ISSN - 1226-4741

A STUDY OF AI IN BANKING SYSTEM

Krutika Sawant

Assistant Professor, Department of Finance, Universal Business School, Karjat, Raigad. Email: krutika.sawant@ubs.org.in

Harshvardhan Soni

PGDM in Finance, Universal Business School, Karjat, Raigad, Maharashtra. Email: harshvardhan.soni@ubs.org.in

Parthraj Maharaul

PGDM in Finance, Universal Business School, Karjat, Raigad, Maharashtra. Email: parthrajsinh.maharaul@ubs.org.in

Saurabh Agarwal

PGDM in Finance, Universal Business School, Karjat, Raigad, Maharashtra. Email: saurabh.agarwal@ubs.org.in

Abstract

The banking industry is undergoing ground-breaking reforms, with a focus on the client as the primary driver. Customers that are tech aware and often interact with cutting-edge technologies want banks to provide smooth experiences. In order to meet these expectations, banks have expanded their industrial landscape to encompass retail, IT, and telecom through the use of services like mobile banking, e-banking, and real-time money transfers. While these advancements have allowed customers to access the majority of banking services whenever they choose, they have also cost the banking sector money. The deployment of AI in banking and financial services, however, also has drawbacks, such as concern about data security and privacy, algorithmic bias, and possible job effects. It is crucial to address these issues and make sure that AI is used in an ethical and responsible way as it becomes more commonplace in banking and financial services. This research paper aims to explore the current state of AI in banking and financial services, as well as its potential impact on the industry as the banking and financial services sector has seen major operational changes as a result of the growing usage of artificial intelligence (AI). Many industries, including customer service, fraud detection, risk management, and investment management, are using AI technology.

1) INTRODUCTION

Humans exhibit natural intelligence, which is defined as the capacity to perceive, analyse, evaluate, and infer rationally in order to draw conclusions or solve problems, and then to learn from experience, develop, and progress. Artificial Intelligence (AI) and Machine Learning are terms used to describe comparable features displayed by machines. The term "artificial intelligence," which describes the most notable ability of a machine to mimic a human being in thinking as a human does and making a logical and the best choice from among the available alternatives aimed at achieving a specific goal, was first used by computer and cognitive scientist John McCarthy from Stanford

ISSN - 1226-4741

University in the United States. Artificial intelligence (AI) has emerged as a disruptive technology in the banking industry, transforming the way financial institutions operate and serve their customers. The integration of AI-powered solutions in banking has brought about significant improvements in efficiency, accuracy, and customer satisfaction. This research paper aims to explore the impact of AI on the banking industry, with a specific focus on its applications in areas such as fraud detection, customer service, risk management, and personalized marketing. Through a comprehensive analysis of industry reports, academic research, and case studies, this paper will examine the benefits and challenges of AI adoption in banking, as well as the future implications of this technology on the industry. Ultimately, this research paper seeks to provide insights into how AI can help banks to enhance their competitiveness, drive innovation, and create value for their stakeholders.

2) LEARNING OBJECTIVE

- To study and analyze the key applications of AI in banking and impact on its operations and performance.
- To identify the challenges associated with AI adoption in banking.
- To analyze the future outlook of AI, its sustainability and adoption in banking industry.

3) RESEARCH METHODOLOGY

Data is gathered for the study from secondary sources such as books, articles, research papers, websites, business reports, and so on. For needed theoretical understanding on the subject, books have also been recommended. There is a lot of information available from various sources on our area of research in professional education or learning, regardless of the nature of the exploration sector. We have study from different articles of companies like Deloitte, PWC, Wipro etc., and 10 research papers and has been arranged according to the flow of the paper. Also only those sources were referred which focuses on impact of AI on banking system only in order to be specific to the study. The necessary theoretical material on the subject has also been found in books. We have done theoritical as well as statistical research on banking system and its operations.

