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A Multi-Disciplinary Research Journal

#### The Role of Artificial Intelligence in Banking for Leveraging Customer Experience Keerti Bhadouria Abstract

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HOD, Vikrant University, Gwalior M.P. A lot of progress has been made over the years in this domain. Machines are able to understand, comprehend, and interpret natural languages now. One direction for the banking application of intelligence through natural language processing is the creation of virtual agents that are computer programs capable of interacting with humans based on queries and requests.

Key words :- Machines, Direction, Processing, Intelligence

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#### Introduction

In light of digital advancements, banks need to create customer experiences that strengthen loyalty and trust. For establishing a strong digital banking base, it is crucial for banks to make their processes efficient and fast. The purpose of the paper is to analyze the efficacy of banking functions on implementing Artificial Intelligence for enhancing customer engagement and improving customer satisfaction. It targets

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banks in metropolitan cities of India having tech-savvy customers, leading a fast-paced life who desire personalization and expect faultless and seamless services.

#### **Objectives of the Study**

- The fundamental statement of AI is for computers to achieve the ability of working similar to humans in specific areas.
- AI is a domain widely used nowadays to target real-life problems where humans were involved in banking investing their efforts to get work done.
- The main benefits a computer application banking has as compared to humans is its availability.

#### Methodology

The study focusses on front, middle and back-office banking processes. The data for middle and backoffice processes is collected through 10 interviews of senior officials and head of IT team in major banks. Literature review and theoretical research is carried out for various international and Indian banks with respect to the integration of AI to improve customer interactions and internal banking processes. For understanding the front-office user experience with AI-Banking, data has been gathered through a survey regarding usage of Chatbots on online banking platforms. A quantitative analysis using the Relative Importance Index reveals major use-cases ranked by customers. Spearman correlation is applied to find the relationship between the two most popular use-cases.

Chatbot use-cases on banking platforms are ranked based on customer experience. It is proved that there is a positive correlation (0.247) between the two most popular use-cases. The paper proposes IT Architecture and best practices for the digital banking sector.

#### **Data Analysis and Interpretation**

The data has been gathered for both back-end and front- end operations in the bank.



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What is the use-cases for Chat bot interaction in Indian Banking?

Table-1.1

Respondents	Chat bot process	Indian banking
Male	75	55
Female	25	45
Total	100	100

#### Findings of the Research



Table 1.1 Has displayed two respondents Male and Female Male has replied Chat bot process 75 and Indian banking 55, Female Chat bot process 25 and Indian banking 45 show it applied percentage method.

- The research paper reveals banking features integrated with AI.
- Chatbot use- cases on banking platforms are ranked based on customer experience.



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- It is proved that there is a positive correlation (0.247) between the two most popular use-cases.
- The paper proposes IT Architecture and best practices for the digital banking sector.

#### Importance of chat bot process in banking

Artificial Intelligence Promotes Easier Scalability With the help of Al-powered solutions, an organization can easily upgrade their customer service endeavors without much investment. Chatbots and Al-powered customer support tools are faster, cheaper to acquire and train, and can take care of thousands of queries at a single time without fail.1

In case of a surge in queries, automated Al tools can be reconfigured and shifted to bigger servers to handle them, thus promoting scalability without hassle We will now discuss some tangible qualities of application manifestations of Al, which attract organizations to adapt these applications and integrate them within their execution systems.

- Intentionality: Al applications follow various standard algorithms developed to solve targeted problems. Machines are often used to make real-time decisions and solve human quandary for reducing manual work. They are upgrades of monotonous applications which respond according to static range of input commands.
- The types of sensors, digital bits, and arbitrary inputs raised from remote machines consoli date together into knowledge base collected from heterogeneous sources. Those collected data are then analyzed to capture thriving rules, which play a significant role in obtaining the desired results
- Inteligions: Al is an integration of machine leaning algorithms which are dependent on key concepts of data mining. Machine learning algorithms accept the knowledge base data and attempt to capture the underlying rules to summarize and predict the context for unknown values.2
- Al spots for relevant trends related to the objective problem and attracts the interest of data analysts to capture hidden issues related to integrating information in the knowledge base. As these algorithms capture vast categories of input, they require to be robust on new context and this point is supported by the next quality.



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• Adaptability: As discussed earlier, Al applications learn and adapt for making future deci sions. For example, in transportation application, autonomous vehicles are equipped with computers that are able to capture patterns of drivers and vehicles on road, vehicle traffic congestion, rood potholes, road construction, and other essential elements required while driving.

#### **Review of Literature**

According to Gallego-Gomez & De-Pablos-Heredero, 2023- Another theoretical study shows the capability of AI to promote new ways of connection with customers, understand their expectations, and adjust to robust services provided by firms to stay ahead of the competition. Additionally, it facilitates quick responses to customer queries and across many use-cases. This study also demonstrates that proper AI technology adoption can redefine traditional banking procedures. The research focusses on Mastercard (U.S.A.), Royal Bank of Scotland (Scotland) and Caixa Bank (Spain).3

- According to Indriasari, Gaol, & Matsuo, 2019-This comprehensive study is conducted with the help of some existing work completed by researchers. With the advancement of technology, banks have been pressing on to acquire digital transformation. In order to achieve this shift, it has become crucial for banks to accelerate back- office workflows and processes.4 It is equally important to be customer-centric and come up with better service techniques. Artificial Intelligence and Big Data Analytics have enabled data driven systems to serve the customer in a better way. This has led to an ease of customization for a wide range of features, thus enhancing customer involvement. The empirical study reveals banking functions that use AI and BDA technologies in global as well as in the Indonesian banking sector. The data collection is achieved through interviews. Enterprise architecture is proposed as the best practice.
- To Trivedi, 2019- The empirical study focuses on the front-end customer experience through Chatbots on the basis of three variables namely System, Information and Service. A hypothesis testing is carried out to check if the relationship between the three quality dimensions and customer experience is moderated by perceived risk.5 The findings help banks to establish the consumer and brand relationship by offering chatbots that fulfill customer requirements. The data collection is performed through a survey.



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• According to Agarwal, 2019- Another paper highlights the applications of AI attending to automation of banking functions and customer engagement. The results display an intelligent framework for banking and financial institutions which may improve their business. The theoretical study is conducted for global banks.

#### Conclusion

Nature-inspired machine learning techniques can further be extended to include the techniques inspired from the concepts of geo-science and banking has been a domain that has never been explored to develop computational models. Moreover, nature can serve as a strong inspiration towards the development of strong machine learning models, which is the reason for extending the taxonomy of nature-inspired intelligence to incllude the geo-science based techniques Table 16.3 presents the key differences between the different categorization of machine learning techniques.

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