Challenges and Suggestions for Artificial Intelligence in Indian Banking System

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Abstract

Penetration of AI in banking sector is emerging at a rapid speed**.** It is emerging as fast developing technology across the globe. Banks are now finding comfort in adoption of new age technologies such as Artificial Intelligence, Block chain and many more. AI include bring smarter chat-bots for customer service, personalizing services for Individuals; moreover banks are using this technology for efficient running of back office work. It aims and helps in reducing frauds. The AI has the great potential to detect frauds, reduce risks and help follow rules and regulations. Hence, financial services providers are inculcating technology into banking sector with the aim of delivering better customers' experience. The objective of this study is to go through the benefits of Indian banking sector after adopting AI. This study is based on secondary data. The present study also put some light on the various challenges faced by Indian banking sector in adoption of AI tech.

Keywords: Artificial Intelligence, Indian Banking System, block chain, innovations

Introduction

The term Artificial Intelligence was introduced at Dartmouth College in 1956. Artificial Intelligence refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. Artificial intelligence is often used to describe machines that humans associate with the human mind, such as "learning" and "problem solving". AI recognizes and justifies certain actions for achieving goals. AI is revolutionizing the world in the

Digital Age, believed to become smarter than humans.AI powered Chatbots -AI en–bled conversational interfaces, allowing saving time and creating brand image. AI enabled mobile banking gives a new edge to banks in the Digital Age, eases financial transaction and increases bank revenues by 665. AI collects, analyzes data and quickly makes recommendations for customers as well as analyzes customer financial status. Constant and intensive analysis of customer credit data and financial transactions helps preventing bad debts, insolvency and fraud.

Components of Artificial Intelligence

- Computer science
- Psychology
- Neuron science
- Biology
- Maths
- Sociology
- Philosophy

Evolution of AI
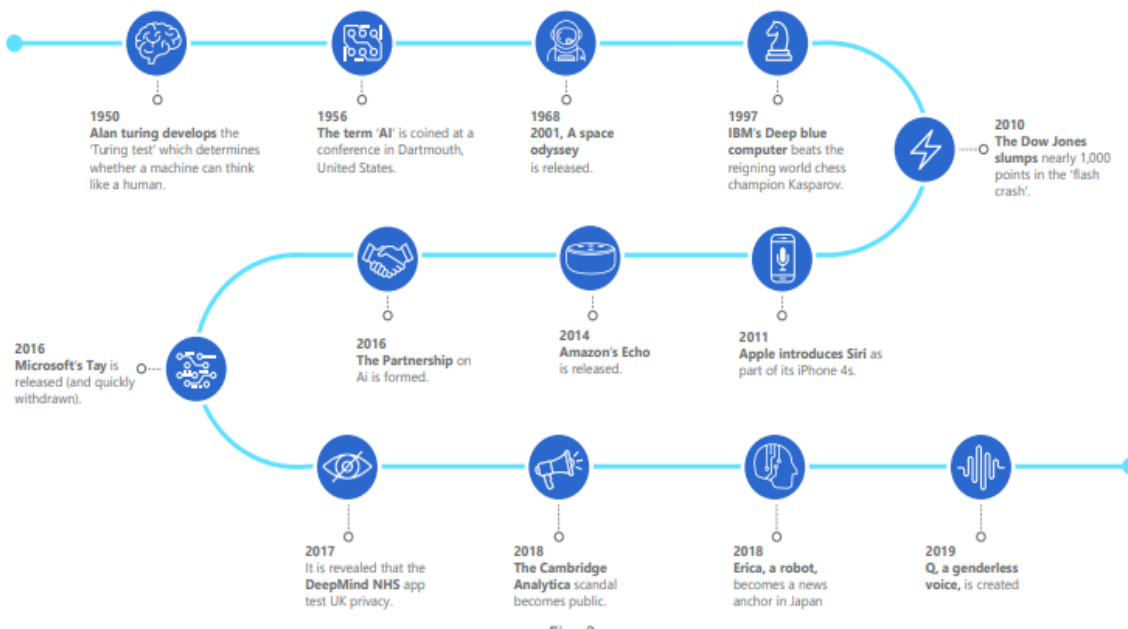
Source: A report on "AI in Banking, A Primer", 2020

Review of Literature

Artificial intelligence (AI) technology has been widely adopted by the banking industry. This industry has seen a significant increase in AI use.With the introduction of the Internet or other forms of electronic communication, this has become much more prevalent.Self-service branch networksand Internet banking. NLP (natural language processing) and AI (artificial intelligence) are two terms that are frequently used interchangeably.Automatic and semi-automated learning systems are employed to react to client inquiries in a timely manner, and keep track of the amount of money saved. (Kaur, D. et al. 2020: Vijai, D. et al. 2019)

