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Role of Artificial Intelligence in The Banking Sector

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ABSTRACT

Global banking institutions will be able to fundamentally reinvent how they function, provide game-changing products and services, and, most critically, prevent customer experience disturbances, thanks to artificial intelligence (AI). Banks will be challenged in the machine age period by modern technology that augments or even replaces human labour with clever algorithms, thanks to fintech enterprises. To maintain a competitive edge, banking and financial companies will need to integrate AI and incorporate it into their company strategy and operations. This article will examine the dynamics of AI platforms in the banking profession and how they are soon becoming a key disruptor by looking at some of the core unresolved challenges in this sector of business.

INTRODUCTION

Artificial Intellect (AI) is a simulation of artificial cognition that aids in the development of intelligent automating tasks more efficiently. Based on the facts it is supplied with, AI operates like a human brain that can reason and make more accurate decisions. Artificial intelligence (AI) is becoming increasingly common in today's business. It is utilized in a variety of sectors, including the financial business. The financial institution employs artificial intelligence in a novel method that saves time and money. Banks utilise algorithms to provide an efficient finding that improves customer service and sales performance, resulting in increased revenues.

Machine learning and deep learning are two types of AI that assist to reduce inaccuracies caused by psychological and emotional elements. One of the AI's most significant duties is to relay crucial data from multiple sources and to draw conclusions.

For instance, IPsoft, the world's largest enterprise AI company, has developed Amelia, a humanoid (robot) assistant. It's the most human-like AI partner in the business. Amelia's capacity to learn, mix, and advance over time has been praised by the firm. Clients' demands and requirements may be completely understood by AI. Amelia can be taught to recognise words and phrases in over 100 different languages.

Artificial Intelligence is the world's fastest-growing technology. One of the first industries to adopt artificial intelligence will be banking. Machine intelligence is referred to as artificial intelligence. Artificial intelligence and large data, sophisticated statistics, and machine learning skills are used to evaluate bank financial transactions for learning, issue solving, and decision-making.

Artificial intelligence (AI), often known as "machine intelligence," is intelligence demonstrated by machines that differ from human intelligence. Artificial intelligence is a term that is frequently used to characterise robots that are associated with the human brain, such as "learning" and "problem-solving."

(Sinha, 2019)

EVOLUTION

While we have only recently witnessed the use of AI, its history can be traced back to the 1950s, when Alan Turing released a paper on the prospects of machines with real intelligence. Although Artificial Intelligence as a phrase was coined in the 1960s, no implementation of the case or the Artificial Intelligence approach was used until the late 1990s. The artificial Intelligence pace increased only after 2011 when major corporations such as Facebook, IBM, Microsoft, and Google began to invest in commercial applications using AI.

REASONS FOR ADOPTION OF AI IN THE BANKING SECTOR

RIVALRY: In the financial sector there are a huge no. of completion which makes every bank have competitive spirits to want to improve in their services.

SELF- EMPLOYMENT: since there is a lot of workloads in the banking sector and a shortage of labourers, this helps them to finish their work easier.

OPERATIONAL EFFICIENCY: One of the main concerns of the banking sector is to increase their operational effectiveness Profitability and compliance which will become possible because of AI.

PERSONALIZED SOLUTION: Customers' need for more personalised solutions is being sought out by all banking sectors.

RISK MANAGEMENT: AI provides all kinds of solutions with the intent to reduce risk, cost, and bring the most viable solution.

PRODUCTIVITY: Boosting employee productivity Using robotic software to improve human activity Managing massive volumes of data at high-speed recording

WHY AI IN THE BANKING INDUSTRY?

- Major challenges in the banking sector.

- Focus on process performance.

- Initiate self-employment in branches.

- Customer desire to deliver different personalized solutions.

- Building functional efficiency.

- Increasing staff productivity.

- Supporting the focus on productivity and efficiency.

- Visualization to increase human activity by using robotic tools.

