

THE EVOLVING ROLE OF AI IN BANKING SECTOR – AN INDIAN PERSPECTIVE

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Abstract

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. Artificial Intelligence used in different industries like finance, health care, etc. AI is also implemented in banking sector that is implemented to detect the fraud, solve the customer query, tracking customer behavior and recommending personalized service to them. Artificial intelligence (AI) is one technology that will alter the banking industry; banks are becoming more popular among customers. Traditional banks have begun to offer more online services as well. Artificial intelligence helps them automate procedures, make better judgments, and handle customer support requests with fewer resources. Also helps with risk management by detecting and combating fraud and money laundering in real time. Artificial intelligence can be applied in a variety of ways to improve the banking business. Banks can utilize AI to improve the customer experience by providing frictionless, 24/7 interactions; however, AI in banking apps isn't confined to retail banking. Investment banking's back and middle offices, as well as all other financial services, could benefit from AI. After India's independence, the government intended to nationalize the banks because all of the main banks were privately owned; this was a source of concern because people in rural areas still relied on money lenders for help. Reserve Bank of India was nationalized in 1949. Nationalization of the banking system improves the economy's overall health, creates more job opportunities, and boosts the country's rural and agricultural sectors.

INTRODUCTION

Making inside tasks proficient and the client experience more powerful has, without a doubt, turned into a test following the demonetization normal of Indian buyers becoming OK with web banking. One of the significant issues confronting banks today is unfortunate information quality and client division. With the development of innovation arranged installments banks like Airtel Installments Bank, Paytm Installments Bank, and others, as well as the appearance of neo banks and neo financial stages, as well as the coming of NBFCs, banks are finding it progressively hard to get by in the old worldview. Simulated intelligence alludes to a framework that can see it's general surroundings, break down and decipher the information it gets, follow up on that getting it, and work on its presentation by gaining from its mix-ups.

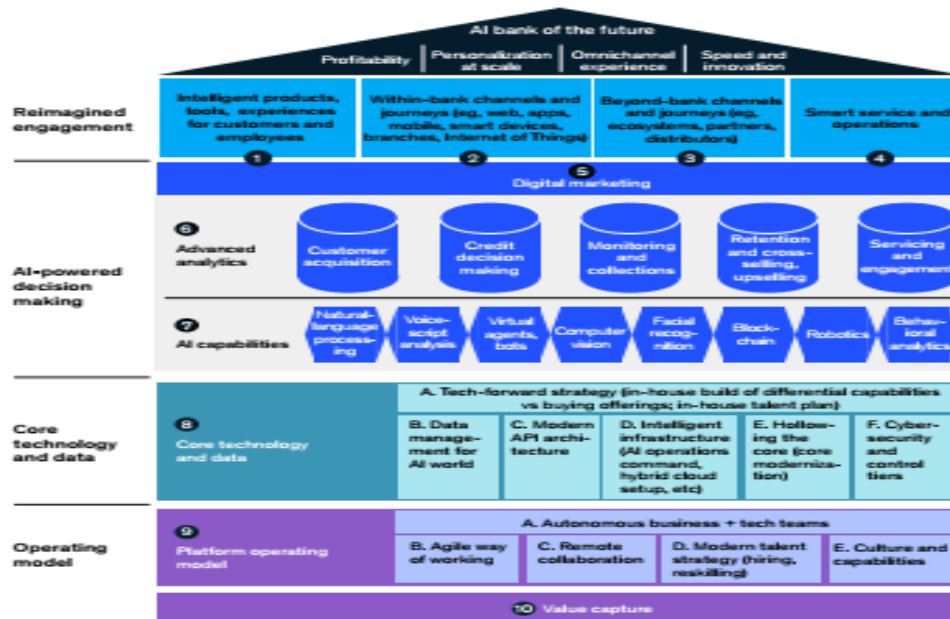
Also, by permitting robots to interface all the more normally with their environmental factors, individuals, and information, innovation can extend the two people and machines' abilities past what they can do all alone. The financial business has been changed by man-made consciousness (artificial intelligence). For more prominent improvement prospects and to more

readily serve trendy customers, banks are effectively carrying out trendy innovations. Computer-based intelligence is helping banks in changing their tasks no matter how you look at it, from bookkeeping to deals to agreements and network safety; banks are futureproofing their contributions and administrations with information examination, blockchain, and AI.

Computer-based intelligence in banking and money is further developing bank and monetary organization execution and seriousness. Banks are applying simulated intelligence to distinguish misrepresentation, further develop client experience, track client conduct to offer more custom-made administrations, investigate client records to expect gambles related to credit allotment, and numerous different purposes. Banks are carried out man-made intelligence in certain areas that are as per the following: One of the key use instances of computer-based intelligence in the financial business is AI-based chatbot administration. It is the advanced approach to offering support to the clients. Computer-based intelligence chatbots in the financial business might serve buyers 24 hours per day, seven days every week, and give the right responses to their inquiries. These chatbots give clients a redid experience.