Banks are using technology to improve client experiences, streamline corporate operations, stimulate business development and competitiveness, and adapt rapidly to internal and external changes.(Ghandour, Ahmad 2021).The widespread use of AI technologies in the banking industry means that more work will be automated. As a result, employees who are harmed by task reassignments or employment termination may become enraged and resign.Alternatively, disgruntled and ineffective personnel might result.(Sastry, V. V. L. N. 2020)

If appropriate data security measures are not performed, AI might lead to major data privacy breaches. This is due to the fact that such technologies frequently employ large amounts of data to provide useful and trustworthy information (Mhlanga, 2020). In most situations, privacy infractions result in high legal costs, damaged reputations, lost market share, and a threat to business continuity (Caron, M. S. 2019).When a result, as they accumulate and analyze vast datasets on clients, banks must employ appropriate information security and privacy protection procedures.

Objectives of the study

1. To study the usage of Artificial Intelligence (AI) banking sector of india
2. To find the challenges in application of Artificial Intelligence (AI) .
3. To identify opportunities and the future prospects concerning AI in Indian banking system.

Research Methodology

The present study is a review based study. Articles are reviewed to fulfill the objectives of the study. Moreover articles are related with the application of AI technology, its benefits, threats and opportunities in different –different fields including banking sector but in the context of Indian Banking System, very few literatures are available. Hence, the researchers have chosen this domain as the area of their research study.

Application of AI at different levels in banking

AI is having a significant influence on the banking industry, influencing how companies operate on three essential levels: the processes they utilize, (ii) the products and services they provide, and (iii) the user experiences they provide to their customers and staff.

A key use of AI in banks is at three levels:

- Front office: client interface; tailored insights; biometric verification and identification of consumers; and wealth management.

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- Middle office: Detection and risk assessment of payment fraud management, as well as Know Your Customer (KYC) and AML (Anti-Money Laundering) and credit rating choices on services and loans
- Back office: Insights into business and strategy; backend process simplification; and regulatory compliance.

Source: Authors' compilation

CHALLENGES IN ADOPTION OF AI IN INDIAN BANKING SYSTEM

India has been at the forefront of the technological revolution for quite some time. In recent years, India's banking sector has experienced unprecedented growth owing to the widespread use of mobile technologies. The industry has taken advantage of shifting consumer preferences brought on by digitalization to create a variety of innovative services and products for the changing economy. Internet banking, mobile banking, and payment apps are all examples of these services.

As a result of this shift in business techniques, there has been an increase in collaborations between technology developers, banks, and financial institutions that use these technologies. In India's retail banking, financial, and investment services sectors, the increased demand for online banking and financial information has generated prospects for AI application. However, a large-scale application of a high-end technology like AI in India will not be without difficulties. The following are the issues that the Indian banking system is facing:

- **Scarcity of trained human resources with right data skills**- The biggest challenge is the scarcity of trained human resources with the necessary data science abilities, There are only a few good data scientists accessible in the country to work on AI. Even banks' existing workforce is unfamiliar with the most up-to-date tools and applications.

- **Lack of acceptable data set quality-** The lifeblood of AI is data. The lack of appropriate data is a major issue in the banking industry. There are variety of problems that exist for the Indian banking industry employing AI, that range from a lack of accurate and quality data to India's wide linguistic mix. For example, if data sources are incorrect, KYC compliance AI systems may pose a risk. Even the most accurate Fraud Detection AI System would be useless without the correct data.

- **Lacking of harmonization in enforcement tactics-** Financial organizations using AI solutions have hurdles due to a lack of uniformity in enforcement techniques between nations and regulators. Different enforcement tactics make it difficult for businesses to create effective global standards and evaluate the risk of bringing AI advances to markets throughout the world.

- **Diversity of language set in Indian set up-** As there is multilingualism in India, the most efficient AI-enabled systems would be the ones that reach the maximum of Indians in their first language. However, because of the lacking of a machine-readable corpus of vernacular languages for training natural-language-processing-and-generation algorithms, this is

- currently a hurdle. There are now significant gaps between AI that can process and grasp local languages and AI that runs in English or bilingual mode.

- **Lack of AI-enabled communication -** It's difficult to express requests in a way that AI can understand. The difficulty is exacerbated by the wide range of clients that utilize banking services, as well as their varying levels of digital literacy. A financial/banking service is only helpful and understandable by AI systems if the data provided by the

consumer is useful. The AI systems can then recognize their questions and provide suitable responses.

➢ **Concerns about data security and privacy -** As inputs, AI systems require massive volumes of training data. Consumer data is acquired on a continual basis by tracking online and offline consumer behavior, then saved, integrated with other data sources to create big data sets, and profiled to extract additional information about customers. Individuals' online activities can generate massive databases. These data sets usually include information about a person's transactions, emails, videos, search searches, health records, and social networking interactions. Unauthorized access to this data is frequently the result of security flaws and unprotected servers. According to a research by the Data Security Council of India, between 2016 and 2018, India saw the second-highest number of cyber-attacks.

