

AI-POWERED CUSTOMER INTELLIGENCE: THE NEW TECHNOLOGY SHAPING THE FUTURE OF THE INDIAN BANK

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Abstract

The banking sector is one of the industries dealing with a massive amount of customer data. Currently, customer data and their needs are changing more vastly; the organization is focused more on customer because they are the asset of the bank and the customer satisfaction takes place at the core of any decision making, that ever boosted the advances in technology. In this scenario, financial industries now will have built their organizations with a customer-centric foothold, a shift from product-oriented ones in order to stay competitive. Customer Intelligence (CI) is the collection and analyzing the information related to customer, their details and activities, to build deeper knowledge for the best ways to interact with each individual customer. Thereby, boots customer loyalty, improves business efficiency, and helps to build customer persona to figure out target audience who turn out to be the brand ambassador. For that bank must invest in technology stack which will help them to understand the customer's needs. Modern techniques like Artificial Intelligence and Machine Learning will be great impact in creating customer intelligence system model. The proposed review paper will explore the AI techniques used for sprouting Customer Intelligence in Banking, to reshape the Banking Industry.

Keywords : Artificial Intelligence, Customer Intelligence, Machine Learning, Know Your Customer.

I INTRODUCTION

Enormous impact is affected in the business world by the awake of new technologies, that has changed the business

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operational perspective over the last couple of years. The demand of the new technology Artificial Intelligence (AI) is growing in entire organization and the Indian banking organization is gradually changing from old technologies to AI techniques in all aspects. AI applications not only help the banks in cost reduction, anti-money laundering or managing risk, but can be used for many other purposes.

Artificial Intelligence technologies are making ever more evident impacts on our lives. Banks are already adopting Artificial Intelligence for customer service management, because customer is the most important asset in banking business and banks around the world are trying to make their business customer-centric. Deep understanding of customer needs with the help of customer analytics, meet the requirements of different segments of customers.

Customer Intelligence strategy adoption in banks keeps the customer at center of all operations. So, it is necessity to have a deeper knowledge of customer banking relationship and all the transactions the customer count in and thereby give an insight about their customer to better understand their persona. Customer Persona means Customer Profiling which segments the customers and have a target one. And also strengthen the customer relationship with bank and offer more service, thereby improve the productivity and operational efficiency. Actually, Customer Intelligence is the path to Know Your Customer (KYC).

Banks should have AI based Customer Intelligence, as products and services are all focused on understanding and reaching potential customers. For this by gathering and analyzing customer intelligence, consumer data and property

data to give valuable insights and form the basis of successful decision making. When understanding potential customers, their motivation and their behavioral journey, can achieve precise targeting and powerful campaigns.

Customer segmentation and profiling can be furnished by applying new technologies like Artificial Intelligence and machine learning approach. In this survey paper, the researcher moves to review papers focusing on Customer Intelligence, Customer Analytics, Customer Segmentation and Profiling through various techniques and analyzed the approaches employed and measure the accurate technique.

The overview of this paper includes, I. Introduction, II. Study of AI in Customer Analytics, III. Literature Review, IV. Proposed System, V. Conceptual Framework, VI. Methodology, and VII. Conclusion.

II STUDY OF AI IN CUSTOMER ANALYTICS

The Indian banking sector has undergone tremendous transformation in the past ten years when compared to the past few decades. Adoption and implementation of technologies and technology enabled solutions have brought in visible benefits in terms of deriving business value, efficiency, and profitability. It has pressed firmly together almost all the areas of economy yet its effect is felt to a high degree in the banking sector also. Recently, many research is going in new technology artificial intelligence. Banks are banking on AI to demand for better services provide to customer, for the competitive advantage between organization, reduction of loss of human mistakes, improve operational efficiency and derive valuable insights from data for better decision making, thereby enhanced profitability.

In this time of life of increasing competition among businesses, customer intelligence (CI) is becoming a notable one and more researches are concentrated on it which makes the business value high. It is quite competitive advantage one

among the business environment. Nowadays, key importance for the growth of any industry is to focus the business on customer-centric mode. Banking is no exception. But there are various facets of becoming a customer-centric bank. Many banks are switch over to that, but it is hard. For being customer-centric, we need to know our customers well. It all begins with that, understand their characteristics or attributes such as demographic, psychographic and behavioral data, and their interest to better evaluate them for the business offerings. And this is where customer intelligence comes into the picture.