- Reducing the chances of fraud and corruption.

- Manage large amounts of data at record speeds and obtain important information.

(Anders, 2021)

USES OF AI IN THE BANKING SECTOR

- **Customer Interface:** Banks employ visual customer help to deliver answers to their inquiries, and Chatbots are used on platforms including mobile applications and websites, as well as social networking sites like Facebook Messenger, Telegram, WhatsApp, and Twitter for this purpose.

- **Customer insights and personalization:** Using AI algorithms, AI can give customers customised interaction services. Based on the digital profiles and transaction history, the technology advises that items are tailored to fit the wants of customers. Emotional analytics for Social Enterprises can help you obtain a deeper understanding of your client's emotional and cognitive states. The programme would assist small financial advisers in better understanding the issues that may drive users to share or split throughout the microfinance process based on video and audio inputs.

- **Insights into Business and Strategy:** With banks now having access to a bigger quantity of information, AI can offer better understanding. Such an analysis may help you gain deeper and more realistic-time insights on internal performance and external market dynamics, informing you about viable plans across many departments. Detailed customer data, for example, can help with marketing and portfolio plans. It can also be used for electronic payments.

- **Backend Processes:** AI is being utilised to help with backend office tasks that include large volume, rules-based, and highly organised and systematic labour. AI technology may be used to generate "intelligent automation" as the default for investment and earnings reporting, as well as to outsource information from essential financial papers.

- **Credit Scoring and Loan Decisions: Lenders** utilise AI to calculate credit scores and construct credit profiles. Companies can make swift credit determinations by studying people's banking activities, spending and earning patterns, family history, cellphone data, and so on.

- **Fraud Detection and Risk Management:** Artificial intelligence (AI) is used to monitor and prevent numerous incidences of fraud, money laundering, malpractice, and the detection of possible dangers.

(Brooks, 2017)

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.

(North, 2022)

INDIAN BANKS USING AI

According to a collaborative study done by the National Business Research and Science Center, around 32% of the banking sector already employs AI technologies such as predictive analytics, speech recognition, and so on. Over the previous several years, 12 Indian banks have accepted AI projects. On the list are:

a) SBI   b) Baroda Bank (BoB)

c) Allahabad Bank   d) Andhra Bank

e) YES Bank   f) HDFC Bank

g) ICICI Bank   h) Axis Bank

i) Canara Bank   j) City Union Bank

k) Punjab National Bank   l) IndusInd Bank

State Bank of India (SBI): SBI is now utilising an AI solution built by Chapdex, the winning team in SBI's first national hackathon, "Code for Bank." On the front desk, using SIA chatbot, an AI- enabled conversation assistant built by Payjo, a Silicon Valley and Bangalore-based firm. It responds to client enquiries quickly and assists them with the day-to-day operations of the bank as a representative of the bank.

Bank of Baroda: BoB has created a high-tech branch equipped with cutting-edge technology such as the artificial intelligence robot Baroda Brainy and a Digital Lab with free Wi-Fi.

Allahabad Bank: In an earlier news release, Allahabad Bank stated that its app'em Power' will undergo significant updates, including Chatbot and artificial intelligence-based eCommerce payments.

Andhra Bank: Flatboat, a Bengaluru AI company, has linked an AI Chatbot with Andhra Bank's Core Banking Servers in order to digitally engage and manage customer support for 5 crore customers. Flatboat will also boost Andhra Bank's internal chatbot, which has over 20,000 users and is used for recruitment and programmed training.

YES Bank: Launched 'YES mPower,' a banking discussion for its credit facility, in collaboration with Gupshup, a bot platform. The YES ROBOT product is another AI technology, which is used to respond to consumer questions concerning bank issues at any location worldwide. In addition, with the launch of YES TAG in April 2016, YES BANK became India's first bank to offer chatbot-based financial services, enabling users to conduct financial transactions through popular social media platforms.

