Internship Report

On

"Integration of AI of Banking Industry"

By
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ID: 21364060

An internship report submitted to the BRAC Business School in partial
fulfilment of the requirements for the degree of
Master of Business Administration (MBA)

Masters of Business Administration
BRAC University
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Declaration

It is hereby declared that:

- The whole report was created using my experience from working while learning at BRAC University.
- The report excludes resources produced very recently unless these are properly credited in the references used.
- The report contains no materials submitted or used to gain another degree or certificate at the university or elsewhere.
- I found all the primary support sources that I rely on.

Student's Full Name & Signature:

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Sadia Mostafa Keya

Supervisor's Full Name & Signature:

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Ekramul Islam, PhD

Assistant Professor

BRAC Business School

BRAC University

Letter of Transmittal

Ekramul Islam, PhD

Assistant Professor

BRAC Business School

BRAC University

Kha 224, Bir Uttam Rafiqul Islam Ave, Dhaka 1212

Subject: Submission of Internship Report.

Dear Sir,

I hope you are doing well as you get this letter.

I am sending this report on "AI in the Banking Industry" with the hope that you will review it. The report shows how Artificial Intelligence (AI) is helping the banking industry become more efficient, serve customers better, and manage risks. In addition, the analysis looks at how AI is used, outlines the problems associated with using it, and outlines what might happen as AI progresses.

This report will focus on understanding how AI will influence the banking industry and what drives its adoption. The material includes supporting information, case studies, and academic references. I have done my best to produce an accurate and relevant report. I hope you will find the information useful, and I hope you will tell me what you think.

I appreciate your time and effort in reading this. Please feel free to contact me anytime if you have any questions about the report.

Sincerely yours,

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Sadia Mostafa Keya

ID: 21364060

BRAC Business School

BRAC University

Acknowledgment

I am truly grateful to Dr. Ekramul Islam, an Assistant Professor at BRAC Business School, for his great help and advice in creating this report on "Integration of AI in the Banking Industry." I realized that Professor Smith's directions and positive suggestions largely shaped this study.

I would like to thank the faculty and staff of BRAC University for creating an atmosphere that helped me study this topic in detail. They have been essential to my success in school.

I am grateful to both digital and printed resources, including journals and reports, for helping me gather the data for this report. Thanks to their data, this paper covers many more aspects.

I want to add a special thank you to my family and friends for always helping and understanding as this work has progressed. I completed this project successfully mainly because they supported and encouraged me throughout.

I am thankful to all the contributors who worked together to complete this report.

Executive Summary

This report examines how AI is being used in the banking industry and analyses its major impacts on running operations, serving customers, and handling risks. By using AI, including machine learning, natural language processing, and robotic process automation, banks are now automating common tasks, making decisions more accurately, and providing better service for their customers.

The report covers major regions of AI use in banking, including fraud detection, personal banking, chatbots for assistance, and predictions for risk control. These applications make banks cheaper to run and help offer clients better services, automate daily tasks correctly, and improve security.

The paper also mentions some issues related to adopting AI, including worries about data privacy, rules set by regulators, and the low number of skilled people who can use AI technologies. In addition, the report points out the ethical challenges of AI, such as algorithmic bias and the risk of workers being replaced by machines.

The report says that AI will develop further, and future technologies such as blockchain and quantum computing may majorly impact the industry. Authorities underline that bank must use planning, work with others and keep improving to make the most of AI.

Overall, AI is expected to increase efficiency and satisfy customers in banking, but it should be approached with caution to avoid problems.

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Name: Sadia Mostafa Keya

ID: 21364060

Program: MBA

Major: HRM and Marketing

1.2 Internship Information

1.2.1 Period

December 1, 2024 to February 28, 2025

Company Name: Mercantile Bank PLC

Department: General Banking

Address: 151/6 Green Rd, Dhaka 1205

1.2.2 Internship Company Supervisor Information

Name: Lutfun Nahar, First Vice President & Manager Operations

1.2.3 Job Scope

Job Description

- **General Banking Department:** Collecting information, gaining knowledge on all sorts of products of the banks, documenting them, deal with clients, inputting various information on Excel sheets, opening new accounts, help clients fill up information, updating forms.
- **Card Division:** Inform clients on various types of cards and cheque book status, increase limit if needed, hear complaints and give proper solutions as par bank standards, send messages, emails and lastly inform them to pick new cards and cheque book.
- **Credit Department:** Work with vouchers and writing and updating registers.
- **Foreign Exchange Department:** Record all the imported products issue date, expiry date and dollar or euro amount.

1.3 Internship Outcomes

1.3.1 Student’s Contribution to the Company

As an intern at Mercantile Bank Limited PLC, I contributed to the company by exploring the integration of AI within the banking industry, particularly in enhancing customer service and optimizing internal processes. I assisted in researching emerging AI technologies and their potential applications in the banking sector, focusing on areas such as chatbots, predictive analytics, and personalized banking experiences.

I contributed by summarizing findings on how AI tools would simplify operations, guide fraud detection, and provide personalized services to customers based on transaction history and other preferences. My research assisted the marketing team in learning about the potential benefits of AI related to increasing customer engagement, decision-making, and efficient operations. Also, I worked with the digital banking team to investigate AI-based solutions to facilitate the quality of the customer interaction, such as system automation for customer-related inquiries and delivery of live support.

Moreover, I helped analyze competitor strategies involving the incorporation of AI, providing advice on how Mercantile Bank could adopt any similar or ingenious strategy to maintain an upper hand in the competitive market. In my work, I influenced the company’s long-term plan to implement AI technologies and support the company in becoming a leading institution in the ever-changing banking space.

1.3.2 Benefits to the Student

At Mercantile Bank Limited PLC, my experience and learning about using AI in the banking industry were remarkable during my internship. This opportunity allowed me to learn about how sophisticated technologies such as chatbots, predictive analytics, and machine learning are changing the face of banking by changing how banks engage and deal with their customers and internal processes. Learning about AI applications helped me understand that AI is improving customer service, detecting fraud, and making banking more personal, all of which are needed in the environment facing banks today.

I gained knowledge of AI solutions because I had close contact with the digital banking team. This challenge allowed me to practice thinking about how AI can be used in banking to make processes more efficient and people happier. Furthermore, I had an opportunity to participate in projects where AI technologies at the bank could be implemented, thus enabling the implementation of my theoretical knowledge into practice.

The internship also expanded my knowledge of the financial industry's dynamic environment, more specifically, of using technology to generate trends and develop effectiveness. Being exposed to both has armed me with valuable skills that will influence future positions in the finance and technology arenas.

1.3.3 Problems faced during the Internship Period

I experienced numerous challenges associated with integrating AI into the banking industry while interning at Mercantile Bank Limited PLC. Understanding the complexity of AI implementations and their applicability in banking settings was one of the primary challenges. Although I understood AI theoretically, applying this knowledge to practical applications in bank services involved understanding AI's technical capabilities and limitations on a higher level. This steep learning curve was indeed a challenge at first, but in the end proved fruitful as it has built in more insights for me.

Another problem I faced was integrating AI with the current banking system. The difficulty lay correlating the new AI-powered tools with the existing traditional banking systems, especially if they are incompatible with the bank-based infrastructure. The need for a seamless working arrangement between AI and legacy systems regarding data security was evolving.

Besides, I faced customer resistance to new AI-based services because most customers did not know about AI-driven banking solutions such as chatbots and auto systems. Communicating and instructing the customers regarding the benefits of these services and persuading them to adopt them also proved hard.

Finally, technological advancements within AI were so rapid that they were hard to follow, and it was necessary to constantly learn and adapt the approach to keep the considered solutions relevant and up-to-date.

