Abhiyaan:** Digi Dhan Abhiyaan to promote digital payments across was launched in December, 2016. More than 2.05 Crore citizen are

registered and 26.15 lakh merchants have enabled for digital payments through 50,805 camps.

- **Growth in Digital Transactions**: eTaal portal measures digital transactions of various e-Governance services shows a rapid growth:
  - ➢ 2013- 241.77crore transactions
  - ➢ 2014- 355.70crore transactions
  - ➢ 2015- 760.75crore transactions
  - ➢ 2016- 1090.02crore transactions
  - ➢ 2017 - 3085.01crore transactions
  - ➢ 2018 - 4265.68crore transactions

From the above mentioned initiatives it can be inferred that lot of digital applications catering to domains such health, education, finance, connectivity and service delivery has taken off with a good pace and likely to increase its spread across the country.

Challenges and Barrier in implementation of Digital India

Public Service Delivery Systems faces lot of challenges in offering viable and effective services and solutions at the grass root level to cater to various needs of the citizens. The usage of technology to cater to the uneducated, vulnerable section and rural citizen factors major challenges in delivery of services through e-Governance. Accountability, Transparency and Innovation is required for catering to the expectancy of a citizen, managing the risk of huge sizes and complication of information are the key challenges in the implementation of Digital India. Some of the major challenges are:

Digital Infrastructure: The telecom infrastructure and Internet connectivity which is the back bone of implementation of Digital India still needs to cover a lot of rural areas for connectivity. As on Sept 2017, only 54% i.e. 46,873 Gram Panchayats were covered out of 85,731 Gram Panchayats under National Fiber Optic Network (NOFN) now Bharatnet project.

The number of mobile internet users is estimated to reach approx. 500 million by till 2018 with the rural India growing at a much higher rate than urban. According to a report titled Mobile

Internet in India 2016 published by Internet and Mobile Association of India (IAMAI) & market research firm IMRB, Urban India with 51% penetration while rural India is 16%. Other than the network part there is a need the IT applications in the form of apps, software etc. which can be accessed by the common man.

Lack of education –The National Sample Survey Organization (NSSO) states that in 2014 that 94% population in rural India do not own a computer and unlikely to have digitally literate population. Illiteracy rate is more than 25-30% and digital literacy is negligible among more than 90% of India's population in villages. This part of population is not literate enough to use digital devices and technology.

Lack of inter-department coordination – There are almost 15 to 20 Government Ministries and departments involved in the implementation of Digital India programme, therefore the coordination of between these departments a major challenge regarding, funding and approvals.

High cost of implementation - Digital India is an ambitious programme projected at Rs. 1,13,000 crores. Information and Communication Technologies are fast changing technologies and the fast changes make them exposed to high risk of obsolescence of IT assets. Initial capital investments in IT infrastructure subject these projects to high level of risks due to delays in projects or technical obsolescence. Further, most of the department do not have the expertise to develop, operate and maintain these specialized systems and depend on private vendors. Time-overrun of the projects is also a challenge for adding into the high cost of implementation for example NOFN project, which has seen a cost overrun of 75% because of delays.

Resistance to change: It is very important that employees working in Government departments participate and promote the digital transformation. The attitude to adopt new technologies and effective usage is a big hindrance in the Government departments. For successful implementation of the Digital India effort is needed from both the Government and citizens.

Lack of faith and security – The increase in number of Cybercrimes and failure in Grievance Redressal mechanism is making citizen bit hesitant feeling that it is risky to make online transactions. Cyber laws implementation in practical is not very effective making citizen skeptical and not confident in using of digital services especially related to electronic payments. Consumers are dissatisfied with the online banking and mobile app experience largely because of fear of lack of trust, hidden charges and complicated information provided among others.

These challenges needs to be addressed by taking necessary measures in the area of Digital literacy, connecting the rural areas thereby increasing the growth of internet usage, data security, localizing the content of digital applications, PPP models can be explored for development of digital infrastructure, encouraging cyber experts to a part of Government machinery, effective coordination of various Government departments and enforcement of legislations for the growth of technology in India.

Role of Digital India in sustainable development

India has become one of the largest IT services provider country in the world and Digital India program is taken to leverage the strength for becoming socio-economically powerful. The program aims at transforming country into a digital empowered society and knowledge economy.

Digital India is not only digitally transforming India but it is also an effort towards achieving the United Nations Sustainable Development Goals Agenda 2030. Government's priority towards achieving this is in three areas. The first area is to remove the poverty. The second area focusses on industry, innovation and infrastructure and the third area is to bring in public private partnerships.

Digital India thrust on building the broadband highways, connecting rural areas to internet, improving and addition on mobile network penetration, service delivery through e-Governance, encouraging entrepreneurs from every strata of the society, the Government of India is working with a conscious effort towards sustainable development.