4) LITERATURE REVIEW

(Hickam Sadok, 2022) This article explores the effects of artificial intelligence (AI) use on banks and other financial organisations' credit score assessment processes. These restrictions serve as the foundation for a new age of economic law that introduces the certification of AI algorithms and bank-used data.

(Chandrima Bhattacharya, 2022) Through this paper we understood that literature evaluation and theoretical studies is completed for diverse worldwide and Indian banks with admire to the combination of AI to enhance client interactions and inner banking processes. Chatbot use-instances on banking systems are ranked primarily based totally on client experience. Practical/Theoretical implications: Based at the entire image of AI integration with banking operations, evolving Indian banks should recognition at the maximum famous use-instances to draw customers. The correlation among Chatbot use-instances can also additionally gain the installed Indian banks to similarly amplify business.

ISSN - 1226-4741

As discussed in (Board, 2017) the loss of interpretability or "auditability" of AI and gadget getting to know techniques may want to come to be a macro-stage danger. Similarly, a significant use of opaque fashions can also additionally bring about unintentional consequences. As with any new product or service, there are vital problems round suitable danger control and oversight. It might be vital to evaluate makes use of AI and gadget getting to know in view in their dangers, which include adherence to applicable protocols on information privacy, behaviour dangers, and cybersecurity. Adequate checking out and 'training' of equipment with impartial information and remarks mechanisms is vital to make sure programs do what they're supposed to do. Overall, AI and gadget getting to know programs display full-size promise if their unique dangers are well managed. The concluding phase offers initial mind on governance and improvement of fashions, in addition to auditability through establishments and supervisors.

(Neeraj Gupta, 2020) As they discussed here, various financial institution-specific factors, such as size, capitalization ratio, risk, price-to-earnings ratio, investment price, sales diversification, labour productivity, and age, are analysed and their effects on financial institution performance are discussed. The findings of the examination also show that the key factors of the performance of commercial banks in India are financial institution size, non-appearing mortgage percentage, and sales diversification. Additionally, the effects show that the impact of financial institution size, financial institution age, workforce productivity, and sales diversification on the overall performance of the Indian banks is significant during the catastrophe length.

(Report, 2020) Says that these technologies have the ability to disrupt the manner we have interaction with every other, function our businesses, or even how governments paintings for his or her citizens. Although the adoption of AI varies substantially throughout geographies, there are wallet of industries even in the evolved nations which might be more and more adopting AI to higher carrier their clients and produce in efficiencies of scale. The authorities have said that for banks to fulfil India's developing needs, they should harness technology along with AI and huge data. Whether to enhance typical client experience, take extra knowledgeable selections on credit score underwriting, come across frauds and defaults early, enhance collections or boom worker efficiency, AI has the ability to convert India's banks.

(Ankur Aggarwal, 2022) Explained that once all the banking offerings had been revolving across the salaried or earners, it emerge as a crucial part of our life. Present look is primarily based upon the scope of synthetic intelligence in client revel in and robot technique automation in banking zone in India. Most of the client revel in associated factors confirmed right correlation with AI primarily based total offerings through banks.

(Saloni Tripathi, 2022) Points out the dynamics of AI platforms in the banking industry and how they are becoming a significant disruptor. Banks are facing challenges from current technology that uses intelligent algorithms to replace human labour. Companies must integrate AI into their business strategies and practises to stay competitive.

(Omar H. Fares, 2022) The findings show how three important study areas—Strategy, Process, and Customer—are covered by the literature on AI and banking. A systematic consumer credit solution application blueprint (Service Blueprint) that details the customer journey, front stage, backstage, and support procedure in banks was also stated by him in his study paper.

ISSN - 1226-4741

(Sindhu J, 2019) In this study, artificial intelligence (AI) adoption in five Indian commercial banks—SBI, ICICI, Axis, HDFC, and HSBC—is discussed with reference to cost-benefit analysis. The data is gathered from secondary sources based on literature to determine the information utilised in the banking business. Search for AI technology services offered in India.