HDFC bank- "Eva," a chatbot powered by artificial intelligence (AI) developed by Bengaluru Sense ahead AI research, is now available. Eva can pull data from tens of numerous sources and respond to simple questions in under 0.4 seconds. In the future, Eva will be able to supervise real-world banking activities. HDFC is also working with shop robotic capabilities, and the prototype robot IRA has been revealed ("Intelligent Robotic Assistant").

ICIC Bank - Robotic software was installed on 200+ business operations across numerous functions of the organization, most of which were built in-house and used AI capabilities such as facial and voice identification, language processing, deep learning, bots, and others. ICICI Bank computer bots are set up to collect and analyze information from systems, discover trends, and carry out business tasks in a number of applications in order to perform duties. iPal, an AI-powered Chabot, is one such tool that helps with answering questions, financial advertising, and identifying new services.

Axis Bank: Introduces a cognitive payment gateway powered by artificial intelligence that uses machine learning and natural to help users with financial and non-financial transactions, inquiries, and marketing materials.

Canara Bank: Mitra, a humanoid robot developed by Bengaluru-based Invento Robotics to help customers navigate the bank, was unveiled. Candi, who provides significantly less assistance to workers than Mitra, is another possibility.

City Union Bank: The banking robot Lakshmi is unveiled. Clients can communicate with a robot on over 125 different themes. The robot has been trained to connect to the primary banking service without responding any of the typical questions.

(Sandres, 2018)

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 inflows 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. 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.

(North, 2022)

IMPACT OF AI IN BANKING

Banks employ artificial intelligence (AI) systems to offer, anticipate and execute personalised financial advice to consumers, as well as to acquire rapid information on financial strategies, lending rates, and future market progress. The following are the effects of artificial intelligence in banking: -

- **Customer Satisfaction:** AI supports banks in offering tailored and more efficient services to clients, as well as in improving revenue, decision-making, and maintaining positive customer relationships.

- **Chatbots:** Bot is an abbreviation for Robot, and a chatbot is an automated conversation system that operates automatically or follows a predefined course. Chatbots are a type of AI that may be used in the form of bank robots. Chatbots are accessible 24 hours a day, seven days a week and provide exceptional customer assistance.

- **Personalized Financial Guidance:** AI assists clients in making simple and quick financial decisions by using up-to-date information on the current market structure and giving recommendations on stocks and bonds in which customers may invest.

- **Digital wallets:** Digital wallets allow users to use digital money to buy anything online using a cell phone or a computer.

- **Interactive Voice Response Systems (IVRS):** An automated voice system that coordinates with consumers, answers particular inquiries, routes calls to relevant financial departments and provides a pleasant customer experience.

- **Fraud Detection:** AI detects financial fraud by scanning transactions via massive amounts of transactional data and following any odd behaviours or patterns of activity. AI minimises financial fraud, accelerates processes, avoids security breaches, and aids in sophisticated machine learning.

- **Improving customer service:** Customer satisfaction has an impact on the banking industry's performance and has created people's impressions of the financial institution's product. It also has an impact on banks' targeting clients and retention efforts.

- **Better regulatory compliance:** AI applications frequently rely on deceptive analytics that watches consumer habits, analyse transactions, detects suspicious conduct, and evaluate the intricacies of different compliance systems. AI provides significant value to clients by personalising, decreasing risks and costs, enhancing staff efficiency, and ensuring improved regulatory compliance.

- **Risk management** entails decreasing fraud by scanning transactions in real-time for suspicious patterns, assessing customers' creditworthiness, and providing risk assessors with the appropriate risk-reduction suggestions.

- **Portfolio Management:** AI systems and machine-learning technology create personalised portfolio profiles for consumers based on their investment restrictions, behaviours, and preferences. Banking and artificial intelligence are poised to usher in the next wave of digital upheaval.

As a result, AI has revolutionized many areas of banking procedures, making money transfers safer and back-office activities more efficient.

