

ADVANCEMENT IN BANKING TECHNOLOGY: ENHANCING BANKING SERVICES AND RISK MANAGEMENT

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Abstract

The banking industry is undergoing a profound transformation, driven by rapid technological advancements. This paper delves into the evolving landscape of banking technology and its significant impact on enhancing banking services and risk management within financial institutions. This study aimed to explore the benefits of technology adoption and the role of emerging tools in enhancing operational efficiency and risk management.

The analysis explores the diverse advantages of technology for customers, banks, and traders. It delves into how emerging digital tools have enhanced transaction processing, customer service, and the banking sector as a whole. Key technologies like AI, block chain, and data analytics are examined for their contributions to risk mitigation.

The paper concludes that the technological developments is reshaping the banking industry and emphasizes the importance of banks. also highlights that banks are fully leveraging technology's potential to enhance operational efficiency and maintaining a robust approach to risk mitigation.

Keywords: *Transformation, banking, Technological advancements, risk management, risk mitigation*

Introduction

In the dynamic realms of banking and commerce, change is the only constant. The most notable evolution has occurred in the sphere of banking operations. At its core, banking revolves around the receipt of customer deposits, the allocation of surplus deposit funds to eligible borrowers, and the facilitation of monetary transactions (Nachane, 2007). Beyond the traditional banking services, financial institutions now provide an extensive array of both financial and non-financial offerings. These cater to the diverse needs of a broad spectrum of clients, ranging from individual account holders to large corporations and, on occasion, even those who are not regular customers. The range of services accessible varies from bank to bank and is predominantly influenced by the institution's type, size, and the technological infrastructure it employs.

Technology has undeniably been a pivotal force in human progress, particularly in the realm of Information and Communication Technology (ICT). This groundbreaking advancement facilitates

electronic access, processing, storage, and information dissemination. India's banking sector is rapidly expanding through the adoption of technology like ATMs, Online Banking, Telephone Banking, and Mobile Banking (Rajaraman, 2015). A notable addition to retail financial products is the plastic card, and technological advancements are integral to its widespread use, making these advancements indispensable in our lives.

Today's banking landscape is witnessing a digital revolution marked by the swift proliferation of technology. Innovative fintech startups are challenging traditional banking, offering user-friendly interfaces and streamlined services. To stay competitive, banks are enthusiastically embracing new technologies, transforming customer service approaches. This technological shift is gradually replacing traditional brick-and-mortar banking with technology-driven services that require minimal human intervention (Roy and Viswanathan, 2019).

Literature review

Digital payments represent a transformative system in India, aligned with the "Digital India" initiative spearheaded by our esteemed Prime Minister Narendra Modi. The primary goal is to enhance transparency regarding financial transactions within the country, while also curbing the presence of black money by promoting tax compliance and ensuring a transparent financial landscape for all individuals.

Manivannan (2017) conducted study focusing digital banking and customer-centric banking and underscores the importance of widespread availability of digital tools such as the internet, wireless devices, ATMs, mobile payment wallets, and various digital applications by all banking institutions. The study concludes that the banking industry should place a strong emphasis on customer-centric approaches and adapt to the latest technological advancements.

The "World Payments Report" by **Capgemini in 2014** reveals that non-cash transactions have surged to 334 billion transactions. Customers are increasingly inclined to embrace digital channels, as they offer enhanced convenience. Nonetheless, banks need to address challenges related to customer service and digital channel-related fraud to fully reap the benefits of digital capabilities.

Trivedi and Remedios (2014) conducted study focusing on the effects of digital banking, reveals that internet banking is effective in retaining customers. Expanding the customer base through internet banking hinges on prioritizing service quality, responsiveness, security, trustworthiness, and reliability aspects of technology. In essence, banks must be attentive to ensure that their digital banking services meet and satisfy their customers.