(Mehrotra, 2019) In this, he discusses the possibility of artificial intelligence (AI) taking the place of people in the banking and financial services industry, unwittingly bringing about the demise of the individualised attention and personal touch that are the cornerstones of customer satisfaction and delight in industries like banking and financial services, which are renowned for their fiduciary and responsible nature. Additionally, he stated that human intervention cannot be fully replaced by AI because it cannot handle complex personalised requests, comprehend sentiments, establish trust, or emotionally connect with a customer in order to capture his interest and earn his brand loyalty.

5) ARTIFICIAL INTELLIGENCE IN BANKING SERVICE

To increase productivity, humans have continually developed newer machines. Consider how human movement was dramatically altered by the introduction of bicycles and subsequently automobiles, which increased both the distance and the speed at which humans could move. These machines were built using internal combustion engines and wheels, which were both general-purpose technology. The most recent general purpose technology, artificial intelligence (AI), is being utilised to revolutionise the banking industry and commercial economics, just like the computer and Internet did before it (Accenture). A significant disruption in the financial services industry is being caused by the development of artificial intelligence, as more banks try to innovate under the aegis of AI powered technology in order to enhance current business processes. For instance, AI is changing how we interact with technology and moving some of the cognitive load from people to robots. You can probably just ask Google, Siri, or Alexa now days when in the past we had to know where to go and what to do in order to execute a task.

The banking environment has recently been more volatile and competitive as a result of globalisation and enhanced economic openness. Customers now demand superior treatment when using a company's products or services, or put another way, there is a greater focus on their satisfaction. Due to cutting-edge technology like artificial intelligence, which have become more prevalent in businesses over the past several decades, the banking industry has been thriving, and customer loyalty will continue to rise. Almost every business, from deposit-taking and lending to investment banking and asset management, depends on artificial intelligence applications because of the way that the modern corporate environment is structured. Therefore, autonomous data management that doesn't include human intervention might be very beneficial to banks in terms of enhancing speed, accuracy, and efficiency. Four categories may be used to group the numerous possible uses of AI in the banking sector. There are first front-office apps targeted at clients and back-office programmes targeted at operations. The second issue is with the regulations and laws governing trading and portfolio management. Most banks are still in the testing stage, however some have fully incorporated modern technology into their operations. Third, online banking fraud is investigated as a potential application for artificial intelligence. With the rise of online and mobile payments, credit card fraud has swiftly become one of the most common types of cybercrime. As a result, a lot of companies have started utilising artificial intelligence (AI) algorithms to compare the

ISSN - 1226-4741

amount and location of current credit card transactions to historical ones in order to validate their legality in real time.

Financial institutions are also experimenting with AI technology in the field of chatbots. Chatbots are virtual assistants that can interact with bank clients via text or voice in an effort to meet their needs without employing a human employee. Financial institutions are also experimenting with artificial intelligence (AI) to present data from reports and legal papers, such as annual reports, to extract the necessary provisions. AI software may construct models by analysing data and using back testing to learn from previous errors. Several already-existing financial technology tools have evolved into precise AI solutions as time has gone forward. For instance, online financial planning tools that assist consumers in making wiser purchasing and saving decisions, robot advisers that enable total automation in some asset management activities, and A new PWC estimate suggests that artificial intelligence (AI) might contribute close to \$16 trillion to the global economy by 2030. Over \$5 billion has reportedly been invested globally on AI applications. By 2030, it is predicted that the banking industry would save \$1 trillion thanks to the implementation of AI, primarily as a result of branch closures.

