

# REVOLUTIONIZING BANKING: THE ROLE OF AI IN PROMOTING DIGITAL BANKING

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## Abstract

From the era of traditional banking to Digital banking now the use of artificial intelligence (AI) in banking is transforming customer experiences through personalized and proactive services and new AI features. This article discusses some of the most significant AI applications, such as AI-based financial planning, efficiency of banking services, enhancing the experiences that tailors saving plans on the basis of transaction behavior, smart alerts that offer timely expenditure information to enhance financial behavior, and customized product recommendations that make use of rich customer profiles to recommend suitable banking products. Such innovations improve customer satisfaction and maximize service provision, making banks active financial partners. By promoting inclusivity and ethical considerations, AI has the potential to provide a more balanced financial environment for both customers and banks.

**Keywords:** Artificial Intelligence, Personalization, Banking Services, Financial Planning, Customer Experience

## INTRODUCTION

Digital banking is defined as the application of digital technology in providing banking services. This ranges from web-based banking sites to mobile applications where customers can have easy access to their finances from anywhere through their devices. With customers demanding more and more digital interactions, banks themselves have scaled up by introducing various web-based services that facilitate smooth financial transactions. Underpinning these developments is artificial intelligence (AI), which includes a range of technologies like machine learning, natural language processing, and data analytics. AI systems are capable of processing large volumes of data rapidly, enabling banks to comprehend customer behavior, personalize services, and enhance decision-making. This embedding of AI in banking not only increases operational effectiveness but also facilitates the creation of innovative financial technologies (Fintech) that propel digital banking. The significance of AI in banking is brought to the fore by its capacity to improve customer experiences. For example, AI chatbots offer 24/7 customer service, offering instant responses and answering questions in real time. This technology not only enhances service accessibility but also personalizes the experience, leaving customers feeling more appreciated and understood as digital banking grows, emphasis on improving customer experience using AI will become all the more critical. Knowing how AI can help improve these experiences will be imperative for banks seeking to stay in the game amidst a fast-changing financial environment.

## EVOLUTION OF BANKING: FROM CONVENTIONAL TO BANKING

Banking itself has also made a dramatic change in recent years, from the old-fashioned physical banks to very digital and AI-oriented systems. Traditionally, banking services were done only in physical branches of the bank where the customers would have to go to banks for making transactions, loan decisions, or financial advice. (Challoumis&Eriotis, 2025) These earlier models of banking relied on manual records, delayed processes, and limited exposure, which resulted in inefficiencies and delays. The latter half of the 20th century witnessed a significant change with the advent of computerized banking systems, which facilitated quicker processing of transactions and electronic record-keeping. (Rathnayake, 2023) This led to online banking, which gained popularity in the early 2000s, enabling customers to view balances, transfer money, and pay bills from anywhere. The advent of mobile banking further sped up this revolution, providing banking services at any time and from any location through smartphones and apps. Banking has now moved into a new age—the era of digital banking based on AI. The change is being driven by leaps in artificial intelligence, machine learning, and automation, which are revolutionizing the ways in which banks function and engage with customers. (Singh-Manager, n.d.)

### Importance of AI in Digital Banking

Artificial Intelligence (AI) is transforming digital banking by making it more efficient, secure, and customer-friendly. AI-based solutions have helped banks automate processes, identify fraud, and offer customized financial services, making banking smoother and more convenient.

#### 1. AI as a Game-Changer in Banking

AI has become an integral part of digital banking, driving efficiency, security, and customer-centric innovations. Here's how AI is transforming the banking industry:

##### a) Increased Efficiency

AI performs repetitive and time-consuming processes like data input, compliance verifications, and transaction processing. Banks apply Robotic Process Automation (RPA) to streamline processes, cutting down on human effort and cost of operations. AI-based decision-making accelerates credit approvals, customer inquiries, and fraud detection, minimizing human touch and errors.

