Introduction

An Overview of the Digital Transformation in the Banking Industry

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The banking industry in India has undergone a rapid transformation driven by digital initiatives. These initiatives have made transactions much easier for customers through the convenience of online banking. Banks can manage the customer relationships more effectively while expanding the range, accessibility and quality of financial services. Digital transformation initiatives have enabled people living in rural areas to access digital banking services, thereby improving their quality of life. Approximately 65% of the Indian population is active internet users, and 57% of the rural population are active users (*Business Standard*, 2025). Internet penetration is primarily driven by the significant increase in mobile cellular connections nationwide. The Unified Payments Interface (UPI) accounts for 85% of India's retail digital payments volume. Recent empirical studies indicate that the adoption of digital technologies has positively affected bank performance (Muduli & Choudhury, 2026). The research findings also suggest that digital transformation has facilitated a significant improvement in the performance of the workforce in Indian banks (Rebekah & Afjal, 2026). Research also indicates that artificial intelligence (AI)- assisted human resource (HR) practices have enhanced skill development, resulting in improved productivity, better financial performance, and better customer service (Gajanand & Trivedi, 2026).

However, digital transformation represents much more than the adoption of new technologies or the digitisation of banking operations. It represents a fundamental restructuring of the banking ecosystem itself. We have come to notice that traditional branch-centric models are increasingly being complemented by platform-based banking, digital public infrastructure, FinTech partnerships, cloud computing, artificial intelligence, and data-driven decision-making. Banking services are no longer delivered solely through physical branches but through interconnected digital platforms that enable customers, banks, FinTech firms, regulators, merchants, and government agencies to interact in entirely new ways. Consequently, digital transformation has become an organisational, institutional, and societal phenomenon rather than merely a technological one.

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India provides a particularly important setting for understanding these developments. During the past decade, the country has built one of the world's most sophisticated digital financial ecosystems through the combined influence of public policy, regulatory innovation, technological advancement, and private entrepreneurship. Initiatives such as the Pradhan Mantri Jan Dhan Yojana, Aadhaar, the Unified Payments Interface (UPI), DigiLocker, and the broader India Stack have transformed financial inclusion while simultaneously creating opportunities for innovation across banking and financial services. These developments have substantially lowered transaction costs, improved access to formal finance, expanded digital payments, and encouraged new forms of collaboration between banks and FinTech firms. At the same time, they have generated new challenges relating to cybersecurity, cyber fraud, digital literacy, privacy, operational resilience, and regulatory governance. Understanding digital transformation therefore requires an appreciation of both the opportunities it creates and the institutional, technological, and behavioural challenges that accompany it.

This monograph emerged from a research programme supported under the Scheme for Promotion of Academic and Research Collaboration (SPARC) of the Government of India. The project, entitled *Digital Transformation of Rural Banking in India: A Multilevel Perspective of Technological Transition and Social Innovation*, originally sought to understand how technological innovation was reshaping banking access among rural households, particularly women, and how digital banking could contribute to wider processes of social inclusion and economic development. As the research progressed, interactions with banking practitioners, policymakers, researchers, and other stakeholders revealed that the transformation of banking was occurring at multiple levels simultaneously. Questions relating to FinTech ecosystems, digital public infrastructure, cybersecurity, digital literacy, platform-based banking, regulatory innovation, and financial inclusion emerged as integral components of a much broader transformation. Consequently, while the project originated in the context of rural banking, the resulting monograph presents a much wider examination of digital transformation across the Indian banking sector.

