Study on Challenges and Opportunities of Artificial intelligence in Merchant Banking

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ARTICLE DETAILS	ABSTRACT
Research Paper **Accepted:** 17-07-2025 **Published:** 10-08-2025 **Keywords:** *Artificial intelligence (AI), merchant banking, financial services, fraud detection, technology.*	Merchant banking is a middleman financial institution that offers financial services to large businesses. A merchant bank primarily deals with issue management by selling, buying, and underwriting securities. It also delivers additional financial services like advisory services, financial arrangements, wealth management, project financing, and stock brokerage. AI has become increasingly common in the banking and financial services fields. AI comprises data, algorithms, and computing power that allow machines to imitate human capabilities and operate with higher levels of intelligence. Some applications of AI in financial services include detecting anomalies in data patterns, providing recommendations for relevant alternatives based on future predictions, translating across languages, optimizing processes, detecting fraud, managing risks, and digitizing operations. This document imparts fundamental knowledge about AI and its application in merchant banks, while also shedding light on the challenges and opportunities of AI in merchant banking services

Introduction

Artificial Intelligence, also known as AI, is a cutting-edge technology employed to simulate human intelligence with the goal of simplifying tasks for humans. It entails the automation of processes with

minimal human involvement and covers a wide range of uses such as natural language processing, machine vision, fraud detection, and speech recognition.

The Indian Artificial Intelligence market is expected to expand by 25% to 35% from 2024 to 2027, reaching almost $17 billion by the conclusion of this period. AI has gained considerable popularity in recent times and is revolutionizing numerous sectors, including financial services. In the realm of merchant banking, AI has a significant impact, presenting substantial opportunities as well as notable challenges.

AI has various applications in merchant banking services, transforming different facts of the industry. Key applications involve:

1.Personalized Investment Advice: AI-driven systems provide tailored investment guidance and portfolio management based on market data and client preferences to recommend optimum investment strategies.

2.Predictive Analysis: AI models forecast market trends, evaluate economic conditions, and predict financial outcomes, aiding in strategic decision-making and risk management.

3.Detection and Prevention of Fraud: AI algorithms monitor transactions in real time, identifying unusual patterns and potential fraud more accurately and swiftly than traditional methods.

4.Client Onboarding and KYC: AI streamlines the onboarding process by automating Know Your Customer (KYC) procedures, verifying identities, and processing documentation efficiently.

5. Evaluation of Credit Risk: AI improves credit scoring by analyzing a wide range of data points, including nontraditional sources, to assess creditworthiness and manage lending risks.

6.Algorithmic Trading: AI systems execute trades based on complex algorithms that analyze market conditions, trading volumes, and other factors, often outperforming manual trading strategies.

7. Automation of Customer Service: AI-powered chatbots and virtual assistants handle client inquiries, offer real-time support, and manage routine tasks, enhancing service efficiency and availability.

8.Regulatory Compliance: AI tools automate compliance monitoring, track regulatory changes, and ensure adherence to legal requirements, reducing the risk of noncompliance.

9.Personalized Marketing: AI analyzes client data to customize marketing strategies, providing targeted promotions and services based on individual preferences and behaviors.

10. Operational Efficiency: AI optimizes internal processes, automates repetitive tasks, and enhances overall operational efficiency, resulting in cost savings and improved productivity. By leveraging AI capabilities, merchant banks can enhance their service offerings, improve risk management, and achieve greater operational efficiency.

LITERATURE REVIEW

Geetha &Dr. M.G.R.(2021) carried out "A study on AI in banking and financial services" in Chennai on the integration of AI in banking and financial services. This research utilized secondary data sources and aimed to uncover insights into the use of AI in banks and its effects on customers. The results indicated varying levels of satisfaction with AI implementation among individuals, and recommendations were made to enhance processes with innovative services to improve customer satisfaction.

Dr. Munish Sabharwal's study titled " The use of artificial intelligence based technological application by Indian bank" it focused on the adoption of AI-based technological applications by Indian banks. The study involved structured interviews with branch managers from 16 selected banks and sought to comprehend the motivations behind AI implementation. It was found that Yes Bank utilizes AI for assessing employee performance, credit evaluation, and portfolio analysis.

Dr. Navleen Kaur and Dr. Monika Sharma's study titled "Banking 4.0 - The Impact of Artificial Intelligence on the Banking Industry" aimed to grasp the transformative changes in the banking sector due to AI and its influence on the workforce. The study highlighted the favorable impacts of AI on attracting customers, leading to the rapid expansion and progress of banks.

Ana Fernandez (2019) titled "Artificial Intelligence (AI) in Financial Services," the author outlined the advantages of AI application in the finance industry for investors, despite the associated risks and limitations. The study emphasized that leveraging AI tools in decision-making processes presents a fair trade-off between risks and rewards.

Mr. Praveen B and Mr. Sunil conducted a study in 2024 on the " Application of Artificial Intelligence in Indian banking -challenges and opportunities." This study aimed to comprehend the obstacles and prospects for AI in the banking sector. The study unveiled positive outcomes and challenges,

underscoring AI's potential for rapid growth in the banking sector while ensuring client safeguarding and collaboration with educational institutions to cultivate data scientists.