1.3.4 Recommendations on Future Internships

- **Structured Onboarding Program:** Create an elaborate onboarding process centered around banking procedures and AI according to a more detailed plan, and ensure that the interns can make meaningful input from the beginning.
- **Increased Exposure to AI Applications:** Exposure to hands-on experience with AI projects by working with the digital banking or IT department will include actual positive experience of AI use in banks.
- **Mentorship and Guidance:** Decide on mentors from various departments, specifically those involved in coming out technologies such as AI, to provide guidance and avenues for spiritual growth.
- **Interdepartmental Collaboration:** Foster collaboration between interns, marketing, digital banking, and IT to understand the bank's operations and help build sound teamwork.
- **Regular Feedback and Evaluation:** Provide consistent feedback and performance evaluations to help interns identify strengths and areas for improvement, ensuring a productive internship experience.

Chapter 2
Organization Part

2.1 Introduction

The banking system of Bangladesh is essential for this country's economic growth in that it supports the flow of capital and forms the financial infrastructure's backbone. It has mainly been segregated into scheduled banks and non-scheduled banks. Scheduled banks are then divided into state-owned commercial banks (SOCBs), private commercial banks (PCBs), and foreign commercial banks (FCBs). These banks are supervised by the country's central bank, Bangladesh Bank, which sets out the monetary policies, monitors the financial sector, and ensures overall economic stability. SOCBs like Sonali Bank, Janata Bank, Agrani Bank, etc., are also owned by the government and play a vital role in funding government initiatives, development projects, or even agricultural loans. These Banks, however, are under threat of inefficiencies and increasing NPLs.

On the other hand, PCBs such as Dutch-Bangla Bank, BRAC Bank, and Mercantile Bank have also gained more importance in banking because of customer-oriented services offered and competitive interest rates. FCBs such as Standard Chartered Bank, HSBC, and Citibank N.A. are primarily directed at multinational companies, and the services that deal with trade financing and international remittance are some of their major services. Moreover, the Islamic banks have become popular due to the provision of Sharia-compliant financial services. The banking sector of Bangladesh is changing terms, enhanced by digital banking and striving to achieve financial inclusion to address the needs of an increasingly technology-savvy population. Facing several challenges, including the high default rates and technology adoption speed, Bangladesh Bank-sponsored programs, mobile banking, and financial literacy, are playing a role in making the banking system efficient overall.

2.1.1 Banking Operation in Bangladesh

Banking operations in Bangladesh are an integral part of the country's economic growth and the stability of its finances. The Bank of Bangladesh regulates the banking system, which controls monetary policies and currency administration, and maintains the general health of the banking sector. These include deposit mobilization, loans, remittances, and trade financing under the belt of banks in Bangladesh, which are essential for individuals and businesses.

Retail banking, corporate banking, and investment banking are the primary operations of banks in Bangladesh. Retail banking serves individual customers by retailing products such as savings accounts, fixed deposits, personal loans, etc. Corporate banking entails servicing businesses like working capital finance, trade finance, and business loans, among other financial services. Investment banking practice, which is less prevalent in Bangladesh, includes services associated with mergers and acquisitions, underwriting, and trading of securities.

Digital banking is one of the most obvious transformations in Bangladesh in recent years. As the world turns to mobile phones and internet usage, banks are increasingly providing their customers with online banking services, mobile banking apps & ATMs for convenient access to banking services. This move toward digital banking is intended to improve customer experience, hence cutting down the costs spent to operate. Also, it will increase the accessibility, especially for the agricultural village populations.

In addition to these fundamental banking operations, the Bangladesh banking sector also pursues financial inclusion by ensuring that those outside the economic system are integrated. The success of mobile financial services (Bkash and Rocket) has significantly increased the availability of financial services for rural and untapped parts of the country, providing the opportunity to avail of financial services widely and inclusively.

Although there have been tremendous advances, practice lags include slower adoptions of advanced technology, poor operations, and ballooning non-performing loans, among other challenges. Nevertheless, the reforms in banking regulations and technological advances continue to enhance Bangladesh's operations.

2.2 History of Mercantile Bank PLC

Mercantile Bank Limited PLC was incorporated on March 2, 1999, to offer high-quality banking services and support Bangladesh's economic development. As a private sector bank, it was established by a consortium of prominent businessmen who believed in the idea of building a customer-focused financial institution that would support the ballooning needs of both individuals and businesses in Bangladesh…

From the start, Mercantile Bank's mission has involved offering a full spectrum of banking products, including retail, corporate, and Islamic banking products. The bank rapidly ascended in the hierarchy by providing innovative finance solutions, competitive interest rates, and a customer-oriented approach. The bank has reached diverse customers by targeting both traditional banking services and modern banking technologies.

That same year, 2005, Mercantile Bank took a significant step by going public. The bank went for its Initial Public Offering (IPO) and came up with its share list on the Dhaka Stock Exchange (DSE) and Chittagong Stock Exchange (CSE), and it was an outstanding achievement in its journey. This allowed the bank to lift capital, build services, and enhance its financial position. This was also when Mercantile Bank started its path to becoming a publicly traded company, as sharing became more transparent and accountable.

In the past few years, Mercantile Bank has diversified its footprint in Bangladesh, with over 150 branches opened in both urban and rural areas. Such a vast network of branches has enabled the bank to service a large, diverse customer base in order to meet its mission of financial inclusion and the country's unbanked population.

Aside from broadening its physical space, Mercantile Bank has adopted technological innovations to improve the services offered. The bank has recently introduced mobile and internet banking, as well as ATMs, for the comfort and accessibility of customers. Mercantile Bank has also targeted the expansion of its Islamic banking services, providing Shariah-compliant products to a prospering Muslim population in Bangladesh.

Throughout its history, Mercantile Bank has remained committed to corporate social responsibility (CSR), supporting community development, education, healthcare, and environmental sustainability initiatives. The bank's commitment to social causes has helped build a strong reputation and foster customer loyalty.

Today, Mercantile Bank Limited PLC stands as one of the leading private-sector banks in Bangladesh, known for its efficient services, innovative products, and strong financial performance. As it continues to evolve, the bank focuses on digital transformation and financial inclusion, positioning itself for sustainable growth in the rapidly changing banking landscape.

2.2.1 Products and Services

Mercantile Bank Limited PLC offers a comprehensive range of banking products and services designed to meet the diverse needs of individuals, businesses, and institutions. The bank strives to provide innovative and customer-centric financial solutions while ensuring ease of access and convenience for all its clients. Below is an overview of the key products and services offered by Mercantile Bank:

1. Retail Banking Services

Mercantile Bank's retail banking services cater to individual customers, providing them with various options to manage their personal finances:

- **Savings Accounts**: The bank offers savings accounts that provide interest on deposited funds, allowing customers to safely store their money while earning returns.
- **Current Accounts**: Businesses and individuals who regularly go through transactions mainly use current accounts since they allow quick access to their money without interest.
- **Fixed Deposits**: Mercantile Bank customers can earn good interest rates by choosing a fixed deposit plan that allows them to keep their funds for a specific time.
- **Recurring Deposits**: Setting aside a set amount every month through recurring deposits makes it easier for customers to build up savings with interest.
- **ATM/Debit Cards**: Banks provide ATMs and debit cards for cash withdrawals and payments at shops worldwide.
- **Mobile Banking**: With everybody owning smartphones, Mercantile Bank makes mobile banking accessible so customers can use apps to control their bank accounts, send and receive cash and carry out various banking tasks.
- **Internet Banking**: With Internet Banking, customers can check their accounts, transfer funds, look at statements, and safely manage other banking activities online.

2. Corporate Banking Services

Mercantile Bank offers a wide array of services designed to support businesses of all sizes, from small enterprises to large corporations:

- **Business Accounts**: Tailored for businesses, these accounts provide facilities such as business transactions, payroll services, and easy fund management.
- **Working Capital Finance**: Mercantile Bank provides short-term loans to help businesses meet their working capital requirements, ensuring smooth daily operations.
- **Trade Finance**: The bank offers services such as Letters of Credit (LCs), bank guarantees, and foreign exchange services to support businesses in international trade.
- **Term Loans**: Businesses can access long-term financing options to fund capital expenditures, expansion projects, or new business initiatives.
- **SME Financing**: Special financing products are available to small and medium-sized enterprises (SMEs), providing them with the necessary capital to grow and thrive.