The chapters included in this volume approach digital transformation from multiple but complementary perspectives. Some chapters examine the technological foundations of digital banking, including FinTech partnerships, digital payments, and digital public infrastructure. Others explore the broader institutional environment by analysing regulatory innovation, cyber risks, cyber fraud, and digital literacy. The volume also considers the societal consequences of digital transformation through discussions of financial inclusion, last-mile banking, housing market behaviour, and the wider social impact of digital banking. Collectively, these contributions demonstrate that digital transformation cannot be understood solely as technological change. Rather, it represents the interaction of technological innovation, institutional development, regulatory

evolution, organisational adaptation, and social transformation. The monograph includes ten chapters, and we provide an overview below:

Chapter 1: Evolving Digital Banking and its Social Impact — *K. Srinivasa Rao*

This chapter traces how India's digital banking system (DBS) evolved as a foundation for financial inclusion and economic growth, moving from a "controlled, social-objective" model before 1991 to a "competitive, technology-driven" one after liberalisation. It walks through the phased banking reforms triggered by the Narasimham Committee recommendations, including reduced CRR/SLR requirements and the licensing of new private banks. The chapter argues that digitisation has become central to improving operational efficiency and lowering intermediation costs. It emphasises that scaling DBS properly gives banks a competitive edge while advancing broader socioeconomic transformation. Overall, it frames digital banking as both a technological and developmental story for the Indian economy.

Chapter 2: Digital Transformation in Banking through FinTech Partnerships — *Dinesh Prabhu*

This chapter examines how bank-FinTech collaboration, rather than outright disruption, has become the dominant mechanism for modernising banking. It surveys partnership models ranging from simple API integrations to deep equity alliances and Banking-as-a-Service (BaaS) architectures. Drawing on global evidence and institutional case studies, it argues these partnerships help incumbent banks extend customer reach and compete with digital-native entrants. The chapter covers technology enablers, regulatory frameworks, and risk architectures across eight sections. It closes with a strategic framework for banking executives navigating this evolving landscape.

Chapter 3: Transitioning from Products to Platforms — *Anurag Banerjee, Meenakshi Kolukuluri, and Pooja Sarin*

This chapter investigates whether the growth of digital payments in India has influenced household sentiment toward house prices. Using data from the RBI's payment system indicators and the Inflation Expectations Survey of Households, the authors test whether digital transaction adoption reduces information and transactional frictions in the housing market. Their findings suggest digital payment diffusion increases optimism in financial systems and encourages a behavioural shift toward home-buying decisions. The chapter positions this as evidence that banking's shift "from products to platforms" has spillover effects beyond finance into broader economic behaviour. It concludes with policy implications for using technology to catalyse housing market development in emerging economies.

Chapter 4: The Gated Core: Digital Public Infrastructure, FinTech Disaggregation, and Regulatory Re-Intermediation in Indian Banking — *K.V. Mukundhan*

This chapter challenges the common narrative that digital disruption would unbundle India's universal banks despite the country's underbanked population and vast real-time

payments infrastructure. Using the 2024 RBI action against Paytm Payments Bank as a case study, it shows that while the customer-facing layer of banking has fragmented among FinTech entrants, the regulated "core" (deposit-taking and credit risk) has remained tightly controlled by banks. The author introduces the concept of "regulatory re-intermediation," where the central bank leverages its monopoly on banking licenses to shape competition rather than simply restrict it. Public digital infrastructure like UPI is presented as a tool the regulator uses to encourage competition at the interface while protecting the core. The chapter frames India's regulator as an active architect of the FinTech ecosystem rather than a passive rule-setter.

Chapter 5: Cyber Frauds and Banking Sector — *V. K. Anand Krishnan and Meera Davi Chalissery*

This chapter examines the sharp rise in cyber fraud in Indian banking, citing data showing incidents growing from 5.3% in 2010-11 to 73.6% in 2021-22. It highlights a shift from purely technical attacks like hacking and malware toward behaviourally driven fraud that exploits social engineering and victim psychology. The authors discuss the "digital arrest" scam as an example of impersonation fraud, where criminals pose as authorities to coerce victims into payments without needing to breach any system. They argue this evolution demands a broader conceptualisation of financial security incorporating behavioural finance and information asymmetry, not just technological defences. The chapter situates these frauds within e-commerce fraud, investment scams, and hybrid fraud structures affecting the sector.

