JDEBM
Journal of Digital Engineering and Business Managemet

Volume-2, Issue-1, January-March 2026
ISSN: **3107-7897** | P.ID: JDEBM/35
DOI: https://doi.org/10.5281/zenodo.19413373

DIGITAL TRANSFORMATION IN PUBLIC SECTOR BANKS AT BANK OF BARODA

[#1]Dr N SANGEETHA, *Associate Professor,*
[#2]NANDYALA HARSHTHA, *MBA Student,*
Department of MBA,
VISWAM ENGINEERING COLLEGE (Autonomous), ANGALLU, MADANAPALLE, AP.

ABSTRACT: The digital transformation process of public sector enterprises is the primary focus of this Research, which examines the Bank of Baroda. It quantifies the extent to which digital technologies including automated processes, mobile banking, and online platforms have enhanced operational efficiency and consumer satisfaction. The advantages of digitization, including expedited transactions, reduced Research time, and a decrease in human errors, are underscored in the Research. The research examines the effects of digital initiatives on consumer satisfaction, service accessibility, and financial inclusion. It also investigates the manner in which Bank of Baroda employs artificial intelligence (AI) and data analytics to reduce risk and deliver personalized services. The investigation concentrates on the strategic strategies and staff training that facilitate successful digital integration. Numerous variables contribute to the bank's digital advancement and competitive advantage. Success in digital transformation necessitates a customer-centric approach, ongoing innovation, and a robust technological foundation, as per the report. It emphasizes the significance of digital initiatives in the modernization of public-sector financial operations.

Keywords: *Digital Banking, Banking Automation, Financial Technology (FinTech), Core Banking Systems (CBS), Digital Infrastructure, Smart Banking Solutions*

I. INTRODUCTION

Digital transformation, also known as "business transformation," is a continuous process that business administrators and organizations employ to integrate non-digital activities, such as products, services, or procedures, across all areas of an operation. Ultimately, this provides companies with a competitive advantage and alters their operational and value delivery strategies. The fundamental objective of digital transformation is to transform procedures that were previously conducted on paper into digital representations. In response to this transformation, organizations are optimizing their procedures.

In order to offer clients value, digital transformation is the process of integrating digital technologies into all aspects of a business, such as operations, services, and products. In a digitally connected environment, this transition necessitates the continuous pursuit of more effective and innovative technologies and processes, in addition to adherence to industry and global standards. The banking industry utilizes technology to improve the effectiveness, accessibility, and consumer focus of financial services through digital transformation.

Customers can conveniently access their accounts and execute transactions through mobile banking and the internet. Furthermore, the adoption of digital technology facilitates the implementation of sophisticated data analysis and artificial intelligence (AI). When these innovations

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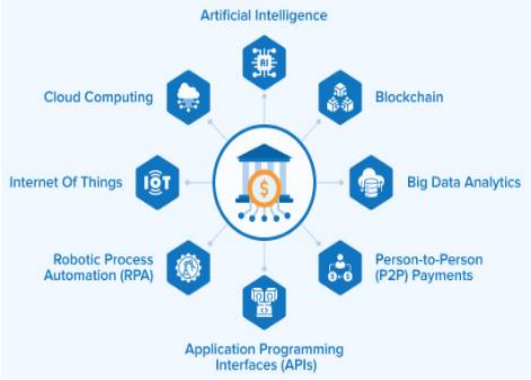
are integrated, banks may be able to predict financial trends, detect fraudulent activity, and personalize consumer interactions.

The "digital transformation" process entails the integration of modern technology into a variety of bank operations in order to enhance client value and simplify financial processes. The finance industry has been significantly influenced by technology over the years. The digital transformation of the financial sector has generated substantial opportunities for prominent banks and financial organizations. Furthermore, it enables banks to offer exclusive advantages to customers via their digital platforms, which could result in the acquisition of new customers.

This implies that the banking industry has been entirely transformed by the adoption of new technology and procedures, as well as the transition to digital banking. Financial organizations are more adept at offering their clients mobile services. The bank has the ability to recommend strategies as a result of its understanding of consumer behavior. This can be achieved through the implementation of AI, cloud computing, blockchain, and other technologies.

Digital transformation enables public sector banks to transition from traditional banking methods to technology-driven operations in a systematic manner. It involves the integration of automation, sophisticated analytics, and digital technology to enhance operational efficiency, expedite procedures, and increase customer satisfaction. In order to remain competitive and meet the evolving demands of their tech-savvy clientele, public sector banks are integrating digital wallets, mobile applications, online banking systems, and AI-driven customer support solutions as financial technology continues to evolve. Furthermore, banks can enhance the transparency, promptness, and user-friendliness of their services by decreasing their dependence on physical branches and research-driven methodologies. Digital transformation in public sector banks encompasses internal functions such as risk management, compliance, data analysis, and decision-making, in addition to customer-focused services. Blockchain technology, big data, and cloud computing can be employed by banks to optimize resource allocation, reduce fraud, and enhance security.

