Digital Empowerment:
A Study on Impact of Digital India Programme
on Indian Society

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Abstract

Digitalization has become the buzz word in today's business world. It does not imply creation of a new business, but remodeling the existing business to take advantage of existing assets in new ways. Technological transformation should be centered on optimizing operational processes, enhancing customer experience and augment business models which is necessary for the economic growth and sustainable development. In order to realize the full potential of Digital India initiative, it is necessary to address certain challenges in the way of its successful implementation like digital illiteracy, poor infrastructure, low internet speed etc. The main objective of the proposed paper is to explore the innovativeness and initiatives of Digital Empowerment and the paper also analyse the key challenges, opportunities and some feasible remedial measures that would pave the way for making India, the preferred choice for digital activities in future. The present study is exploratory in nature and entirely based on secondary data.

Keywords: *Digitalization, Digital Empowerment, Digital Illiteracy, Economic Growth, Sustainable Development.*

I. BACKGROUND

The Digital India is the most comprehensive flagship programme of the Government of India with a dream to transform India into a digitally empowered society and knowledge economy with participation from rural or urban citizens and businesses by improving online infrastructure and increasing the effectiveness of Internet connectivity with one mission to propel India forward in terms of digitally and economically which is necessary for the economic growth and sustainable development. In order to realize the full potential of this programme, it is necessary to address certain challenges in the way of its successful implementation like digital illiteracy, poor infrastructure, low internet speed, lack of coordination among various departments, issue pertaining to taxation etc. If implemented properly, it will open various new opportunities for the citizens of the country that is to say, aims at ensuring the government services are made available to the citizens electronically by reducing paperwork and therefore it requires a lot of efforts and dedication from the organisations (public and private) for achieving aim of making India the preferred destination for digital activities by both global and domestic investors.

II. LITERATURE REVIEW

A number of research papers and articles provide a detailed insight about the implications of digital India towards transformation and empowerments in India. **Kumar (2015)** mentioned that Digital India and other

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initiative like National Digital Literacy Mission, penetration of mobile phone/broadband and pattern of users has risen significantly to some extent. **Gupta and Arora (2015)** pointed out the impact of various digital India projects including the initiatives taken for empowerment of rural Indian women which has been launched to boost agriculture sector and entrepreneurship development in rural areas. According to **Rani (2016)**, digital India project provides a huge opportunity to use the latest technology to redefine India the paradigms of service industry at present and in upcoming future also. **Midha (2016)** emphasised that to transform India into a digitally empowered society and knowledge economy, digital India is the most comprehensive flagship programme of the Government of India, if properly implemented it can make the best future of every citizen.

III. OBJECTIVES OF THE STUDY

The objectives of the proposed study are to highlight the concept, explore the innovativeness and initiatives of Digital India, analyse the challenges surfaced, opportunities and to make some recommendations that would pave the way for making India as the preferred choice.

IV. RESEARCH METHODOLOGY

The present study is explanatory in nature and entirely based on secondary data *(inclusive of quantitative and qualitative data)* which are collected through repute journal, articles and related websites and annual reports.

V. UNDERSTANDING DIGITAL INDIA

Digital India is expected to not only boost economic growth but also aims to empower citizens to avail services with more ease and to conveniently interact with the government.

Table 1: Four factors for driving digital growth in India

Factors	Driving force
Favourable Demographics	• More than half of the population is between the ages of 15 and 45 • Online and digital services are in high demand
Evolve start-up ecosystem	• There were more than 70 venture capital and private equity firms in 2014, more than 550 angel investors and more than 80 incubators and accelerators. •Engineering talent is abundant.
Rising Internet penetration	• Internet penetration has grown by more than 200 percent in the past five years • 4G will drive mobile internet usage
Increasing government focus	•The Digital India campaign focuses on digital infrastructure, e-governance and citizen empowerment.
Source: A.T.Kearney Analysis (2016)	

- **Areas of Vision**

To transform the whole economy into techno-driven economy, the comprehensive flagship programme of the Government of India centered on three key vision areas such as -

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i) Infrastructure as a utility to every citizen: It is aimed at providing connectivity through fixed-line broadband, mobile connectivity or Wi-Fi hotspots. Every citizen of the nation would be provided with a unique identity with lifelong validity that can be tied up with mobile number and bank account to enable digital banking. Access to common service centre would be improved and shareable cloud space on public cloud servers would be provided.

ii) Governance and services on demand: It plans to create seamless integration across multiple government departments and jurisdictions, and make services available on online and mobile platforms. Financial transactions would be made cashless and electronic and entitlements would be available on the cloud. The ease of doing business in India would be improved.

iii) Digital empowerment of citizens: It would provide universal digital literacy to empower citizens to use digital platform. Universal access to digital resources would be provided, wherein all documents would be available in digital form on the cloud. Government services would be provided in local languages and a platform would be made available to citizens for participative governance.