➢ **Impairment of creativity and adaptability-** Overreliance on artificial intelligence (AI) leads to automation of decision making and problem-solving may diminish employees' creativity and adaptability.

➢ **Some skills may become outdated as a result of AI-driven automation-**There are fears that an AI-based banking system may alter the nature of existing employment and render some talents obsolete, resulting in job losses. As a result, ensuring user acceptability of AI in banks could be a huge difficulty.

➢ **Expensive implementation and operational costs –** The cost of implementing and managing a large-scale AI system, particularly for small institutions with limited resources, could be prohibitive. Aside from the initial costs, professional data science talent would be necessary to keep AI technology operations running efficiently and effectively.

> **Integration of AI with traditional banking procedures is difficult-** There is currently limited data on how to properly align AI with traditional banking processes. As a result, maximizing the value of AI implementation may not be attainable.

> **Loss of emotional or human touch-**AI will never be able to completely replace human bankers or branch networks. To develop close banker-customer contact, the duties of human bankers should be rediscovered.

> **Not easily accessible-** Customers without current personal devices such as PCs, cell phones, and tablets, Internet connectivity, or ICT skills may be unable to use banking AI systems. People with lower socioeconomic status may be unable to benefit from banking AI.

SUGGESTIONS FOR SMOOTH ADOPTION OF AI IN INDIAN BANKING SECTOR

Along with the initiatives taken by the Govt. of India, some suggestions are recommended for the smooth adoption of Artificial Intelligence in Indian Banking Sector-

- **AI strategy**: In order to successfully adopt emerging technology, banking organizations must have a clear vision of what they want the technology to achieve, how they want to integrate it into their organization, the technology's feasibility and impact, and its potential consequences for the organization's internal dynamics.

- **Data collection**: To fully realize AI's great potential, a banking company must invest in the creation and storage of massive amounts of data for AI systems to learn from. The quality and quantity of data that these organizations have recorded or kept are related to the profits they earn from AI.

- **Internal digitization**: Banking Companies interested in implementing AI should start with internal digitization, establish a pro-technology culture, and educate their employees with emerging technologies.

- **Talent development**: Due to fierce competition for AI professionals and the specific demands of each banking company, most businesses opt to build their own talent pools.

- **Designing security mechanisms**: Banks must engage more in cybersecurity collaborations with technology companies in order to anticipate and mitigate possible risks.

- **Recommendations for Banks on AI Adoption Pre-adoption**: Banking Companies should make it clear to their staff that AI will not replace them, but rather enhance their employment. Workers will help improve the organization's efficiency by using new technology if they don't feel threatened by it.

- **During the adoption process:** Data access and privacy are critical parts of any AI development done by banks. From an ethical, business, and security standpoint, organizations should be cautious of privacy and data protection.

- **AI training**: Banking Companies that utilize AI should ensure that their personnel are trained on how to use it.In order to deliver banking or financial services, an AI-based communication platform must be able to understand the consumer's spoken language and answer in the same language.

- **Ethical design**: Banking organizations must construct AI systems that can be audited and that are consistent with rules in order to uncover customer frauds more accurately and efficiently.

- **Fairness, Accountability, and Transparency in Artificial Intelligence**: With AI/ML making inroads into every field of human life, ethics, transparency, and accountability should be prioritized in AI adoption in banking system.

- **Collaboration between banking industry and universities:**The financial services industry should collaborate with Indian universities to build qualified data scientists and in-house training programs to prepare staff for successful AI adoption in banking functions. In India, HDFC Bank has launched a program to educate students on developing banking technologies in collaboration with engineering and MBA universities.

CONCLUSION

In India, the banking sector is progressively embracing AI. According to a collaborative study by the National Business Research Institute and Narrative Science, roughly 32% of Indian financial service providers are already employing AI technologies like predictive analytics and voice recognition. AI is already being used by banks like SBI, Bank of Baroda, HDFC, ICICI, Yes Bank, and others to streamline their routine activities. According to Accenture's recent Accenture Banking Technology Vision 2018 research, 83 percent of Indian bankers anticipate that AI will operate alongside humans in the next two years, which is higher than the global average of 79 percent. In India, 93 percent of bankers indicated they are increasingly relying on data to make essential and automated decisions. However, according to the report, 77 percent of Indian bankers feel that most companies are unprepared to deal with impending tsunami of tainted data insights. They must develop and implement AI tools in banking services successfully. The adoption of AI in the Indian banking and finance industry can be further enhanced by addressing the above discussed challenges and by applying the suggestions.

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