II. TECHNOLOGIES DRIVING DIGITAL TRANSFORMATION IN BANKING



Artificial Intelligence

Artificial intelligence (AI) is completely changing the financial sector. AI has many benefits, including higher income and lower costs through a variety of routes. With the aid of AI technology, modern banks may improve the effectiveness, speed, accuracy, and efficiency of their operations. Banks may use AI-powered solutions to improve customer satisfaction by making it easier to manage large data volumes and make more effective decisions. Banks can benefit from AI in a number of ways, including improved

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customer service, digital client communication, access to back-office processes, improved product delivery, assurance of compliance, greater marketing efforts, and improved risk management.

Blockchain

Blockchain is one of the most widely used technologies in the industry. It is a decentralized database-based distributed ledger that allows developers to offer services that protect customers' financial data from real-time transactions. Blockchain is a decentralized, unchangeable chain that holds all of the nodes' vital data. This prevents any kind of data alteration while guaranteeing the highest level of security and integrity. For banks or other financial organizations making the switch to digital, this is the most cutting-edge technology available. Furthermore, blockchain can tackle any problem, including fraud and cyberattacks. Blockchain promotes openness between credit unions and other institutions.

Big Data Analytics

The most important element of any company organization is data. Businesses use the technological idea of "big data analytics" to collect and examine consumer data. Large financial organizations use most big data since they have a wealth of information that may not be used now but is crucial. Every day, the finance sector generates more and more data. By examining time series, finding data links, and spotting patterns in customer contact data, advanced analytics frequently helps banks create new business models.

Person-to-Person (P2P) Payments

The direct transfer of money to another user is made possible by peer-to-peer payments, or P2P. Peer-to-peer (P2P) payments just require the recipient's phone number or bank account to enable quick money transactions.

Application Programming Interfaces (APIs)

APIs, or application programming interfaces, are critical in the banking industry because they allow firms to engage with new clients and partners while also developing new services and products. For this reason, companies use APIs and make them available to the public, which motivates developers to create integrations and applications that work with different systems. In the end, this might encourage innovation and market growth. Additionally, by automating processes, APIs make it easier to customize activities.

Robotic Process Automation (RPA)

The banking industry prefers to use intelligent automation as it helps drive efficiency, improves customer satisfaction, and eliminates the chances of reputation. The technology that can offer all these things is known as robotic process automation (RPA). With the help of robotic process automation, banks can start using bots for customer services. Besides, the banks don’t even have to worry about the low-priority questions that can be asked by customers.

Similarly, it helps save a lot of time that goes behind dealing with customers’ high-priority concerns. Robotic process automation is a technology that can easily help banks improve productivity, data analysis, reducing operational costs and errors. It also reads customer behavior to enable all the users to make a quick decision for their credit card application with RPA without any human intervention in the process.

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Internet of Things (IoT)

Data transmission and device connections over the internet are made easier by the Internet of Things (IoT). The Internet of Things has the ability to improve customer happiness and streamline financial procedures. For example, wearable payments allow consumers to use fitness trackers and smartwatches to make safe, contactless purchases. IoT has the capacity to identify mechanical issues and disruptions, as well as to establish alarms for preventative maintenance on critical banking infrastructure, including ATMs.

Cloud computing

For security and privacy reasons, banks have traditionally kept all data on-site. However, cloud computing provides a more adaptable and scalable infrastructure, which can assist banks in more effectively competing. Cloud computing enables banks to promptly introduce new products and services.

III. REVIEW OF LITERATURE

Sneha Rao 2025 Swathi Rao 2025 This essay investigates how digital transformation affects public sector bank operational efficiency and customer experience. Public sector institutions have used UPI, internet banking, and mobile banking to make financial services more accessible to urban and rural citizens. Due to obsolete IT infrastructure, legacy systems must be modernized for real-time transaction processing and flawless service delivery. AI and data analytics aid fraud detection, risk assessment, and prediction. Cloud computing facilitates scalability and disaster recovery, while cybersecurity protects financial data. Digital transformation improves customer service, loan processing, and costs. New technology requires personnel training and digital literacy. Fintech partnerships foster innovation and product development. Regulatory compliance ensures financial stability and prudence. AI-powered personalized banking boosts consumer engagement.

