

Application of Artificial Intelligence and Its Powered Technologies in the Indian Banking and Financial Industry: An Overview

Dr. Anil B Malali¹, Dr. S. Gopalakrishnan²

^{1&2} Associate Professor

Department of Commerce and Management,
Acharya Institute of Graduate Studies Bangalore - 560107, Karnataka, India

Abstract: Artificial intelligence (AI) will make powerful the banking and financial institutions to totally redefine how they function, institute ground-breaking products and services, and most prominently brunt customer experience interferences. In the machine age era, banks will find themselves challenging with the help of fintech companies by leveraging sophisticated technologies that supplement or even restore human workers with classy algorithms. To uphold a sharp spirited edge, banking and financial companies will need to cuddle AI and weave it into their business strategy and operations. This present article will examine the dynamics of AI ecosystems in the banking and financial industry and how it is fast becoming a most important disrupter by looking at some of the critical unsolved problems in this area of business. AI's possible can be looked at from side to side with several lenses in this sector, predominantly its implications and relevance crossways the operating backdrop of banking and financial service industry.

Key Words: Artificial Intelligence, Machine Learning, Chat bots, Banking and Financial Industry, Technology.

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I. INTRODUCTION

As the say 'Necessity is the Mother of Invention' universal technology has progressed over the years and those are influencing the people and their mindsets. Thus people have changed their state of mind from cable networks to online network and this has been changed the world gradually towards adopting the new age technology Artificial Intelligence (AI). The word AI was profound by John Mc-Carthy in the year 1956 and it is going to rule the world in the forthcoming days. Thus it has become a smart technology amongst business houses today since the business houses are associated with a large number of data. Increment in the data pattern business has paved the way for the rising demand for AI. Since the AI is processing a large number of data patterns more effectively than human beings, it seems to be a beneficial technology for the business houses, and thus it understands the customers and increases the insight. All around the world thousands of business houses have looked the AI as a process giant in the field of Banking and Financial services industry (Ayushman Baruah, 2019). The banking sector is now realizing the comfort of data processing with the help of cutting edge technology such as AI, Blockchain and so on. As a result, the traditional Banking and Financial services industries are approaching Fin-tech companies with a view to providing innovative services to their customers (Ashish Anantharaman, 2019).

AI in the Indian Banking and Financial Sector

In recent years, the Indian banking sector has been incorporating the AI-enabled technologies in their business operations uncompromisingly. According to PwC Fin-Tech Trends Report 2017, investment on AI and its allied technologies would be touched 5.5 billion USD, and it up from 4.1 billion USD in the year 2015. While a large number of commercial as well as industrial banks worldwide have incorporated the AI and its allied technologies for managing the customer and back-office related activities, in the case of India, implementation of AI and its allied technologies are not upto the level of advanced countries (BFSI, 2019). In recent times, lots of banking and financial institutions having tie-up with Fin-Techs companies and conduct proof of concepts (POCs) and the same has been executed in the day to day business operations. Thus AI is sight as profitable and viable ventures in the Fin-Tech room in India (Raghav Bharadwaj, 2019). The relevance of AI and machine learning (ML) in the process of data analytics and customer service creates personalized as well as faster services. Consequently, it offers systemized back- end workflows, well-tailored customer services with

enhanced insights (Rajamohan & Dhanabalan, 2012). It is noted that about 36 percent of large financial institutions have invested a huge amount on these kinds of technology already, around 70 percent of the industries mentioned that they have an intention to invest in the days to come (Aashish Chandorkar & Kamal Misra, 2019).

What makes the Indian banking and financial sector to go for AI-enabled technologies?

Indian Fin-Tech industry is expected to expand upto 22 percent of CAGR in the next five years, with a business volume of 73 billion USD by 2020. In addition, with over half a billion people in the country having admittance to the Internet, it is posing a vast prospect for the fin-tech industry. Financial services are impacting more than 300 million consumers by facilitating the access to credit, while the same consumers are totally unnoticed by conventional players due to inadequate credit history (Meha Agarwal, 2019). Apart from these statistics and rationale, a number of reasons behind the incorporation of AI in the banking and financial industry and the reasons are,

1. Heavy competition in the banking and financial industry.
2. Demand for process-driven services
3. Introduction of customized service at banks
4. Need for customized solutions
5. Ensuring the operational efficiencies
6. Escalating employee efficiency
7. Increase the profitability and acquiescence
8. To trim down maladies and safety risks
9. To deal with a huge amount of business data
10. To bring in effective decision making

II. AREAS, WHERE AI-ENABLED TECHNOLOGIES HAVE TO BE EXCELLED

AI will empower banking organizations to completely redefine how they operate, establish innovative products and services, and most importantly impact customer experience interventions. In this second machine age, banks will find themselves competing with upstart fintech firms leveraging advanced technologies that augment or even replace human workers with sophisticated algorithms. To maintain a sharp competitive edge, banking corporations will need to embrace AI and weave it into their business strategy. The following are some of the areas where the AI-enabled technologies explored the changes (Dhanabalan et al. 2018).

