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INDIA'S DIGITAL READINESS: A CRITICAL STUDY OF THE DIGITAL INDIA PROGRAMMES IMPLEMENTATION STRATEGIES

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Abstract
Digital India is a campaign launched by the Government of India to ensure that Government services are made available to citizens electronically by improved online infrastructure and by increasing Internet connectivity or by making the country digitally empowered in the field of technology. It was launched on 1 July, 2015 by Prime Minister of India. The initiative includes plans to connect rural areas with high speed internet networks. Digital India consists of three core components, namely, The Creation of Digital Infrastructure, Delivery of Services digitally and Digital Literacy.

The proposed paper attempts to study the important requirements for the proper implementation of the digitizing plan in the country and the elements that may hinder the implementation of the above said process of digitization. The paper pivots on the challenges the implementation of the digitization plan in the country.

Keywords: Digitization, Literacy, Accessibility, Revolution, Communication, Open access.

I. Introduction and an Overview of Indian Economy

Digitize or die. That's the clarion call echoing through the business world as the Internet of Things and its next phase, Internet of Everything, gather steam. Prime Minister Narendra Modi opened the Digital India Week on 1 July with a kind of a function we have never seen before. The function had all the glitz of money, multimedia, videos, tall promises and, as a token, two women brought from villages to be handed over a laptop each in recognition of how they were using the Internet and computers to be successful entrepreneurs. It is also observed that the people invited to the event were the 1%—those who were connected, successful and do not need the help of any of those nine pillars[(1)] on which Digital India is structured. All those living far away in inaccessible areas in rural India who need to be connected were nowhere to be seen. The event merely mentioned that 40-odd Panchayats were connected through video conferencing using the National Optic Fibre Network (NOFN).

In 2012, Booz & Company, [(2)] now called as **Strategy** set out to quantify the impact of digitization by creating an index that scores digitization by country. The company's research highlights the fact that countries that have increased their digitization level have realized gains in their economies, their societies, and the functioning of their public sectors.

India is the second most populated country in the world with nearly a fifth of the world's population. According to United Nations, in July 2016, the population stood at 1,326,801,576. India is projected to be the world's most populous country by 2022, surpassing China, its population reaching 1.7 billion by 2050. Indian Literacy Rate has grown to 74.04% (2011 figure) from 12% at the end of the rule of British in 1947. Although this was greater than six-fold improvement, the level is well below the world average literacy rate of 84%, and of all the nations, India has largest illiterate population currently. Despite government programmes, India's literacy rate increased only sluggishly, and a 1990 study estimated that it would take until 2060 for India to achieve universal literacy at then-current rate of progress. The 2011 census, however, indicated a 2001–2011 decadal literacy growth of 9.2%, which

is slower than the growth seen during the previous decade. The latest Education for All Global Monitoring Report (GMR) released worldwide by the UNESCO acknowledges the headway made by India is improving access to education but the country's population of illiterate adults has been identified as the **drag factor.** India currently has the largest population of illiterate adults in the world with 287 million. This is 37% of global total. While India's literacy rate rose from 48% in 1991 to 63% in 2006, "population growth cancelled the gains so there was no change in the number of illiterate adults," the report stated. The report questions the quality of education; placing India among the 21 countries facing an extensive learning crisis. **Digital India** aims to have broadband networks that will span India's cities, towns and 250,000 villages by end-2016, along with a system of networks and data centres called the National Information Infrastructure. The vision is grand. After years of broadband and nationwide fibre-optic infrastructure targets, India remains stuck at a total of 15 million wire line broadband users. Yet mobile broadband use has exploded, currently standing at 85 million users, driven by apps like Facebook and WhatsApp, and the sharing of images and videos only. Experience shows that it is communications and content, not empty pipes that drive network usage. And manufacturing content is not a government strength. This project needs content and service partnerships with telecom companies and other firms, with new entrepreneurs.

Taking into consideration the country's present social, demographical, digital infrastructure and economical scenario, it feels digitalizing the country feels like reaching the stars not reachable. The reasons may be **1.** Only 40% of Indian population access internet compared to US and Germany accessing 93 and 94% respectively, **2.** A total of 4 billion people in the world don't have access to internet-India accounts for 25% of them, **3.** A report suggests that the major obstacle in internet access in India are the same as the most pressing issues facing the country today: literacy, poverty and poor infrastructure, **4.** 37% of Indian adult are illiterate which translates to 287 million people- the highest in the world, **5.** Internet is out of the reach of nearly 950 million Indians as many of them struggle to make ends meet and **6.** "Even the cheapest data plans are simply too expensive," a study says.

