

Artificial Intelligence in Indian Banking Industries

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Abstract-In the history of computer science, artificial intelligence has been just the latest disruption. Additionally, AI has transformed the dynamics of the banking and financial services industry. AI is combining, reassembling and re-formulating in unexpected ways, creating new opportunities and challenges, while at the same time causing new threats. The ethical neutrality of technology and its attendant threats such as cybercrime and macro-financial risks, as well as its sustainability, which tends to replace humans and the personal touch which is the essence of the financial services industry that thrives on customization and customer satisfaction, must also be addressed. In the banking sector, we are witnessing radical changes, with customer centricity at the forefront. Modern customers, exposed to advanced technologies on a daily basis, expect seamless banking experiences. As a result of these expectations, banks have expanded their industry landscape to retail, IT, and telecom to provide services such as mobile banking and real-time money transfers. Despite the fact that these advancements have allowed customers to obtain most banking services anytime and anywhere, they have also come at a cost to the banking system. As part of this study, we also explore the positive and negative effects of Artificial Intelligence within the Indian banking industry. Due to this study's descriptive nature, all the necessary and relevant data was gathered from various journals, magazines, and websites.

Keywords: Artificial intelligence, banking industry, Technology

1. Introduction

Through AI, banks are transforming the way they operate, interact with customers, and manage risks. Banks can benefit from AI-powered systems by automating repetitive tasks, making better decisions, and providing personalized customer service. Customer service is the primary applications of AI in banking sector. Chatbots and virtual assistants powered by artificial intelligence are being used to improve customer engagement, reduce waiting times, and provide instant support. These systems can interpret natural language, learn from previous interactions, and present clients with personalised recommendations. Fraud detection and prevention can be made using AI. In real-time, banks can analyze vast amounts of transactional data, identify patterns of fraudulent behavior, and prevent losses using machine learning algorithms. AI is also making a significant impact in risk management. Banks are able to better assess creditworthiness, identify potential risks, and make more informed lending

decisions by analyzing customer data, credit scores, and financial history.

Finally, AI is assisting banks in streamlining their operations and lowering costs. Banks can save time and resources by automating back-office processes such as data entry, document processing, and record-keeping. As a result, AI is improving customer service, enhancing fraud detection, improving risk management, and reducing costs in the banking sector. Banking will continue to innovate and advance as AI technology evolves. This study aims to Learn about artificial intelligence and its meaning, AI implementation in banking industries: Reasons for its implementation Furthermore, it analyzes the positive and negative impact of Artificial Intelligence on the banking industry

2. Methods

This study provides a descriptive overview of Artificial Intelligence, its meaning, and the impact of positive and negative outcomes in Indian banking. Only observation and documentary analysis are used in this study. A variety of

secondary data sources, including journals, publications, websites, is also used to collect the required & relevant secondary data. Books have also been consulted for theoretical information on the subject as needed.

3.Results and analysis

Artificial intelligence (AI) is the ability of a computer or a robot controlled by a computer to do tasks that normally require human intelligence and discernment. It is a simulation of human intelligence in machine that think and act like humans (SHETTY, SPULBAR, BIRAU, & FILIP, 2022).

The discussion part is divided into following sub parts as under:

1. Meaning of Artificial Intelligence.
2. Reason for implementation of Artificial intelligence in Banking Industries
3. Pros and Cons of Artificial Intelligence in banking industry.

3.1 What is Artificial Intelligence: Artificial Intelligence(AI)is the ability of a computer or robot controlled by computer to do tasks that normally requires human intelligence and discernment, moreover is a simulation of human intelligence in mechine that think and act like humans (SHETTY, SPULBAR, BIRAU, & FILIP, 2022). AI is trying to make computers think and act like humans. Achieving this end requires three key components namely Computational systems, Data and data management and Advanced AI algorithms (code) (PADMANABAN & METILDA)

Artificial intelligence consists of generally two fundamental ideas. First it involves studying human brains like how their thought process works and secondly it helps representing those processes through machine learning (Kaur, Sahdev, Sharma, & Siddiqui, 2020)Artificial intelligence systems have the potential to alter the banking industry's whole operations and to enhance the banks' performance. (Husain, Hamdan, & Fadhul, 2022)

3.2 Why Artificial intelligence in Banking Industries: Data generation today is outpacing humans' ability to absorb, interpret, and make complex decisions based on it due to the amount

of data generated by both humans and machines. All computer learning and complex decision-making relies on artificial intelligence. sing computers, these combinations and permutations can be calculated extremely efficiently. In order for businesses to make informed decisions in the future, artificial intelligence (and its logical evolution of machine learning) and deep learning are essential.

