Renovating Indian Banking and Financial Sector through Industry 4.0 Powered Technologies

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Abstract: *Artificial Intelligence (AI) is a magic word that influences the various industries across the world by its magical transformations and it also offers lots of personalized benefits to the human race. The technology itself is growing faster and becoming smarter day by day, thus it persuades new startups and to implement the AI and its powered technologies for a variety of applications. The banking sector is flattering one of the first adopters of AI-powered technologies in its business operations. The banking sector also understands, accepts and put into practice this technology in different possible ways just like other industries. The basic application of AI includes, fetching smarter chat-bots for customer service, customized services for individuals, and even introduce AI-powered robotics for self-service at the premises of the banks. Further than this fundamental application of AI, banks can also implement this technology for providing enhanced and efficient services to their back-office and even trim down deception and safety risks. Obviously, many research and development centers are doing research on this technology for enhancing this sector potentially. As per PwC report it is noted that global investments AI and its powered technologies has reached 5.1 billion USD in 2017 and it was 4 billion USD in 2015. Thus it could understand from this the growing importance of AI-powered technologies in the business operations, especially in the Indian banking sector. With this backdrop the present paper made an attempt to present the insights related to AI in the Indian banking sector, its application, advantages and the future of this technology.*
Key Words: *AI, Banking, Robotics, Technologies*

I. Introduction

In the technology dominant world, there is a buzzword called Artificial Intelligence (AI) echoing in the nuke and corner of the world in recent times. AI is a unique technology that caters to a variety of benefits and services to different industrial sectors around the world. In the prevailing days, AI is the hot topic and its related information having lots of discussion in the media, people, and society and around the world, then there must be incredible things in the AI and thus there is a need to be familiar with this and be aware of it. As the name proposes, AI is having the ability to reproduce things from something by its intelligence, by way of obtaining and applying knowledge and skills. This ability of replication is done by a mechanism or a computer. While a mechanism imitates a human mind and thereby thinking for itself, it is known as AI (Tim Sloane, 2018). The programmed computers are intended in such a way that they can carry out a lot of activities. a few of these activities are erudition, Speech and voice detection, observation, preparation, way of thinking, Problem-solving and also the ability to functioning and be in motion around the objects. For this reason, AI spotlights its attention on generating intelligent technologies that maneuver and act in response like human beings. In the technology-driven world, like industries, the human race is also using the AI and its powered technologies in one way or the other do in the form of mobile phones or computers (Ryan North, 2019)..

II. Role of Banking Industry in an economy

Banking sectors play a significant role in the growth and development of the financial environment in modern society. Moreover, it is considered to be the lifeblood of the present economy since it handles cash, credits, and other financial transactions. Banks facilitate the customers to track their expenditures over savings and stimulate them to save money and earn interest for a safe future (Dhanabalan & Sathish, 2018). This support, in turn, helps the banking sector to make available the financial support to the growth and development of all sorts of businesses and industries. In view of the fact that the banking sector plays such a major role in the expansion of the world's economy, it is very essential that each and every business deals and financial

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transactions done through the banks and the same must be documented properly. To do these banks are largely using the computers, where they have a comprehensive record in their databases (Eleni Digalaki, 2019). There are channels used by the banks to carrying out their business operations through ATMs, mobile banking, online banking, e-mails, and so on. It is mind-boggling to know that the complete banking system is so well attached with lots of subsystems and that every transaction can be tracked and any exchange of information can be done from any part of the world just by connecting to these networks. This smooth process of the banking world that is done through computers and networks is possible only because banks use ICT enabled AI technologies (Kumba Sennaar, 2019).

Thanks to the flourishing AI concept, each and every company has made it's business technologies more commanding and intelligent to provide its customers in an improved way. Both B2B and B2C business setups have initiated the things to adopt this ground-breaking technology according to their scale of operations. Though, the level of penetration of AI-powered technologies in the banking sector seems to be limited to some extent. The divergent datasets and the risk of confidential data are the reasons for the sluggishness of AI incorporation in the banking industry. But then, as the online, as well as mobile banking, becoming a popular tool for 24/7 banking transactions, moreover, it is also expected that the AI and its powered technologies will soon take over (Stephen Gossett, 2020).