- **Major Pillars**

Table 2: Nine Pillars of Digital India

Name of the Pillars		
Early Harvest Programme	**Information for everyone**	**Public Interest access programme**
To focus on execution of project within short timelines, such as e-greetings from the government, biometric attendance, Wi-Fi in all universities etc.	To provide open access to government information and documents online and two-way communication between citizens and the government through online platforms and social media.	To make CSCs operational at Gram Panchayat level for delivery of government services and to convert post offices into multi-service centres
IT for Jobs	**Electronic delivery of services (e- Kranti)**	**Universal access to mobile connectivity**
To provide necessary skills and training that enable the youth to avail jobs in IT/ITes sector.	To use technology for service delivery such as e-education, e-healthcare technology for planning, farmers, security, financial inclusion, justice, etc.	To provide mobile connectivity to about 42,300 villages.
Electronic Manufacturing	**E-governance reforming**	**Broadband highways**
Manufacturing indigenous technology and electronic equipment's are the key requirements to attract investment in the sector and to reduce imports.	To use business process re-engineering to transform government processes and make them simple, automated and efficient.	To provide high-speed broadband coverage highways connecting about 250,000 villages, various government departments, universities etc.
Source: Deloitte, ASSOCHAM (2016)		

Some of the initiatives undertaken in terms of schemes namely *(Pradhan Mantri Jandhan Yojana, Direct Benefit Transfer, Jan-Dhan-Aadhaar-Mobile Trinity, National Optical Fibre Network, Skill India initiative, e-Hospital)* are almost revolutionary in the manner in which they will change governance and finally bring to

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life the vision of inclusive growth. Its success greatly depends on how the policymakers, the executive and the citizens cope with the numerous challenges that present themselves at various phases.

- **Key technology enablers for the development of digital infrastructure in India**

a) Cloud computing: It enable seamless integration between various departments and delivery of services to the citizens. *The DigiLocker*, a cloud service launched by the Indian Government which allows the citizens to use a shareable cloud space to upload, store and share documents in a digital format as it is being linked with all government departments.

Table 3: Major Initiatives of Digital India

Digital Initiatives	Description
BharatNet	Provide broadband access to 250,000 Gram Panchayats through a network of optical fiber cable.
Smart Cities	Creation of 109 smart cities by 2022. Rs. 5 billion allocated to every city over 5 years for this purpose.
Common Service Centers	Centers through which e-governance and related services will be made available to villages.
Digitization of Post Offices	Digitization of post offices including setting up centralized data centres, networking of all post offices and enabling digital payments.
Universal Access to Mobile	Provide mobile access to more than 55,600 villages that do not have mobile coverage.
Public Wi-Fi Hotspots	Creation of public Wi-Fi hotspots in India to enable citizens to access content without depending on mobile data.
India Stack	Opened Jandhan-Aadhaar-Mobile trinity that enables development of payment-enabled applications, using Aadhaar as the base for authentication.
National Cyber Coordination Center	Set up a center to safeguard India's cyberspace against potential threats by the ministry for electronics and IT.
Source: Compiled from various sources by author(s).	

b) Mobility (Web-API for internal and external consumption): It enables availability of information on the go through various devices and can be coupled with cloud to enable sharing of valuable information with the government regardless of their physical location.

c) Analytics (Unique digital identity and data linkage with security): It relies on collection of large amounts of data and drawing out actionable insights. A data repository called the *electronic transaction aggregation and analysis layer* (e-taal) initiated by the Government of India provides the real time transaction data of citizens with various departments and agencies along with a quick analysis of the provided information in graphical form.

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VI. DIGITAL INDIA: MAKING AN IMPACT

The impact of Digital India can be felt across all facets of citizens, businesses and environment through the applicability of sophisticated digital technology. It is projected that Digital India has the potential to provide an incremental 20-30% increase in GDP by 2025, resulting in an opportunity of close to $1 trillion annually by 2025.

Table 4: Expected Investment inflow in the Digital Space

Name of the Company	Amount (in $ billions)	Key Areas
Reliance Industries	37.0	Wireless Broadband, Cloud Computing, Data centers
Bharti Airtel	16.0	4G connectivity, e-health, e-education
Sterlite Technologies Limited	3.7	Fibre and Cable Manufacturing
Aditya Birla Group	7.0	Network roll-out, broadband network, Wi-Fi deployment
Cisco	0.1	Investment in early-stage and growth-stage companies
Qualcomm	0.15	Investment in digital and innovation start-ups
Source: Compiled from various sources by author(s).		

- **Impact towards citizens:** It has the potential to impact the lives of citizens by creating employment opportunities, enhancing the quality and speed of service delivery, providing access to healthcare, education, improving social and financial inclusion.

- **Impact towards businesses:** Through the adoption of digital technologies, it will have a significant impact on the profitability and operations of business, so that concerned companies can consolidate documentation, automate processes and have greater access to efficient and cheaper ICT capabilities.

- **Impact towards environment:** Use of digital technologies helps to reduce carbon footprint and provide several environmental benefits such as cloud computing technology minimizes carbon emissions by improving mobility and flexibility.