With artificial intelligence (AI), machine learning and natural language can be applied to the banking industry. Machine learning automates the process of building analytical models by analyzing data. When computers are exposed to new data, they change their parameters/algorithms without humans having to do so. As a result of natural language processing (NLP), technology can use human communication, whether spoken or written, as an input to prompt computer action. The goal of natural language generation (NLG) is to produce human-quality prose through technology. To create a natural sounding response, NLG sorts through vast amounts of data. It can take the form of a speech or a multipage report summarizing financial results.

3.3 PROS OF AI FOR BANKING SECTOR :As a result of AI, the bank can understand the pattern of a customer's expenditure, come up with a customized investment plan, & assist customers with budgeting. It is possible for banks to notify customers about advice for keeping track of expenses and investments based on the data they provide. To improve the customer's experience, transactional and other data sources can be tracked to better understand their behavior and preferences. One area where artificial intelligence is particularly relevant is in fraud prevention, where it is able to shift through massive amounts of data and identify patterns that would otherwise be unnoticed by human observers. To detect fraud in real time, many financial services providers use artificial intelligence and machine learning solutions. Online banking and mobile banking are becoming increasingly popular as tools for 24/7 transactions. AI enables banks to access customer information, such as detailed demographics, website analytics, and records of both online and offline transactions, and machine

learning is capable of integrating and analyzing it. It is very critical and complex to assess risk when giving loans. Artificial intelligence can simplify & handle this process by analyzing relevant data of the prospective borrower. To determine the risks associated with giving the loan, artificial intelligence can combine and analyze data related to the latest transactions, market trends, and financial activities. For the purpose of presenting secure & swift transactions, banks need to be bankable. Artificial intelligence identifies fraud in transactions based on a predefined set of rules. Using behavior analysis, the mobile app can detect suspicious activity in the customer's account. Any large transaction from an account with a history of small transactions can instantly be detected. As cybercrimes are on the rise, AI-based fraud detection can be used to prevent such attempts. Artificial intelligence plays a crucial role in protecting personal data. Therefore, AI has a huge potential in the domain of cyber security for banks and finance institutions. Mobile app development services can help banks detect fraud and data breaches. With the help of artificial intelligence-based mobile apps for the banking industry, hedge fund trading and management can be done on the move. AI-related tools can retrieve real-time data from various financial markets across the world, AI models can analyze different financial markets, so that users are able to make quick decisions. AI can offer high security to the banking sector; mobile applications based on artificial intelligence can make the transactions quicker & safer; banks and financial institutions can understand the behavior of their users and provide customized service through an app, banks handle customer-oriented operations easily while reducing the cost of hiring additional employees. By shifting tasks from humans to artificial intelligence, AI can reduce costs, increase response times, keep humans abreast of regulatory changes, and save time by preparing reports faster. The Bank has computer programs that carry out repetitive tasks ranging from automated programs to responding to data requests from external auditors. AI improves employee effectiveness and enhances customer experience through targeted emails and other offers, it increases revenue, it increases the productivity of sales reps, it offers

greater precision and accuracy, AI provides better customer service. Your customers can benefit from AI from cash transfers to bill payments, card management, and other support services, which can be handled on desktops, smart phones, and other mobile devices. Finance industry involves both front-office activities across multiple institutions, as well as back-office activities. Hence firms in it are utilizing machine learning to reduce operational costs and increase profitability. By analyzing thousands of data points in real time, machine learning algorithms can flag suspicious or plainly fraudulent transactions, preventing many fraudulent claims from being made. As a result of artificial intelligence, mathematical calculations become faster, more accurate, and more efficient. As a result of the degree of initial margin reduction in the past under different combinations of those trades, banks can determine the best combination of initial margin reducing trades at a given time. It has been shown by several pieces of evidence that customers prefer self-service options that let them interact with a virtual assistant as if it were a human. In addition to chat bots on instant websites, voice response systems, and mobile apps, most leading banks have already added virtual assistants. As Artificial Intelligence considers every interaction as a teachable moment, chat bots (virtual assistants) continue to become better while interacting with their customers. Better customer support can be delivered by virtual assistant with the help of AI. Additionally, the virtual assistant can recognize when an individual is frustrated and transfer them immediately to a live agent. With the help of artificial intelligence, banks are able to provide comprehensive digital support to customers. The ability of artificial intelligence (AI) to transfer cash, pay bills, manage cards, and provide other customer service can greatly enhance the satisfaction of your customers. It is possible to manage all of these operations through desktop computers, smart phones, or other mobile devices.