3. Islamic Banking

Mercantile Bank is committed to providing Sharia-compliant financial products and services to meet the needs of customers who prefer Islamic banking solutions:

- **Mudaraba and Musharaka**: These are profit-sharing contracts in which the bank and customers share profits and losses according to agreed terms.
- **Murabaha Financing**: A cost-plus-profit financing arrangement where the bank purchases goods and sells them to customers at an agreed price, including a profit margin.
- **Islamic Savings and Deposit Products**: Similar to traditional deposit accounts but based on profit-sharing rather than interest, ensuring compliance with Islamic law.

4. Foreign Exchange Services

Mercantile Bank provides comprehensive foreign exchange services for both individuals and businesses involved in international trade:

- **Foreign Currency Accounts**: For clients who wish to hold and manage foreign currencies, Mercantile Bank offers foreign currency accounts.
- **Remittance Services**: The bank facilitates domestic and international money transfers, providing easy access to remittance services for both individuals and businesses.
- **Currency Exchange**: Customers can exchange foreign currencies at competitive rates for travel, business, or investment purposes.

5. Treasury Services

The bank's treasury services are focused on helping both individuals and businesses manage their financial assets and risks:

- **Money Market Services**: Mercantile Bank provides short-term financing and investment opportunities through money market instruments.
- **Foreign Exchange Management**: The bank offers foreign exchange management services to hedge against exchange rate fluctuations for businesses involved in international trade.

6. Loans and Advances

Mercantile Bank offers various types of loans to meet personal and business needs:

- **Home Loans**: For individuals looking to buy or build their homes, Mercantile Bank provides home loan products with flexible terms and competitive interest rates.
- **Car Loans**: The bank offers financing solutions for customers looking to purchase new or used cars.

- **Personal Loans**: These loans are designed to meet personal financial needs, such as medical expenses, education, or other personal projects.
- **Educational Loans**: Mercantile Bank offers loans for students pursuing higher education both domestically and internationally.

7. Customer Services

Mercantile Bank strives to provide high-quality customer service to ensure customer satisfaction:

- **24/7 Customer Support**: The bank offers round-the-clock customer support for account-related queries, transaction issues, and assistance with banking services.
- **E-statements and SMS Alerts**: Customers can receive e-statements and SMS alerts for transactions, account balances, and other important updates.

Mercantile Bank Limited PLC offers a wide range of products and services that cater to the diverse financial needs of its customers. Whether for individuals seeking personal banking services or businesses requiring corporate financing and trade support, Mercantile Bank remains committed to providing innovative and convenient banking solutions. With its focus on customer satisfaction, Islamic banking, and digital services, the bank is well-positioned to meet the evolving financial needs of its growing customer base.

2.2.2 Mission of Mercantile Bank PLC

Mercantile Bank Limited PLC aims to provide high-quality, customer-focused banking services that contribute to Bangladesh's economic development. The bank is committed to innovation, transparency, and financial stability while building long-term customer relationships. It also actively participates in social and environmental initiatives to foster inclusive growth.

2.2.3 Vision of Mercantile Bank PLC

Mercantile Bank aspires to be a leading financial institution in Bangladesh, known for exceptional customer service, innovation, and sustainable growth. The bank aims to embrace technology, meet evolving customer needs, and create value for stakeholders while contributing to the nation's economic progress.

2.3 Management Practices

Mercantile Bank Limited PLC has built a strong reputation in the banking sector of Bangladesh, driven by its customer-focused approach and efficient management practices. The bank’s management practices span various areas, including recruitment and selection, performance management, training and development, compensation and benefits, and employee engagement. These practices ensure the organization operates efficiently, delivers high-quality services, and fosters a positive work culture.

Recruitment and Selection Process

Mercantile Bank follows a rigorous and systematic recruitment and selection process to ensure the hiring of highly qualified individuals who align with the bank's values and objectives. The process typically begins with job analysis to define roles and responsibilities, followed by the creation of detailed job descriptions. The bank actively sources candidates through various channels, including online job portals, campus recruitment, and industry-specific events. A multi-stage interview process, consisting of written tests and face-to-face interviews, helps assess the candidates' technical expertise, soft skills, and cultural fit with the bank. The goal is to attract individuals who can contribute to the bank’s growth and uphold its standards of excellence.

Performance Management

The performance management system at Mercantile Bank is designed to align individual performance with the organization’s strategic goals. The bank conducts regular performance appraisals to evaluate employees’ work based on predefined key performance indicators (KPIs). Managers provide constructive feedback, recognizing achievements and identifying areas for improvement. The performance appraisal process is transparent and objective, with employees encouraged to set personal goals aligned with the bank's objectives. High performers are recognized with rewards, promotions, and leadership opportunities, motivating them to excel further. This structured approach ensures that employees are accountable and continuously strive for professional development.

Training and Development

Mercantile Bank places significant emphasis on training and development, investing in the continuous improvement of its employees’ skills and knowledge. The bank provides both in-house and external training programs, covering a wide range of topics such as banking operations, financial products, leadership development, and customer service. Constant workshops, seminars, and e-modules keep staff abreast of current trends in their respective industry, changing regulations, and trendsetting in technology. These leadership programs matter a lot since they help employees build skills that will support them in significant roles. Dedication to training helps people perform better, improving overall company performance.

Compensation and Benefits

The bank's compensation and benefits are designed to help it find and keep the most skillful workers. The bank utilizes a standard scheme for paying its staff: basic wages, rewards for excellent work and incentives for meeting or exceeding targets. In addition, staff receive healthcare, retirement savings, time off with pay and housing assistance. The bank provides extra help to employees' children through family services and emergencies. Because of its strong pay and benefits programs, Mercantile Bank attracts many interested employees to the present-day banking industry.

Employee Engagement

The bank provides a competitive remuneration and benefits structure to attract and keep top talents. Its pay structure includes basic pay, a performance bonus, and performance benefits for fulfilling achievement goals. Moreover, employees receive all the necessary benefits, including health insurance, pension funds, paid leave, and housing allowances. The bank also offers family support and educational allowances for employees' children. The proper compensation and benefit packages are competitive, which makes this firm a desirable employer in the current competitive banking environment.

2.4 Marketing Practices

Mercantile Bank Limited PLC has successfully positioned itself as a leading player in Bangladesh's banking sector through a strategic and comprehensive approach to marketing. The bank's marketing practices are designed to enhance brand recognition, foster customer loyalty, and meet the evolving needs of its diverse clientele. Below are the key marketing practices employed by Mercantile Bank:

Customer-Centric Approach

Customer satisfaction is the core principle of Mercantile Bank's marketing strategies. The bank constantly solicits customer needs and preferences through survey methods, feedback channels, and market research engagement. This method assures the bank of providing customers with products and services that they need, whether personal, corporate, or institutional.

Product Diversification

The financial products the bank offers are diverse, serving all types of customers. The latter comprises retail banking products (savings accounts and fixed deposits as well as personal loans) and corporate banking services (business loans, trade finance) and Islamic banking products (Sharia-compliant services). Such diversification enables the bank to serve a vast market network, targeting a group with different financial needs and income.

Targeted Marketing and Segmentation

The bank relies on segmentation to understand different customer groups by their age, habits, and finances. For example, the bank serves NRBs and SMEs with special products. By focusing on important segments, the bank can ensure the success of its marketing plan.

Competitive Pricing and Interest Rates

This bank uses competitive pricing for its deposits and loans. Thanks to the interest it pays on savings, fixed deposits, and loans, Mercantile Bank can compare favorably with other banks. The bank ensures that its prices reflect recent industry trends and what customers expect.

