Chapter 9
Revolutionizing Banking Operations With AI and ML Technologies

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ABSTRACT

Financial institutions can meet client demand for better, safer, and easier money management with AI and ML.AI helps the financial sector manage risk, trade with numbers, and make investment decisions more efficiently.Thus, automated solutions are predicted to transform financial services.Managers can spend less time on mundane tasks and more on strategic tasks with AI and ML.AI is taking over critical financial tasks like risk assessment, stock trading, and loan approvals.To elaborate, AI is a powerful tool for banking and insurance.The financial services business could benefit from ML and AI.It may improve internal procedures, cybersecurity, and risk management and create more personalized products and services.

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AI speeds responses, improving customer satisfaction.AI and ML are changing how banks and financial institutions collect and use data insights.This is driving firms to develop new operational strategies, changing competitive dynamics, work methods, and risk management, and creating new problems for businesses and governments.

INTRODUCTION

Artificial intelligence and machine learning are the two big trends in the 21st century. The banking sector is always a prestigious field where security in all respects is the main concern. To improve financial services, we can use AI and ML, so customers receive better service and experience less transaction risk. The world economy and the financial services sector are the primary sectors that have benefited from AI. According to a recent study, AI could generate more than $1 trillion annually for the global banking sector by reducing costs, increasing revenue, and making customers happier (Millennium Consultants, 2022). The global financial services industry is expected to earn around USD 28.529 trillion from 2025 to 2030, at a compound annual growth rate (CAGR) of 6% (Ross, 2015). This change has already been reflected, especially after COVID-19, and we are in the era of Banking 4.0, where everything is digital, AI makes decisions, and customers can communicate beyond location and time. As adaptability is the most highlighted feature, it can meet the demands of any business regardless of the structure. In the 1960s, the ATM at Barclays Bank was a breakthrough in this domain, but since 2017, AI has been changing how processing and database management are handled. There is always a need for advanced analytics and automation solutions to prevent cyberattacks. New services are still evolving to enhance customer connections, control risks, and make the system more efficient. One study by Autonomous Next found that people worldwide saved $447 billion by using AI applications by 2023.

Neural networks, data analytics tools, natural language processing, etc., are common technologies of Artificial Intelligence in Banking that automate and improve various features of financial services. Banks use AI-backed chatbots, recommendation systems, and sentiment analysis tools to engage with consumers. They also adapt to evolving needs and provide products and services that address them. AI has the potential to create new financial products, such as flexible credit limits, tailored savings plans, and investment advice. Digital banking, mobile payments, and partnerships with fintech companies have created large, high-quality datasets for AI to use. Additionally, banks have invested in smart tracking and reporting systems to meet increasing regulatory demands to combat financial crime, protect client data, and comply with regulations. Traditional banks have had to update their technology due to tougher competition from fintech startups that can move quickly and from