II. The Problem

Introduction of computers in India 21 years ago is a biggest boost to digital India. More so, because in the aftermath of recent demonetization the government is advocating cashless and less-cash as the way to go. Digital is being projected as panacea for many monetary ills. Internet usage in India is rising on the back of the mobile phone revolution. There are 105 crore wireless connections but, the number of internet subscriptions is only a third of the total number of mobile phone users. The rural picture, where 67% of India lives, is bleaker. The actual figure may vary because many people have multiple connections (as evident by the fact the number of urban mobile phone a subscriber is 37% more than the total urban population) and that many use shared internet connections (wired, WiFi). However, this figure of 96 crore Indians without internet is close to the figure of 95 crore unconnected Indians put forward by a recent Assocham-Deloitt[(3)]joint study. The above data of internet usage, present demographical, digital infrastructure, and economical and population related hindrances make one to really doubt whether the digitization of the country is really possible? Hence, the topic for the paper is "**Is India Ready for Digitization?"**

III. Scope and Objectives of the Study

The proposed paper attempts to study the important requirements for the proper implementation of the digitizing plan in the country and the elements that may hinder the implementation of the above said process of digitization. It emphasizes only the three vision areas in which the digitization is intended to be introduced. The objectives of the paper are **1.** To study the most vital requirements for digitization

of India, **2.** To study and analyze the demographical, economical, digital infrastructure & social framework of the country **3.** To highlight the gap between existing and required infrastructural, digital, demographical, governance and service scenario of the country **4.** To suggest the strategies to mitigate the challenges for the effective Digitization of India.

Okay, here's a research methodology for your article "India's Digital Readiness: A Critical Study of the Digital India Programme's Implementation Strategies," assuming it's based on secondary data:

IV. Research Methodology

This research article employs a **qualitative, secondary research methodology** utilizing a **critical evaluative approach** to assess India's digital readiness. The study focuses on a critical examination of the implementation strategies of the "Digital India Programme" and their impact on the nation's preparedness for a digitized future.

The core of this research lies in the **extensive review and synthesis of existing secondary data sources**. These sources will include, but are not limited to:

1. **Government Publications and Official Documents:** Reports, policy documents, white papers, annual reports, and official websites from the Ministry of Electronics and Information Technology (MeitY), NITI Aayog, Digital India Corporation, and other relevant government bodies responsible for the Digital India Programme.
2. **Academic Literature:** Peer-reviewed journal articles, conference proceedings, scholarly books, and dissertations focusing on e-governance, digital transformation in India, ICT for development (ICT4D), public policy implementation, and critiques of the Digital India Programme.
3. **Reports from International Organizations and Think Tanks:** Publications from bodies such as the World Bank, International Telecommunication Union (ITU), United Nations Development Programme (UNDP), World Economic Forum (WEF), and reputable national and international think tanks that analyze India's digital landscape and readiness.
4. **Reputable Media Reports and Industry Analyses:** In-depth articles, investigative reports, and analyses from credible news outlets and industry research firms that provide insights into the practical implementation, challenges, and public perception of the Digital India Programme.
5. **Existing Datasets and Indices:** Publicly available data on digital infrastructure, internet penetration, digital literacy, e-service adoption rates, and relevant indices (e.g., Networked Readiness Index, E-Government Development Index) that provide quantitative context to India's digital status.

Data Analysis

The collected data will be subjected to a rigorous analytical process involving:

- **Content and Thematic Analysis:** Policy documents and reports will be analyzed to identify the stated objectives, strategies, and intended outcomes of the Digital India Programme. Thematic analysis will be used across all sources to identify recurring themes, patterns, successes, challenges, and critical perspectives related to the programme's implementation.
- **Critical Evaluation:** The implementation strategies will be critically evaluated against the programme's own goals, established best practices in digital transformation, and frameworks for assessing digital readiness. This will involve identifying gaps between stated intentions and actual outcomes, assessing the inclusivity and sustainability of the initiatives, and understanding the underlying factors contributing to successes or shortcomings.

- **Comparative Synthesis:** Information from diverse sources will be cross-referenced and synthesized to build a comprehensive and nuanced understanding of India's digital readiness, considering various stakeholder perspectives.

This methodological approach will enable a robust, evidence-based critical study of the Digital India Programme's implementation strategies and their contribution to India's overall digital readiness, without collecting primary data. The findings will aim to highlight strengths, weaknesses, and provide insights for future policy considerations.

V. Analysis and Interpretation of the Digital India Vision Areas and Indian Present Scenario of Infrastructure, Governance, Service and Citizens' Digital Literacy.