In 2024 by Mr. Gideon , Dr. K. T. Gopi, and Ms. Chaithra conducted research on the "study of impact of AI in banking and financial services " This study underscored the potential advantages of AI adoption, including heightened operational efficiency, improved customer experience, and enhanced talent management. The study stressed the positive relationship between staff adoption of AI and return on assets, emphasizing the importance of providing additional skills to employees in financial institutions. AI adoption was also observed to have a positive impact on overall business performance by fostering a culture of innovation and continuous enhancement.

Objective of study

1. To provides basic concept of AI

2. To highlights the challenges and opportunities of AI in merchant banking

Research methodology:

Collection of data – Data collected from publication,articles,internet,newspaper etc.

Sources - secondary data and analysis is done in descriptive mannersss.

Opportunities of AI in Merchant Banking

Experience the game-changing impact of AI in the banking sector:

Enhanced Risk Management -

Empower your decision-making with data-driven insights: AI algorithms analyze vast datasets to identify patterns and foresee potential risks. Witness firsthand the precision of machine learning models in assessing creditworthiness by analyzing historical data and market conditions. Furthermore, AI systems revolutionize fraud detection by scrutinizing transaction patterns and flagging anomalies, translating to a remarkable 50% reduction in fraud losses, as reported by McKinsey in 2023.

Improved Customer Service -

Step into the future of personalized banking: AI paves the way for tailored financial products and services. Engage with cutting-edge chatbots and virtual assistants, fueled by natural language processing

(NLP), which deliver real-time assistance, elevating the customer experience. The AI in banking market is poised to skyrocket from $11 billion in 2023 to $30 billion by 2028, meeting the surging demand for personalized services. Additionally, 24/7 support is made possible by AI-powered chatbots, enabling seamless handling of routine inquiries and freeing up human agents to tackle more complex issues.

Operational Efficiency-

Redefine efficiency through automation: AI seamlessly automates repetitive tasks such as data entry, compliance reporting, and transaction processing, yielding reduced operational costs and minimal human error. Revel in the potential of AI-driven automation, with the 2024 Deloitte study indicating possible operational cost cuts of up to 40%. Moreover, AI tools optimize workflows and enhance decision-making processes, as exemplified by predictive analytics improving asset management strategies through accurate market trend forecasts.

Strategic Insights-

Unleash the full power of AI for market analysis: AI provides unparalleled insights into market trends, facilitating well-informed investment decisions for banks. Witness the tangible impact of AI in trading strategies, with the potential for up to a 20% increase in returns over traditional methods.

Challenges of AI in Merchant Banking

1. **Data Privacy and Security -**
- **Sensitive Data Handling:** The implementation of AI in banking entails managing substantial amounts of confidential information, prompting worries regarding the privacy and security of data. As per a survey conducted by IBM in 2023, 65% of financial organizations are apprehensive about the possibility of AI systems being jeopardized, which could result in data breaches.
- **Regulatory Compliance:** Compliance with regulations such as GDPR and CCPA can be challenging, as AI systems must be designed to protect personal data and ensure transparency in data handling practices.

2. **Ethical and Bias Concerns -**
- **Algorithmic Bias**: The use of AI models may inadvertently reinforce biases found in the training data, potentially resulting in unfair treatment of specific customer demographics. According to the Stanford Institute for Human-Centered AI, biased algorithms could lead to discriminatory lending policies and disparities in service delivery.

- **Ethical Dilemmas**: The ethical implications of employing AI include concerns about the transparency and accountability of decision-making. It is an ongoing challenge to guarantee that AI systems make decisions that are both fair and ethical.

3. **Implementation and Integration** -

- **Huge investment:** Implementing AI solutions demands a substantial investment in technology and expertise. For numerous banks, particularly smaller institutions, the initial expense of AI deployment can pose a barrier. According to a 2024 study by Forrester, the typical cost of AI implementation in banking can vary from $1 million to $5 million.

- **Integration with Legacy Systems:** Merging AI with current legacy systems can be intricate and time-intensive. Many banks encounter challenges when updating outdated infrastructure to accommodate new technologies.

4. **Talent and Expertise**

- **Skill Shortages:** Skilled professionals capable of developing, managing, and interpreting AI systems are in short supply. Banks are finding it challenging to locate qualified individuals due to the high demand for AI talent. According to the World Economic Forum, 70% of financial institutions struggle to recruit AI talent.

Conclusion

AI opens up a wide range of opportunities for merchant banking. These include the potential to improve risk management by using advanced algorithms to identify and assess risks more accurately and rapidly. AI can also transform customer service by facilitating personalized interactions and prompt responses to customer inquiries based on extensive data. In addition, the introduction of AI can result in significant operational efficiency improvements by automating manual processes and streamlining operations, leading to cost savings and enhanced productivity.

Furthermore, AI can offer invaluable strategic insights by analyzing complex datasets to identify trends, patterns, and opportunities that would be challenging to uncover using traditional methods. However, alongside these promising opportunities, there are various challenges that need careful navigation. Data privacy is a crucial consideration, and it is important to ensure that sensitive customer information is handled securely and ethically.

Ethical concerns also arise in the use of AI, especially in decision-making processes that may impact individuals or communities. Moreover, while the long-term benefits of AI implementation are substantial,

the initial costs and resource requirements can be significant. Additionally, there is a shortage of talent with the necessary skills to develop, manage, and optimize AI solutions within the merchant banking sector.

As AI technology continues to advance, it is essential for organizations to make ongoing efforts to effectively address these challenges and risks. By doing so, they can fully leverage the benefits that AI offers, ensuring the future success and competitiveness of merchant banking in an increasingly technology-driven landscape.

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