Risk Assessment

AI and ML are replacing the human analysts in business activities since human selection involves high cost. AI is constructed upon ML and it learns the thing over a period of time, and thus it ensures the highest accuracy in the calculation, and examining the huge amount of data; AI has the power to establish process automation to the fields wherever necessary, smart analytics and clear thoughts. AI-powered Chat-Bots have proved themselves a potential technique in the case of customer care, as a consequence, it seems to be an uncompromised resource for the organizations since it saves time and money for them. This innovative technology would not only change the way of doing business but also non-commercial activities (Maruti techlabs, 2019).

Fraud Detection and Management

The ultimate objective of every business is to trim down the risks that have associated with the business. This statement would also suit for the banking and financial institutions. Since the banks and financial institutions deal with deposits and payments, it has to prompt while getting and paying the interests over the deposits and dividends. This is the reason why banking and financial institutions consider fraudulent activities as a serious issue and to avoid financial pollution by using AI-enabled technologies (Rajamohan & Dhanabalan, 2013). AI is the topmost technology that comes with security and fraud detection techniques. It can be used to assess the earlier spending pattern and behavior of an individual towards various transactions and from which it would identify the odd behavior, like utilizing a card from one more country just a few hours later that card has been used somewhere else, or is there any attempt to take out the money unusually for an account is in query. One more beautiful attribute of the AI in fraud detection is that it has no doubts in learning things based on the experience. If it hoists a red-colored flag for the routine transactions and the same is corrected by a person, the AI enables the system may learn the things from that experience and makes effective decisions on what things can be treated as fraud and whatnot (Maruti techlabs, 2019).

Financial Advisory Services

PWC Report 2017 mentioned that the possibilities of Robo-advisors in the near future. Because of the pressure loaded on the banking and financial institutions to trim down the commission amount on the investments made by the individuals, technologies will do the things that humans won't do for a single down payment. Apart from this a new type of technique called bionic advisory is also being used in this process. In which both mechanical and human insights have combined together and thus it gives highly efficient alternatives than what the individual components can give (Ashish Anantharaman, 2019).

Trading

For determining the future market position, investment companies have depended upon the systems and the data analysts more and more. The success of the investment companies depends upon its capability to forecast the market's future exactly. Systems are playing a major role in this prediction since they have processed a large amount of data in a short span of time. In such a way that systems trained to examine the various types of past data and thus it predicts the data how it would repeat in the days to come. In the meantime anomalies, as the 2008 financial crisis does exist in data, the system would be trained in the companies to examine the data to find reasons for these kinds of anomalies and sketch up a plan for avoiding those anomalies in the prospect forecast well (Dhanabalan et al. 2018). Thus AI could suggest a collection of solutions to the demand of each and every since it is more dependent upon the individual risk appetite. Hence, an individual who is having more risk appetite can use AI for a variety of solutions on the areas such as time to buy the stocks, hold it and sell it. On the other hand, those who have less risk appetite can use the AI-enabled technologies to get alerts like when the market would fall or rise, and thus companies may go a decision that either invest more or stay in the existing investment or to move out from the market.

Managing Finance

Managing finance is a challenging task in the materialistic world for people and business houses. But this problem won't exist any longer, since the emergence and utilization of AI and its enabling technologies in the fund management field. There is a new emergence in the field of AI-enabled financial management is called personal financial management (PFM) (Rajamohan & Dhanabalan, 2014). It is a kind of wallet that has made by a San Francisco based startup with the help of AI-based algorithms and thus it supports consumers to make smart decisions to spend the money at the right time. In this case, it collects all the data from the web footprint and thus it generates the spending graph (Maruti Labs, 2019). Though this process is termed as privacy violation on the internet and it would be an offense but, might be this is what lies in prospect. As a consequence, it has to be considered as a PFM with a view to reducing the time span from making a huge database or writing on a piece of paper. From a micro-level investment to macro-level investment AI and its enabling technologies commits to be a regulator of the future for managing funds (Ashish Anantharaman, 2019).

Accurate Decision-Making

In the data-driven management era, management decisions at a lower cost would help to various business houses such as banking, financial and insurance companies and these institutions will raise the questions towards the systems, rather than towards the experts. While systems and machines would come up with desired results by analyzing the huge volume of data and the same would help the business managers and their subordinates to take suitable decisions.

Automated Customer Support

In recent days, the traditional customer care industry has been replaced with the help of AI-enabled technologies such as Chatbots, Voice systems, and Text chats. These advanced technologies having the capability to deliver customer services like the executives and it also gave the expert opinion to the customers at a lower cost. Thus the AI-enabled technologies have replaced the existing traditional customer care procedures and it saves time and energy for the business houses.