Technology advancements in more recent years have allowed AI to provide workplace cognitive computing, which comprises incorporating algorithms into apps to assist organisational procedures (Tarafdar et al., 2019). This calls for increasing the effectiveness of information analysis, creating more accurate and reliable data outputs, and empowering workers to do high-level tasks. In recent years, AI-based solutions have shown to be effective and valuable. However, many corporate leaders are still unsure about how to strategically implement AI in their organisations. Despite 85% of corporate executives saw AI as a crucial tool for offering organisations a sustainable competitive edge, Ransbotham et al.'s (2017) research revealed that only 39% of company leaders had a strategic plan for the usage of AI because they were unclear of how to apply it inside their organisations.

Artificial intelligence (AI) is being used in banking in a variety of settings, including the front office (voice assistants and biometrics), middle office (complicated legal and compliance processes, antifraud risk monitoring), and back office (credit underwriting with smart contracts infrastructure).



Front Office

Researchers have discovered that AI has had an impact on the whole banking industry. At this stage of banking operations, voice help, chatbots, and biometric systems, among many others. This task was previously carried out by people. These tasks must be allocated to an individual, however since AI has been used, things have changed. Chatbots are crucial because they can interact with users like real people can. After-hours tech support lines are now available 24 hours a day to respond to client questions. They are able to manage several queries. Even after working for a longer period of time, they are careful and incapable of making mistakes. The cost has decreased while the client experience has enhanced.

ISSN - 1226-4741

Back office

They are an important component of banking services. The middle level activities of banks have been enhanced using AI. The intermediate level operations have a significant impact on all banking scams. At this level, KYC, Antifraud ML, and other monitoring actions are carried out. AI is used to support past transaction-based notifications and CIBIL monitoring. Banks can benefit from more robotic process automation in areas such as loan approval, account opening, automated report generating, anti-money laundering, and KYC. Some application areas of AI in banking services include facial recognition for the initial transaction, micro-expression analysis with virtual loan officers, biometric authentication and authorization, machine learning to detect fraud and cybercrimes, and real-time transaction analysis to prevent fraud.

A) AI Transform Banking for Customer

Convenience is something that customers are always looking for. Customers could obtain a necessary service even when banks were closed, for instance, making the ATM a success. More inventions have been stimulated by that degree of convenience. With the use of their cellphones, customers can now open bank accounts from the comfort of their couches. A decision management system (DMS) helps speed up the process of gathering Know Your Customer (KYC) data while also reducing errors, which can help businesses with their turnaround times. Also, company decisions can be rolled out without arduous procedures with the right business rules software. According to McKinsey's global AI survey study, virtual assistants and conversational interfaces used in front-office settings account for about 32% of all AI technology. Along with the usage of digital banking, customer expectations are increasing. During the COVID-19 pandemic, internet usage grew by up to 50%, and it is anticipated that this tendency would persist long after the pandemic has ended. Up to 45% of consumers could soon cease regularly visiting branches. As a result, it is crucial to maintain and build a user-friendly digital banking platform. The 24/7 assistance and recommendations offered by chatbots dramatically improve the banking experience for customers.