Thus, man-made intelligence chatbots for banking and monetary tasks empower banks to get client consideration, further develop administration quality, and develop their image's market presence. In view of client search patterns, clever portable applications might screen client conduct and concentrate canny data. This information would help specialist organizations in making fitted ideas for clients.

Making internal operations efficient and the customer experience more effective has undoubtedly become a challenge following the demonetization average of Indian consumers becoming comfortable with internet banking. One of the major issues facing banks today is poor data quality and customer segmentation. With the emergence of technology-oriented payments banks such as Airtel Payments Bank, Paytm Payments Bank, and others, as well as the arrival of neo banks and neo banking platforms, as well as the advent of NBFCs, banks are finding it increasingly difficult to survive in the old paradigm. AI refers to a system that can see the world around it, analyze and interpret the data it gets, act on that understanding, and improve its performance by learning from its mistakes. And, by allowing robots to interact more naturally with their surroundings, people, and data, technology can expand both humans and machines' capacities well beyond what they can do on their own.



The banking industry has been transformed by artificial intelligence (AI). For greater development possibilities and to better serve new-age consumers, banks are actively implementing new-age technologies. AI is assisting banks in transforming their operations across the board, from accounting to sales to contracts and cybersecurity, Banks are futureproofing their offerings and services with data analytics, block chain, and machine learning. AI in banking and finance is improving bank and financial company performance and competitiveness. Banks are applying AI to identify fraud, improve customer experience, track customer behavior to offer more tailored services, analyze client credit histories to anticipate risks associated with loan allocation, and many other purposes. Banks are implemented AI in some areas that are as follows: One of the key use cases of AI in the banking business is AIbased chatbot service. It is the modern way of providing service to the customers. AI chatbots in the banking business may serve consumers 24 hours a day, seven days a week and provide correct answers to their questions. These chatbots provide users a customized experience. As a result, AI chatbots for banking and financial operations enable banks to grab client attention, improve service quality, and grow their brand's market presence.

Based on user search trends, intelligent mobile apps may monitor user behavior and extract insightful information. These data would aid service providers in making tailored suggestions to customers.

AI in Financial Services There are also a range of improvements in the way communications, customer support, and recruiting and asset management take place throughout financial sector. Today, for example, stock investing and finance is all about technical skills and divine luck. Yet in the future, with the aid of sentiment analysis, crowdsourced data and algorithms, we will be able to handle money in a much different way

REVIEW OF LITERATURE

Singh and Pathak (2020a) contended that a rising country, for example, India, isn't exceptionally centered on digitalization, so the dissemination diverts are vital with regards to the trading system of speculation for monetary devices and resources. The examination concentrates on likewise talked about the actions executed by Hold Bank of India (RBI) with regard to the Coronavirus pandemic yet, in addition to the Protections Trade Leading body of India, otherwise called SEBI, and the unpredictability of stock costs.

Noreen et al. (2023) recommended that the financial business can utilize appropriate strategies in view of man-made reasoning to work on the nature of client administrations as well as the banks' exhibition pointers.

Karbassi Yazdi et al. (2022) contended that helping industry is fundamental for a manageable financial turn of events, particularly on the grounds that not at all like customary areas, is the reliance on traditional assets tremendously diminished, and it is available for the utilization of new and inventive plans of action.

Birau et al. (2021) likewise recommended that the financial framework is a crucial component in arriving at a practical degree of improvement in the worldwide economy.

Singh and Pathak (2020b) characterized the idea of computerized reasoning, for example, "the capacity of machines to think all alone and do an undertaking without the assistance of individuals." The financial business addresses an information-escalated space truly viable with man-made consciousness or machine knowledge, and like the accompanying: field of AI (ML), Normal Language Handling otherwise called NLP, Profound Learning, intuitive voice reaction (IVR), Discourse Acknowledgment or discourse to-message, picture examination and numerous others. Mhlanga (2020) examined the impact of Man-made reasoning on the course of computerized monetary consideration while featuring the significance of perspectives, for example, chatbots, misrepresentation recognition, and network safety with regards to working on the nature of administrations given to bank clients.

Mehdiabadi et al. (2022) recommended that the idea of banking 5.0 depends on the design of a modern insurgency created by computerized reasoning. Besides, **Samartha et al. (2022)** inspected the effect of versatile financial applications and online exchanges utilizing the "Brought together hypothesis of acknowledgment and utilization of innovation" (UTAUT) changed the model in view of a contextual analysis for India, which is an arising country.