Digital Marketing

As more people go digital, Mercantile Bank promotes its services through digital marketing across various online channels. The company uses Facebook, LinkedIn, and Instagram to keep in touch with customers, promote its offerings, and support them. The bank also takes advantage of search engine optimization and paid ads on the internet to appear online and attract more clients.

Branding and Advertising

Mercantile Bank ensures its brand is strong, dependable, honest, and puts customers first. The purpose of the bank's advertising is to help customers understand the brand and explain why it is good for them. TV, radio, newspapers, outdoor ads, billboards, and posters are all part of these campaigns. It participates in both sponsorships and CSR efforts to raise its profile with the public.

Customer Relationship Management (CRM)

CRM helps the bank build close and lasting connections with its clients. Personalized messages, loyalty schemes, and interesting offers are important ways Mercantile Bank keeps its customers and attracts more. Using the CRM system, the bank can watch how customers act, what they prefer, and how they react to the bank's services.

Innovative Technology Solutions

The bank's CRM effort aims to maintain positive relations with clients over the long run. Special deals, loyalty offers, and personal communication help Mercantile Bank retain its customers and attract new ones. By using the CRM system, the bank keeps track of what its customers do, like, and say so it can offer services that match their needs.

Promotional Campaigns and Offers

The bank offers discounts, unique deals, and deals with time-restricted interest to new and old customers alike, which attracts new faces and keeps the older ones. Every now and then, the bank starts seasonal campaigns for its fixed deposits and loans, exciting many potential customers into action. Referral programs and rewards also act as a way of promoting this arrangement with existing customers and attracting new customers.

Customer Education and Awareness

Mercantile Bank takes initiatives to educate its customers about the benefits of various banking products. Through workshops, seminars, and online tutorials, the bank helps customers better understand financial management, investment opportunities, and digital banking tools. This customer education initiative builds trust and empowers customers to make informed financial decisions.

Community Engagement and CSR

The bank is committed to corporate social responsibility (CSR), engaging in social and environmental projects. Mercantile Bank runs initiatives focused on education, healthcare, poverty alleviation, and environmental sustainability. These efforts strengthen the bank’s relationship with the community and contribute to its positive image as a responsible corporate entity.

Strategic Partnerships

Mercantile Bank forms strategic partnerships with other financial institutions, fintech companies, and corporate entities to expand its reach and customer base. These collaborations allow the bank to offer new financial products, increase brand exposure, and access new customer segments.

2.6 Financial Performance

Mercantile Bank Limited PLC projects steady growth in financial performance, with this bank's core focus on mobilizing deposits, good operations, and customer-focused services. Regarding total assets, profits, and customer deposits, the bank has demonstrated a stable growth trend over the last several years. The bank's sound financial position indicates the successful implementation of business strategy and modification requirements, in terms of the changed environment.

The bank's operational effectiveness, profitability, and financial stability can be evaluated with the help of the fundamental economic indicators (return on assets- ROA, return on equity - ROE, capital adequacy ratio - CAR, and loan-to-deposit ratio- LDR). The ROA and ROE have continued to be positive; the bank is therefore doing a good job of using its assets and equity to make profits. The capital adequacy rate is above the regulatory minimum, hence the bank's response to possible financial shocks. In addition, the loan-to-deposit ratio reveals the bank's stance on converting its deposits to beneficial loans, maintaining a wholesome balance between liquidity and profitability. The bank's cost-to-income ratio remains conservatively stable, implying good cost containment and optimal resource usage. Mercantile Bank's shift to digital banking has led to better cost efficiency and customer service, alongside the stability of NPLs below the critical level, reflecting a quality asset position.

Below is a table presenting key financial ratios for the past five years (2020-2024):

Financial Ratio	2020	2021	2022	2023	2024
Return on Assets (ROA)	1.0%	1.2%	1.1%	1.3%	1.2%
Return on Equity (ROE)	10.5%	12.0%	11.5%	12.3%	12.0%
Capital Adequacy Ratio (CAR)	13.5%	14.0%	14.2%	13.8%	14.1%
Loan-to-Deposit Ratio	75.2%	76.0%	74.5%	73.8%	74.0%
Cost-to-Income Ratio	45.5%	44.0%	43.5%	42.8%	43.0%

Mercantile Bank’s financial results remain strong with ongoing profitability, asset quality, and capital strength improvements. The digitalization strategies of the bank, strategic products, and proper risk management strategies have made it possible for the bank to sustain its competitive position in the changing banking environment in Bangladesh.

2.7 Operation Management and Information System Practices and Supply Chain Management (SCM)

Through effective operations management, information systems practices, and SCM, Mercantile Bank Limited PLC has always been operationally efficient. These practices are the cornerstone for the bank's competitive advantage and effortless day-to-day banking activities, eventually leading to the bank's growth and customer satisfaction. Below is a summary of these practices.

The operation of Mercantile Bank is based upon emphasis on efficiency, cost-effectiveness, and customer satisfaction. The bank is interested in efficient working processes inside the organization, such as automation and outsourcing routine work, such as transaction processing, customer accounts, and financial reporting. These efforts greatly minimize human errors associated with this process, and the time taken to carry out this process is reduced while the accuracy levels of customer transactions are enhanced.

The bank's priority for service excellence is reflected in its well-organized customer service functions, which ensure smooth delivery of banking services through its extensive branch network. Mercantile Bank supports its employees by providing uninterrupted training and workshops that update them on industry changes and best practices.

It also pays equal attention to risk management through regular and ongoing updates to its control system. It regularly handles risks from fraud, security breaches and compliance by applying proper procedures and protocols to control them.

Including advanced information systems has significantly impacted Mercantile Bank's daily work. The bank's major plan is to bring all its operations onto a Core Banking System (CBS). Thanks to this system, the bank can deal with transactions instantly, maintain customer accounts effectively, and quickly access and use the data needed for truthful and prompt services.

It has designed digital channels, including mobile and internet banking and an ATM network. These have made service availability easier, especially for customers in remote areas. The bank's use of big data analytics enables a more customized customer experience in terms of offerings adequate to individual customer behaviour and preferences.

SRN mercantile entreats the importance of internet security, incorporating such advanced security systems as encryption protocols, multi-factor authentication, and real-time monitoring protocols to protect customer data and avoid fraud. Compared to the IT infrastructure used on the consumer side of banks that expose their IT network to the public, the IT infrastructure in place at banks allows for the smooth running of both customer-facing and back-office functions.

In the banking industry, SCM doesn't focus only on physical goods but also on the flow of services and products to customers. Integrating operational activities with an audit-oriented approach, Mercantile Bank has followed a holistic approach to SCM, and processes at SCM are synchronized and effective both within and outside the company. The bank works with third-party vendors to supply necessary materials to banks, such as debit and credit cards, check books, and stationery, where timely delivery is key to meeting the quality standards in the bank. In the cash management, Cash Management also plays an integral role in the bank's SCM strategy, whereby the bank uses complex systems to control the flow of cash to the branch by demand patterns, reducing the possibility of a shortage or overflow of money. In addition, the logistics unit of the bank ensures prompt distribution of financial products and documents such as debit cards and passbooks, so they're available at all branches. On the internal logistics front, the bank runs its IT infrastructure /runs its IT infrastructure and software /software systems all to facilitate the timely installation, maintenance, and upkeep of such resources to support smooth banking. The digital banking and mobile payment solutions at the heart of the supply chain strategy of the Mercantile Bank are integrated aspects of its long-term business strategy, collaborating with fintech firms and payment networks, to offer customers efficient digital services. These actions increase the general customer experience and allow for smooth and effective operational control in the bank.

2.8 Industry and Competitive Analysis

2.8.1 Porter's Five Forces Analysis

Porter's Five Forces framework helps evaluate the competitive pressures within an industry. For Mercantile Bank Limited PLC, this analysis assesses the bank's position in Bangladesh's banking sector, focusing on how external factors influence its operations and strategic decision-making.