Customer Intelligence is the process of collecting and analyzing data for better understanding of customers. From the massive amount of data in the database, through Customer Intelligence the bank can help to create customer persona and thereby creating a strong bond with the customers who is more profitable to the organization. This long-term relationship is indispensable for any successful organization in a competitive world.

III LITERATURE REVIEW

- [1] According to this paper telemarketing is a direct marketing approach of goods and services to potential customer over telephone or the internet. To find out such a prospective customer from the telemarketing database with the highest probability based on their different characteristics, data mining approach for customer profiling is needed. The classification algorithm is used for customer profiling to measure the accuracy in bank. The technology used here are Naïve Bayes, Decision Tree, and Random Forest. Measured accuracy percentage and compared them.
- [2] Information Communication and Technology innovation in Indian banking sector has become a foundation of modern banking services. Nowadays all

banks are shifting to ICT tools used services and the expectation of tech savvy customers have increased in last few years. In this review, the researcher focuses on the detailed study of ICT applications to make the entire banking experience customer centric. Adopt innovative strategies in ICT such as Big Data Analytics, Artificial Intelligence etc. The innovations of ICT change the banking environment economy high.

[3] The objective of the bank is to achieve more profitable business for the existence. For the polished atmosphere of the bank, customer of the bank has an important role and they are the most important than any other. Knowing the customer i.e., customer profiling is needed. In other words, we can say Customer Relationship Management has a great role in bank. The proposed paper explores the banks in achieving goals of customer relationship management by customer segmentation and profiling with the help of data mining algorithms. Naïve Bayes classification algorithm and BIRCH clustering algorithm are used here. Using these techniques helps banks to increase accuracy of customer profiling and segmentation.

[4] The main aim of proposed system is to improve profiling bank customer's behavior using different machine learning technique. Profiling bank customer give a knowledge about whom to give banking facilities and services. Customer profiling mainly depends on the demographic data and transactional data. The researcher focusses on both the data for customer profiling and figure out more accurate result. Many machine learning techniques used and analyzed. The result shows artificial neural network is more efficient and accurate method.

[5] The researcher discusses various applications of Artificial Intelligence (AI) in Indian Banking Sector,

because banking sector becomes the first adopters of Artificial Intelligence. The researchers focus to study on areas where the artificial intelligence is being used by the banks and study about the application of Artificial intelligence in Banking. Also discuss the benefits and challenges facing the Indian banks with AI technology. AI create more efficient business processes, offer personalized services, and promote economic wealth.

[6] AI is useful for operations, decision making and improving effectiveness of method implementation in various aspects of banks which more critical. The paper focus on various applications of AI and how these be more successful in Indian Banking sector.

[7] The paper covers the different approaches in machine learning that are implemented for the digitalization of bank customers. Digitalization process includes the feature identification of bank customers', consumers' decision-making process etc. Random forests, Conditional inference trees and Causal forests technologies are used here.

[8] As related to this research paper, focuses on the impact of Artificial Intelligence (AI) in banking sector in India and the challenges faced by the banking sector in implementing Artificial Intelligence. The banks are harnessing the power of AI to deliver new customer experiences with various solutions and are setting new standards for the Indian banking ecosystem, thereby charting a new wave by embracing tech intensity.

[9] This paper stated the benefits, use, challenges affect the Indian banking sector by the implementation of Artificial Intelligence. The author also analyzed that the banking operations are automated using AI may offers

high potential impact on the industry. This may lead to the maximum achievement of profit in banking.

[10] Focuses on the concept of AI in the field of banking, how it has brought revolutionary changes in banking and its impact on human manpower. Analysis based on the data, are most impacted by artificial intelligence in banking sector.

[11] Researcher concentrate on predicting customer details for the approval of credit cards to customer using machine learning techniques. Algorithms like K-Mean, Improved K-Mean and Fuzzy C-Means are used here. Measure the accuracy rate of these algorithm and compared, choose the appropriate one. The researcher focusses on the current technology using algorithms like decision tree algorithm and k nearest neighbor algorithm. Both algorithms give good results.

[12] The paper focuses on the K-means and the DBSCAN clustering techniques to identify customer behaviors. The customers data from various sources are preprocessed and grouped to identify the potential customer in order to improve the customer service Here data mining technique are used.

[13] Now, banks are shifting itself towards Artificial Intelligence, an emerging technology which is implementing in most of the organization for enhancing operational efficiency. Banking is also implementing and exploring technologies in various ways. Evolution of technology has transformed the operating atmosphere of the entire organization. The study focusses on the ways to enhance customer services using Artificial Intelligence. The study also emphasizes how AI is used by Indian Banks more focus on to make better performance in customer services in future.