The programme, Digital India will be implemented in phases from the current year till 2018. The Digital India is transformational in nature and would ensure that Government services are available to citizens electronically. It would also bring in public accountability through mandated delivery of government's services electronically; a Unique ID and e-Pramaan based on authentic and standard based interoperable and integrated government applications and data basis. The Digital India has the three major vision area through which the digital process will be implemented. The vision areas are;

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

In the following **Table-01** we can notice how the vision area 'Infrastructure as Utility to Every Citizen' is challenged by the Indian present infrastructural scenario which can be the hindrance for the effective implementation of the programme. Every table in the study has the sub activities that the government has included in the vision area at the left side and the challenges those sub activities confront at the right side.

I. Infrastructure as Utility to Every Citizen (Table-01)

SL NO	VISION AREA	INDIAN INFRASTRUCTURAL SCENARIO
1	High speed internet as a core utility shall be made available in all Gram panchayats.	Low demand for high speed internet, India's digital ambitions continue to be hindered by slow Internet connection speeds. India had both the slowest average connection speed and peak connection speed in Asia-Pacific, according to Akamai's latest State of the Internet Report[(4)] for the fourth quarter of 2015.
2	Cradle to grave digital identity - unique, lifelong, online and authenticable.	The absence of a clearer legislative framework around privacy in India is an issue at play in the legal conflict taking place regarding the programme, as well as concerns by Lawmakers on potential data breach and misuse of sensitive information by private parties. As the ongoing Indian experience around the Aadhaar programme shows, privacy concerns cannot be easily delinked

		from identity focused digital government projects no matter their initial framing—and they will crop up even if not initially apparent.
3	Mobile phone and Bank account would enable participation in digital and financial space at individual level.	Fraudsters capture 'access data'. We may become the victim of a phishing attack. If a fraudster succeeds, he can then access your account and abuse it for financial transactions. 'Malicious code invading' your mobile device to capture your access data or manipulate transaction data. It is 'called a man-in-the-browser attack'. Another risk is the loss of your mobile device. Strangers can obtain access to your mTANs and any e-banking app installed this way.
4	Easy access to a Common Service Centre within their locality.	As on 31st May, 2010, six years after the initiation of the project, only about 50 percent of the States had reported success in achieving 70 percent rollout status of these centres. Even the successful States were being plagued by issues which were hindering the operation and threatening the sustainability of these centres.
5	Shareable private space on a public Cloud.	Issues start from the fact that the user loses control of his data, because it is stored on a computer belonging to the cloud provider. This happens when the owner of the remote servers is a person or organization other than the user; as their interests may point in different directions.
6	Safe and secure Cyber-space in the country	Today Internet and cyber crime are inseparable enemies. The entire architecture should be designed in such a way that there is proper authentication done of all the documents put online by citizens and it is available to the right users at any time they want with the right authentication. But how can we ensure cyber security if the country does not have any privacy norms?

These challenges indicate that the vision area of Infrastructure as 'Utility to Every Citizen' in the programme Digital India has a long way to go on its road to reality in its truest sense. The government cannot overstep them, no matter how trivial they might seem to be. The above demonstrated infrastructural scenario such as low speed internet facilities, absence of clearer legislative framework, 50% of states report only 70% is successful in rolling out the common service centre, no control on the stored data, increasing cyber crimes and man-on-the web indicate a demanding road ahead to be travelled by the government to implement the Digital India programme.

The scenario in the vision area 'Governance and Services on Demand' is not different. It also faces the similar impediments which we can take note of in the following **Table-02.**

II .Governance and Services on Demand (Table-02)

SL NO	VISION AREA	INDIAN PRESENT GOVERNANCE AND SERVICE SCENARIO
1	Seamlessly integrated across departments or jurisdictions to provide easy and a single window access to all persons	Although the Department of Electronics and IT (DeitY) is leading it forward, there is an active involvement of telecommunication, justice, finance and planning, health department. Without a smooth teamwork between these, this mission would never be implemented to its full strength.
2	Government services available in real time from online and mobile platforms.	Little availability of skilled manpower, Providing last-mile connectivity is a challenge in the future since it is unaffordable for most Indians, Internet penetration is only 15% in India, it is nearly 46% in China, Lack of appropriate access devices, and fact that a project of this scale has never been completed in India before is, in itself, a major challenge.
3	All citizen entitlements to be available on the Cloud to ensure easy access.	Cloud system is complex. The problem in understanding cloud systems stems from the fact that it is simply difficult to model them. Cloud is a very dynamic system with numerous users, devices and networks, connecting and disconnecting simultaneously with the cloud. This complexity is to such an extent that it can perhaps be likened to the complexity of a human brain where neurons connect and change their synaptic structure continuously to store information.
4	Government services digitally transformed for improving Ease of Doing Business.	Though India has resources required implementing it, the government needs to realize the strong capability being built in the private sector and needs to leverage that. If everything needs to be done by government agencies, that there would be many obstructions.
5	Making financial transactions above a threshold, electronic and cashless.	Customers are unaware of the risks they face while using insecure systems, especially when it comes to the security of financial transactions online.
6	Leveraging GIS for decision support systems and development.	The problems with GIS are lack of qualified staff, data limitations, financial implications of hardware and software, decision-makers do not understand its application.

