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Artificial Intelligence, Blockchain, Machine Learning, and Customer Relationship Management

[1]Maria Joy Iglesia Idian*, [2]Mohummad Kamrul Hasan, [3]Akaa Samuel Terzungwe
Corresponding Author: *joyidian@cspc.edu.ph
[1] Camarines Sur Polytechnic Colleges, Camarines Sur, Philippines
[2] Women's Environment and Development Organization, Bangladesh
[3] University of Calabar, Nigeria

Abstract

This article discusses the utilization of technology, particularly artificial intelligence (AI) and blockchain, in customer relationship management (CRM). The use of technology in CRM helps companies improve customer experience, maximize customer value, and make better business decisions. AI plays a crucial role in managing CRM by collecting, analyzing and personalizing customer data, predicting customer decisions, and creating chatbots. Blockchain improves the transparency, security and accuracy of customer information stored in CRM. Research data shows that the combination of AI and blockchain in CRM can lead to increased business efficiency, improved customer experience, revenue increase, improved data security and increased transparency of customer information.

Keywords: *Artificial Intelligence, Blockchain, Customer Relationship Management, Machine Learning*

Introduction

CRM is essential in increasing the success of the company. CRM is a business strategy focusing on managing customer interactions and relationships through technology and business processes. CRM plays an essential role in increasing the success of the company. CRM helps companies improve customer experience, efficiency, loyalty and understanding by enabling them to collect, analyze and integrate customer data in business systems [1]. It helps companies understand customer needs and trends to provide a more personalized and memorable experience, streamline business processes, build better relationships with customers, and adapt business strategies to meet customer needs. Companies using CRM increase in customer loyalty and increase in revenue compared to companies that did not use CRM [2],[3]. CRM plays a vital role in increasing the success of companies by enhancing customer experience, business efficiency, customer loyalty and understanding.

However, the company currently needs to work on managing CRM. Many companies still need help to integrate customer data stored in different systems [4]. The available customer information needs to be more accurate and available in real time [5]. In addition, companies are still concerned about the security of customer data, especially with cyber threats and identity theft. Another impact of the lack of CRM utilization is that providing a personal and memorable customer experience is still challenging [6]. The available customer information needs to be more accurate and available in real time. Many companies have tried to improve data integration and security by using technologies such as AI and blockchain to overcome this problem [7].

The company is also trying to increase personalization by utilizing available customer data and increasing customer interaction through different channels. The company's achievements are exemplary, but there are still many opportunities for improvement [8]. Companies improve data integration and security by using more sophisticated and up-to-date technology. They also increase personalization by using machine learning algorithms and data analysis to understand customer needs in greater depth [9]. Overall, companies still have many opportunities to improve CRM by incorporating the latest technologies, such as AI and blockchain. Moreover, it understands customer needs in greater depth through data analysis.

Discussion

A. Utilization of technology in CRM

CRM is a customer relationship management strategy that utilizes information technology to collect, store, and analyze information about customers and their interactions with the company [1]-[3]. Using technology in CRM helps companies improve customer experience, maximize customer value, and assist in making better business decisions. For example, companies use CRM software to manage customer databases, track customer interactions with the company, and perform data analysis to understand customer needs and preferences [10],[11].

CRM often also uses social media platforms that integrate machine learning algorithms. An example of a machine learning application in CRM on social media platforms is using algorithms to predict and manage customer interactions [12]. Algorithms learn customer preferences and use that information to provide more relevant and exciting content recommendations. It scans customer interactions with customer service and classify possible problems such as complaints, requests and more [13]. It helps customer service prioritize actions and increase efficiency. Algorithms study customer behaviour patterns to understand customer preferences and needs, such as peak activity times, interactions with certain content, and more [14]. Churn prediction is made with specific algorithms to predict the possibility of customers when they will stop using the service and provide preventive actions to retain customers [15]. Social media platforms improve customer experience, manage interactions more efficiently, and understand customers better using machine learning.

B. Technology and Customer Experiences

Customer management technology has a significant impact on customer experience. The following are some analyzes related to customer experience related to customer management technology:

1. Personalization: Customer management technologies allow companies to collect and analyze data about customer interactions, thereby enabling companies to personalize customer experiences [14],[16]. For example, companies suggest products or services that match customer preferences based on the data they have.
2. Consequences and Efficiency: Customer management technologies enable companies to manage customer interactions efficiently and consistently [17]. Companies resolve customer issues more quickly and ensure that customers receive the same service in every exchange [18].