Claims Management

AI-enabled technologies gather evidence and assess the data smartly for ensuring the quality of results. AI-enabled technologies learn the behavioral outlines of the users or the customers in order to spot the unusual activities and send the warning signs of unusual transactions and a kind of incident. In the case of claims administration, these kinds of technologies play a major role; especially ML techniques help to bypass a number of stages in the claim settlement process (Park & Dhanabalan. 2019). AI-powered technologies facilitate the data management process effectively. It handles a huge volume of data within the short span of time and thus it enables insurers computerized claim settlement. With the help of a computerized settlement process, overall

processing time has been trim down to a certain extent and ultimately it condenses the costs associated with the claims settlement, thus it also improves customers' experience in this process.

Insurances Management

In the case of Insurance industry AI plays a substantial role in the Underwriting process. By way of computerization of the underwriting process, it collects a large volume of data and thus it takes appropriate decisions and provides the same to the customers. Mechanized driving force would support to the clients online, in finalizing insurance obligation. The objective of the insurance is to compensate for the loss, for this process it will take some time. While these AI-powered technologies rush up the underwriting process and habitually deliver exclusive tests by connecting different pertinent data sets, still external ones do not submit the health records. Instead of made payments for the medical treatments that are expensive for insurance, it is good to find out the illness in order to avoid them. Thus a person can administer the data that was utilized prior to admittance of the risks, to the lesser the likelihood of indemnity occurring to the insured and also for the insurer (Rajamohan & Dhanabalan, 2013).

Automated Virtual Financial Assistants

AI-powered financial experts and advisers support the users in making effective and efficient decisions related to finance-related activities. This process takes account of observing the happenings of stock and bond market tendency as per user's investment affordability and portfolio, it would assist them in taking decisions regarding buying and selling of stocks and bonds. This kind of technology often termed as "Robo-Advisors" and these kinds of advisers usage has been increasing with the help of well-known financial companies and Fintech Startups.

Predictive Analysis in Financial Services

Prognostic analytics is a kind of analytics and it plays a major role in the financial service industry in various aspects. It also influences the areas such as developing business strategy, increasing sales and turnover, revenue generation and optimum utilization of resources. It seems a game changer by way of enhancing overall industry operations, smoothening domestic operation processes, and exceed than rivalries. Since predictive analytics is closely associated with different industries, it collects, arrange and analyzes the data by using cutting edge algorithms and technologies, thus it provides customized and well-organized solutions to the customers. In such a way that banks and financial industries using this technique for calculating the credit scores of the customers and avoids bad loans (Dhanabalan et al, 2018). Since predictive analysis uses a huge amount of data, it would able to identify the pattern and forecast insights easily and accurately. Such results and insights would disclose the things that would happen in the future like what the consumers are going to purchase, how much they are going to purchase, how long the employee would be in the company etc... thus predictive analysis comes to the authentic conclusion from sophisticated statics in the form of data mining.

Wealth Management for Masses

Computerized advisory services are accessible to the lesser net worth market division ensuing in a lesser amount of commissions. AI-powered smart wallets observe the users buying behavior and actions. Such details intimate the users to hold back the present spending pattern and advice those to modify their personal spending pattern with a view to trim down their expenses. Due to various potential reasons usage of automation in the banking and financial industry is increasing day by day, its result deploying AI and ML related technologies more and more in the day to day business operations (Django Stars, 2019). The attraction in science fiction, AI, ML and bots in banking and the financial industry would have the possibility to expand the required skills, trim down the costs and get better customer experience. This could be possible only through the Fintech industry to associate with coders; developers, designers, and tech people to make sure new concepts are diagnosed, developed and commercialized effectively and professionally.

III. CONCLUSION

Lending is not limited only to consumers with credit scores or credit cards. Thanks to fintech, it is available to everyone and it is reinventing lifestyles. Fintech companies in the country are filling in the gap left behind by the traditional banking sector, and this is happening by using the power of technology and innovation in Artificial Intelligence. The users being positively impacted by these lending startups were never considered serviceable by the formal banking sector. Also, Fintech, powered by AI, helps in assessing credit scores of users based on various factors like digital footprint and other alternative data points, thus lending to NTC customers and therefore significantly increasing the number of 'creditworthy' people in the country by introducing them to the market, safely and affordably. Today, AI has become the de-facto technology used by all fintech companies to build their platforms. It is estimated that within the next decade, AI-powered financial services will be the

only medium of interaction for the users, making financial products and lending available to masses even in the remote towns of the country, thereby making financial inclusion a close reality. It could be understood from the above-furnished details that AI would be the future for the banking and financial industry. Because of the tempo at which AI-powered technologies working towards financial progression and make it easier for the customers. Thus in the upcoming days, it is going to reinstate the human being and would cater quicker services with the most suitable solutions at an affordable cost. Bots are the kind of innovation in the AI-powered sector and its usage has been growing gradually. Hence huge investments are being made on this by different industries those who are envisaging this technology as an elongated cost-cutting investment. It helps the industries in saving money from recruiting humans and also keeps away from human errors in this process. Though the usage of AI-powered technologies in the budding stage the way in which it is functioning leads to the growth and development of banking and the financial sector it could be also be anticipated that the prospects of AI-powered technologies would lead to minor losses and offer better trading with utmost customer satisfaction.

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