From the above **Table-02** it is clear that second vision area is facing the summons such as inefficient inter-government coordination, only 15 million wireless internet users sadly using only social applications, complexity of cloud system, public-private partnership, insecure system of financial

transactions and poor GIS system which cannot be ignored if at all the Digital India Programme has to successful.

Further, empowering the citizen digitally is a difficult task especially in the country like India where the literacy rate amounts to only 74.04% (2011 figure), the level is well below the world average literacy rate of 84%, and of all nations, and India currently has the largest illiterate population. Despite government programmes, India's literacy rate increased only sluggishly, and a 1990 study estimated that it would take until 2060 for India to achieve universal literacy at then-current rate of progress. The 2011 census, however, indicated a 2001–2011 decadal literacy growth of 9.2%, which is slower than the growth seen during the previous decade, as mentioned earlier. Empowering the citizens digitally becomes almost unendurable with the present demographic scenario. Digital empowerment refers to the abilities of an individual to use digital technologies. The interruptions Digital India programme may come across are registered in the following **Table-03.**

III Digital Empowerment of Citizens (Table 03)

SL NO	VISION AREA	DEMOGRAPHICAL FEATURES
1	Universal digital literacy	74% of literacy, Over 6,50,000 villages and 2,50,000 panchayats represented by 3 million panchayat members. Approx 40% population is living below poverty line, illiteracy rate is more than 25-30% and digital literacy is almost no-existent among more than 90% of India's population. (National Digital literacy Mission)
2	All digital resources universally accessible	The availability and accessibility of resources universally causes the rise in the cyber theft, manipulation and may lead to unwanted, anti national utilization of data resources.
3	All Government documents/ certificates to be available on the Cloud	Identity Crisis in India due to the confusion as to which of the document among Aadhar, Passport, Ration/PDS card, Voter ID card, Driving License, etc is valid and almost 90% of Indian population being Digitally illiterate and the Challenges of digitizing the present Government documents is a hazard as India ranks the second highest populated country in the world.
4	Availability of digital resources / services in Indian languages.	The digitization sole lingual itself has its own challenges. The digitization of the economy multi-lingual seems strenuous.
5	Collaborative digital platforms for participative governance.	Scholars assert an existence of unwillingness of political representatives and state institutions to use new media to enhance their relationship to citizens. It is the traditional emphasis on strict representation — a feature proper to modern democracies, *tends* to resist

		to changes in the decision-making process. Argument affirms that some representatives would be uncomfortable with a notion of sharing political power with citizens.
6	Portability of all entitlements for individuals through the Cloud	This programme aiming to connect 2,50,000 villages by 2019, faces deadlocks due to low internet speeds and penetration levels. India's average internet speed was ranked 115th globally in the first quarter of the year, among countries studied by services provider Akamai Technologies.[(4)] India had just a little over 100 million broadband subscribers at the end of April, 2016 out of a population of close to 1.3 billion, according to the sector regulator, which considers internet connections with minimum download speeds of 512kbps.

It is explicit that, India being a geographically distributed country with large population living in rural areas along with many different languages spoken, the vision of digital India and digital empowerment may face many issues and challenges to get such a diverse nation on a single platform. Therefore, it is important to adopt different approach for each area and state. The problem of Empowering Citizens digitally can arise, especially in the rural areas of the country – which accounts for about 68% of total population of India.

VI. Short Note on the Strategies to Mitigate the Obstacles

Digital empowerment of citizens of a nation can significantly contribute to the national development and is also important for the prosperity of the people. The government needs to carve policies to implement Digital India programmes depending on socio-economic status, literacy – particularly computer literacy, geographical divide, urban and rural population and available infrastructure. The Government of India, taking state governments in confidence, should formulate the plan to execute the schemes and policies in a better way so that the level of satisfaction (of the users and general public), towards the services received, should be on a higher side. The government(s) should also try and evolve some mechanism to bridge the digital divide which is mostly and broadly a divide between rich and poor and also between urban and rural population. Ease of access to information can lead to better standard of living; improve health and quality education for which e-governance can play a major part in policy implementation. Moreover, the information should be available at low cost so that it can reach the poor people of the country.

Conclusion

The issues and challenges arising from the digital empowerment of rural population needs a deep understanding so that the vision by which the government wants to implement its policies through Digital Indian should not face obstacles and the set target can be achieved within the given time frame. With the necessary infrastructure in place, computer literacy leads to use of internet, knowledge of accessing internet leads to gathering of information online and this knowledge and information combined with Digital India will eventually lead to digital empowerment of the citizens.

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