B) How AI helps in Detecting and preventing Frauds in banking sector

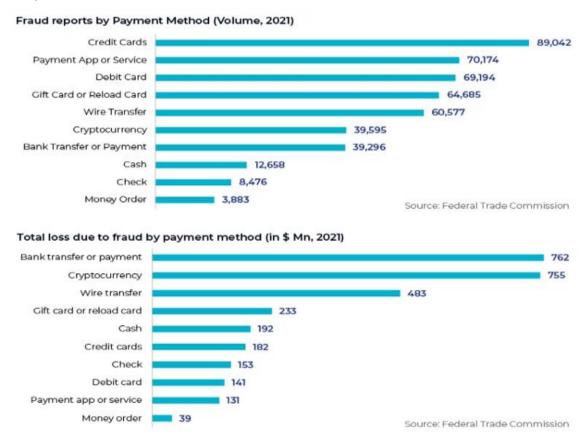
Fraud and Anti-Money Laundering

Every day, a sizable number of digital transactions take place as customers use apps or online accounts to pay bills, withdraw money, deposit checks, and do a variety of other tasks. As a result, the banking sector must increase its efforts in cybersecurity and fraud detection. Artificial intelligence in banking can be helpful in this situation. AI can help banks lower risks, track system problems, and improve online banking security. AI and machine learning can detect fraudulent behaviour fast and inform banks as well as customers. For instance, Danske Bank, the largest bank in Denmark, switched from a rules-based to an algorithm-based fraud detection system. AI offers anti-money laundering measures to protect its clients' money. AI offers anti-money laundering measures to protect its clients' money. AI creates several methods to protect bank accounts from such scammers.

ISSN - 1226-4741

Here are two well-liked AI money laundering prevention methods.

- SAS AML Solution
- Ayasdi AML Solution



SAS AML Solution

SAS AML solution is a detection software that identifies the source of information and provides all data and records to customers. Any form of money laundering fraud may be found with it, and clients can be warned about threats or crimes. The official accounts in the banking industry benefit from comprehensive protection provided by AI, increasing their credibility. Ayalon Insurance is one of the several Israeli businesses that utilise SAS AML solution products.

Ayasdi AML Solution

AI-based software examines customer behaviour to determine whether they are prepared to transfer money to businesses, giving bank management the ability to develop a customised plan to thwart crimes or frauds. It also identifies the client's behaviour tendencies and carries out the following tasks.

Contextual alert data, intelligent event triage, behavioural visions, auto feature engineering, and intelligent segmentation

ISSN - 1226-4741

Self-Learning AI and Adaptive Analytics

AI and ML excels at securing customer accounts, which fraudsters make exceedingly challenging and dynamic. Adaptive solutions designed to sharpen the reactions, at small judgments, for continuous improvement of performance should be considered by fraud detection experts. These transactions, which are very close to the trigger of the investigation, are either slightly above or slightly below the threshold. If there is a narrow window between a false positive event (a legal transaction that has scored too well) and a false negative event (a fraudulent transaction that has scored too low), accuracy is extremely crucial. Adaptive analytics, which provides a current understanding of a company's risk characteristics, emphasises this contrast. By immediately reacting to freshly established case disposition, adaptive analytics systems increase sensitivity to shifting fraud trends, enabling a more accurate distinction between frauds and non-frauds. Whether a transaction is found to be legitimate or fraudulent, the results of an analyst's examination are sent back into the system. By doing this, analysts can accurately describe the fraud environment in which they are working, including new tactics and long-dormant misleading fraud practises. The model is automatically modified using this adaptive modelling approach. The underlying fraud models' anticipated feature weights are automatically modified by this adaptive modelling method. It is a useful technique for improving fraud detection at the edge and stopping new fraud attacks.

Using supervised and unsupervised AI models together for safeguarding

Supervised learning, which is based on many precisely "classified" transactions, is the most popular type of machine learning. Every transaction is classified as fraudulent or not fraudulent. Large volumes of labelled transaction data are ingested to train the models, which then look for patterns that most strongly suggest genuine activities. How much clean, pertinent training data was used to create a supervised model has a direct impact on how accurate it is. **Unsupervised models** are used to find abnormal behaviour when there is little or no annotated transaction data. In these situations, self-learning must be employed to uncover the data patterns that traditional analytics miss.

C) Cost Benefits to banks by AI and ML

The BFSI business is using artificial intelligence (AI) more and more. Around 85% of banks, according to IDC, installed AI solutions last year to allow intelligent choices and automated processes for corporate know-your-customer (KYC) procedures, significantly cutting the time it takes to authorise enrolments for new corporate accounts. Moreover, personalization, efficiency, and reaction time are all being enhanced by AI technology and conversational interfaces.

According to Autonomous Next study, banks may save an estimated \$447 billion overall by 2023 thanks to AI applications, with \$416 billion going to front and middle office costs.

