

The impact of artificial intelligence application on customer engagement

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ABSTRACT

The spread of using online websites challenges traditional ways of customer engagement. Engaging customers as one of the most important aspects in the marketing field, it is necessary to take advantage of artificial intelligence to enhance customer engagement, thus improving customer experience journey as well. Existing papers have explained how artificial intelligence influences many aspects of the marketing field, but limited papers focus on the utility of artificial intelligence on customer engagement. In order to fill in this gap, a critical literature review has been conducted in this paper. The result shows that the use of artificial intelligence improves customer engagement both directly and indirectly.

Keywords

Customer engagement, artificial intelligence, customer experience

1. INTRODUCTION

Engaging customers is one of the most important aspects of marketing, especially during the customer's experience journey because companies want to obtain customers' attention to build rapport and interaction (Demangeot & Broderick, 2016). The spread of using online websites challenges the traditional way of customer engagement. With the development of technology, growing attention is focused on how to take advantage of artificial intelligence (AI) in different industries. Existing papers elaborated that artificial intelligence (AI) has influenced many aspects of the marketing field, such as improving efficiency and meet market demand in advertising (Qin & Jiang, 2019), understanding consumer journey (Jan et al., 2018), enhancing customer experience (Daqar & Smoudy, 2019). However, to the best of our knowledge, limited papers explained the utility of artificial intelligence (AI) on customer engagement.

Hence, the goal of this paper is to combine the customer engagement model proposed by Sashi (2012) and existing papers about the benefits of artificial intelligence (AI), explore the utility of artificial intelligence (AI) on customer engagement in the marketing field. This paper contributes to the effect of artificial intelligence (AI) on customer engagement by providing a critical review of artificial intelligence (AI) and customer engagement in scientific research. It theoretically contributes to providing an overview of the value of artificial intelligence (AI) in enhancing customer engagement. Practically, it helps the organizations to be aware of the function of artificial intelligence (AI) and the potential to implement it in their business to strengthen customer engagement. The procedure of this paper is: firstly, we select and present the customer engagement papers to figure out the factors that may affect customer engagement. Secondly, we explore the function of AI and what is AI, and investigate the impact of AI on customer engagement. Thirdly, we summarize the findings of the direct and indirect influence of AI on customer engagement. The final section is a discussion about the contribution of the findings and future directions.

To conclude, the research question is: How does artificial intelligence (AI) improve customer engagement?

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Literature review

2.1.1 Artificial intelligence

Artificial intelligence (AI) refers to "the development of machines to perform complex tasks usually carried out by a human" (Daqar & Smoudy 2019, p. 23).

The crucial role of artificial intelligence has been noticed in the marketing field recently since artificial intelligence is in aid of information systems based marketing (Crunk & North, 2007). Artificial intelligence can help with customer experience in two aspects: customer service and after-sale support, for instance, the implementation of AI call centres decreases customers' waiting time (Daqar & Smoudy, 2019). Furthermore, in the advertising industry, AI provides a new way to understand and guide consumers by consumer-generated data mining, then use the data to communicate actively back to consumers (Jan et al., 2018). Besides that, AI enhances programmatic creative, such as real-time bidding (RTB) with media buying (Chen et al., 2019). With

the adoption of AI, it is more convenient for marketers to discover potential customers and provide more customized service by analyzing customers' data (Vieira & Sehgal, 2017).

2.1.2 Customer engagement

The role of customer engagement is getting more attention because it helps co-creating customer experience in the dynamic and interactive business environment (Brodie et al., 2011). It contributes to increasing corporate performance (Neff, 2007; Brodie et al., 2011), advertising effectiveness as a driver of message involvement (Wang, 2006), retention of existing customer relationships (Vivek et al., 2012). Customer engagement includes several behaviours: Word-of-Mouth (WOM), blogging providing customer ratings and so on (Verhoef et al., 2010). It can also be divided as valence, form and modality, scope, impact and customers' propose, which can be affected by customer characteristics, firm initiatives, and the context factor (van Doorn et al., 2010; Verhoef et al., 2010). Website customer engagement is described as the participation and connection of customers' experience with the marketing entity, which contains the interactions and meeting customers' demands via communication (Demangeot & Broderick, 2016).