VII. CHALLENGES AND OPPORTUNITIES

- **Challenges**

Some of the major challenges faced in the successful implementation of Digital India flagship programme are - i) Cost and affordability, ii) Limited high speed mobile data connectivity, iii) Low awareness of benefits of technology, iv) Low rate of digital literacy, v) Limited digital content in regional languages and finally, vi) Security and privacy.

- **Opportunities**

i) Increasing the effectiveness and reach of existing digital services

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• *Education:* Keeping in mind about varied needs of learners, the Academia and University curriculum should be developed and updated regularly in consultations with the industry that must be innovative, interactive and engaging to ensure staying abreast of emerging technologies.

• *Healthcare (e-Hospital):* Additional services like remote healthcare and telemedicine could be added to
  provide coverage to urban and rural segments.

• *Banking:* Digital trainings for existing bank and Indian Postal Payment Bank employees as to cater to the digital needs of the citizens.

ii) Increasing ease of doing business

It can be improved significantly by reducing time for licenses/approval/sanctions, simplification and digitization of tax processes and availability of ICT infrastructure.

iii) Building a distributed and digital talent pool

In order to encourage global companies in the digital sector to establish offices in India, there should be a considerable thrust on forming a highly skilled talent pool. Local capabilities along with lower labour costs would encourage companies to enter India driving innovation, infrastructure and services.

iv) Using digital infrastructure to create a positive impact on the environment

Digital infrastructure can be leveraged to deploy such solutions that will help with issues such as pollution monitoring and management, waste management, water management, improving efficiency of energy grids, etc will have a positive impact on the environment.

Table 5: Landscape of Digital Services

Name of the Digital Services	Description
E-Sign Framework	Allows for online digital signature by leveraging Aadhaar authentication
National Centre of Geo Informatics	GIS platform for sharing and collaborating GIS data source, location-based analytics and Decision Support System.
Information Security Education and Awareness Phase- II and Cyber Security	Capacity building in the area of Information Security to address the human resource requirement, training and develop information security awareness.
MyGov App	Citizen-centric platform empowering people to connect with the government and contribute toward good governance
DigiLocker	It provides citizens a shareable private space on a public cloud and making all documents available on cloud.
Swachh Bharat Abhiyaan app	To proceed further, the government has launched this app which will be used by people and government organizations
Wi-Fi hotspots	Under this scheme, the government plans to deploy Wi-Fi at public and tourist places in every parts of the nation.
Payment Bank by India Post	India Post will launch their own Payment Bank across India by March, 2017.
Pay Online Launch of	National e-Payment gateway enables every Indian citizen to make

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e-Payment Portal	online payments for all Government based transactions, e-commerce payments and other related tasks.
Launch of Post-Terminals (Rural ICT – RICT)	Handing over Post Terminals to rural Post Masters which will help in providing the financial and other services in to rural areas.
National Scholarships Portal	One-stop-solution for end-to-end scholarship process right from submission of student application, disbursal to end beneficiary for all the scholarships provided by the Government of India.
Launch of Online labs for schools	Under this nationwide initiative, online labs will be available in Hindi, Malayalam and Marathi and offered in both urban and rural schools.
E-education	Provides high-tech education in remote and urban areas by using various kinds of technology and Internet services
E- Health	Provides timely, effective and economical healthcare services such as online registration, payment, report, claim etc.
Source: Compiled from various sources by author(s).	

VIII. RECOMMENDATIONS

While several steps have been taken to improve skill capacity for Digital India, in addition, developing strong talent in digital and Information and Communication Technology is imperative. The following measures are recommended:

- To align with academia and university curriculum to ensure staying abreast of emerging technologies.
- To accelerate partnerships with global technology leaders to stay at the forefront of emerging technologies for trainings and skill development programmes in governments and various ministries.
- To migrate from basic digital literacy to advanced skill development training programmes and project management to ensuring a highly skilled manpower base.
- To widen the reach of the train-the-trainer *(e-Governance, skill development and capacity building)* programmes for creating pool of e-governance champions within the government to lead, support, manage and execute trainings.
- To create an awareness programme regarding the benefits of digital services among the citizens.

IX. CONCLUSION

A digitally connected India can help in improving social and economic condition of people through development of non-agricultural economic activities apart from providing access to education, health and financial services. If implemented properly, it will open various new opportunities for the citizens of the country that is to say, aims at ensuring the government services are made available to the citizens electronically by reducing paperwork and therefore it requires a lot of efforts and dedication from the organisations (public and private) for achieving aim of making India the preferred destination for digital activities by both global and domestic investors.

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However, it is important to note, that Information and Communication technology alone cannot directly lead to overall development of the nation. Therefore, in order to realize the nation's full potential of overall growth and development through Digital India Initiative, it is necessary to support and enhance major key elements such as, literacy, basic infrastructure, overall business environment, regulatory environment etc.

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