Arjun Verma 2024 Arjun Verma 2024 Digital banking is essential for public sector bank transformation, according to this Research. Mobile banking, online banking, and digital wallets have improved client convenience, especially in remote areas. UPI's faster financial transfers and reduced branch dependence have improved transaction efficiency and security. PSBs' inability to adapt outdated IT systems limits contemporary banking technology scalability and incorporation.

AI and machine learning improve customer service with predictive credit evaluation, automated query resolution, and chatbots. Cloud solutions provide efficiency and flexibility, while data analytics aids strategic decision-making and risk management. Cybersecurity and regulatory compliance underpin digital operations and customer trust. Employee skill development initiatives help workers use new tech.

Thanks to innovative fintech partnerships, PSBs can offer personalized investing advice and fast financing. Digital technology aids underprivileged financial inclusion. Financial institutions use scenario-based simulations and stress testing to reduce liquidity and credit risks. Digital banking improves PSB operations, customer satisfaction, and sustainability.

Baisakhi Dasgupta 2023 Dasgupta 2023 The promise and constraints of digital transformation in Indian public sector institutions are examined here. The research cites legal constraints, outdated

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legacy systems, and change resistance as digital adoption barriers. Despite these challenges, digital transformation has improved operational efficiency, customer experience, and financial inclusion, according to the inquiry.

The paper says government programs like Digital India promote digital literacy and infrastructure. It also emphasizes fintech collaborations for innovation and service diversification. The analysis advises public-sector banks improve IT infrastructure, train staff, and develop customer-centric digital solutions. Effective leadership, strategic thinking, and continual growth are necessary for digital transformation. These findings help policymakers and institutions navigate the financial industry's digital revolution.

Dr. Sri Hari 2022 Dr. Sri Hari 2022. This Research explores how technology affects public-sector bank digital banking uptake. AI, ML, and blockchain improve customer service, fraud detection, and credit risk assessment, according to the Research. The Research also found that individualized offerings and real-time digital help increased consumer engagement.

Rapid technological innovation highlights cybersecurity risks and personnel training, according to the poll. Financial institutions should invest in digital infrastructure and work with IT companies to be competitive. According to the paper, digital transformation has many benefits but requires careful strategy and execution to reduce risks. Banks can use these data to improve digital services.

Rohit Malhotra 2021 Malhotra Digital transformation of public sector institutions both potential and problems, according to this Research. Aversion to change, old systems, and staff digital skills hinder technology adoption. Instead, digital banking platforms improve efficiency, transaction processing, and customer happiness.

AI, machine learning, and predictive analytics help banks reduce risks and make better decisions. Digital technologies engage consumers by personalizing services and responding faster. Banking reliability depends on cybersecurity and regulatory compliance. Employee training and change management help integrate new technology. Partnerships with fintech firms boost innovation and service offerings. Cloud computing improves scalability, flexibility, and disaster recovery. PSBs can improve financial inclusion by reaching underserved and rural areas through digital transformation. Scenario-based planning and stress testing improve credit crisis preparation and liquidity.

IV. DIGITAL TRANSFORMATION SERVICES AT BANK OF BARODA

1. DIGITAL PAYMENT SOLUTIONS

CUSTOMER-FOCUSED DIGITAL PAYMENT SOLUTIONS

A. BOB World UPI App
B. BOB World Wave – Wearable Contactless Payment

MERCHANT PAYMENT SOLUTIONS

A. BOB World Merchant POS
B. BOB World Merchant Gateway
C. BOB World Merchant UPI QR Sound Box
D. Baroda Diginext

2. INTERNET AND MOBILE BANKING SERVICES

A. bob World Internet Banking

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B. bob World Mobile Banking

3. DIGITAL LENDING SERVICES

A. Digital Personal Loans

B. Digital Co-Lending Platform

4. BLOCKCHAIN INITIATIVES AT BANK OF BARODA

A. Blockchain Initiatives At Bank Of Baroda

B. Digital Identity Solutions

V. CONCLUSION

Public sector banks, in a nutshell, need to go digital if they want to boost efficiency, accessibility, and customer service. Blockchain technology, artificial intelligence, and mobile banking have been utilized by major financial institutions to streamline processes, decrease human error, and increase the speed of service delivery. Digital platforms streamline banking by giving you personalized options and making transactions possible at any time of day or night. Utilizing sophisticated analytics and making decisions based on data improves strategic planning and risk management.

The internet may get safer, users could get help transitioning to new tech, and infrastructure problems could be fixed with continuous innovation. The digital revolution has opened up banking services to underserved and rural populations. This change in contemporary banking is made possible by government programs and collaborations with tech companies. Thanks to digital technologies, businesses run more smoothly and customers are happier.

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