There are multiple existing conceptual models related to customer engagement. Verhoef et al. (2010) proposed that customer engagement consists of customer-to-customer interaction (i.e. Word-of-Mouth), co-creation, blogging, etc. Based on the website customer engagement model proposed by Demangeot and Broderick (2016), customer engagement includes four aspects: interaction engagement, activity engagement, communication engagement and behavioural engagement. Interaction engagement means how does the online website meet customers' expectation and understand customers' demand during the navigation session. Activity engagement is defined as "the level of involvement with the task of producing communication by calling up different elements of content (clicking on hyperlinks, searching for key terms, calling up product photographs, etc.) (Demangeot & Broderick 2016, p. 822). Communication engagement means how do the customers desire to commit to future dialogue with the website. All these three constructs will influence customers' behavioural engagement in the future. Ertell (2010) clarifies the customer engagement cycle into five stages, whereas awareness, consideration, inquiry, purchase, retention stages. But it has been argued that this customer engagement cycle is incomplete, which is missing the satisfaction stage and referral stage (Sashi, 2012). Therefore, Sashi (2012) suggests a new customer engagement cycle, which includes 7 stages: connection stage, interaction stage, satisfaction stage, retention stage, commitment stage, advocacy stage, and engagement stage. To establish emotional bonds in relational exchanges with the customers, this customer engagement cycle focuses on satisfying customers by offering more excellent value to the customers compared to competitors (Sashi, 2012).

2.2 Theoretical framework

The theoretical framework is demonstrated in Figure 1. To explain how artificial intelligence improves customer engagement, the customer engagement cycle is retrieved from Sashi (2012).

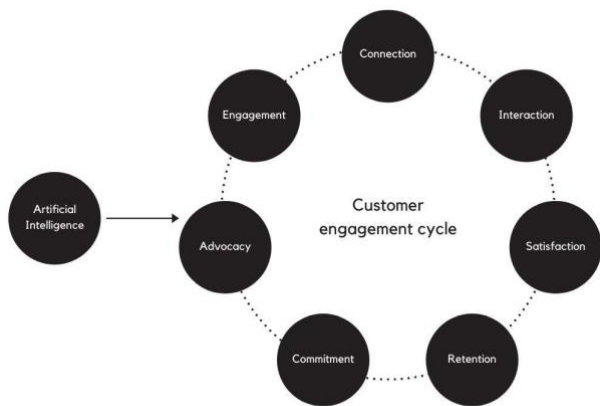


Figure 1. Theoretical framework

3. METHODOLOGY

In order to search the information related to this topic, the following platforms were used: Google Scholar, Scopus, Science Direct, Web of Science. The searching keywords are: artificial intelligence, AI, customer engagement, customer involvement. Additionally, we searched for other keywords: artificial intelligence, AI, consumer engagement, consumer involvement. The papers were selected based on their titles and abstract.

The journals of selected papers are from multiple domains, which related to artificial intelligence application on customer engagement: management (Management Decision, California Management Review, International Review of Management and Marketing, Waste Management), marketing (Journal of Marketing Management, International Journal of Bank Marketing), business (Business Horizons, Harvard Business Review, Future Business Journal), other (Policy Exchange Forum I, Acta Polytechnica Hungarica, Journal of Advertising Research) and conference paper (International Conference on Automation, Computational and Technology Management).

Cluster analysis is applied to categorize the specific function of artificial intelligence based on the customer engagement model. The theoretical concept is the combination of artificial intelligence and customer engagement. The papers were categorized into two clusters based on their topics. The first part of the analysis chapter is about the direct effect of artificial intelligence on customer engagement. The second part of the analysis chapter is about the indirect impact of artificial intelligence on customer engagement, which takes advantage of the “customer engagement cycle” concept. Customer engagement cycle is a process of connection stage, interaction stage, satisfaction stage, retention stage, commitment stage, advocacy stage, engagement stage (Sashi, 2012). Hence, when searching the papers related to the partial effect of artificial intelligence on customer engagement, the following keywords are applied: “artificial intelligence” and “connection”, “artificial intelligence” and “interact customers”, “artificial intelligence” and “satisfy customers”, “artificial intelligence” and “customer retention”, “artificial intelligence” and “customer commitment”, “artificial intelligence” and “customer advocacy”, “artificial intelligence” and “WOM”, “artificial intelligence” and “Word-of-Mouth”, “artificial intelligence” and “customer delight”, “artificial intelligence” and “customer loyalty”.

4. DATA COLLECTION AND ANALYSIS

4.1 How does artificial intelligence impact on customer engagement?

Artificial intelligence is applicable to a lot of problems, but the papers which directly explores the benefit of artificial intelligence on improving customer engagement is limited. Through searching via the information sources that are mentioned in the methodology part, we found two relevant recent papers.