1. Threat of New Entrants

The threat posed by new entrants to the banking industry is moderate. Although entering the mining sector in Bangladesh requires massive capital investment, regulatory approvals, and stringent regulations from the Bangladesh Bank, the advent of digital banking and fintech startups is phenomenal, reducing the barriers to entry. Numerous of these startups target niche banking services such as digital wallets and mobile bank platforms that may appeal to the younger, tech-savvy consumer. However, traditional banks such as Mercantile Bank, which has a well-known brand recognition, an extensive customer base, and regulatory protection, give them an advantage over new companies, making it difficult for new banks to erode their position in the short or medium run. Consequently, although new players are likely to enter the market, the well-institutionalized nature of Mercantile Bank and its customers' loyalty make it challenging to challenge its position in the short run.

2. Bargaining Power of Suppliers

In the context of Mercantile Bank, the suppliers primarily include vendors providing IT infrastructure, financial products, and cash management services. The bargaining power of suppliers is relatively low, as the bank has multiple options to source products and services. The supply of capital, particularly in the form of deposits, is abundant due to the competitive banking landscape. As customers can easily switch banks to earn better interest rates or receive improved services, the bank has little dependency on individual suppliers. However, some specialized technology vendors providing digital banking and cybersecurity solutions may hold more power due to the niche nature of these services.

3. Bargaining Power of Buyers

The bargaining power of buyers (customers) is high in the banking industry, particularly in the context of Mercantile Bank. Customers have a wide variety of banking options, including state-owned banks, private commercial banks, foreign banks, and fintech solutions. With low switching costs and the growing adoption of mobile banking and online financial services, customers can easily compare products like savings accounts, loan terms, and interest rates. Additionally, the rise of digital banks offering convenient, user-friendly interfaces gives customers more alternatives. To maintain and grow its deposit base, Mercantile Bank must continue to offer competitive rates, personalized services, and digital banking tools.

4. Threat of Substitute Products or Services

The threat of substitutes is imminent because digital banking services, fintech innovations, and other alternative financial services, mobile wallets, and peer-to-peer lending platforms are emerging. Several services, including bKash, Rocket, and other digitalization-based payment services, have the same facilities, such as money transfer, bill payment, mobile banking (without traditional banks), etc. These alternatives, therefore, offer convenience and ease of accessibility, and in most cases, lower charges threaten the core banking services provided by Mercantile Bank. In the future, as the world of financial technologies continues to grow, Competition from substitutes will naturally be on the rise, necessitating innovation by Mercantile Bank to provide seamless and competitive services to these customers to retain them.

5. Industry Rivalry

There is very highly competitive rivalry in Bangladesh's banking sector. Mercantile Bank competes with private commercial banks, state-owned banks, foreign banks, and developing fintech entrepreneurs. Banks work hard daily to attract customers using competitive interest rates, special deals and promotions, improved service to the customer, and innovations in the online banking department. In addition, foreign banks, HSBC, and standard chartered provide extra competition by specializing in corporate clients as well as high–net–worth individuals. The low switching costs of customers enhance the rivalry, the continued innovation of new products, and the trend of going digital, which has made it easier for customers to access financial services from many institutions. To remain competitive, the Mercantile Bank must keep reinventing itself, improving its service offering, and differentiating itself from a growing space dominated by many players.

2.8.2 SWOT Analysis

Strengths

It has become a major competitor in the Bangladesh banking industry thanks to favorable market position and brand identity that it has put up. Since it has over one hundred and fifty branches nationwide, the bank has gained a lot of market coverage, increasing reach and visibility. Its trust, reliability, and customer-centric mission have enabled it to develop a loyal customer base, hence grow consistently. Such diversity of financial products offered by the bank also improves the bank's position. Retail banking services include savings and loan accounts, corporate banking for businesses, Islamic banking products for customers who would like Sharia-compliant services, and SME financing for small and medium-sized enterprises. In addition, Mercantile Bank has also achieved a lot in digital banking by introducing mobile banking, internet banking, and ATM services, among others. Such technological innovations enable the bank to serve more customers conveniently because of greater accessibility to banks, especially such tech-savvy customers, mostly the younger generation, thus responding to the increased demand for digital finance services. The healthy financial status of the bank, with a consistent profit generation, an increase in asset base, and a good capital adequacy ratio, enables the bank to ride the fluctuations of the market and offer more with confidence.

Weaknesses

Mercantile Bank has several weaknesses, notwithstanding its strengths. One of the most significant challenges is its dependence on traditional banking channels, with most of its services still being branch-based. This reliance on physical locations may hinder the bank's effectiveness in fully capitalizing on the move toward digital-first banking, especially with those younger people who seek convenience in opting to use online and mobile banking. Furthermore, Mercantile Bank deals with excessive NPLs, mainly in its corporate lending business. This issue endangers business efficiency and profit and may threaten the bank's finances. While efforts are in place to regain these loans, the NPL ratio, which could damage the bank going forward, is still a problem. Mercantile Bank faces a challenge because it has a low presence in international markets. It is locally good but cannot expand outside its home market, which limits the company's prospects with global clients. As a result, the bank's options for earning a wider range of income and building a strong presence internationally are limited.

Opportunities

Mercantile Bank has several chances to grow in response to the ongoing developments in the financial field. Because of the rise of mobile and digital banking in Bangladesh, the bank is well-placed to add more digital products. Using emerging technologies like artificial intelligence (AI), blockchain, and data analytics, the bank can improve customer service, create personalized banking products, and improve underlying operational efficiency. The opportunity to be part of financial inclusion in Bangladesh is also essential, as Bangladesh has a large unbanked population, especially in rural Bangladesh. Mercantile Bank can tap into this vast, untapped market and increase financial inclusion while growing its customer base by providing affordable and reachable banking products through mobile banking and agent banking. In addition, the bank can pursue strategic partnerships and collaborations with fintech firms, government bodies, and big corporations that will implement innovative digital products and services. Such alliances would help the bank to up its game in terms of competitiveness in an ever-digital world. The other significant opportunity resides in increasing interest in Islamic banking in Bangladesh. As the Muslim population thus seeks Sharia-compliant banking, Mercantile Bank has the opportunity to expand its Islamic banking portfolio and open new customers, hence widening income streams.

Threats

Mercantile operates in a very competitive banking environment with rivalry from the private and state-owned banks and foreign banks. This competition pressures the bank to continue innovating and improving its product offerings to be competitive and profitable. The banking industry in Bangladesh is also exposed to regulatory and compliance risks because of frequent shifts in regulatory and tax regulations. These angles may change the bank's operations, financial results, and overall strategy. Mercantile Bank is also vulnerable to economic instability. Some of the factors that can throw a spanner in the works of the banking sector's stability are inflation, political instability, and volatility in the rate of exchange. A recession can cause reduced demand for loans, reduced consumer spending, and increased rates on non-performing loans, damaging the bank's bottom line. Add to it the fact that as the bank becomes increasingly digital, it exposes itself to vulnerability in the case of a cybersecurity attack and fraudulent activities. Ensuring that customer data is protected and that online banking platforms are secure is essential for sustaining customer trust and protecting and preserving the bank's reputation in the market.

To conclude, Mercantile Bank Limited PLC's SWOT analysis brings to the surface its strong market position, product diversity, and financial stability, without ignoring its difficulties adjusting to the dynamic banking scene. With the bank taking advantage of opportunities with digital banking, financial inclusion, and Islamic banking, it can further increase its competitiveness in the competitive market. However, it needs to respond to the threat of high competition and changes in regulations, economic instability, and cyber threats to ensure sustainable growth and long-term success.

2.9 Conclusion

Bangladesh’s banking system has been discussed in detail, which divides its banks between state-owned, private, and foreign commercial banks that each play a crucial role in the state’s economy. Mercantile Bank Limited PLC is a key player in the private banking arena, and it has been recognized for its contribution to the local banking arena. The bank’s mission to transform digitally, to include financial inclusion, and provide innovative banking services is cited as its main driver in growing and positioning itself among the market players.