Fraud recognition and reduction have become challenging for the banking sector due to the rapid growth of banking fraud. There were several banks that tried to identify the factors and powerful solutions but failed to do so. As a result of AI, fraud factors can be detected more easily

and investigators can be supported better. Using advanced fraud prevention techniques, it improves financial security. Scammers can use Artificial Intelligence to handle complex situations and tactics in real-time in the banking industry. With AI, fraud can be detected by flagging unusual transactions, it is possible based on advanced data crunching. It additionally feeds back into the consumer's profile, resulting in the creation of a secure environment.

Among the biggest advantages of AI is its ability to automate tedious tasks, increasing productivity. Using a machine learning algorithm, AI can process massive amounts of data quickly and efficiently. As a result of the immense speed in financial services, consumers can now take advantage of personalized offerings. Furthermore, AI makes faster decisions and takes faster actions.

3.4 CONS OF AI FOR BANKING SECTOR : In order to meet the changing needs of the changing environment, artificial intelligence consists of advanced software programs that require regular updates. Artificial intelligence is very expensive to manufacture & maintain because it is a very complicated machine. The process of reinstalling the system and recovering lost codes may be extremely time & expensive in the case of critical failures.

Artificial Intelligence can learn and improve, but it cannot make judgments. When making decisions, humans take individual circumstances and judgment calls into account, something AI might not be able to do. Humans and things may behave irrationally if AI replaces adaptive human behavior.

Humans are constantly concerned that AI will replace or overtake them. In the hands of a few individuals, artificial intelligence can be very powerful. Therefore, AI carries the risk of removing control from humans while dehumanizing actions in several ways. Unemployment can spread far and wide if the workforce is replaced by machines. The use of AI will also lead to a loss of creativity if it becomes prevalent in society. There is nothing more socially undesirable than unemployment. A mindless individual can be destructive if they have nothing to do. The unemployment rate can be effectively increased through artificial

intelligence in any sector, whether it is banking or any other.

The ability of Artificial Intelligence to learn and improve does not yet allow it to make judgment calls. Humans, on the other hand, can take individual circumstances and judgment calls into account when making decisions, something that AI may not be able to do. Changing adaptive human behavior for AI may lead to irrational behavior within human-to-thing ecosystems.

Artificial intelligence carries a lot of risk as it takes control away from humans while dehumanizing actions in several ways. AI can offer a lot of power to the few individuals who are controlling it, so it also carries the risk of taking control away from humans. When artificial intelligence is misused, it can become a serious threat to humanity. Individuals can destroy these advanced machines if they start thinking destructively. The use of artificial intelligence allows you to replace the workforce with machines, which can result in widespread unemployment. People will become dependent on machines & lose their creative powers if AI becomes rampant. AI can increase unemployment rates, whether it is in banking or other sectors, causing individuals with nothing to do to use their minds to devastating effect.

4. Conclusion

The banking industry is gradually adopting AI to enhance its financial services. People are more likely to take the digital route to manage their bank accounts and make transactions during times of social distancing and quarantine. To remain competitive and deliver better customer service, many banks and financial institutions will adopt AI. An algorithm based on machine learning, however, has several disadvantages as well. With continued learning and growth, the decision-making capabilities may become problematic. In addition, since the manual workforce is being limited, banks must rely on AI in order to effectively serve their customers.

By understanding the customer's expenditure pattern, the bank can develop a customized investment plan and assist customers in budgeting. According to the data, banks can send notifications about the advice on keeping an eye on expenses and investments. To improve the

customer's experience, transactional data & other sources of data can be tracked to help understand the customer's behaviour. In fraud prevention, artificial intelligence can shift through vast amounts of data and identify patterns that may otherwise be unnoticed by a human observer. Many financial service providers are using artificial intelligence and machine learning to detect fraud in real time.

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