3. Omnichannel experience: Customer management technologies allow businesses to provide a consistent omnichannel experience for customers, whether by email, phone or social media [19]. It ensures that customers can interact with the company through any channel they prefer.
4. Data Analytics: Customer management technologies enable companies to collect and analyze data about customer interactions, which can be used to understand customer needs and preferences [20]. It helps companies in making better business decisions and improves customer experience [21].

Customer management technologies help companies improve customer experience and build better customer relationships.

C. The Role of Artificial Intelligence in CRM

Artificial Intelligence (AI) plays an essential role in managing modern CRM. Here are some of the functions of AI in CRM:

1. Data Analytics: AI collect, store and analyze customer data and their interactions with companies [20],[21]. It allows companies to understand customer needs and preferences better.
2. Personalization: AI assist companies in personalizing the customer experience by leveraging available data about customer preferences and habits [14],[16]. For example, AI can suggest products or services that match customer preferences.
3. Decision Prediction: AI help companies make better business decisions by predicting customer decisions and assisting companies in preparing to deal with problems that may arise [14],[15].
4. Chatbots: AI can be used to create chatbots that assist customers in efficiently finding information and solving their problems [22],[23]. Chatbots can operate 24/7 and help companies solve customer problems more quickly.
5. Targeted Marketing: AI refresh customer data and assist companies in sending targeted marketing messages that match customer preferences and habits [24],[25].

Overall, AI helps companies improve customer experience and maximize customer value. AI makes CRM more efficient and allows companies to make better business decisions.

D. Blockchains and CRMs

Blockchain has a relationship with CRM. Blockchain helps increase the transparency and security of customer information stored in CRM. Information stored in the blockchain cannot be edited or deleted, ensuring that customer information stored in the CRM remains accurate and available in real-time. Blockchain also helps companies to verify customer identities more efficiently. It ensures that customer information stored in CRM is only used for legitimate purposes.

According to an article in Ref. [26], the use of blockchain can help companies improve their customer information management processes and ensure that customer information stored in CRM remains accurate and available in real-time. The use of blockchain in CRM helps companies improve customer information transparency, security, and accuracy, which allows companies to improve customer experience and maximize customer value [27]. Several research data and statistics explain the relationship between AI, blockchain, and CRM. Here are some of them: improved business efficiency [28], improved customer experience [29], increased revenue [30], and improved data security,

transparency [31]. Overall, research data and statistics show that combining AI and blockchain in CRM can improve business efficiency, customer experience, revenue, data security and transparency of customer information.

Conclusion

The integration of technology, particularly CRM, AI, and blockchain, has a significant impact on improving customer experience and maximizing customer value. CRM uses technology to collect and analyze customer data, personalize customer experiences, and make better business decisions. AI plays a crucial role in data analytics, decision prediction, chatbots, and targeted marketing in CRM. Blockchain enhances the transparency and security of customer information stored in CRM. Studies show that combining AI and blockchain in CRM can lead to increased business efficiency, improved customer experience, increased revenue, improved data security, and increased transparency of customer information.

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Authors

Maria Joy I. Idian has a doctoral degree in Business Administration and currently designated as the of Dean of College of Toursim, Hospitality and Business Management in Camarines Sur Polytechnic Colleges, Philippines. She has several research published and now working on funded research with Department of Agriculture, Philippines on the Market Assessment of Oyster Mushroom in her country. (email: joyidian@cspc.edu.ph).

Mohummad Kamrul Hasan is Mohummad Kamrul Hassan, PhD is the Director of Women's Environment and Development Organization (WEDO), Dhaka, Bangladesh. He is also the Elected Member of Country Coordinating Mechanism (CCM) for Global Fund Operations in Bangladesh, and member of International Association for Media and Communication Research (IAMCR). (email: khassan75@gmail.com).

Akaa Samuel Terzungwe started his career in audit and assurance. He later joined First Bank of Nigeria Limited where he worked for 17yrs and left in 2017 and later joined the University of Calabar as a Faculty Member. Akaa at the moment is a Doctoral scholar at the Joseph Sarwuan Tarka University, Makurdi-Nigeria. (email: akaatery1974@gmail.com).