According to the financial research firm Autonomous, there are an estimated 22 billion smart computing devices worldwide, outnumbering people by a factor of three. A recent study by Autonomous also shown that traditional financial institutions may save expenses by 22% by 2030 by utilizing artificial intelligence technologies. Today, banks have a huge chance to use artificial intelligence to advance their operations while also boosting client happiness.

ISSN - 1226-4741

According to Forbes, 51% of businesses consider cost savings as the main advantage of artificial intelligence technology. Furthermore, according to a 2019 estimate by Juniper Research, operational cost savings from chatbot use in banking would rise to \$7.3 billion globally by 2023 from an anticipated \$209 million in 2019.

How is AI cutting cost by adopting AI?

1) Chatbots and Digital Banking

A bank must pay its expenses through physical offices, which include buying/renting the building, power consumption, and salaries of the human workforce. AI-supported Chatbots can be used to mimic the human representative, allowing banks to operate for an extended time without giving any over-time and handle multiple clients at the same time with the same accuracy.

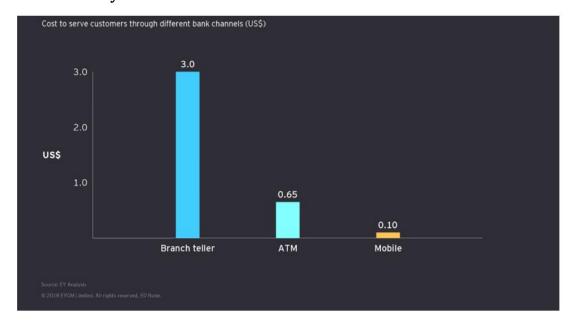
For example: With a total revenue of US\$6.394 billion and a net income of US\$1.721 billion, Ally Financial is a completely online bank. It provides managed portfolios, self-directed trading, and mortgages. Discover Bank is also such example.

2) Reduce Human Workforce Errors to a Minimum

AI can help to minimize errors caused by human workforce, such as miscalculations and human error. **Human mistake accounts for 38% of banking losses, resulting in a loss of revenue.** If a bank can minimize the loss, it can increase its net income.

Example: OSP offers Role-Based Access Control, AI-driven Audit Reporting, Audit Planning Systems, clever Data Sampling, and Journal Entry Testing. High Radius offers Bank Reconciliation Cloud.

Source: EYGM Limited D) AI for Credit Analysis



ISSN - 1226-4741

Traditional credit decisions are made using a small set of data points, such as credit agency scores and information from a borrower's application. Credit risk has always been a difficult subject for banking majors because of the many variables that go into determining a person's risk profile. The process is more difficult for business borrowers because data from many time periods and attributes must be combined and analysed to produce an overall picture of risk. By combining alternative information like utility bills and rent payments with legally permitted information like the borrower's credit history with other lenders, an AI system may create a more complete picture of the borrower.

ICICI Bank use ML and AI for credit analysis

Techniques of Zero Credit Touch the Bank was attempting to create "Zero Credit Touch" (ZCT) solutions, wherein loan facilities could be granted without any credit intervention and additional information being obtained from consumers. The following difficulties arise when developing ZCT techniques using conventional credit underwriting models.

Many of the current ICICI Bank clients are not eligible for credit models that combine business rules and scorecards. Customers who don't have salary accounts with the bank may have their required amount supplied to them because their anticipated income is smaller in certain cases. Machine learning models have been developed to address these issues by taking into account all customer-related data that is currently available to the bank, including transaction data from savings bank accounts, credit card usage patterns, repayment history from credit bureaus, and other profile-related data recorded in various CRM / internal platforms. To forecast clients' income in situations where it is unavailable, a machine learning-based model of income prediction was developed. These initiatives caused a sizable part of credit card and personal loan sourcing to occur through ZCT tactics.