[14] In a competitive business world AI and machine learning are viewed as a most efficient knowledge approach to achieve business goal. In banking industry, the adoption of these techniques enhances the operation capabilities and change the banking industry to the more profitable one. This paper will highlight the applications of AI and measure the use of AI techniques in relevant areas of banking industry which ensure the customer relationship management.

[15] The paper gives a complete review of AI in marketing. Data clustering techniques like Louvain method is applied here. The author aims on the paper to develop AI model to enhance customer perception in marketing. Based on data collection and detailed study about the customer needs in marketing, develop an automated AI in marketing and offers automated decisions.

IV PROPOSED SYSTEM

A review of the existing literature on AI in the Indian banking reveals that most of the earlier researchers focused on understanding the various applications of AI in banking or analyzing the concept from a purely technical/ management perspective. No major study has been carried out from a techno management perspective, especially in the Indian public and private sector on deriving business value from AI applications through customer profiling.

In the present research initiative, the researcher proposes to study the application of AI in banks for customer profiling and identifying the profitable customers. Customer is the most valuable person in the banking business and banks around the world are trying to make their business more focus on customer i.e., customer-centric. In today's environment customers are moving their banking services through multichannel mode, supports the customer to interact with the bank through multiple ways and that's why

the multimode of characteristics of customers are changing promptly creating demands for dynamic customer management that can respond to customer needs in an adaptive manner.

Implementing customer profiling through AI enables banking industry to know the customers alternatives, make sure about the satisfaction, and help the customers to understand their potentials from the banks more precisely and accurately. Develop an AI-powered Customer Intelligence, that can help the bank to automate the customer profiling process and thereby identify the profitable customers.

V CONCEPTUAL FRAMEWORK

- [1] The proposed system starts with the different dataset collected from various sources and goes through data pre-processing step.
- [2] Segment and classify the customers based on some descriptors of customers to build customer profiles using Clustering and Classification techniques [Customer Segmentation].
- [3] After that, the artificial intelligence methods are chosen to build the Customer Intelligence system model.
- [4] The system model recognizes the profitable customers to offer more product services and derive the banks business value high [Customer Profiling].
- [5] Many AI techniques are applied and compared based on the accuracy rate and choose appropriate one.

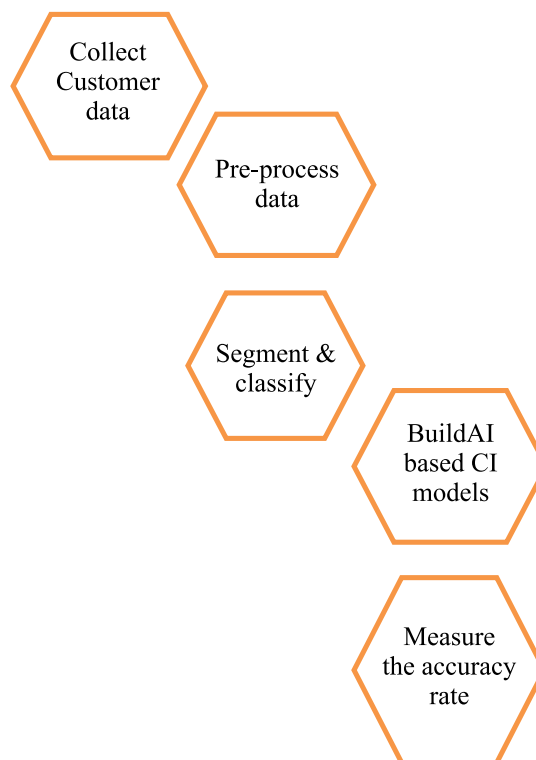


FIG.1. CONCEPTUAL FRAMEWORK

VI METHODOLOGY

With the core objective to understand the AI applications in the banking industry in deriving business value, the researcher proposes to source data from the key personal in each of the responding bank.

The primary data for the study shall be conducted using a structured questionnaire.

The study also uses the secondary data from multiple sources such as reports, journals, news articles, various bank portals, internet sources etc. and develop an application solution.

VII CONCLUSION

Adoption of AI in banks shall not only help them in retaining their existing customers, but also attracting new customers which will ultimately generate more business

value in monetary and non-monetary terms. Banks can drive AI-powered Customer Intelligence to make the client experience high and use of this technology multiplier the outcome on growth and the development of banks. Thereby, enhance quality in service, quality offered to their customers and resulting in delighted customers who will be the brand ambassadors of the bank.

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