The first paper is Kumar et al. (2019), it “explores the role of artificial intelligence in aiding personalized engagement marketing - an approach to create, communicate, and deliver personalized offerings to customers” (Kumar et al., 2019, p. 135). The paper proposes that customers are willing to get new personalized offerings and journeys via using artificial intelligence as a tool. Meanwhile, this paper also discusses the predictions for brand and customer management in an artificial intelligence-driven environment. It makes a matrix to distinct long term and short term categories and developed economy and developing economy context. It defines artificial intelligence as “a system’s ability to interpret external data correctly, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation” (Kumar et al., 2019, p. 136). Artificial intelligence can be widely used to analyze the data and make decisions, including personal assistants like Siri, travel planning like Mezi, financial planning like Olivia, etc. Personalization is one of the crucial benefits that artificial intelligence brought in the marketing domain. The authors also introduced the concept of curation in the personalized engagement marketing field, which refers to “the automatic machine-driven selection of products, prices, website content, and advertising messages that fit with an individual customer’s preferences” (Kumar et al., 2019, p. 138). From the company point of view, artificial intelligence helps to decide the most suitable marketing mix for the customers based on the data patterns and approach the customers proactively. From the customers’ perspective, customers can obtain personalized offerings based on their preference from the company, find the best options. For instance, Netflix “recommended for you” is regarded as a typical digital personalization function. If a customer has a positive attitude and behaviour, it will result in a higher level of connectedness and engagement. The advantage of artificial intelligence is that it interacts and emotional bonds with the customer in an unobtrusive way. Compared to the traditional technologies and consumer information processing model, integrating artificial intelligence in a personalized engagement marketing model takes advantage of personalization which manifests through the curation of marketing components and strategies. It provides customized choices for customers which more fit their demands, based on the history data of customer interactions. Finally, a prediction matrix related to “brand and customer management in an AI-driven environment” is proposed by the authors. The predictions are distinct according to short-run/ long-run (time period) and developed economy/ developing economy. For developed economies in a short-run time period, artificial intelligence is more likely to be a tactical solution, which provides personalization by improving customer brand

experience and service delivery, providing flexible price and attractive ads. For developing economies in a long-run time period, artificial intelligence helps to increase customer trust, advising suitable prices, standardizing service delivery, customizing solutions-focused ads. For developed economies in a long-run time period, artificial intelligence impacts customer acquisition, customer retention, and customer growth. For developing economies in a short-run time period, artificial intelligence influences regional brand value, incremental and adaptive human-machine interface, and profitable customer loyalty. Notably, AI-driven capabilities (marketing elements, technology elements, operational elements) work as a moderator which moderates the AI outcomes. Overall, artificial intelligence helps to obtain competitive advantages and improves customer engagement according to Kumar et al. (2019).

Hansen et al. (2017) also agreed that artificial intelligence and data analytics improve engagement, monetization and personalization. It helps to meet customers' interest and concerns, meanwhile, enhance customer loyalty. However, in their study, one of the participants expressed the concern of "too much personalization", which may "cross the line into a different activity", it is dangerous when there is too much personalization (Hansen et al., 2017, p. 11). Therefore, how to use artificial intelligence and how to solve customers' concerns can be a problem to discuss in the future.

4.2 How does artificial intelligence improve customer engagement cycle?

As mentioned in the previous section, the papers which directly analyze the influence of artificial intelligence on customer engagement are limited. Hence, the concept of "customer engagement cycle" which includes connection stage, interaction stage, satisfaction stage, retention stage, commitment stage, advocacy stage, engagement stage, can be an indirect way to explore the research question. Sashi (2012) explained the following terms. The connection stage refers to the prerequisite in order to build a relational connection between the seller and the customer, such as taking advantage of salespersons and social networking. The interaction stage means how the customers interact with the sellers and other customers. The satisfaction stage appears only when the customers feel pleasant during the interaction stage, they will stage connect and willing to participate in the later stages towards engagement. Customer retention is a positive result from the previous stages, such as positive emotions and overall satisfaction. Customer commitment is a combination of affective commitment and calculative commitment. At the advocacy stage, customers are already delighted from the previous experience with the seller, they are willing to spread positive Word-of-Mouth (WOM) within their social network. During the final customer engagement stage, customer delight and customer loyalty are the crucial components for customer engagement. After searching the papers based on the definition of each stage, I figure out that artificial intelligence mainly impacts on the following three stages: interaction stage, satisfaction stage, and engagement stage.