MAJOR AREAS OF ARTIFICIAL INTELLIGENCE CAN BE USED IN BANKING PERSONALIZED FINANCIAL SERVICES

Smart Wallets Voice Assisted Banking Customer support Digitalization instead of branch lines Reduce Costs Mitigate Risk Increase Revenue Different AI application in Banking and Financial Services Customer Support and Marketing Chatbots: Self-learning programs for intelligent conversations with humans over chat or audio; Available 24×7 and very easy to use but require long time for training. Robo-Advisors for Financial Products: Online platforms that

use algorithms to offer financial advice reinvest dividends, automatic portfolio creation and re-balancing of the portfolio etc. This require minimal to zero human intervention. Personalized Financial Services: Robo-advisors to monitor customer goals and suggest stocks or bonds to buy/sell; Gives personalized attention to customers irrespective of their risk appetite.

Smart Wallets: Intelligence added to mobile wallets for smart services like chat, booking of bus tickets, cab, events, movies, utility bill payments, etc. Emotion AI: A branch of AI to enable machines to detect human emotions with advanced facial and voice recognition technologies.

Security and Compliance: Fraud Detection and Prevention: Minimize need to add continuous manpower to detect and block security attacks. These platforms use machine learning to automate the process. Compliance Monitoring: Use AI to examine lengthy documents and flag potential issues in seconds, which would otherwise take many hours.

Intelligent QRC: A new segment of Artificial Intelligence companies that specialize in helping companies remain compliant, e.g. ensure no document is missed out while filing something, do risk mitigation by monitoring customer behaviour from empirical data.

Back-End BPM Robotic Process Automation: The use of software robots to take over high volume, back-office processes and repetitive tasks to save time, enhance efficiency, and increases accuracy. Algorithmic Trading: AI for high-frequency trading where inputs are taken from multiple financial markets to make investment decisions in milliseconds. Reports suggest that over 70% of trading worldwide today is being managed by algorithms

Investment Research: AI to guide investors on stock picking decisions. It can help cover more companies in exchanges all over the world, do their research and portfolio management.

Human Resources: AI to save hiring manager's time in various recruitment processes e.g. engage with new recruits, shortlist resumes from social media sites, pre-screen candidates over chat, determine candidate drop out chances, etc.

THE ROLE OF THE BANKING INDUSTRY

Banks play a significant part in today's economy and are regarded as the "lifeblood" of the economy since they manage currency, credit, and other financial activities. Banks assist and inspire consumers to save money and earn interest for a more secure future. Banks are also increasing their financial aid to growing companies. All financial transactions conducted by banks must be accurately documented. Banks primarily employ computers to carry out this function. ATMs, emails, telephone banking, internet banking, and mobile banking are some of the channels that banks employ for operations. The flawless running of banking via computers and networks is only feasible because banks employ AI.

THE FUTURE OF ARTIFICIAL INTELLIGENCE IN BANKING

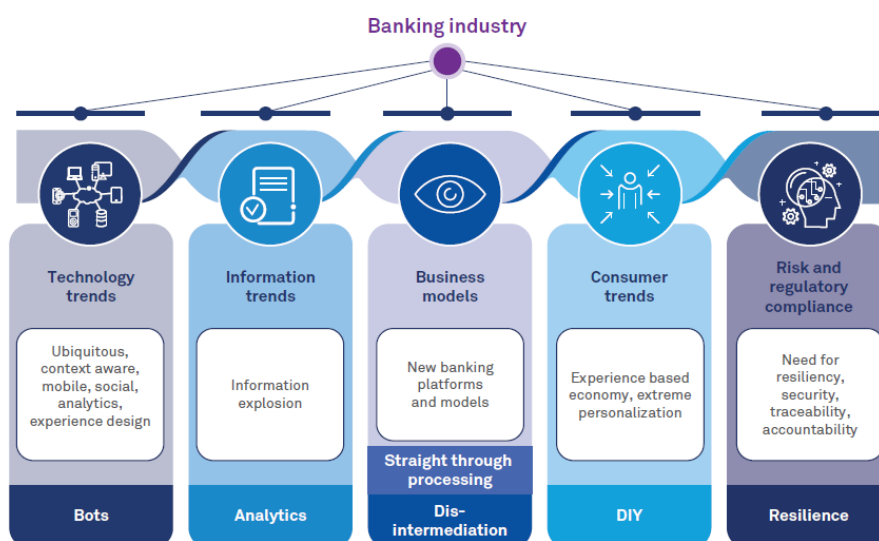
AI will become more powerful in the future as AI technology progresses, allowing every client to enjoy a more secure banking experience. AI will provide the groundwork for higher productivity and the creation of new employment. Furthermore, AI has the potential to alter the

client experience and develop a new business model in the banking industry. To get the greatest outcomes, humans and machines must interact, which will necessitate training and a re-evaluation of the future of banking jobs.