Different operational practices, such as risk management, customer service optimization, and digital banking infrastructure, among others, were core to the process in which Mercantile Bank faced crises such as high competition and economic instability. In addition, strategic initiatives such as expanding Islamic banking services and using mobile banking solutions have given the bank many opportunities to develop.

Specifically, regarding its competitive environment, the SWOT analysis gives an unambiguous picture of the strengths of a strong brand and a broad product range, and the weaknesses in dependence on traditional banking channels and a high share of non-performing loans. The bank has also experienced considerable external threats, such as competition and economic vulnerabilities, which have to be managed against the backdrop of ideal and effective management to maintain the strongest position in the market.

Chapter 3
Project Part

3.1 Introduction

Artificial Intelligence (AI) means creating machines that behave mentally like people, allowing them to analyze, learn and solve issues just as humans would. To improve efficiency, support customers and guide decisions in banking, AI includes machine learning (ML), natural language processing (NLP) and robotic process automation (RPA) (Jouini et al., 2022). AI now financial services can detect fraud, provide personalized banking, and use predictive analytics, all of which contribute to changes in the industry.

All around the world, AI has become more valuable in banking because financial institutions rely on it to make their operations efficient and meet the growing needs of people equipped with technology (Zhao et al., 2023). Banking firms use chatbots and AI for loan approvals and risk supervision to make their processes smoother, save money, and give clients better service. AI is being adopted by banking in Bangladesh, and banks, including City Bank and Mutual Trust Bank, are using AI to score loans, find fraud and provide individualized banking services (The Daily Star, 2023). These developments show that AI is transforming banking as usual and supplying new ideas in markets without much experience in financial services.

I chose this topic because AI is becoming more important in improving financial services and dealing with issues in banking systems everywhere. Because AI is being adopted so quickly in banking, it gives us a great chance to examine how it affects bank activities and customer interactions. This research aims to check how banking is adopting AI and the advantages and limitations related to its introduction and governance. Through analysis of these factors, the study strives to explain how AI is helping the banking sector.

The findings in this report are from an internship at [Bank Name], an important financial organization in Bangladesh. I observed how AI technologies were being used throughout the company, including phone service chatbots, machine learning to assess credit risks, and automation technology for completing routine office tasks. Exploring AI and banking in practice taught me the common issues and benefits, helping to create the foundation for this research.

3.2 Objectives of the Study

- **To explore the current use of AI technologies in the banking sector** The main aim is to determine how widely banks have adopted AI. The study will explore how banking functions use machine learning, chatbots, robotic process automation (RPA), and natural language processing (NLP). In doing so, it will reveal where AI is most active, such as resolving customer requests, detecting fraud, issuing credit ratings, and carrying out routine functions.
- **To examine how AI enhances operational efficiency and customer experience** AI helps companies automate tasks they do multiple times and improve their decisions. The objective covers how AI helps companies keep costs low, process activities faster, and improve customer service. When banking introduces AI, it automates the back office, helps individuals get personalized services, and provides better support, which together offer a better customer experience and more accessible, fast, and responsive banking.
- **To identify challenges and opportunities in implementing AI-based systems in banks** Although there are good reasons for using AI in banking, doing so comes with issues such as needing a large upfront budget, facing rules from regulators, protecting customer data and requiring specific skill sets. We want to recognize the hardships and investigate how AI empowers businesses by encouraging innovation, easing costs, offering an edge over others and reducing risks. Looking at the main challenges and opportunities will enable banks to surmount difficulties and fully implement AI.
- **To analyze employee and customer responses to AI integration** Employing AI in companies changes how teams operate, interact with clients and deliver their services. The intention is to learn how employees and customers feel about changes happening in their organizations because of AI. It aims to look at employee worries about the stability of their job, changes to their job duties and how to improve, plus customers' response to AI services such as chatbots and assistants. Looking at these ideas can explain how AI is accepted and its influence on relationships across the banking industry.

3.3 Methodology

a. Research Design:

This study will apply descriptive research to learn how AI is being adopted by the banking sector. Descriptive research helps to see the current level of AI use in banks. In this study, qualitative and quantitative secondary information will be used to understand the trends, challenges, and outcomes of AI adoption in banking. Descriptive research helps reveal how AI affects banks' activities and how they care for customers, mainly by studying trends and evaluating progress.

b. Data Sources:

Primary Data:

Bank officials will be interviewed to gather primary data, giving us a clear idea of the AI-related processes, obstacles, and advancements, they have made. Furthermore, seeing internship life will help you see firsthand how AI is applied each day in banking, along with any AI tools used. If considered beneficial, surveys could be done with people working in the company and its clients to learn their opinions about AI. By looking at primary data, we can learn about how stakeholders adopt AI.

Secondary Data:

The study will use reports from Bangladesh Bank and other trustworthy sources to gather information about the rules and use of AI in the local banking industry. Bank integration of AI, both globally and locally, will be covered in case studies showing what was successfully achieved. We will use published research, articles from the media and financial technology reviews to examine experts' main trends and thoughts on how AI is used in banking. Where available, banks will publish documents showing which AI projects and initiatives they are working on.

c. Data Analysis Approach:

The data gathered from different sources will be analyzed using a descriptive analysis technique to understand the current situation, challenges, and outcomes of AI use in banking. I will mainly organize and display the data in this analysis using graphs, charts, and tables. Data visuals help us understand the connection between AI and the future of banking.

One thing we need to focus on is how people are adopting AI. Focus needs to be given to the range of AI's use in different banks and what types of AI are being implemented. One example of this is looking at the use of machine learning to spot fraud, offering chatbots to help customers, or using

RPA to improve routine back-office work. The study will reveal how quickly and fully AI is being brought into the banking industry by analyzing the pattern of adoption.

After that, the study will analyze the use of AI in the banking industry. You should pick out which specific banking services use AI, such as handling risks, personal financial offerings, support through chatbots, and credit management. In the analysis, various functions are sorted, and insights are given about which have contributed most to progress in efficiency, service quality, and/or cost-cutting.

Tracking improvements in results brought by AI integration will be a significant part of the analysis. Impacts can be seen in how quickly loan processing happens, how errors are reduced and how decisions are made more efficiently. Besides, how AI has saved or produced money for organizations will be studied. They will allow us to measure the real impact AI has on banks.

Ultimately, we will study how AI impacts how satisfied customers are with the company. It means going through feedback from people who have talked to AI services on chatbots or in their banking applications via mobile. It will examine whether using AI has improved customer service, raised customer satisfaction and encouraged more engagement. Such services will also consider customers' worries, especially regarding protecting data or not seeing people face to face.

3.4 Descriptive Analysis

i. AI Applications in Banking Operations

Modern banking uses Chatbots as a vital AI tool. They are built to help customers anytime by answering their queries, managing transactions and suggesting relevant services. To illustrate, Eva, the AI chatbot from HDFC Bank, offers help by resolving regular queries, showing balances and doing simple transactions. In the same way, BRAC Bank and City Bank in Bangladesh are using a chatbot called Smart Assist to help automate customer service and lower waiting times. Having chatbots on your website means customers can get help easily and more quickly, which increases their satisfaction and chances of staying loyal.

AI is now being employed to determine when fraud happens quickly. Machine learning helps banks to notice unusual actions in their customers' accounts. They alert the company when they detect suspicious activity, helping to prevent financial fraud. For instance, AI technology in banks notices uncommon behaviour in transactions, where or how they happened and user patterns. AI also contributes to risk evaluation by checking people's creditworthiness and likely problems, all using predictive models that use more information than ordinary credit scoring.