Chapter 6: Significance of Imparting Digital Literacy for Digital Inclusion — *K. Srinivasa Rao*

This chapter argues that digital literacy (DL) has evolved from a desirable skill into an essential life skill as society becomes enmeshed in digital systems spanning banking, healthcare, and government services. It reviews definitions of DL from scholars like Paul Gilster and organizations such as UNESCO and the American Library Association, framing it as encompassing cognitive, technical, and ethical competencies. The chapter stresses that banks' technological safeguards alone offer limited protection, and that financial literacy combined with digital literacy is essential to protecting customer savings. It also notes the interdependence of digital literacy among individuals, since even literate users can be exposed through interactions with less digitally capable people. The chapter sets up a broader discussion of how insufficient DL restricts opportunities and increases vulnerability in a digital-first economy.

Chapter 7: Digital Transformation in Banking through FinTech Partnerships — *Ramesh Krishnan*

This chapter examines how banks worldwide, and particularly in India, are shifting from viewing FinTech as a threat to embracing partnership-driven models for co-creating value. It applies theoretical frameworks such as open innovation, platform economics,

and co-opetition theory to analyse the rationale, typology, and outcomes of bank-FinTech partnerships. The chapter credits India-specific catalysts—including Jan Dhan Yojana, Aadhaar, the India Stack, and the 2016 demonetization—for accelerating this transformation. It includes case studies from HDFC Bank, SBI, Axis Bank, RBL Bank, and Kotak Mahindra Bank to illustrate different partnership architectures. It concludes by looking ahead to embedded finance, Banking-as-a-Service, and India's Account Aggregator framework.

Chapter 8: Last Mile Financial Service Delivery through Micro ATMs — *Sanjeev Kumar*

This chapter focuses on how Micro ATMs help extend banking access to rural India, where roughly two-thirds of the population lives and branch infrastructure remains sparse. It uses the Burdwan District Central Cooperative Bank in West Bengal as a case study within India's three-tier rural cooperative credit structure (State Cooperative Banks, District Central Cooperative Banks, and Primary Agricultural Credit Societies). The chapter weighs the merits and drawbacks of traditional branch banking, noting the high costs rural customers like farmers and daily-wage labourers bear when accessing fixed-location, fixed-hour branches. It positions Micro ATMs as a practical last-mile delivery mechanism that leverages the DCCBs' local presence. The chapter presents this as evidence-based analysis of financial inclusion strategy at the grassroots level.

Chapter 9: Cyber Risks in Digital Transformation — *K. Srinivasa Rao*

This chapter examines how banks' growing reliance on technology increases exposure to cyber risk, defined as potential losses from technology breaches, fraud, and operational or reputational disruption. It traces the progress of digital transformation in Indian banking from standalone automated ledger posting machines in the 1980s through CORE banking adoption between 2005 and 2010. The chapter frames cyber risk as a subset of operational risk, noting the rise of specialized functions like CISOs and dedicated cyber control rooms. It argues banks lack "invincible firewalls," making frameworks like Risk Control and Self-Assessment (RCSA) essential for managing exposure and capital buffers. The chapter emphasizes that understanding the depth of digital transformation is a prerequisite to properly assessing and managing cyber risk.

Chapter 10: Evolving Digital Banking and its Social Impact: A Socio-Economic Transformation — *U.K. Sethumadhavan*

This chapter presents India's digital banking growth as a socio-economic transformation without global parallel, crediting the "JAM Trinity"—Jan Dhan bank accounts, Aadhaar biometric identity, and mobile connectivity—as its foundational architecture. It traces the origins of computerisation in Indian banking to the late 1980s, with real momentum building after 1991 liberalisation and accelerating over the last decade. The chapter highlights UPI's massive scale, citing over 16.99 billion monthly transactions, as evidence of India's global leadership in digital financial inclusion. It emphasises how digital banking has become embedded in everyday life, from transit tickets to grocery purchases, across

all socio-economic groups. The chapter frames this success as a model other countries have sought to emulate.

We are thankful to the SPARC team for supporting us in producing this monograph. We are confident that this monograph will promote a healthy intellectual conversation leading to significant contributions to research and practice in the domain of digital transformation in the banking industry.

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