(Brooks, 2017)

BENEFITS OF ARTIFICIAL INTELLIGENCE IN BANKING

Here are some benefits of artificial intelligence in banking.

- *Enables overall superior customer experience*

The introduction of artificial intelligence has resulted in a technological revolution in banking, opening the door to several prospects.

No lengthy lines- The most common issue with banks is long lines. This issue is solved by chatbots and other virtual assistants.

Personalized banking- Using machine learning, AI-powered assistants may aid in the development of personalised financial plans, offers, and loans for each consumer based on their prior behaviour, interest, and credit score.

Data-driven smart insights- Artificial intelligence can evaluate cash flow patterns and other end- user actions to develop reports that highlight consumers' spending habits. AI also aids in the recommendation of items and services to customers based on their previous behaviour.

- *Empowers customer service through AI-based tools*

Cost savings- Artificial intelligence aids in cost savings.

Quick resolution time- Another advantage of artificial intelligence is that it saves both agents' and customers' time.

- *Data-driven decisions making*

Accurate marketing-AI assists organisations in developing and implementing exact marketing plans.

Improved business operations-AI analytics can help banks improve operational efficiency.

- *AI-driven risk management*

Here are some of the ways AI may help banks manage and decrease possible risks -

Assist in making informed decisions through predictive forecasting- The banking business is heavily reliant on external global forces. Scams, currency fluctuations, natural disasters, and political turmoil all have an impact on it. AI-powered analytics can help you stay prepared and make timely decisions by providing a pretty clear picture of what is to come.

Examines a client's credit history- AI typically identifies hazardous applications by calculating the likelihood of a client failing to repay a loan.

- *Fraud prevention*

- Better Auditing- Artificial intelligence can replace manual editing, which is prone to error and inability to audit all data sets, to avoid fraudulent actions in the financial industry. Missing files and data sets during a manual audit might result in significant costs for banks. AI aids in the analysis of each file, while machine learning quickly detects potentially dangerous files and data.

- Reduces cybercrime- AI may be used to improve cyber security and safeguard client data. AI assists in the detection of fraudulent transactions or other questionable activity in a client account.

- Establishes a compliant internal structure- Internal AI-based systems can aid in compliance by assuring ethical internal system functioning.

(Sinha, 2019)

DISADVANTAGES OF ARTIFICIAL INTELLIGENCE

- **Expensive Creation-** Machines necessitate expensive repairs and upkeep. Because it is such a complicated machine, it necessitates a large sum of money.

- **Making People Lazy-** AI's automated systems make people lazy because they cover a lot of work. Humans have a proclivity for becoming addicted to inventions that may cause issues for future generations.

- **Inactivity-** As AI automates the majority of repetitive activities and other duties, human intervention is becoming less and less, posing a serious concern in the workplace. Every company wants to replace the tiny ones with AI Robots that can perform the same tasks.

- **No Emotions-**While robots are undoubtedly the most efficient, they cannot substitute for the human relationships that make up a team. Machines are unable to form bonds with people, which is a key aspect of team management.

- **Lack of Thinking-** Outside the Box- Machines can only accomplish the tasks for which they were created or programmed; otherwise, they are prone to crashes or unforeseen consequences that may occur in the background.

- **Data quality-** AI is a data-driven technology, and data quality influences the algorithm's prediction potential. The lack of sufficient and reliable data necessitates visual data management, which necessitates advanced analytics and end-to-end AI modelling.

- • **Result from the Black Box-** Machine learning is difficult to comprehend due to the intricacy of neural networks. The concept of modelling is not understood by everyone in every organisation. Banks should improve governance to assure compliance. Bank managers will be able to take advantage of descriptive AI benefits by using visual translations and model management frameworks.

(Sandres, 2018)

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.