E) Challenges for adoption AI in India

AI is becoming increasingly popular in India, with 32% of financial service providers now using it. AI is being used by banks like SBI, Bank of Baroda, HDFC, ICICI, Yes Bank, and others to streamline their business processes. In the next two years, AI and humans will coexist, according to 83% of Indian bankers, and 77% of them feel that banks must effectively create and/or use AI solutions.

Trained Manpower

There aren't many strong data scientists who can work on AI. Along with a lack of qualified human resources, banks also lack personnel that is up to date on the newest equipment and software. The financial services sector must collaborate with Indian institutions to recruit qualified data scientists and create internal training programmes that would teach staff how to successfully deploy AI technology for banking operations. Offering undergraduate and masters programmes in fintech, universities throughout the world, including the US and UK, are starting to adjust to the changes that AI is bringing about in the banking sector.

User capacity

It might be difficult to formulate requests or questions in a way that is understandable to AI. Customers that utilise financial services come in a wide variety, and their degrees of digital literacy vary widely, which makes the issue more difficult to solve. Only when the customer-provided data

ISSN - 1226-4741

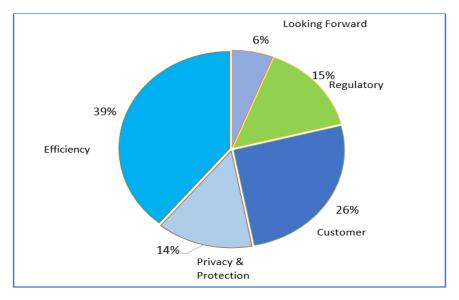
is relevant and understandable by the AI algorithms in use can a financial/banking service be considered effective. They may then ask questions, and the AI systems will be able to recognise them and provide an appropriate answer.

Multiple Languages

Given the diversity of Indian languages, the AI-enabled communication systems that reach most Indians in their first or preferred languages would be the most effective. Due to the small machine-readable corpus of vernacular languages available for the training of natural language processing and creation algorithms, this is currently a difficulty. Now, there are significant disparities between AI that can process and grasp local languages and AI that only works in English or bilingual mode. An AI-based communication platform must be able to comprehend the customer's spoken language and respond in that language while providing banking or financial services.

Data privacy and protection

AI systems need a lot of training data as an input. Consumer data is gathered by monitoring customer behaviour both online and offline, archived, and combined with data from other sources to create big data sets. These data set often include details on transactions, emails, videos, search inquiries, health records, and activities on social media. Unauthorized access to this data frequently occurs due to security flaws and unsecured servers. Cyberattacks against India ranked second between 2016 and 2018, so it is important to use the same language as the consumer when communicating with them.



Source: Accenture Report, 2021

5) FINDINGS

1) Financial services that are focused on building a personal connection with the client in order to offer automated financial advice as well as professional guidance for helping clients make financial decisions. Moreover, it assesses market volatility and makes recommendations on how users can manage their portfolios in order to meet their financial objectives.

ISSN - 1226-4741

- 2) Since technology enables users to access financial services with voice commands and touch displays, physical presence is gradually vanishing. Natural language processing technology can process queries to provide information, respond to inquiries, and link consumers to other financial services. As a result, efficiency is systematized, reducing human error.
- 3) The Indian banking industry is being impacted by artificial intelligence. The major players in the banking industry are incorporating artificial intelligence technology into some of their processes to improve the efficiency of banking. As a result, the banking industry will have more time to devote to other tasks that will enhance banking operations and relieve it of tedious tasks.
- 4) When voice processing and natural language processing technologies are improved, customer concerns relating to the banking sector will be answered quickly. The time when computers might handle the majority of customer support inquiries is rapidly approaching. Due to the elimination of line waiting, effective customer service would ensue.
- 5) We have identified that banking system are lacking behind in its back-end operation with respect to protection as data suggests that around 15%-20% is being allocated to data privacy and protection and also reveals that bank focusing more on generating revenue.
- 6) Nowadays, the majority of Indian banks are either preparing to employ AI to boost customer effectiveness and/or operational efficiency, or they have already tried out certain AI/ML models. Yet, it is crucial for each organization to evaluate where they are in the AI process and what level of maturity, they have for building and owning a production-grade AI/ML system. The bank may then choose a course of action based on the assessed degree of maturity.
- 7) It has been identified that banks have major challenge of acquiring huge amount data of every customer because for the purpose of training AI algorithms, an organization must spend in the production and storage of substantial volumes of data. The quantity and quality of data that these businesses have captured or retained are connected to the AI dividends that have been generated.

