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Study of the New Trends of Artificial & Digital Banking System in India

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ABSTRACT
India's banking sector has undergone a remarkable transformation over the last decade due to rapid advancements in digital technologies and Artificial Intelligence (AI). Traditional banking services are evolving into customer-centric, data-driven, and intelligent financial ecosystems. Government initiatives such as Digital India, Jan Dhan Yojana, Aadhaar, UPI, Account Aggregator, and Digital Public Infrastructure (DPI) have accelerated financial inclusion. Simultaneously, banks are increasingly adopting AI, Machine Learning (ML), and block chain, cloud computing, robotic process automation (RPA), biometric authentication, and conversational banking. This study examines the latest trends in Artificial and Digital Banking in India, analyzes recent banking data, discusses opportunities and challenges, and provides recommendations for sustainable digital transformation.

Keywords: AI, UPI, RPA, NLP.

Introduction

The Indian banking industry has shifted from traditional branch-based banking to digital-first banking. Customers now expect instant, secure, and personalized banking services through mobile applications and internet platforms.

Artificial Intelligence has further revolutionized banking by enabling:

- Automated customer support
- Intelligent fraud detection
- Personalized financial advice
- Digital lending

- Risk prediction
- Automated compliance

Today, digital banking is no longer limited to Internet Banking; it includes AI-powered banking ecosystems that offer seamless customer experiences.

Objectives of the Study: -

The objectives are:

- To study recent trends in Artificial and Digital Banking.
- To examine technological innovations in Indian banking.
- To analyze growth of digital payments.
- To evaluate AI applications in banking.
- To identify challenges and future opportunities.

Concept of Artificial Banking:-

Artificial Banking refers to banking services powered by Artificial Intelligence technologies.

These technologies include:

- Machine Learning
- Natural Language Processing (NLP)
- Computer Vision
- Predictive Analytics
- Robotic Process Automation (RPA)
- Intelligent Decision Systems

AI helps banks:

- Reduce operational costs
- Improve customer experience
- Detect fraud instantly
- Automate loan approvals
- Predict customer behavior

Concept of Digital Banking:-

Digital Banking means providing banking services electronically without requiring customers to visit bank branches.

Major services include:

- Mobile Banking
- Internet Banking
- UPI Payments
- QR Payments

- IMPS
- RTGS
- NEFT
- Digital Wallets
- Video KYC
- Digital Lending

New Trends in Artificial & Digital Banking:-

A. AI Chatbots

Banks are deploying AI-powered catboats for:

- Balance enquiry
- Fund transfer
- Loan information
- Complaint handling
- Investment advice

Examples:

- SBI Assistant
- HDFC EVA
- ICICI iPal
- Axis AHA

B. AI-Based Fraud Detection

Artificial Intelligence continuously monitors customer transactions.

It detects:

- Unusual transactions
- Fake accounts
- Credit card fraud
- Money laundering
- Identity theft

AI systems analyze thousands of transactions within seconds.

C. Digital Lending

Banks now use AI algorithms to evaluate:

- Income
- Spending behavior
- Credit history
- Mobile usage

- GST records
- Digital transactions

This has reduced loan approval time from weeks to minutes.

D. Biometric Banking

Modern banking increasingly uses:

- Fingerprint authentication
- Face recognition
- Iris scanning
- Voice recognition

Benefits:

- Higher security
- Password-free banking
- Faster verification

E. Robotic Process Automation (RPA)

Banks use software robots for:

- Account opening
- Loan documentation
- KYC verification
- Report generation
- Compliance monitoring

This improves efficiency and reduces human errors.

F. Block chain Banking

Block chain improves:

- Cross-border payments
- Smart contracts
- Trade finance
- Digital identity
- Transaction security

Although still emerging in India, banks are actively exploring block chain applications.

G. Open Banking

Open Banking allows customers to securely share financial data with authorized third-party applications.

Benefits include:

- Better financial planning

- Personalized banking
- Easier loan comparison
- Integrated financial services

H. Voice Banking

Customers can now perform banking transactions using voice assistants.

Examples:

- Google Assistant
- Alexa
- AI banking assistants

I. Contactless Banking

Customers increasingly use:

- NFC Cards
- QR Codes
- UPI
- Wearables
- Smart Watches

This trend has accelerated after COVID-19.