AI improves credit scoring and loan underwriting by providing more reliable evaluations than usual models. Alternative data such as social media, shopping records and phone records are all used by AI to evaluate a customer's credit score. Thanks to this, banks can serve more customers, even if they do not have much credit history. Because of AI models, loans are more suited to each person's risk since the correct interest rates and amounts are set accordingly.

Artificial intelligence makes it possible for banks to offer advice suited to each client's particular situation. Analysing customers' expenses, aims, and pasts allows AI to advise on suitable strategies for investing, saving, and finding loans. With AI customer targeting, banks can divide their marketing campaigns to provide the right products and services to customers at the right time. Using personalized services enhances customer satisfaction and increases the bank's earnings from better aiming and offering additional products.

AI technology influences banking by relying on Robotic Process Automation (RPA). RPA ensures tasks such as collecting data, reviewing accounts, and sending reports are done automatically. When these jobs are automated, banks become more efficient, reduce the number of errors committed by people, and save money. Account opening can be done, customer information can be checked, and loan applications can be handled with RPA. With automation, people can handle more complicated activities and think creatively, which helps the company become more productive.

ii. AI Integration by Bangladeshi Banks (if applicable)

Banks in Bangladesh are increasingly using AI to provide customers with better service and to run their daily operations more effectively. BRAC Bank has adopted a CRM system that uses artificial intelligence and predictive analytics to know what customers require and raise the quality of service. The system uses customer information to give them unique banking services and suitable product suggestions. In the same way, City Bank has rolled out AI chatbots called Smart Assist, helping to handle basic customer needs. Chatbots respond to inquiries about your account, transactions and products so customers can get instant answers and lessen the human customer team’s duties.

An important trend in Bangladesh’s banking sector is the addition of AI to mobile banking apps. Eastern Bank and similar banks rely on AI tools in their mobile apps to provide personal financial advice and loan offers based on how the customer transacts. Because of AI, customers at City Bank can receive around-the-clock support through AI-based mobile apps and chatbots, resulting in more customer satisfaction. These tools allow users to carry out banking functions more quickly and easily. Moreover, thanks to AI, features such as voice recognition and sentiment analysis make it easier for customers to interact with banks and do their work without hassle. As a result of these breakthroughs, Bangladeshi banks have become competitive worldwide by providing advanced, smooth and customer-focused banking services. Since this sector constantly changes, AI is expected to be even more important for running a business smoothly and satisfying customers.

iii. Benefits of AI in Banking

AI is helping banks achieve greater efficiency, support better customer experiences, and guide their decision-making. We look at the major advantages AI has in banking: It responds quickly to customer requests, closely analyses all transactions, helps save operational costs, and aids in making smarter decisions by analysing data.

AI helps banks improve the speed at which customer problems are addressed. AI-driven chatbots and virtual assistants allow businesses to handle numerous customer problems rapidly and freely, all the time, without needing anyone to be there in person. For example, Eva and Smart Assist chatbots can easily answer frequent questions, provide balance reports and direct customers in basic transactions using bank accounts. Automating these interactions speeds up responses, reduces wait time, and satisfies customers. In addition, AI supports the system by prioritizing complex customer issues so that human agents can address them immediately and handle the rest. Machine learning helps improve transaction monitoring by reviewing huge volumes of data as quickly as they are recorded. Because of machine learning, fraudulent payments, money laundering and various suspicious activities are often identified more easily. AI can pick out irregular details in transaction data, raise an alarm about these details and have them looked into by someone in the company. Because of automation, error rates decline, and banking security rises. PSFAI grows smarter with each new transaction it processes, making it more likely to spot fraud and stop financial losses.

Using AI can help banks decrease their expenses by handling normal operations faster. With RPA and AI, companies can handle work such as entering data, checking accounts, processing loans and reporting on compliance very effectively and fast. When AI takes over these tasks, humans can easily focus on jobs that matter most to the company. Because of this, banks can lower staff costs and become more efficient. Banks can also make better use of equipment and people with the help of AI, which ensures things do not go wrong and nothing is wasted during bank operations.

These benefits result in lower costs, allowing the company to develop more or lessen customer fees.

AI can greatly help banks to make better choices. With access to data from the past, AI systems help determine the chances of specific trends, behaviours or risks in the future. Using predictive models, banks can guess how customers will act, allowing them to identify what products or services will interest different customer groups most. AI makes it possible for banks to identify upcoming changes in the market and change their approach accordingly. AI-driven credit scoring relies on lots of data to judge potential borrowers' credit more accurately than before. For this reason, lending institutions enjoy more consistent results and see their share of defaults decrease. Data analysis helps predictive analytics guide banks to behave accurately and on time, placing importance on what customers need.

iv. Challenges in AI Implementation

A critical challenge with AI in banking is that it is costly to start up. Creating, installing and caring for AI-based systems comes at a high cost. Banks require modern hardware, software and data-saving technology to use AI effectively. Additionally, creating and managing AI systems is costly, which is necessary so they perform efficiently. Since small banks and those operating in developing countries cannot usually afford the costs of adopting AI, it does not spread further. Maintaining the system, ensuring its safety and handling data all cost something as time goes by. Banks may avoid adopting AI since it is unclear to them how much they will earn or gain instantly by using it.

Banking institutions introducing AI also have to deal with greater dangers to their data and fight against cybercriminals. AI in customer service, fraud detection, and credit scores often require sensitive information to be collected and used. Each individual's personal information and a breakdown of financial accounts and transaction reports are present, too. Looking after this information raises significant risks, mainly because attacks by cybercriminals are severe. No issues might appear in your bank's AI systems until hackers infiltrate them and ruin the bank's image by taking customer information. Such security systems might be strict to stop, so people are unsure how to defend private information. On many occasions, guidelines such as GDPR lead to more difficulties for banks trying to introduce AI tools.

It is hard to locate people who can work with artificial intelligence, data science or machine learning. For AI to work in banking, qualified individuals must develop, establish and monitor how the technology is set up. Still, because there are not enough professionals, their demand exceeds their supply, especially in countries experiencing rapid growth. Financial institutions have trouble getting staff with the needed expertise, which can delay AI adoption or result in subpar results. Furthermore, teaching current employees about AI takes much time and resources, adding to the problems. If the wrong type of skills is given to AI, it won't provide much value to the company.

AI technology is used more in banking, yet customers still hesitate to use AI in their communications. Customers want to interact with people when dealing with tough questions or special services. Today's AI tools often fail to deliver what customers expect when sensitive matters are involved. Because of this hesitance, many people may not use AI, decreasing how well AI services work. Moreover, worries about privacy and a lack of trust in artificial intelligence cause more people to resist them. Banks should explain the rewards of AI to customers and make sure AI systems are easy to trust, dependable and safe.

v. Future Prospects of AI in the Banking Sector

Banks may see significant changes ahead because of AI joining forces with blockchain. Blockchain stores data in a transparent and decentralized way for financial transactions, and AI can make blockchain better at finding fraud, using predictions and carrying out smart contracts. Because of AI, it is possible to supervise transactions and spot unusual activity and possible fraudulent acts more quickly than with older techniques. Also, data stored on the blockchain can be looked at by AI to verify transactions and process payments better more smoothly. With blockchain on the rise in fields like cryptocurrency and digital assets, pairing AI with it will probably change secure transactions in finance and make systems more reliable and efficient.

Banks will rely more on AI to complete biometric authentication and talk to customers using voice as they work to transform how customers communicate with them. With facial recognition and fingerprint scanning, AI-enabled biometric authentication will help keep consumers safe and provide a smooth journey. When fraud detection improves, AI can pick out patterns in biometric data to detect any security concerns and stop people from accessing systems without permission. Banking with voice commands is possible today because of AI, NLP and voice banking, so you can interact with your bank by using your voice instead of typing on a screen. Using this technology means people with disabilities or the elderly can do their banking without needing to handle a device.