6) CONCLUSION

From the above study we came to the conclusion that banks are experimenting with and utilising artificial intelligence (AI) to modify how customers are handled, as the technology is growing in popularity. The banking industry will benefit greatly from artificial intelligence in the future. Customers now have more flexibility to complete transactions whenever they want, wherever, without having to stand in huge queues at the bank thanks to the introduction of AI. The purpose of artificial intelligence is to provide highly customised, high-quality services that are also quick and efficient. With the help of AI bank has reduce the cost on the repetitive task by automation. AI has also help bank to reduce fraud and to analysis the credit risk but still there are many challenges in front of AI. Challenge of acquiring huge amount of data of every customer of bank. Bank has to spend money on the production and storage of data. But still AI has bright future in banking sector as time will move forward there will be improvement in AI.

ISSN - 1226-4741

Bibliography

- 1) Ankur Aggarwal, D. (. (2022). A study of the scope of artificial intelligence in customer experience in banking sector in India . *International Journal of Advance and Innovative Research*, 3-7.
- 2) Board, F. S. (2017). Financial Stability Implications from FinTech. Financial Stability Board.
- 3) Chandrima Bhattacharya, D. M. (2022). Role of Artificial Intelligence in Banking for Leveraging. *AABFJ*, 7-84.
- 4) Hickam Sadok, F. S. (2022). Artificial intelligence and bank credit analysis: A review. *Cogent Economics & Finance*, 2-10.
- 5) Mehrotra, A. (2019). Artificial Intelligence in financial services Need to blend automation with human touch. *ResearchGate*, 2-6.
- 6) Neeraj Gupta, J. M. (2020). Ownership, bank size, capitalization and bank performance: Evidence from India. *Cogent Economics & Finance*, 4-34.
- 7) Omar H. Fares, I. B. (2022). Utilization of artificial intelligence in the banking sector: a systematic literature review. *Journal of Financial Services Marketing*, 3-15.
- 8) Report, I. (2020). Ai in Banking A Primer. IDBRT.
- 9) Saloni Tripathi, R. G. (2022). Role of Artificial Intelligence in the Banking Sector. *International Journal of Research Publication and Reviews*, 3-8.
- 10) Sindhu J, R. N. (2019). Impact of Artificial Intelligence in chosen Indian Commercial Bank A cost benefit analysis. *Asian Journal of Management*, 2-7.

Website Links

- 1) How AI Is Making Banks Cost-Effective and Efficient
- 2) https://datatechvibe.com/ai/how-ai-is-making-banks-cost-effective-and-efficient/
- 3) Banking of Tomorrow: Top Indian Banks Using Artificial Intelligence
- 4) https://www.analyticsinsight.net/banking-of-tomorrow-top-indian-banks-using-artificial-intelligence/
- 5) AI-bank of the future: Can banks meet the AI challenge?
- 6) https://www.mckinsey.com/industries/financial-services/our-insights/ai-bank-of-the-future-can-banks-meet-the-ai-challenge
- 7) Banking on Artificial Intelligence
- 8) https://www.wipro.com/business-process/why-banks-need-artificial-intelligence/

Books referred

- 1) AI and Future of Banking System by **Tony Boobier,2020**
- 2) Hands-On Artificial Intelligence for Banking: A practical guide to building intelligent financial applications using machine learning techniques by **Jeffery Ng**, **2020**