(North, 2022)

LITERATURE REVIEW

(Soni, 2021)- This report will look at how Criminals are using numerous cyberspaces to promote criminality as information technology advances. The banking and financial industries are attempting to utilize artificial intelligence to combat cybercrime and cyber risks. AI approaches offer a variety of benefits to the banking sector, including increased prosperity and expansion. It is critical to maintaining transparency and explainability in artificial intelligence to preserve trust. Artificial intelligence tools provide information on a customer's behaviour and interests. Artificial intelligence-based fraud detection systems help to prevent and identify cybercrime. Implementation, on the other hand, and Artificial intelligence requires a high level of maintenance. In addition, the unemployment rate has risen.

(Kaya, 2019)-Researched the environment where banking competition is becoming increasingly fierce thanks to data-driven financial services providers such as FinTech start-ups and large technology firms that are challenging traditional banking business models – banks' ability to quickly implement AI technologies could be critical to their survival.

(Smith & Nobanee, 2018)-This report will look at how artificial intelligence has been implemented in the banking business. There have been many differing viewpoints on artificial intelligence (AI) and its ability to improve efficiency in a variety of industries. It's no different in the banking industry. Artificial intelligence may also hurt the financial business, according to certain reports.

(Sabharwal, 2014)- The major goal of this study work is to see if the selected Indian banks are employing Artificial Intelligence (AI) based technical applications, and if they are, what are the distinct goals for which they are using them. This was followed up with a structured interview of branch heads from the 16 scheduled banks in Meerut (U.P.). The researcher questioned the branch heads of chosen banks using a questionnaire and compared the responses to the ideal state using the GAP Analysis Worksheet.

(Vieira & Sehgal, 2018)-Business intelligence will be transformed into a fully predictive probabilistic framework thanks to Artificial Intelligence (AI) algorithms. AI will be able to completely change the world or automate a variety of business tasks, such as pricing, budgeting, and so on. Detection of fraud and security This chapter will discuss some advanced strategies analytics and give some examples of how AI is assisting in the financial sector. Small company credit scoring is being refined, internet behaviour is being studied, and customer service is being improved. We'll also look at how traditional integration works.

(Kaur, 2020) - In this research paper author examine how Artificial intelligence is changing the banking sector -A case study of the top four Commercial Indian Banks (SBI, HDFC, ICICI, AXIS). Examine the areas where machine Intelligence is being introduced to banks and the main use of AI commercial banks in India. There is progress in traditional banking and gradually banks are using these new technologies such as AI, blockchain, cloud computing but banks are yet to reach the stage of the AI revolution, the human touch is still important. The Indian banking sector is exploring ways in which AI can be implemented that improve banking performance and improve customer service shortly.

(Marko & Matej, 2018) - According to this article, relationships banking, which promotes a close relationship with bank clients, should not be abandoned. Long-term relationship lending simplifies compensation and satisfies bank clients' long-term objectives. Banks may be drawn to payment systems due to the availability of IT-driven increased efficiency and competition from FinTech start-ups and IT businesses. Distances, machine intelligence, and cognitive biases are all discussed in this study. The consequences for banking stability are examined.

(Ebrahim, Kumaraswamy, & Yomna, 2021)- The usage of machine learning, one of the most cutting-edge technologies, in Bahraini banks is examined. Only a few banks have implemented artificial intelligence solutions, with digitalization and chatbots being the most often deployed artificial intelligence software. Furthermore, the data reveal that the Federal Bank of Bahrain has prioritized the digital transformation of banks, meaning that greater technology development and implementation in banks would be seen in the near future.

(Donepudi, 2017) -Machine Learning and Artificial Intelligence applications, as well as their value in various banking sector functional areas, and how these institutions may successfully employ computational intelligence to better their company. While conventional banking institutions are catching up with computational intelligence technologies with products like Chatbot, fintech businesses, which appear to have embraced A.I. a long time ago, play a crucial role in financial intelligence via innovation.