##### b) Enhanced Security and Fraud Detection

AI processes huge amounts of transactional data in real-time to identify abnormal patterns that may point to fraudulent activity. Machine learning models flag suspicious transactions and raise alarms before fraud happens. Biometric authentication (like fingerprint scanning, facial recognition, and voice authentication) provides safe account access and guards against identity theft

##### c) Superior Customer Experience

AI-driven chatbots and virtual assistants offer 24/7 customer service, decreasing wait times and improving user experience. Personalized financial information and spending analysis assist customers in making better decisions. AI facilitates more seamless transactions, decreasing delays and enhancing customer satisfaction.

#### 2. AI-Driven Innovations in Digital Banking

AI has introduced various innovations that have reshaped the banking industry:

##### a) AI-Powered Chatbots and Virtual Assistants

AI chatbots like Bank of America's "Erica" and HDFC Bank's "Eva" give immediate answers to customer queries, minimizing the use of human agents. They help customers with operations such as checking account balances, making fund transfers, and scheduling payment reminders. Chatbots enhance customer interaction by providing real-time support, minimizing frustration due to lengthy waiting times.

##### b) Fraud Detection and Risk Management

AI systems process billions of transactions to detect anomalies and fraud patterns that humans may miss. Banks such as JPMorgan Chase and Citibank utilize AI-based fraud detection to mitigate cyber threats and data breaches. AI enhances anti-money laundering (AML) compliance by monitoring real-time suspicious transactions.

##### c) Automated Loan Approvals and Credit Scoring

Legacy loan approvals are based on credit scores, which might not capture a person's true financial situation. AI looks at non-traditional data such as spending habits, work history, and even social behavior to determine creditworthiness. AI-driven underwriting technology allows for quicker loan approvals, increasing credit access for underserved consumers. Fintech firms such as ZestFinance and Upstart leverage AI-powered risk assessment models to extend more inclusive lending.

##### d) AI in Credit Scoring and Loan Approvals

Conventional credit scoring models are based on financial past and credit bureau reports. AI enhances this process by examining non-traditional data sources, resulting in quicker and more equitable credit determinations.

**AI-Based Credit Scoring:** ZestFinance and Upstart utilize AI to determine creditworthiness based on spending patterns, work history, and online traces.

**Automated Approvals:** AI simplifies loan applications by automatically processing documents, confirming identities, and estimating repayment potential.

**Alternative Credit Scoring:** AI considers non-traditional information, including payments for utility bills and social media usage, to extend loans to underserved clients.

##### e) Robo-Advisors and AI-Driven Wealth Management

Robo-advisors are computer-based financial planning software that give automated investment advice based on the goals, risk tolerance, and market trends of the user.

**Individualized Investment Suggestions:** AI processes market information and recommends investments best suited for personal financial objectives.

**Portfolio Management:** Robo-advisors automatically rebalance portfolios for maximizing returns. AI monitors market trends and economic signals to predict investment prospects.

##### f) AI powered personalized banking

AI improves customer experience by providing customized banking services according to the preferences, behavior, and transaction history of the customers.

**AI-Based Financial Planning:** AI recommends saving plans and expenses on the basis of transaction records.

**Smart Alerts and Notifications:** Banks provide personalized expenditure information and notifications to assist customers in controlling expenses.

**Personalized Product Recommendations:** AI recommends banking products (e.g., loans, credit cards) based on user requirements.

## CONCLUSION

The use of artificial intelligence (AI) in banking is transforming customer experiences with greater personalization and proactive service. Some of the major applications are AI-driven financial planning, which personalizes saving strategies according to individual transaction behavior, and intelligent alerts that offer timely spending insights, leading to improved financial behavior. Personalized product suggestions use detailed customer profiles to recommend suitable banking products, enhancing customer satisfaction and minimizing frustration. While these innovations have come to pass, problems like privacy issues and bias in algorithms continue to exist. Future studies need to concentrate on broadening the use of AI for underserved groups and its ethical implications with a view towards an inclusive financial system that rewards customers and institutions alike.

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