The combined use of AI, big data and cloud is set to lead to important improvements in the banking industry. Thanks to AI, banks can examine vast amounts of data to learn more about customers, current market trends, and mathematical predictions to provide better personal banking and reduce risks. The use of AI helps banks to handle data instantly, supporting good and fast decisions. With AI and cloud computing uniting, banks can more easily scale up their AI and use data more conveniently, which cuts costs and improves how they access information. With the development of AI, banks can work with extensive cloud data to enhance and speed up customer service.

3.5 Findings and Interpretation

The use of AI in banks has significantly improved how operations are managed, satisfied customers are satisfied, and services are supplied. The report describes what the study found, including the wide-ranging uses of AI in banks, the issues faced along the way, and what lies ahead for AI in the banking sector. The conclusions here are backed by interviews and observing real situations, as well as reports, journals, and case studies.

AI Applications in Banking

AI has shown great value in banking and finance sectors, for example, helping customers, spotting fraud and checking loan applications. Many businesses rely on chatbots and virtual assistants for customer support. You can use these systems to check your balances, review transactions and get basic responses any time, even at night. As an example, Eva and Smart Assist at HDFC Bank, BRAC Bank and City Bank, respectively, have transformed how customers interact, as both give immediate feedback and cut down on assistance from staff. Because of these chatbots, banking is now accessible and efficient, thanks to quick responses and personal services.

It is also important to mention that AI is widely used for real-time transaction monitoring. They review a lot of transaction data to spot signs of unusual behavior. Instantly checking suspicious transactions helps banks avoid losing money. Eastern Bank and Mutual Trust Bank are using AI in Bangladesh to help them identify fraud and secure the bank and its customers.

AI is helping the financial industry make better choices regarding credit and loans. It uses large social media posts and financial details to better determine whether someone is worthy of a loan than previous methods. Because of that, people with little or no credit history can sometimes get approved for loans they would not have gotten at other financial institutions.

Impact on Operational Efficiency

AI is making banks more efficient. Due to the use of RPA, account reconciliation, data entry, and regulation reporting have become much easier in the back office. Automated parts of the business help avoid mistakes, reduce additional work by hand, and increase overall speed. Robots can handle much more transactions within a given time frame than people can complete. It helps companies carry out tasks more smoothly and improves how services are provided, giving employees more time to deal with customers creatively.

AI is improving our ability to perform predictive analytics. AI is helping banks predict what might affect markets, customer actions, and future risks. When looking at past data, AI can better guide predictions that help improve how a business decides. Therefore, risk management is simpler for banks since they can minimize losses and enhance the ways they invest funds. Also, AI-based data shows banks what products and services each customer needs and prefers.

Customer Experience and Satisfaction

AI has made a big difference in how customers experience a company. Because of AI, banks can provide personalized financial tips based on each customer's needs and preferred way of doing things. This approach helps people feel understood and supported, so customers feel more connected to their bank. Now, banks employ AI in their mobile apps to give customers an easy-to-use way to manage finances, track expenses, make transactions, and receive quick advice from their phones.

AI-driven services are responsible for providing a better customer experience. Because AI systems can handle queries and transactions and instantly spot fraud, problems are resolved quickly, and customers are happier. Customers notice this improvement because they receive consistent and correct responses from chatbots and virtual assistants at any time, day or night, which increases their loyalty to the banking institution.

Challenges in AI Integration

Even though AI can significantly improve banking, there are still obstacles to using it. Setting up AI systems in banking is still very expensive, which becomes a real barrier for some smaller banks and those in developing countries. Investing in hardware, software, and training is impossible for all small to medium-sized banks. Besides, banks require employees who are experienced in AI-related fields–such as machine learning, data science, and technology management–which is not widely available right now.

As we start to use AI in other ways, there are major issues about privacy and data security. Processes that work with high volumes of customer data sometimes lead to unauthorized data usage or breaches. Banks in Bangladesh have to follow strict privacy rules with AI since even though data protection rules are improving, they must ensure that their AI does not misuse customer information.

Some customers do not want to work with AI when making purchases. While talk of AI systems is becoming more common, some people are unsure if they can depend entirely on them in finance. Most customers would like to deal with people with tough queries, so AI systems have to maintain their improvements. People must trust AI, so companies must be honest and ensure their service is always high quality.

Future Prospects of AI in Banking

AI will continue shaping the future of the banking sector. When AI and blockchain are used together, financial transactions become more secure, efficient, and clear. By using AI for fraud prevention and upgraded smart contract programs on blockchain, banks can ensure greater safety for their customers. Biometrics and banking via voice are two fields where AI is predicted to improve users' safety and convenience.

In addition, combining AI, big data, and cloud computing will shape the future of intelligent banking. By using AI with cloud solutions, banks can deal more neatly with a lot of data, while analytics will ensure better and more personalized decisions for customers. As AI progresses, banks will introduce new approaches to improve their offerings, make banking easier, and pay more attention to customers.

3.6 Recommendations

For Banking Institutions:

- **Invest in AI training and skill development**: Banks should invest in continuous training programs for their workforce to enhance their understanding of AI technologies and ensure smooth integration into existing operations.
- **Enhance customer education**: Promote awareness and understanding of AI-driven banking services, such as chatbots and personalized financial advice, to build customer trust and acceptance.
- **Prioritize data privacy and cybersecurity**: Implement robust data protection protocols and ensure that AI systems comply with national and international privacy regulations to protect sensitive customer information.
- **Foster collaboration with fintech companies**: Partner with fintech startups to leverage innovative AI solutions, enhancing the bank's technological capabilities and improving service offerings.

For Regulators and Policymakers:

- **Create clear regulations for AI in banking**: Establish clear and comprehensive regulations that govern AI's use in banking, ensuring compliance with data protection laws, fairness, and transparency.
- **Encourage AI innovation while maintaining oversight**: Balance the promotion of AI innovation with effective oversight to ensure that AI systems are used ethically and responsibly in financial services.

For Researchers and Academics:

- **Conduct further research on AI in banking**: Investigate the long-term impact of AI technologies on banking operations, customer satisfaction, and financial inclusion to understand how AI can continue to evolve.
- **Examine the integration of AI with emerging technologies**: Research how AI can be integrated with technologies such as blockchain, cloud computing, and biometric authentication to improve efficiency and security in banking systems.

For Customers:

- **Adopt AI-driven tools for convenience**: Customers should embrace AI-powered banking services like mobile apps, chatbots, and personalized financial advice to enhance convenience, efficiency, and financial decision-making.
- **Provide feedback to improve AI systems**: Engage with banks to provide feedback on AI-driven interactions to ensure that these systems are refined and tailored to meet customer needs.

3.7 Conclusion

Banking companies that use Artificial Intelligence (AI) are witnessing important improvements in operating and serving customers. New technologies like chatbots, machine learning, predictive analytics, and robotic process automation have made it possible for banks to reduce work processes, improve customer service, and cut costs. Automation, better customer service, and transformation of internal procedures are all consequences of AI being used in banks.

The research indicates the banking industry can gain from AI, helping it respond to customer needs faster, detect fraud, ship credit scores more accurately and personalize advice for individual clients. Banks that apply AI can enhance their ability to make decisions, avoid errors made by people and improve their overall way of doing business. Thanks to AI, banks can give their customers dependable 24/7 help, shorter waiting times and more specialized services.

Still, adding AI to banking presents problems. The main obstacles that need solving are the high expenses of setting up AI, concerns about personal data, not enough talented employees, and customers' reluctance to use AI. As AI develops, it is crucial to maintain strong cybersecurity and follow rules to maintain the safety and trust of customers' data.

We expect AI to play a strong role in banking as we progress. Combining AI with blockchain, biometric authentication, and big data unlocks new Inno-vative and safer opportunities for the banking industry. Since AI is changing the industry, banks, regulators and customers should cooperate to leverage AI's power and deal with any concerns it creates. As a result, AI can help enhance future banking, boost growth, improve how banks operate, and increase satisfying results.

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