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DIGITAL INDIA: ADVANCING DIGITAL INCLUSION, GOVERNANCE AND SOCIO-ECONOMIC DEVELOPMENT

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Abstract : Digital India, launched by the Government of India on 1 July 2015, is a national programme intended to strengthen digital infrastructure, improve the delivery of public services and expand citizens' access to digital technologies. This paper presents a descriptive review of the programme, focusing on its foundational pillars and selected initiatives in education and skills development, financial inclusion, agriculture and other sectors. It also examines continuing challenges associated with unequal access, connectivity, digital literacy, cybersecurity and personal-data protection. Official government and regulatory publications indicate substantial growth in internet access: the number of internet subscribers increased from 251.59 million on 1 April 2014 to 865.90 million in December 2022 and 970.21 million on 31 January 2025 [2–4]. These figures demonstrate expansion in connectivity, but subscriber growth alone does not establish universal, affordable or meaningful access. The review argues that the next phase of Digital India should prioritise reliable last-mile infrastructure, accessible and multilingual services, digital skills, stronger cyber awareness, privacy safeguards and transparent evaluation of outcomes. The paper is based on secondary information from official government, regulatory and programme sources; it does not claim to provide a causal impact evaluation.

Keywords**: Digital India; digital inclusion; e-governance; digital public infrastructure; financial inclusion; digital education; cybersecurity.**

I. INTRODUCTION

Digital technologies have become an important part of public administration, education, commerce and everyday communication. In India, the Digital India Programme was launched on 1 July 2015 with the vision of transforming the country into a digitally empowered society and a knowledge economy [1]. Rather than operating as a single technology project, it provides an umbrella framework through which ministries, departments, States and Union Territories can develop and connect digital initiatives.

The programme is organised around three broad vision areas: digital infrastructure as a utility for every citizen, governance and services on demand, and the digital empowerment of citizens. Its nine pillars cover broadband highways; universal access to mobile connectivity; public internet access; e-governance; electronic delivery of services; information for all; electronics manufacturing; IT for jobs; and early-harvest programmes [1]. Together, these areas seek to improve access, efficiency, transparency and participation.

The scale of connectivity has grown considerably. The Department of Telecommunications reported 251.59 million internet subscribers as of 1 April 2014, while the Telecom Regulatory Authority of India (TRAI) reported 865.90 million subscribers in December 2022. A Government of India parliamentary reply, citing TRAI data, reported 970.21 million subscribers as of 31 January 2025 [2–4]. The dates and measurement periods are important: the 970.21-million figure relates to January 2025, not 2022. Subscriber totals also do not, by themselves, reveal the quality, affordability, frequency or equality of access.

2. Objectives and Methodology

2.1 Objectives

To outline the vision and principal pillars of the Digital India Programme.
To review selected digital initiatives in education, skills development, financial services and agriculture.
To describe the programme's influence on selected public and economic sectors.
To identify key barriers to inclusive, safe and effective digital participation.
To suggest priorities for strengthening the programme's future implementation.

2.2 Methodology and Scope

This paper adopts a descriptive review approach based on secondary information. The discussion draws primarily on official Government of India publications, regulatory documents and programme websites. The selected initiatives are illustrative rather than exhaustive. No primary survey, interview, statistical model or independent impact assessment was undertaken. Accordingly, the paper describes programme objectives and reported developments; it does not attribute wider economic or social changes exclusively to Digital India.

3. Major Areas of Digital India

3.1 Digital Infrastructure and E-Governance

Digital infrastructure provides the connectivity and shared technology foundations required for online public services. Broadband networks, mobile connectivity, public internet access points, digital identity systems and online service platforms can reduce the need for repeated in-person interactions. The programme's e-governance and e-Kranti pillars also emphasise process simplification, electronic records, integrated systems and the delivery of services through digital channels [1,5].

Common Services Centres (CSCs) are an important assisted-access mechanism, particularly for people who may lack devices, connectivity or confidence to use online services independently. Their effectiveness depends on service availability, affordability, local-language support, accessibility and the quality of assistance provided.

3.2 Education and Skills Development

3.2.1 e-Granthalaya

e-Granthalaya is a library-management and automation platform developed by the National Informatics Centre (NIC) for use by government libraries. Its functions support the computerisation of library operations and the management of bibliographic and circulation services. Digital library systems can improve catalogue access and administrative efficiency, although their benefits depend on the completeness of digitised collections, staff capacity and users' access to devices and networks.

3.2.2 BHASHINI

BHASHINI, associated with the National Language Translation Mission, seeks to make digital services and information more accessible across India's linguistic communities. Language technologies such as machine translation, speech recognition and text-to-speech can reduce language barriers in digital interaction. Their usefulness, however, depends on accuracy across languages and dialects, inclusive data resources and continuous evaluation with users.

3.2.3 FutureSkills Prime

FutureSkills Prime is a digital-skilling initiative of nasscom and the Ministry of Electronics and Information Technology (MeitY). It offers learning pathways and industry-oriented training in emerging and core digital technologies, including artificial intelligence, data analytics, cloud computing and cybersecurity [6]. Such programmes can help learners update their competencies; their longer-term value should be assessed through course completion, demonstrated skills, employment outcomes and equitable participation.