(Dr.C. Vijai, 2019) -discusses how artificial intelligence (AI) is employed in the financial industry, the benefits it provides in fintech, and the different ways it may help a financial organisation. In FinTech, AI will play a significant role in decision-making. Analysts will be able to make complicated judgments with the assistance of computers that give pre- and post-decision support based on previous data and upcoming patterns.

(Malali & Dr.S. Gopalakrishnan, 2020)- The magazine discusses how artificial intelligence (AI) would push large banking and financial organizations to totally rethink their operations, create ground-breaking goods and services, and, most crucially, shoulder the cost of user experience interferences. Fintech startups that utilize sophisticated technology to augment or even replace human labor with clever algorithms will challenge banks in the machine era. To preserve a competitive edge, banking and financial institutions will need to embrace AI and incorporate it into their business strategy and operations.

(Romao, 2019)- The report discusses the link between AI and robots. RPA is the use of software with artificial intelligence (AI) and machine learning characteristics to handle high-volume, recurring processes that were previously solely handled by humans. In short, traditional Business Process Management (BPM) systems have at least one flaw: they are unable to identify the optimal combination of activities, personnel, and timings for maximizing the benefits of performing them while minimizing costs and risk factors. Nonetheless, the reality that today's business world is extremely dynamic cannot be denied. On the one hand, we need to be more efficient in executing what is already operational and obvious, so that precious resources may be allocated to more critical areas.

(Leo, 2019)- The article discusses how machine learning is becoming more prevalent in corporate applications. Risk management at banks has grown in importance since the global financial crisis, with a continual focus on how risks are detected, quantified, reported, and controlled. Academic and industrial research has focused on banking and risk management innovations, as well as current and upcoming challenges. The above paper aims to analyze and evaluate machine-learning methods that have been investigated in the context of banking risk assessment, as well as identify areas or difficulties in risk mitigation that have been deficiently explored and are possible future areas for future research, throughout a review of the available literature.

(Chakraborty, 2017)- This study introduced the main components of the machine learning toolkit within the framework of central banking and policy. We introduced the notion of machine learning systems and their components: problem kinds, data aspects, model classes, optimization techniques, validation, and testing. The model classes included artificial neural networks, random forests, support vector machines, and various clustering algorithms. Model calibration procedures connected to validation and testing are valuable in and of themselves.

(Marouani, 2019) In the digital age, artificial intelligence technologies have been deployed in a wide number of fields. This rapidly growing trend has proven to be very effective and convenient in several areas, especially in the banking sector, because it provides enterprise solutions in both and front back-end tasks and processes, allowing for considerable time savings, cleverer and more efficient work, and an overall enhanced customer experience. The behaviour purpose of this paper is to describe the benefits of incorporating artificially intelligent applications into banks, to emphasize their usabilityand utility, to shed light on their influence on customer behaviour, and to show how they may potentially enhance their overall business.

RESEARCH METHODOLOGY

PROBLEM STATEMENT:

The key reason for selecting this topic is that it allows us to learn about the function of AI in the banking sector. Artificial intelligence boosts individual effots in terms of pace, precision, and efficacy. AI approaches may be employed in financial institutions (the banking industry) to classify whether transactions are prone to fraud, implement rapid and reliable credit ratings, and automate labor-intensive data management chores.

RESEARCH DESIGN:

The population of the study paper is India as a whole. There will be a concentration of persons working in the financial industry. No sample is necessary because it is not relevant to this study. The research will be qualitative, deductive in nature, and will depend exclusively on secondary sources (journals, publications, government websites, RBI websites, student research papers, etc.).

RESEARCH OBJECTIVES:

- To investigate the impact of artificial intelligence on the expansion of the banking sector in India, as well as how AI is transforming the view of modern banks.

- To Examine the many issues encountered in using Artificial Intelligence in the financial sector.

- To Recognize many activities aimed at reducing the challenges associated with using AI in the financial sector.

- To foresee the future of AI in the banking sector.

- Recognize research devoted toward the idea and use of AI in India's banking sector.