The Rise of Ai and its powered technologies in the Indian Banking Industry

Handling a huge volume of data and its processing needs, initiation of mobile phone technology, data accessibility, and propagation of open-source software offer AI a huge scope in the banking sector. Despite the fact that AI has been utilizing in the banking sector for decades, still, it has remained unobserved. In the technology-driven world the banking sector eyes on leveraging with the help of mobile application development companies and fintech companies. Digital personal assistants and chatbots have transformed the customer services delightfully and enhanced business communication. From supporting the people in doing everyday tasks to giving them custom-made services and thus offers a joyful experience, virtual assistants and chatbots have many applications. Talking about the banking sector, mobile application development services can incorporate AI technology for improving and enhancing the services (Sameer Dhanrajani, 2019).

Integration of AI in Mobile Applications for Bank

The majority of the banks have started to implement the AI and related technologies into their business operations worldwide. According to the National Business Research Institute, over 32 percent of the financial institutions using AI and its powered technologies in the form of voice recognition and prognostic analysis. Banks are utilizing AI-powered technology for improving and enhancing the customer experience by the customized touch. Millennials rely heavily on mobile banking, which means that AI-powered banking mobile applications can attract them like anything (Meha Agarwal, 2019). Such applications can eagerly meet the user's outlook with personal, contextual, and predictive services. These are intelligent applications that can track the user's behaviors and give those tailored tips and insights on investments and everyday expenditures.

Initiation of AI banking in India

According to Accenture's recent Accenture Banking Technology Vision 2018 report, 83 percent of Indian bankers considered that the AI and its powered technologies will work at the side of the human beings in the next couple of years higher than the global average of 79 percent. 93 percent of bankers in India mentioned they are progressively using the data more to drive critical and automated decision-making. More partner supplied customer data means a higher degree of responsibility for banks. Yet, 77 percent of Indian bankers agree that most firms are not prepared to confront impending waves of corrupted insights from falsified data (Oliver Smith, 2019). AI is not new to India. Research institutions and universities have been working with various AI technologies for decades, and especially in the area of social transformation. With enabling technologies becoming a lot more accessible and inexpensive, AI is now becoming mainstream, with large enterprises and start-ups looking at different opportunities (Rajamohan & Dhanabalan, 2013). Our research shows that the adoption of AI has the potential to add nearly $1 trillion to the Indian economy in 2035. AI adoption is still in its nascent stages, and a lot more needs to be done to realize its full potential. Application of AI and machine learning (ML) to different functions within the banking and financial industry has enabled them to offer far more personalized and efficient customer service. By achieving that, banks have also been able to gain better insights into their customers' preferences and expectations from the bank. Accordingly, automation of back-end workflows has shown better outcomes. Moreover, more than 36 percent of large financial institutions are already investing in such technologies, and close to 70 percent are planning to in the near future (Meha Agarwal, 2019; Dhanabalan & Sathish, 2018).

Relevance of AI in the Banking Operations

While incorporating the AI-enabled technologies in the banking and financial industry, it would help in probing the database efficiently and make it possible decision on the data is processed and thus it helps the bank and financial institutions to advocate, forecast and execute customized financial services to its customers. Thus the application of AI-powered technologies is offering possible solutions to issues like financial strategies, loan rates, and future market progress and so on (Thomas smale, 2018**)**.

Personalized Financial Guidance

AI-enabled technologies offering lots of benefit to the customers, banking and financial institutions in the form of taking quick and efficient financial decisions. It would provide up to date information on the current market situation, structure, timing to invest our time to withdraw money and it also provides propositions on stocks and bonds in which customers can invest or not invest (Rajamohan & Dhanabalan, 2012).

Digital Wallets

The invention of digital wallets has helped in boosting the level of digital money to a much higher level. The best part of these wallets is that customers can purchase any item online either with a mobile phone or a computer and they can do this through cashless transactions.