3.2.4 Mission Karmayogi and iGOT Karmayogi

Mission Karmayogi is the National Programme for Civil Services Capacity Building. Its emphasis is on competency-based, continuous learning for public servants. The iGOT Karmayogi platform provides digital learning resources and courses intended to support professional development in governance, administration, policy and related capabilities [7]. The platform's contribution should be considered alongside workplace application, institutional support and improvements in service delivery.

3.2.5 DIKSHA

DIKSHA (Digital Infrastructure for Knowledge Sharing) was launched on 5 September 2017 as a national digital platform for school education. It supports curriculum-linked resources, QR-code-enabled textbooks, teacher development and digital learning content. States and Union Territories can use the platform in ways that respond to

their educational requirements [8]. Digital platforms can widen access to learning materials, but they cannot replace the need for trained teachers, suitable devices, accessible content and dependable connectivity.

3.3 Financial Inclusion and Digital Payments

3.3.1 DigiSaathi

DigiSaathi is a 24-hour helpline for queries relating to digital payment products and services. It was launched on 8 March 2022 by the Reserve Bank of India (RBI) and provides assistance through digital channels and telephone support [9]. A support mechanism of this kind is relevant to users who need guidance when adopting electronic payment services.

3.3.2 RuPay

RuPay is India's domestic card payment network, developed by the National Payments Corporation of India (NPCI). It supports card-based transactions through participating banks and payment infrastructure. Its contribution to financial inclusion depends on acceptance, affordability, security, customer awareness and the availability of suitable banking services.

3.3.3 Direct Benefit Transfer

Direct Benefit Transfer (DBT) is a mechanism through which eligible welfare benefits are transferred to beneficiaries' bank accounts. Digital identity, verified beneficiary records and electronic payment systems can help improve the targeting and traceability of transfers. However, effective delivery also requires accurate records, accessible grievance redressal and alternatives for people who face authentication, banking or connectivity difficulties.

3.3.4 Unified Payments Interface

The Unified Payments Interface (UPI), operated by NPCI, enables interoperable real-time payments through participating banks and applications. It supports person-to-person transfers and merchant payments through a common interface. Its expansion has made digital payments more convenient, while also increasing the importance of user awareness, secure authentication, fraud reporting and timely dispute resolution.

3.4 Digital Initiatives in Agriculture

3.4.1 SATHI

The SATHI portal is intended to strengthen digital monitoring and traceability in the seed production and distribution system. A traceable digital record can support quality assurance and help stakeholders follow the movement of seeds through the supply chain. The practical value of the system depends on reliable data entry, participation by relevant stakeholders and effective use of the information.

3.4.2 Mobile-Based Agricultural Advisory

Mobile-based agricultural advisory services can provide farmers with timely information about weather, crop practices, pest management and market-related matters. Push notifications and farmer-initiated information requests are two common delivery approaches. Advisory services are most useful when information is locally relevant, available in languages farmers understand and supported by extension workers who can help interpret recommendations.

3.4.3 Pradhan Mantri Kisan Samman Nidhi

Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) is a Central Sector Scheme that provides eligible landholding farmer families with income support of Rs. 6,000 per year in three instalments of Rs. 2,000, subject to the scheme's eligibility and exclusion provisions [10]. The scheme uses digital systems for beneficiary registration, verification and electronic transfer. Its implementation illustrates how digital administration can support large-scale welfare delivery, while also highlighting the need for accurate beneficiary data and accessible correction and grievance mechanisms.

4. Digital India Across Other Sectors

Digital platforms and infrastructure have also influenced transport, industry, rural service delivery and entertainment. The examples below indicate areas of application; they should not be interpreted as a quantified assessment of programme impact.

Table 4.1: Sectors of Digital India

Sector	Illustrative digital applications and contribution
Transport	FASTag, DigiYatra, e-Challan and Vahan/Sarathi services support electronic toll payments, passenger processing and online transport-related services.
Industry and commerce	Digital infrastructure supports online business processes, e-commerce, digital payments and technology-enabled services for start-ups, MSMEs and larger enterprises.
Rural service delivery	Common Services Centres and online government portals can extend access to selected public, financial and utility services in rural areas.
Media and entertainment	OTT services, digital publishing, online gaming and regional-language content have expanded the range of digitally delivered media.

5. Challenges and Gaps

5.1 Digital Divide and Unequal Access

Growth in the number of internet subscribers does not mean that all citizens enjoy comparable access. Differences in income, geography, gender, age, disability and educational attainment can affect device ownership, affordability, connection quality and confidence in using digital services. Rural and remote communities may face additional barriers where networks, electricity and local support are limited.

5.2 Connectivity and Infrastructure Constraints

Last-mile connectivity remains essential. Network availability alone is insufficient when connections are unreliable, data plans are unaffordable or public access points are distant. Remote, hilly, border and tribal areas require context-sensitive infrastructure planning, maintenance and service-level monitoring.