4.2.1 Customer interaction stage and artificial intelligence

IBM, Fobes, and Gartner proposed that 85% of customer interactions will be provided without human agents by 2020 (Daqar & Smoudy, 2019). The advantage of applying artificial intelligence to enhancing customer interaction has been mentioned in several articles.

Daqar and Smoudy (2019) reveals the function of artificial intelligence can help to improve the customer experience by the means of interacting with the customers throughout the customers' buying journey. They proposed that customer interaction is one of the most crucial elements to improve customer experience. The customers' buying journey composites 4 phases: awareness phase, consideration phase, purchasing process phase, and supports phase. In the awareness phase, the predictive analytics characteristic of artificial intelligence helps to figure out the interests of the customers. Based on the interests of the customers, artificial intelligence can provide suitable recommendations to the customers. In the consideration phase, artificial intelligence takes advantage of massive data, providing multiple options for the customers to compare the products or the services that they prefer. In the purchasing process phase, artificial intelligence can combine the data of customers' buying history and provide customized suggestions to the customers. In the supportive phase, artificial intelligence can provide personalized customer service to the customers according to customers' behaviour. If the customers are not satisfied with the products or the services, artificial intelligence can respond quickly and take possible remedies.

Artificial intelligence enhancing business capabilities in three crucial business aspects: "automating business processes, gaining insight through data analysis, and engaging with customers and employees" (Davenport & Ronanki 2018, p. 4). As customer interaction is important in obtaining competitive advantages, the authors gave several real-life examples in this aspect. For example, intelligent agents can provide technical support 24 hours and 7 days of customer service, which is quicker and more flexible than human agents. The recommendation function of artificial intelligence is widely applied in the retailer market, which increases sales by increasing customer engagement and personalized suggestions. Furthermore, the recommendation function of artificial intelligence is also used in the health treatment domain. It takes patients' health status and previous treatments into account, combining the data and creates a suitable health treatment plan for the patients.

However, each coin has two sides, using artificial intelligence can improve customer interaction, but some ethical problems also arise because of that. Artificial intelligence can improve the efficiency of the business in multiple ways, but it is also possible to destroy the business value with serious consequences (Canhoto & Clear, 2020). The authors proposed that three characteristics of artificial intelligence can both be beneficial and be harmful to the business: connectivity between the various AI components, cognitive ability of AI, and imperceptibility. Some customers are unaware of interacting with artificial intelligence because of the imperceptibility characteristic of AI, which "can aid users' acceptance of the technology". (Wilson & Daugherty, 2018; Canhoto & Clear 2020, p186). The data collection is not

only limited to the interaction between the sellers and customers, but it has also been expanded towards the social lives of the customers (Park et al., 2012; Canhoto & Clear, 2020). For example, Apple encountered a piece of scandal, which was reported by The Guardian, 2019 July: “According to an Apple contractor, Apple just like Google and Amazon have been busted doing, uses contractors to analyze and assess the accuracy of its Siri voice assistant by listening into people who are unaware this is happening” (Hern, 2019). This kind of customer interaction performed by artificial intelligence is harmful to the reputation of the organizations.

4.2.2 Customer satisfaction stage and artificial intelligence

High customer satisfaction can bring huge benefits to the companies and create competitive advantages, such as increasing sales, customer loyalty, and a positive WOM (Daqar & Smoudy, 2019). Artificial intelligence is applicable to multiple industries to improve customer satisfaction because it can provide personalized and customized content to the users in a real-time response, which is flexible and convenient for the customers (Brill et al., 2019).

Brill et al. (2019) take digital assistants (such as Siri from Apple, Alexa from Amazon, Google Assistant from Google, and other digital assistants) as a typical representative of artificial intelligence application, because the digital assistants are widely used all over the world nowadays, and it has been estimated that the number of digital assistants in use will be doubled by 2013. The authors took advantage of the expectations confirmation theory, categorized the three main factors which influence customer satisfaction, whereas expectations, perceived performance and confirmation of expectations. By means of the survey, 244 valid participants with random sampling were gathered in the United States. The authors tested the relationships among expectations of digital assistants (expectations), the perceived performance of digital assistants (perceived performance), confirmation of expectations of digital assistants (confirmation), and customer satisfaction with digital assistants (customer satisfaction). They proposed perceived trust and information privacy concerns as moderators, which moderate the relationship between customer expectation and customer satisfaction. The results of the article show that expectations and conformation of expectations impact on customer satisfaction with digital assistants positively, the expectations confirmation process plays an important role in the customer satisfaction evaluation. Furthermore, the digital assistant can help the companies to meet customers’ expectations in a positive way. Therefore, this article provides an insight into the benefit of artificial intelligence in enhancing customer satisfaction.