Interactive Voice Reaction Systems

This is a mechanized voice system that helps in work together with customers and system and routing calls to correct banking departments. This voice support also helps in answering certain queries. This characteristic adds a generous and agreeable knowledge to customers with their banks. AI is gaining attractiveness day by day and banks are exploring and put into practice this technology in transforming the way customers are assisted (Dhanabalan, 2011). So, the future of AI in the banking sector is very bright and with the introduction of AI, it makes it even easier for a customer to do communication from any place and at any time without waiting in long queues at the bank. Hence, the aim of AI is to provide modified and high-quality customer satisfaction along with efficient and time-saving services (Paolo Giudici, et al, 2019).

III. Benefits of AI in Banking

Customer Satisfaction

Customer satisfaction is the first and foremost important factor of any bank around the world. The banks provide personalized and more efficient services to each and every individual customer. AI helps in increasing revenue, faster decision making and having a good customer relationship. Having AI not only ensures the customers' satisfaction but it also helps the banks to maintain and have a well organized back office.

Chatbots

The bot is the short form of Robot, and so chatbot is an automated chat program that is either run automatically or follows a pre-determined path. A chatbot is a way of using AI in the form of robotics in banking. This tool is very helpful in the banking industry because people are so caught up in their daily jobs that it becomes very difficult for them to be physically present at the bank. Most often it has been used when people are free, the banks are closed or it is a weekend and during late hours' banks don't work. Money can be required at any time and at any place and this is where chatbots come handy as they are available 24/7. Chatbots are a smart way of providing efficient customer service. It helps customers know their transaction details and also additional services that they are eligible to receive. Through the use of chatbots, banks are able to understand each customer's requirements and give them the right offers or even reward them (Stephan Bredt, 2019).

Detecting Fraud

Banking related fraud is one of the most fearful concerns among people and the banking industry. Especially when a financial fraud occurs, the affected individual finds it very difficult to cope and recover from financial losses. However, the good news is that whenever there is a fraud transaction noticed in a bank statement and if it is immediately brought to the attention of the bank, then the bank authorities immediately step in and take necessary action to handle the incident in a very organized manner (Dhanabalan et al, 2018). This quick response from the bank has helped the costumers to build their trust with the bank as well as helps the bank also to retain their loyal customers. Now, this immediate action that the bank authorities are able to take is because of the use of AI in the banking industry. AI has an enormous ability to detect and minimize banking fraud. The tool that is used for AI gets smarter and smarter day by day, which in turn helps in powerful machine learning. One way it captures banking fraud is by scanning through the vast transactional data and tracking down any unorthodox activities or irregular behavior patterns. Hence with this smarter AI, banks are able to detect fraud and protect security breaches (Sharyn & Nikolai 2019).

IV. The Future of AI in Banking

It could understand what is AI and the benefits of AI in banking, we will now look at the scope of AI in the banking industry in the years to come. If we look at the development in the field of technology, we see that it is getting smarter every day, this gives us the assurance that in the future, we can only see that technology of AI going stronger and stronger, which will help any customer to have secure banking experience. Let us look at some of the areas in which AI will rule in the future (Park, & Dhanabalan, 2019).

V. Conclusion

AI has many benefits to offer the same for the growth and development of the banking sector. Be it android application development or ios application development, the AI can bring tremendous changes in the banking and financial industry. AI-powered technologies facilitate the banking and financial institutions to recognize the customers' behavior patterns and thus gives a variety of services to them through the application. With the help of AI-powered technologies system, analysts will provide the prominent IT-based solutions and it offers personalized business solutions to the customers by integrating revolutionary technologies such as AI, and Blockchain. Thus there is the number of benefits is being with AI (Dhanabalan & Rajamohan, 2014). Hence the banking and financial institutions should come forward to invest in these significant resources to strengthen their competency through well developed AI-based ecosystems, research, and development (Ryan North, 2019). Though some of the banking and financial institutions have invested already, its level seems to be lesser than developed countries, moreover, technology innovation centers need to be created more. However awareness on the AI and its allied technology is comparatively poor in India, therefore the centralized AI program will have to be conducted along with the cooperation of national and state programs and hub development, building on existing centers of excellence. Several analyses have established that the startup ecosystem in India is developing slowly in the early stage AI ecosystem, and is presenting a high possibility for the development of AI in the banking and financial industry.

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