J. Hyper-Personalized Banking

AI analyzes customer behavior and recommends:

- Loans
- Insurance
- Credit Cards
- Investment Products
- Savings Plans

Government Initiatives Supporting Digital Banking

Major initiatives include:

- Digital India
- Jan Dhan Yojana
- Aadhaar
- UPI
- Bharat Bill Payment System (BBPS)
- Account Aggregator Framework
- e-RUPI
- Digital Rupee (CBDC)

- Unified Lending Interface (ULI)

The government is also promoting AI-enabled financial inclusion through Digital Public Infrastructure and regulatory innovation.

Data Analysis of Digital Banking in India

Table 1: Growth of UPI Transactions

Year	Transaction Value (Approx.)
2022	₹126 Lakh Crore
2023	₹183 Lakh Crore
2024	₹247 Lakh Crore
2025	₹310+ Lakh Crore (Approx.)
2026*	₹29.53 lakh crore in March alone (2,264 crore transactions)

*Recent official data show that in March 2026 UPI processed about **2,264 crore transactions worth ₹29.53 lakh crore**, with **691 banks** participating and accounting for nearly **81% of India's retail payment volume**.

Interpretation

- Continuous growth in digital payments
- Rising customer trust
- Increased merchant adoption
- Expansion of fintech ecosystem

Table 2: Growth of Jan Dhan Accounts

Indicator	2026
Total Accounts	58.16 Crore
Deposits	₹3.02 Lakh Crore

Interpretation

The data indicate strong financial inclusion and wider participation in the formal banking system.

Table 3: Major AI Applications

Banking Function	AI Application
Customer Service	Chatbots
Credit Approval	Predictive Analytics
Fraud Detection	Machine Learning
Investment	Robo Advisors
Risk Management	AI Models
Compliance	Automation

Benefits of Artificial & Digital Banking

For Customers

- 24×7 banking
- Instant fund transfer

- Lower transaction cost
- Better security
- Faster loans
- Personalized services

For Banks

- Reduced operational costs
- Higher efficiency
- Better fraud management
- Improved customer satisfaction
- Data-driven decision making
- Increased profitability

Challenges

Despite significant progress, challenges remain:

- Cyber security threats
- Data privacy concerns
- Digital fraud
- Rural digital literacy
- Internet connectivity
- AI bias
- High implementation cost
- Regulatory compliance
- Dependence on technology

Future Trends

The future of Indian banking will include:

- Generative AI in customer service
- AI-powered financial advisors
- Autonomous banking
- Embedded finance
- CBDC (Digital Rupee)
- Banking through IoT devices
- Quantum-safe cyber security
- Green Digital Banking
- AI-enabled regulatory compliance (RegTech)
- Multilingual AI banking using Indian language models

Recent initiatives include AI-based UPI support, IoT-enabled UPI payments, interoperable banking platforms, and AI-driven complaint resolution, reflecting the next phase of intelligent banking.

Findings of the Study: -

- Digital banking is becoming the dominant banking model in India.
- AI has significantly improved customer experience and operational efficiency.
- UPI has emerged as the backbone of India's retail payment ecosystem.
- Financial inclusion has expanded rapidly through Digital Public Infrastructure.
- Banks are increasingly investing in AI, cloud computing, automation, and advanced cyber security.
- Cyber security and data privacy remain major concerns requiring continuous policy and technological improvements.

Suggestions: -

1. Strengthen cyber security infrastructure.
2. Improve digital literacy in rural India.
3. Promote responsible AI governance.
4. Expand multilingual AI banking services.
5. Encourage collaboration between banks and fintech firms.
6. Increase investment in AI-based fraud detection.
7. Strengthen customer awareness regarding digital fraud.
8. Continue expanding Digital Public Infrastructure to underserved regions.

Conclusion

Artificial Intelligence and Digital Banking have transformed the Indian banking sector into one of the world's most advanced digital financial ecosystems. Innovations such as UPI, AI-driven customer support, digital lending, biometric authentication, and automation have improved accessibility, efficiency, and financial inclusion. Continued technological innovation, responsible regulation, and robust cyber security will be essential for sustaining this growth and ensuring inclusive, secure, and customer-centric banking in the future. India is well positioned to become a global leader in AI-enabled digital banking.

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