Furthermore, mass customisation is the key to unlocking significant potential in the future, and it can only be realised through technologies such as AI and blockchain. Banks employ the potential of AI to provide innovative client experiences through various solutions and to create new standards for the Indian financial sector, thereby charting a new course by embracing technological rigour. Data is converted into a digital format using AI technology. It also contributes to a better client experience. It helps both the consumer and the bank save time. It aids in the reduction of human mistakes. It contributes to the development of a strong and loyal consumer base. It facilitates the passage of huge cash inflow and withdrawals. It facilitates cashless transactions from any location and at any time.

ARTIFICIAL INTELLIGENCE - THE CHANGING FACE OF BANKING IN INDIA

In banking, artificial intelligence can communicate with people through decision-making and a convincing strategy that promotes clients. AI enables the banking industry to learn about its clients' preferences, assure customer happiness, and assist consumers in understanding their banks' expectations. Banks are aggressively utilising new-age technology to improve development possibilities and to service new clients. AI assists banks in transforming the operations of the entire board, from accounting to sales contracts and cyber security. Banks are demonstrating their future contributions as well as services using data analytics, blockchain, and machine learning. Many conventional banks have joined with fintech startups to provide their consumers with a contemporary banking service. Traditional banks fight with tech-savvy fintech businesses that are using new technology such as artificial intelligence.



Source – Mckinsey Report 2023

AI enables banks to completely explain how they work, provide novel goods and services, and affect customer experience interventions. Banks will need to embrace AI and adopt its business approach to gain a competitive advantage.

CHALLENGES OF ARTIFICIAL INTELLIGENCE

Not everyone understands what AI is

To implement AI into the banking sector, one must be well informed of its capabilities and limitations, as well as the benefits and drawbacks. To be honest, most people have no idea what technology is or how to cope with numerous banking issues. When one hears the word "intelligence," the most common image that comes to mind is of robots taking over humanity. The problem is that AI technology is being misunderstood, which is limiting its adoption in many businesses. People must educate themselves about the problem of AI and its current use to fix it. And perhaps a little, but technology will undoubtedly begin to unlock doors in our life.

Computer power

The amount of power that these algorithms demand is one element that drives many developers away. Machine learning and in-depth learning are the foundations of Artificial Intelligence, and they require an increasing number of cores and GPUs to function successfully. Asteroid tracking, health deployment, cosmic body tracking, and other domains where we have the ideas and knowledge to employ in-depth learning frameworks are just a few examples. They necessitate the processing capacity of a supercomputer, and yes, these computers are inexpensive. They do, however, come at a cost, owing to the availability of creators of Cloud Computing processing systems and programmes that function in tandem with AI systems with tremendous success.

Lack of Trust

The uncertain nature of how deep learning models predict the result is one of the most fundamental elements that cause concern for AI. For the average person, understanding how a precise collection of inputs might build a solution to several problems is tough. The majority of people on the planet are unaware of the use or presence of artificial intelligence, and how it is interwoven into common items such as smartphones, smart TVs, banking, and even automobiles (at some level of automation).

Information is scarce

Although there are numerous instances where Artificial Intelligence can be a better alternative to traditional technologies on the market. The underlying issue, however, is that Artificial Intelligence is not well-known. Only a few people, aside from technology enthusiasts, college students, and academics are aware of AI's potential. Many SMEs (Small and Medium Businesses) can, for example, organise their work or learn new ways to extend their product, manage resources, sell and manage things online, learn and understand consumer behaviour, and respond to the market effectively and efficiently. They are also unaware of technology service providers such as Google Cloud, Amazon Web Services, and others.

The level of the individual

This is one of AI's most difficult problems, and it has kept academics on the cutting edge of AI services in businesses and startups. These firms may boast of the accuracy of more than 90%, yet in all of these cases, people can perform better. To execute the same task with an in-depth learning model, it would take extraordinary funding, the usage of a hyperparameter, a vast database, and a well-defined and accurate algorithm, as well as powerful computer power, continuous training in train data, and testing on test data. That sounds like a lot of effort, and it's a hundred times more difficult than it appears.

Data privacy and security

It is critical because all deep learning models and robots rely on data and training resources. Yes, we have data, but because it is generated by millions of users around the world, it may be utilised for nefarious purposes.

Grieving Issues

The amount of data used to train an AI system determines whether it is good or terrible. As a result, the ability to obtain good data is a potential answer for good AI programmes. But, in reality, the day-to-day data collection organisations are tedious and useless.

Lack of data

With large corporations like Google, Facebook, and Apple facing charges for illegally utilising user data, governments like India are enforcing tight IT rules to limit travel. As a result, these businesses are now faced with the challenge of exploiting location data to create worldwide applications, which may result in overpopulation. Labelled data is used to educate equipment to read and make predictions, which is an important part of AI. Some businesses are attempting to innovate by concentrating their efforts on developing AI models that can offer correct results despite a dearth of data. With skewed data, the entire system may be flawed.

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