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EMERGING ROLE OF ARTIFICIAL INTELLIGENCE IN INDIAN BANKING SECTOR

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ABSTRACT: For the understanding of a common man, Artificial Intelligence is nothing but the ability of machines to think on their own and do a task without the help of human beings. There are a number of state of the art technologies available in the arena of AI viz Machine Learning, interactive voice response (IVR), NLP (Natural Language Processing), Deep Learning, Speech Recognition, Image Analysis amongst others for the purpose collecting, cleansing and analyzing and disseminating massive amounts of data. As per the reports of Indian Brand Equity Foundation, as on September, 2019, there are 18 public sector banks, 22 private sector banks, 46 foreign banks, 53 regional rural banks, 1,542 urban cooperative banks and 94,384 rural cooperative banks in India. In the financial years starting 2007 to 2018, the compounded annual growth rate of the total advances was 10.94 per cent and at the same time, the compounded annual growth rate of total deposits 11.66 per cent. India's retail credit market holds huge size of world markets and is the fourth largest in the emerging countries. The size of the retail credit market in India grew to US\$ 281 billion as on December 2017 against US\$ 181 billion as on December 2014. If we believe in Reserve Bank of India (RBI), there are literally no worries in capitalization levels of the banks. India's economic conditions are in a much better shape than any other country in the world. RBI has always played a crucial role in bringing dynamic changes in banking sector. The fact that India can boast of one the best digital payment systems at the international level can be verified with the fact that Immediate Payment Service (IMPS) in India is the only level 5 system in the Faster Payments Innovation Index. India has been able to adopt AI well by integrating majority of its functions with customer centric view. Whether it is advances, cross sell avenues, AI technologies have helped to make the processes better.

KEYWORDS: AI (Artificial Intelligence), NLP (Natural Language Processing), SIA (SBI Intelligent Assistant), ML (Machine Learning), Faster Payments Innovation Index (FPII), Immediate Payment Service (IMPS), Credit Information Bureau India Limited (CIBIL), Forex (Foreign Exchange).

I. INTRODUCTION

Indian Brand Equity Foundation Publication. "Internet of Things- A Game Changer for India" (2019) focused on the relationship between technology adoption in the area of IoT in India in comparison to that in America, Europe and China. M.D fethi (2010) in their survey studied the role of AI in banks in Spanish and in India. A. Melit (2008) in their review of AI techniques in photovoltaic studied AI based system in different sectors such as economics, business etc.

OBJECTIVE OF THE STUDY

To study the usage of the application of AI in various domains of commercial banks in India.

II. REVIEW OF LITERATURE

One the major sectors which are data-intensive is banking. Banking is all about analyzing the huge available data, useful commercial and conclusive patterns can be drawn using AI. With so much of advancements in technology, consumer is the king today and has got a taste of ease and convenience and simply do not want to stand in a queue or wait for hours to connect with any channel and get an solution for their queries, to go through number of steps and paperwork to simply buy an insurance for an example, or to process the tedious and time consuming credit appraisal processes. AI will not only remove repetitive nature of such process but also use the huge data involved in banking processes for achieving better customer delight leading to increase in bank's operational efficiency.

III. RESEARCH METHODOLOGY

Secondary data has been used and the research is descriptive and exploratory in nature.

IV. FINDINGS

In the below mentioned passage, the increasing usage of banking in the areas of fraud and risk management, ATM, trading services, credit assessment, portfolio management and home loans is being studied.

Increase in the usage of AI in Banking

In today's era, the dilemma of the banks is choose either reduction of costs or exceeding the customer expectations. In order to overcome this dilemma, AI has been able to provide the required impetus. AI has played an important for convincing the public for using digital channels with the user-friendly experience it offers to them.

Fraud and risk management

Increase in cybercrime is an area of deep concern for the commercial establishments as they increase their operations in the digital arena. It is not easy to manage risk management at internet scale either manually or with the help of legacy information systems. Majority of the banks in India in general and some leading private banks in specific are always in the opportunity to put in place the tools of AI in order to assess all the transactions on real-time basis. Machine learning not only plays an extremely important role in the middle level of the bank but also use help in management of fraud by scrutinizing transactions for suspicious patterns in real-time, verifying necessary customer information for credit appraisal, and enabling risk analysts with appropriate suggestions for curbing risk. For example, Axis Bank has adopted High Value Software w.e.f 1.-4-2009 for monitoring anti money laundering transactions which detects any unusual pattern in the customer transactions against their respective risk categories.