The application of artificial intelligence is broad. There are several articles exploring the positive usage of artificial intelligence, which result in improving customer satisfaction as well. For instance, Krol et al. (2016) figured out a novel approach to improve electrical and electronic waste management systems with the “use of the genetic algorithm for optimization of the route length and number of vehicles and fuzzy logic for the representation of the household residents’ satisfaction on the take-back service provided by collection companies” (Krol et al., 2016, p. 222), which embraced artificial intelligence in this

approach. Yussupova et al. (2016) proposed an innovative approach to quality management, which embedded customer satisfaction applying artificial intelligence. The new approach has been proved that it is more effective for quality management and provides support for decisions than the classical methods of qualitative and quantitative research into customer satisfaction. Zeinalizadeh et al. (2015) proposed to use artificial neural networks (ANN) to figure out how satisfied are the bank customers and what would influence the bank customer satisfaction in order to enhance the bank customer satisfaction in the future. Daqar and Smoudy (2019) mentioned some examples of how artificial intelligence can improve customer satisfaction. For example, applying chatbots can reduce the waiting time of the customers, which makes the customer service more flexible; customers are more likely to be satisfied when they receive the relevant promotions advertisements according to their demands, which artificial intelligence can meet their demand by analysing customer data.

4.2.3 Customer engagement stage and artificial intelligence

Customer delight and customer loyalty are the important components which can influence customer engagement (Sashi, 2012). Therefore, the impact of artificial intelligence on the customer engagement stage is decomposed into two parts: how does artificial intelligence affect customer delight and how does artificial intelligence affect customer loyalty.

Kietzmann et al. (2018) took chatbots as an example, describing how a company uses artificial intelligence in advertising along the customer journey to make their customers delightful during the post-purchase phase. During the post-purchase phase, customers tend to consider whether to repurchase the products or services from the same company and start to think about if they should spread positive or negative Word-of-Mouth (WOM). Hence, the goal of the advertisers is to perform well and make the whole customer journey meet customers’ demand, try to figure out the potential problems and solve them on time (Kietzmann & Canhoto, 2013). Chatbots play an important role in customer support because chatbots can answer the customers’ questions quickly. Furthermore, chatbots can analyze the customers’ data and identify valuable customers with propensity modelling. In order to provide more accurate content to the customers, chatbots can help the advertisers to get to know more about the customers, categorize them, which results in a delight customer relationship. Mehrotra (2019) examined customer delight and satisfaction by means of replacing the humans in the space of banking and financial services with artificial intelligence, in order to provide customized services. The artificial intelligence assistant such as Luvo which is used in the Royal Bank of Scotland, redefining the customer experience and customer delight through quality instant response to customers’ requests.

Ansari and Riasi (2016) explored the customer-service provider relationship which applies artificial neural networks in the insurance industry. They figured out that the application of linear regression analysis and artificial neural networks helps to increase customers’ satisfaction and perceived value. As customers’ satisfaction and perceived value are the antecedents

of customer loyalty, the degree of customer loyalty increases as well.

Hence, artificial intelligence benefits both customer delight and customer loyalty, whereas it helps to improve customer engagement.

5. CONCLUSION AND FUTURE DIRECTION

This paper explores the impact of artificial intelligence application on customer engagement. According to the critical literature review in this paper, the use of artificial intelligence improves customer engagement not only in a direct way, but also enhancing the customer engagement by refining three stages (interaction stage, satisfaction stage, and engagement stage) in the customer engagement cycle. However, the concerns of “too much personalization” from customers also need to be notified to balance the issue in the future.

As mentioned in the beginning, the existing papers which address the utility of artificial intelligence on customer engagement are limited. With the spread of artificial intelligence, there is no doubt that the application of artificial intelligence changes people’s daily life. It brings a lot of benefits to human beings, but also raises some problems. For instance, the privacy issue. Therefore, how to solve the customer's concerns while enjoying the benefits of artificial intelligence can be an interesting question. What factors make the customers hesitate to use artificial intelligence can be explored in future research.

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