Objectives

The present paper is carried with the following objectives:

1. *To Assess the benefits in adoption and implementation of technology in banking sector in India.*
2. *To highlight the emerging technological tools for risk assessment and management in banking industry.*

Material Method

This article employs an exploratory research methodology, which integrates an extensive review of existing literature with the collection of secondary data encompass research papers and case studies. This approach aims to provide a comprehensive understanding of the advantages of technology adoption in the banking sector also enabling the identification of emerging technological tools for risk assessment and management within the banking industry.

Result and discussion

Technology has undeniably transformed the efficiency of India's banking sector. It has streamlined operations, improved customer service, and replaced traditional processes with digital solutions. This shift has led to faster, more accurate transactions, enabling banks to handle larger volumes, serve more customers, and reduce errors, significantly enhancing operational efficiency.

This section will discuss the objectives of the study which are as follows:

Adoption and Implementation benefits of technology in banking
Following are some evidences in support of positive influence of technology on banking (Singh and Tigga, 2012):

Benefits to Customers

- a) **24/7 Banking Access:** E-banking offers round-the-clock services, allowing customers to withdraw cash from any branch at any time.
- b) **Worldwide Banking:** Online banking enables customers to access services from anywhere in the world.
- c) **Online Shopping and Payments:** Customers can purchase goods and services online and make payments securely through cards.
- d) **Mobile Transactions:** Users can perform authorized transactions using their mobile phones from their home, office, or while traveling.
- e) **Rapid Information Access:** Customers receive relevant and detailed information within seconds, eliminating the need to wait for days or weeks.

Benefits to Banks

- a) **Competitive Advantage:** E-banking provides banks with a competitive edge through an extensive network.
- b) **Marketing Tool:** Online banking serves as an effective medium for promoting various bank schemes and acts as a marketing tool.

- c) Risk Mitigation: Integration of ATM and POS terminals reduces the risk of overdrawing on ATM credit and debit cards.
- d) Revenue Generation: E-banking sites can generate revenue through promotional activities with corporate consumers.
- e) Customer Relationship Enhancement: IT helps banks establish and maintain better customer relationships, attracting and retaining clients.

Emerging technologies for risk assessment and Management

Following are the technological tools which are innovated in a way to assess and manage the risk involved in digital products (Li et.al., 2022):

3. Artificial Intelligence (AI) in Banking: AI equips computer systems with human-like intelligence, offering versatile solutions in the financial sector. It enhances security through fraud detection, real-time transaction monitoring, and analysis of unstructured data. AI also improves credit risk assessment and provides personalized financial advisory services, reducing overall risk exposure.
4. Big Data for Risk Management: Financial technology companies utilize advanced data processing techniques to transform raw data into valuable information. This data aids banks in personal credit assessments, credit extension, and risk management, enabling better decision-making and risk mitigation. Big Data analytics helps identify trends, anomalies, and potential risks, enhancing compliance and risk control.
5. Block chain for Secure Transactions: Block chain, a decentralized and immutable distributed ledger technology, aligns with the financial industry's need for secure and transparent transactions. Banks use block chain to improve transaction security, transparency, and traceability, especially in cross-border payments. It reduces the risk of fraud, counterfeiting, and unauthorized access while ensuring compliance with data privacy regulations.

Conclusion

In conclusion, technology adoption in banking benefits both customers and banks. Customers now enjoy 24/7 access, global banking, online shopping, and quick information retrieval. Banks gain a competitive edge, efficient marketing, and improved risk management through technology, enhancing customer relationships.

Moreover, emerging technologies like Artificial Intelligence (AI), Big Data, and Blockchain are transforming risk assessment and management in banking. AI enhances security, refines credit risk assessment, and offers personalized financial services. Big Data identifies trends for informed decision-making, while Blockchain ensures secure transactions. These advancements represent a digital revolution in banking, shifting from traditional operations to technology-driven services. As the sector evolves, these innovations will enhance operational efficiency and risk management, shaping the future of banking in India and globally.

In light of these advancements, it's crucial to address digital risks stemming from market competition, platform fraud, compliance challenges, data privacy, and cybersecurity threats. Leveraging these technological tools from the fintech field is not just an opportunity but a necessity for effectively mitigating associated risks.

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