Automatic Teller Machine(ATM)

AI techniques helps in mitigation of the frauds through ATMs say cloning of the cards by developing a full proof mechanism for the identity of miscreants.

Trading and Securities

India boasts of the number one position when it comes to the volume of trades in financial derivatives market in the world. AI helps in the processes of risk management by identifying the suspicious transactions on real time basis. AI also provides the scope for back-up for bulk data in case of any failure in the operating systems.

Credit Assessment

One of the key business areas for banks is lending, which contributes significantly to the economy. There is a lot potential for the use of AI in the file of retail as well as corporate lending in India. AI has been playing an effective role in the process of verification of credit appraisal processes of retail customers as well corporate clients who wish to avail such loans. If there is an abundant data available about the borrower, it will make a better case for assessment of their creditworthiness. Generally, the amount of a loan is related to assessments based on the value of the underlying security and considering the rate of future inflation. Apart from that, the AI also uses Credit Information Bureau India Limited (CIBIL) information that gives the overall credit history of a borrowers with loan tracking of lifetime history. AI has the potential of executing more than one task simultaneously. The banks in India have been showing confidence in the use of AI for their credit appraisal processes.

Portfolio Management

In tune with the customized products in the areas of portfolio management services (PMS) mandated by SEBI offering discretionary or non-discretionary fund selection, the tools of AI have been helpful. The fund managers of the AMC (Asset Management Companies) are in a better position to suggest the potential sectors to their clients based on their risk quotient and investment horizons.

Home Loans

In first of its kind initiative, Axis Bank has introduced AI enabled features in its mobile banking application that assists the prospective home loan buyers to search properties on the basis of customized set of customer requirements. In the given below table, a list of Artificial Intelligence based technological innovations adopted by some of the leading banks in India is mentioned:

Table 1: AI applications used by selected commercial banks in India

Name of Bank	Name of Technology	Services provided
State Bank of India	SIA (SBI Intelligent Assistant)	An AI-powered chat assistant that addresses customer enquiries instantly on 24*7 basis.
SBI Cards	ILA	Caters to the queries related to credit card related requests
IndusInd Bank	Indus Assist	Helps their customers in not only undertaking financial and non financial banking transactions on Amazon Echo but also the Alexa-enabled devices execution of voice based command. Alexa is an online assistant developed by Amazon
HDFC Bank	EVA(Electronic Virtual Assistant)	An AI-backed virtual online chat assistant that responds to customer enquiries instantly
ICICI Bank	Ipai	Helps customers for banking requests on multiple channels such as Internet banking, mobile banking, pockets etc.
Kotak Bank	Chat with KEYA	Answers banking queries related to credit card, debit card, current accounts, savings accounts, demat cum trading accounts, fixed deposits, mutual funds, loans etc.
Yes Bank	YES ROBOT	Helps users to do a host of financial and non financial banking transactions.
Axis Bank	Axis Aha!	All time conversational banking assistant that addresses banking related queries and help them do banking transactions.
Canara Bank	Mitra	Assists the customer in their queries on real time basis

Source: Websites of commercial banks in India

V. CHALLENGES IN ADOPTION OF AI IN BANKING IN INDIA

Implementation of AI suffers from many obstacles. People still rely on the traditional channels of banking i.e the brick and mortar approach over the automation tools because of increased chances of online fraud, hacking etc. The population density of India when it comes to number of persons on per square kilometer basis had reached 382 persons per sq km as compared to 325 persons per sq km in the 2001 Census as per Census 2011, Government of India. In such case, a lot of damage will be done to the credibility of AI, if the AI processes wrong information based on misleading data. The success of AI is subject to availability of genuine data the failure of which can render AI worthless.

VI. CONCLUSION

Despite so many challenges, banks in India have made tremendous progress in the adopting AI (Artificial Intelligence). As per the sources, State Bank of India's AI based technological innovation SIA has the potential of responding to approximately 10,000 enquiries per second or 864 million in a day which is about 25% of the total queries processed by Google every day. A Bangalore based company named "Payjo" has designed the platform for SIA and doing it in a errorless manner for a bank with approximately 420 million customers is

nothing short of any engineering marvel. In yet another landmark, Canara Bank has set up its first digital branch “CANDI” and a humanoid robot named, “BRO” that responds to a specific set of customer queries.

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