

CHAPTER-04

TRANSFORMING BANKING: THE GROWING ROLE OF ARTIFICIAL INTELLIGENCE IN INDIA

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ABSTRACT

Artificial Intelligence is a fast-developing technology across the world. The banking sector is becoming one of the first adopters of Artificial Intelligence. Banks are exploring and implementing technology in various ways. Artificial Intelligence is getting better and smarter day by day. Artificial Intelligence AI has the potential to revolutionize the banking industry in India. It can enhance customer experience, improve operational efficiency, and enable personalized services. This article explores the impact of AI in Indian banking, highlighting the potential benefits it offer and the challenges that need to be addressed.

1. INTRODUCTION

Artificial Intelligence around for a long time. AI was first conceptualized in 1955 as a branch of computer science and focused on the science of making “intelligent machines” machines that could mimic the cognitive abilities of human mind, such as learning and problem-solving. AI is expected to have a disruptive effect on most industry sectors, many fold compared to what the internet did over the last couple of decade. Organizations and government are diverting billions of dollars to fund research and pilot programs of applications of AI in solving real world problems that current technology is not capable of addressing.

Artificial Intelligence enables banks to manage record-level high-speed DATA to receive valuable insights. Moreover, features such as digital payments, AI bots, and biometric fraud detection system further lead to high-quality services for a broader customer base. Artificial Intelligence comprises a broad set of technologies including but are not limited to.

The adoption of AI in different enterprises has increased due to COVID-19 pandemic. Since the pandemic hit the world, the potential value of AI is increased significantly. The focus of AI adoption is restricted to improving the efficiency of operations or the effectiveness of operations. However, AI is becoming increasingly important as organization automate their day-to-day operations and understand the COVID-19 affected datasets. It can be leveraged to improve the stakeholder experience as well.

2. OBJECTIVES BEHIND THE USE OF AI IN BANKING SECTOR

- **Enhancing customer experience:** AI can provide personalized and efficient services to customer, such as AI-powered chatbots for instant support and personalized recommendations for financial products.

- **Improving operational efficiency:** AI can automate manual repetitive tasks, reducing human error and increasing efficiency. It can also analyze large amounts of data quickly, providing valuable insights for decision-making.
- **Enhancing security and fraud detection:** AI algorithms can detect patterns and anomalies in real-time, helping to identify and prevent fraudulent activities. This strengthens the security of customer accounts and transactions.
- **Streamlining processes:** AI can streamline process like loan approvals, credit scoring, and risk assessment, making them faster and more accurate. This improves the overall efficiency of banking operations.
- **Optimizing resource allocation:** AI can analyze data to identify areas of improvement and optimize resource allocation, allowing banks to allocate their resources more effectively and make data-driven decisions.

By leveraging AI these ways, banks can provide better services, increase efficiency, and stay competitive in the ever-evolving banking industry.

3. CHALLENGES DURING IMPLEMENTATION OF AI IN BANKING SECTOR

Implementing AI in the banking sector does come with its own set of challenges. Here are a few:

- **Data quality and privacy:** AI relies heavily on data, and banks need to ensure that the data they use is accurate, reliable, and protected. Maintaining data privacy and complying with regulations can be a challenge.
- **Integration with existing system:** Banks often have complex legacy system that need to be integrated with AI technologies. Ensuring seamless integration can be a technical challenge that requires careful planning and execution.
- **Ethical Considerations:** AI algorithms need to be fair and unbiased. Banks must ensure that AI system do not discriminate against certain individuals or groups and that they are transparent and accountable in their decision-making process.
- **Skill gap:** Implementing AI requires a skilled workforce that understand both banking operations and AI technologies. Banks may need to invest in training their employees or hiring new talent to bridge this skill gap.
- **Customer acceptance and trust:** Some customers may be hesitant to adopt AI-powered banking services due to concerns about privacy, security, or a lack of

human interaction. Building trust and providing clear communication about the benefits and safeguards of AI is crucial.

4. MISUSE OF AI IN BANKING SECTOR

While AI can be an important tool in the banking sector, it's important to be aware of potential fraud risks. Here are a few methods of fraud that can involve the misuse of AI in banking sector:

- **Synthetic identity fraud:** Fraudsters can use AI algorithms to create synthetic identities by combining real and fake information, making it difficult to detect fraudulent activities.
- **Manipulations of AI algorithms:** Hackers can attempt to manipulate AI algorithms used for credit scoring or risk assessment to bypass security measures and gain unauthorized access to accounts and funds.
- **AI-powered phishing attack:** Fraudsters can use AI to create sophisticated phishing attack that mimic the communication style of legitimate banking institutions, tricking customers by revealing sensitive information.
- **Data poisoning:** By injecting malicious data into AI systems, fraudsters can manipulate the algorithms decision-making processes, leading to inaccurate risk assessment or fraudulent transactions.
- **Deepfake fraud:** AI can be used to create convincing deepfake videos or audio recordings of individuals, which can be used to impersonate customers or bank officials for fraudulent purposes.

To combat these risks, banks should prioritize implementing robust cybersecurity measures, regularly update their AI systems and algorithms, conduct employee training on AI ethics and security, and ensure transparency in AI decision-making processes. Remember, staying informed and cautions is key to protecting yourself and your finances in the digital age!

5. LIST OF BANKS LEVERAGING AI

Here are few banks that are leveraging AI in their operations:

- **HDFC Bank:** HDFC Bank uses an AI-powered chatbot called EVA (Electronic Virtual Assistant) to assist customer with their queries. EVA designed to provide personalized banking information and answer customer questions.

- **State Bank of India:** State Bank of India (SBI) uses an AI system Called SIA (SBI Intelligent Assistant). SIA is an AI-powered chatbot that assists customers with various banking queries, such as account balance, transaction history, and product information.
- **Bank of America:** They use AI-powered virtual assistant called Erica. To help Customers with their banking need.
- **Citibank:** They have an AI-powered chatbot called CitiBot that helps customers with account-related inquiries and provide support.

6. CONCLUSION

In conclusion, the adoption of Artificial Intelligence (AI) in the banking sector, particularly in India, signifies a significant advancement towards enhancing customer experiences, improving operational efficiency, and strengthening security measures. AI technologies offer personalized services, automate tasks, streamline processes, and optimize resource allocation. However, the implementation of AI also presents challenges such as ensuring data quality and privacy, integrating with existing systems, addressing ethical considerations, bridging skill gaps, and building customer trust. Despite these challenges, several banks in India, including HDFC Bank, State Bank of India, Bank of America, and Citibank, are leveraging AI through chatbots like EVA, SIA, Erica, and CitiBot to enhance customer service and operational efficiency. As AI continues to evolve, vigilance against potential fraud risks, such as synthetic identity fraud, manipulations of AI algorithms, AI-powered phishing attacks, data poisoning, and deepfake fraud, becomes imperative. Therefore, maintaining cybersecurity measures, updating AI systems, conducting employee training on AI ethics and security, and ensuring transparency in AI decision-making processes are essential for safeguarding customers and their finances in the digital age.

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