5.3 Digital Literacy and Accessibility

Citizens need more than the ability to operate a smartphone. They must be able to evaluate online information, complete digital transactions, protect credentials, recognise fraudulent messages and seek help when a service fails. Platforms should also follow accessibility principles and provide clear interfaces, assistive-technology compatibility and relevant language options.

5.4 Cybersecurity and Digital Fraud

Phishing, impersonation, malicious applications, identity misuse and payment fraud can undermine public trust in digital services. Risk reduction requires secure system design, regular security testing, prompt incident reporting, effective grievance handling and sustained public awareness. Users should be advised never to disclose PINs, passwords or one-time passwords to callers or unverified websites.

5.5 Privacy and Data Governance

The Digital Personal Data Protection Act, 2023 establishes a statutory framework for the processing of digital personal data in India [11]. Effective data governance requires clear communication about data use, appropriate security safeguards, accountable data handling and accessible mechanisms for exercising legal rights. Questions concerning implementation, institutional capacity, consent practices and oversight should be examined through the applicable law and rules rather than treated as settled conclusions.

5.6 Quality and Accountability of Digital Services

A service being available online does not necessarily mean that it is easy to use or effective. Poorly integrated databases, outdated records, system downtime, inaccessible interfaces and weak grievance redressal can exclude the very people digital programmes are intended to serve. Evaluation should therefore consider service completion, reliability, user experience and outcomes, not merely registrations or downloads.

6. Recommendations

Strengthen last-mile broadband and mobile connectivity, with priority for underserved rural, remote and geographically difficult regions.

Improve affordability and access to suitable devices, including shared and assisted-access models where individual ownership is not feasible.

Expand practical digital-literacy programmes covering online safety, payments, privacy, misinformation and access to public services.
Design platforms around multilingual access, accessibility standards and the needs of older persons and persons with disabilities.
Adopt privacy-by-design, data minimisation, secure authentication, independent security assessment and transparent grievance mechanisms.
Improve coordination and interoperability among public platforms while maintaining clear accountability for data quality and service performance.
Publish regular, disaggregated performance indicators that measure actual service access, reliability, inclusion and user outcomes.
Strengthen institutional capacity through training for teachers, public officials, frontline service providers and local support personnel.

7. Conclusion

Digital India has established an important policy framework for expanding digital infrastructure, improving public-service delivery and supporting citizens' participation in the digital economy. Initiatives in education, skills development, payments, welfare administration and agriculture demonstrate the range of areas in which digital systems are being applied. Official statistics show a substantial rise in internet subscriptions over the period reviewed, but access figures alone cannot establish that the benefits are distributed equally or that services are consistently effective.

The programme's next stage should place equal emphasis on inclusion, service quality, trust and accountability. Reliable connectivity, affordable devices, digital literacy, multilingual and accessible design, cybersecurity and responsible data governance are necessary for digital participation to be meaningful. Digital transformation should ultimately be evaluated not only by the number of people connected or transactions completed, but also by whether citizens can use services safely, independently and with dignity.

References

[1] Press Information Bureau, Government of India. (2014). Digital India – A programme to transform India into a digitally empowered society and knowledge economy. https://www.pib.gov.in/newsite/PrintRelease.aspx?lang=2&reg=48&relid=108926
[2] Telecom Regulatory Authority of India. (2023). Consultation Paper No. 10/2023. https://cms.trai.gov.in/sites/default/files/2024-09/CP_07072023.pdf
[3] Department of Telecommunications, Government of India. (2025). Rajya Sabha Unstarred Question No. 3691: Internet subscribers in the country. https://sansad.in/getFile/annex/267/AU3691_dtfYeK.pdf?source=pqars
[4] Telecom Regulatory Authority of India. (2024). Telecom Statistics India – 2024. Department of Telecommunications. https://dot.gov.in/sites/default/files/Telecom%20Statistics%20India%20-%202024.pdf
[5] Ministry of Electronics and Information Technology, Government of India. (2014). Policy on adoption of e-governance. https://www.meity.gov.in/static/uploads/2024/03/Policy-Document.pdf
[6] FutureSkills Prime. (n.d.). About FutureSkills Prime. nasscom and Ministry of Electronics and Information Technology. https://www.futureskillsprime.in/about-us/
[7] iGOT Karmayogi. (n.d.). Mission Karmayogi and the iGOT learning platform. https://igotkarmayogi.gov.in/
[8] Ministry of Education, Government of India. (n.d.). DIKSHA: Digital Infrastructure for Knowledge Sharing. https://pmevidya.education.gov.in/diksha.html
[9] Reserve Bank of India. (2022, March 8). Reserve Bank launches UPI for feature phones (UPI123Pay) and 24x7 helpline for digital payments (DigiSaathi). https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=53385
[10] National Portal of India. (n.d.). Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) services. Ministry of Agriculture and Farmers Welfare. https://www.india.gov.in/services/details/pradhan-mantri-kisan-samman-nidhi-pm-kisan-services
[11] Government of India. (2023). The Digital Personal Data Protection Act, 2023 (Act No. 22 of 2023). Gazette of India. https://egazette.gov.in/WriteReadData/2023/248045.pdf