Based on United Nations e-Government Survey 2018: e-Government in Support of Sustainable Development survey provides a snapshot of trends in the development of e-government in countries across the globe. In the survey on the e-Government Development Index India's progresses with a ranking of 96 out of 193 countries as against 107 in 2016. In e-participation, India falls in the category of very high EPI (E-participation Index). As per the survey there has been a rise in the number of public services online through one stop-platforms, public institutions are more inclusive, effective, accountable and transparent, by the easy access to social media Government is moving towards participatory decision-making. The efforts have been made to increase the utilization of advanced electronic and mobile services for the benefit of citizens.

Digital India has given push to affordable mobile devices, internet access and digital literacy, the last 2-3 years has shown a three-times increase in the number of e-transactions. The combination of **JAM** trinity (Jan Dhan Aadhaar and Mobile) has increase the financial inclusion. Indian government has been enabling this trend with a number of schemes and retro-measures. To pull out corruption and black money from public life, digital transaction ecosystem has been leveraged by Government. People using Internet are going beyond the search facility and social networking towards more matured actions such as online shopping and digital banking. As per Statista portal India's Digital population as of January 2018 (in millions)- 462 million active internet users; 230 million active mobile internet user; 250 million active social media users and 230 million active mobile social media users. As per a report by Facebook and Boston Consulting Group (BCG) the number of users picking online banking is projected to be double to reach 150 million mark by 2020, from the existing 45 million active urban online banking users in India. As per the BCG report wide scale acceptance of digital transactions has the likelihood of reducing cost of procurement and cost of servicing to 1/10th. Hon'ble Prime Minister also quoted that "We have attacked poverty by using the power of networks and mobile phones to launch a new era of empowerment and inclusion."

Technology is being used for resolving the critical challenges in the two segments Health and Education. Digital media can be used to spread awareness and educate the 83 million population of rural areas using various electronic gadgets. Digital India aims to target on the marginalized population, the rural, the elderly and women using digital technology. Government has launched the **SWAYAM** platform with more than 1000 online courses to help students to remotely attend the various courses taught by best of the faculties, it will also provide access to high quality reading material, enhance participation in discussion, appear in online tests and earn academic grades. Access to SWAYAM is being enhanced by connecting it with DTH channels which are dedicated to education only. Digital literacy will not only play a critical role in empowering poor and the vulnerable sections, but is also very significant for the growth of a knowledge economy. **Digi Gaon** initiative is for providing telemedicine, education and skills.

Digital India is paving a way to rural entrepreneurs making easy access to markets through e-Commerce and enabling DBT, it is focused on bringing weaker sections into main stream. As 68% of India's population lives in rural areas and agriculture is the main and almost sole source of livelihood for 58% of the population Digital India will help farmer which are major section of our population in improved per capita agricultural return, increase in cost

output ratio of industrial produce and to offer better quality of service.

As per some of the projections approx. 25–30 people are migrating every minute to major Indian cities from rural areas looking for better livelihood and lifestyles. If this pace continues about 843 million people are expected to settle and live in urban areas by 2050. In order to accommodate this massive urbanization, country needs effective ways to reduce expenses, manage complexities, increase in efficiency and to improve quality of life. Digital India initiatives and Smart Cities Project go hand in hand as technology has a key role in this initiative. Digital India aims develop socio-economically and environmentally sustainable cities. Some of the key aspects of a smart city are Intelligent Transport System, Smart urban lighting, Waste management, Smart grids, Smart city maintenance Smart parking, Tele-care, Woman Safety, Digital signage and Water Management. It will help in stimulating the development of Internet of Things (IoT) industry in the country. IoT will be very helpful in automating solutions for the problems faced by the industries like energy, security, agriculture, health services, disaster management etc. through remotely connected devices using this technology.

Digital India is also encouraging Make in India and Public Private Partnership (PPP) models for electronic manufacturing, infrastructure expansion through infrastructure investment and technology transfers this will not only help in industrial growth but will enhance employment opportunities for all the sections of the society.

 Digital India is set to give a new direction to the country's socio-economic dynamics. It will bring to connect the systems and infrastructure and will leverage the country's manpower towards a sustainable development and progress.

Conclusion:

Digital India's three pillars digital infrastructure, delivery of services digitally and digital literacy will enable transparency and accountability in all the policies and processes thereby enhancing

quality of life. The technology will expedite efforts to bring down the digital divide, as for Digital India to make a greater impact on socio-economic development it is very important that the digital divide i.e. the social stratification due to disparity in access, adapt, and create knowledge, be minimized. India is expected to have over 650 million of country's population connected to the internet by 2020 in this regard connecting to the internet is not an issue or constraint, but the fact is that people are not aware of the immense benefits of being connected to the internet and being digital which can be done in creating content in local language. If the use of Digital Technologies is appealing and useful to a common man it will become a key enabler for achieving sustainable development.

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