- To assess the potential of AI to deliver differentiated results for effective strategy implementation in India.

- To Investigate how artificial intelligence has aided banks in improving customer service.

DATA COLLECTION METHODS

Data collection is the process of gathering information from all relevant sources to solve a problem, verify a thesis, and evaluate the results. Data collecting processes are classified into two types: secondary data collection methods and primary data collection methods. We have solely used the secondary data collecting approach in this case.

Secondary data collection method:

Secondary data is information that has previously been published in books, papers, publications, periodicals, internet portals, journals, and so on. Regardless of the nature of the exploration field, there is a wealth of material available in these locations concerning our area of investigation in professional education or learning.

MEASURES TO OVERCOME AI CHALLENGES

- ❖ The challenges of AI can be overcome by;

- ❖ AI has the power to slow down procedures and enhance productivity, but only if banks employ the technology to its full potential.

- ❖ AI can recognise patterns, styles, trends, and organisations, as well as identify inefficiencies, learn and improve, and plan.

- ❖ AI can forecast future outcomes based on historical trends and make fact-based decisions.

- ❖ Mention the manager-technician relationship when explaining the technology.

- ❖ Start a conversation across the bank, establish limits, excite interest, foster dissent and diversity, manage first situations, and keep an eye on emergence.

- ❖ Duplicate information, log information and provide it as needed

- ❖ Major financial institutions should designate Chief AI Officers and invest in AI labs and incubators.

- ❖ Eighth, AI banking bots are employed before client data is collected.

- ❖ Access to sound investment products should be made possible.

- ❖ Adopting custom home-based solutions that incorporate advanced ontologies, natural language processing, machine learning, pattern recognition, and thought algorithms to assist skilled people and robots in making complicated decisions.

- ❖ Decision assistance and improved algorithms enable more extensive automated processes in the environment. xii. Employ superior reading abilities.

- ❖ A complicated forecasting system/advanced forecasting Offers AI-assisted customer care.

- ❖ Chatbots can be "hired" to act as customer service representatives and provide continuous service to customers throughout the day. Chatbots can be used to do basic tasks such as account opening and closing, as well as transactions.

FINDINGS

- ❖ Artificial intelligence has had an impact on the banking industry, with respondents finding it to be more beneficial, friendly, and inventive.

- ❖ People are satisfied with financial institutions because of better bank service speed.

- ❖ Respondents are satisfied and believe that artificial intelligence has doubled bank security.

- ❖ Banks' competitiveness has improved because of the artificial intelligence age.

- ❖ Because the banking sector is becoming more efficient, the respondent believes that banks should invest in artificial intelligence to provide faster and better services.

- ❖ Artificial intelligence has made the lives of customers and bankers much easier. Its data-driven approaches to several operations in a banking system, such as credit scoring, compliance, trading and securities, and enhanced customer service, have increased the efficiency and effectiveness of services.

CONCLUSION

- ❖ To summarise, Artificial Intelligence is rising in popularity, and banks are experimenting with and using this technology to change the way consumers are supported. As a result, artificial intelligence has a bright future in the banking sector. The introduction of AI makes it easier for clients to conduct transactions anywhere and at any time without waiting in long lines at the bank. Artificial intelligence's goal is to give personalized, high-quality client pleasure as well as efficient and time-saving services.

- ❖ Without a question, the recent push toward digitization is having an impact on traditional banking arrangements. However, it has exposed businesses to a growing number of cyber security threats and vulnerabilities. To establish an active defence system against cybercrime, banks are increasingly turning to emerge technologies such as blockchain and analytics. Artificial Intelligence (AI) is leading the way in bringing innovations to the banking industry, which is evolving quicker than ever. Many AI technologies have been used in banking in domains such as core banking, operational performance, customer service, and analytics. Banking is no longer a physical branch for AI; it has evolved into a new universe of modern banking.

- ❖ As a result, the introduction of machine learning draws a growing number of clients and assists banks in expanding.

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