10 Customer relationship management through blockchain technology

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Introduction

Mass production techniques and mass marketing increased the availability of products for customers and changed the competition environment in the middle of the 20th century. Businesses became less familiar with their customers in this period. In other words, customers were only numbers in the eyes of businesses that make mass production and sales. Extreme increase in the product and service options in the market has caused businesses not to deal with the customers' needs separately. There was no difference between such businesses in the eyes of customers. However, many businesses abandoned mass marketing concept in the following years and started to increase long-term customer loyalty and reestablish the connections with their current customers for this purpose. Some businesses activated their competition and increased success in the market by implementing relational marketing principles within the scope of the strategical and technological-based customer relationship management (CRM) (Chen & Popovich, 2003).

The fourth industrial revolution, which started as Henning Kafgermann and Bosch Company presented the study to the German Government in 2012 and is referred as the Industry 4.0 (Turan, 2020), requires the digital transformation of many business activities in a comprehensive and detailed way (Sayar, 2019). The targets of Industry 4.0 also include meeting the requests of personal customers. The transition from mass customer services to personal product and service production is facilitated by combining smart production and industry components (Pisching *et al.*, 2015). The

increased communication possibilities from technological developments have removed the borders between countries and increased the globalization rate. Today's world, which can be named the digital interaction era, has revealed the blockchain technology in line with the requirements and conditions of the era (Sayar, 2019). It has been seen that customer relations managements have preferred to collect customers' data using blockchain systems recently.

The main reasons for this preference are that it enables storing data more safely, sharing data with relevant units and making analyses more easily (Turkiye Bilisim Vakfi, 2019a). Conveniences provided by the digital era, such as the transition to customer-based production and blockchain, have increased the importance and effectiveness of CRM activities for tourism businesses. Digitalization has greatly accelerated due to the pandemic period we have been living in as people mandatorily stayed in their houses and the majority of jobs were carried out remotely. However, the pandemic, which accelerated digitalization, affected the world's economy and tourism movements quite negatively. According to the United Nations World Tourism Organization (UNWTO) (2020a), international tourism movements decreased 82% in 2020 compared to the June-December period in the previous year. UNWTO (2020b) predicts that these developments will accelerate the relevant steps of tourism activities, that take pioneering steps in digitalization.

The transfer of activities to digital platforms provides opportunities that will increase CRM activity thanks to blockchain technology. Some of these are opportunities that will increase customer satisfaction and loyalty such as providing closeness and trust with customers, making smart contracts, rapid access to and safe sharing of information, reducing costs, safe storage and evaluation of customers' information, and payment ease and advantage with a token system. Current studies state that the increase in digitalization will not be limited to the pandemic period and will continue afterward. According to the Association of Turkish Travel Agencies (TURSAB, 2020), studies showed that 75% of people who used digital channels for the first time during the pandemic will continue to use these after the pandemic.

Literature review

The fact is that businesses focusing on preserving and gaining customer loyalty can increase their market share as they transform customer relations into a structure with different value dimensions. The main reason for a customer to continue purchasing a product and service from a business is the customer perceived value. Customer perceived value is the positive difference between the product benefit and the cost of obtaining it (Uzunoglu, 2007). Knowing the effects of customer value is of great importance for customer relations management, because the perception that the business values customers more than its competitors will attach customers to the business and increase the competitive power of the business (Ay, 2014). Graf and Maas (2008) state that one of the customer value approaches is the determination of the value by the customer. They also state that a key aspect of any product or service is the perception regarding how much it meets the goals and requests of the customer or how much it satisfies the customer. According to Rossanty *et al.* (2019), how much a customer is satisfied with a product is determined with the customer's expectations from the product and the benefit the product provides to the customer. If the product performance is greater than the expectation, the customer will be satisfied with the product or business; thus, the customer's loyalty tendency to the business will increase. Loyal customers will be less sensitive towards the pricing of the business and the business will have a positive image in the eyes of customers.

The strategic role of CRM will increase as customer-oriented businesses focus on customer-centered strategies instead of product-centered strategies (Onaran *et al.*, 2013). CRM is defined as a strategy that aims to develop and maintain customer relations (Rossanty, 2019). It is a strategy that ensures reducing the costs of an organization, increasing its profitability and enhancing customer loyalty (Saha & Sharma, 2020). After the developments in the customer-focused understanding, many marketing concepts have been started to be questioned. After CRM solutions, marketing experts have started to pay attention to not only gaining customers but also ensuring the loyalty of the current customers to the business (Demir & Kirdar, 2012). CRM is management efforts made to understand the requests and characteristics of customers and to improve relationships with customers by combining businesses processes and technology. The basis of CRM is the transition from product-focused marketing understanding to customer-focused marketing understanding.

Customer relations activities have affected and changed businesses and many customers while entering the millennium era (Kim & Suh, 2003). CRM is the entirety of applications, strategies, and technology used by the business to manage and analyze customer interactions and data during the customer lifecycle (Rouse, 2020). It is also a customer-centered relation management philosophy that enables coordination and cooperation between all units of the business, customers and business partners (Bozgeyik, 2005). According to Gordon (2002), it is a series of strategies and processes that create new and mutual values for customers and businesses, make sure the business is preferred, and focus on improving the services provided in their lifelong relations with the costumer. Nam * Lee (2019) states that CRM used to be based on conventional data analysis but it has had a transformation based on big data. According to Aktan (2018), technological development and digitalization enabled institutions and industries as well as individuals to produce great quantities of data rapidly with their smart devices. As a result, we have encountered a rapid increase in the diversity and volume of data that has never been seen in human history. This situation introduced the concept of big data.

In data-based customer analysis, the data obtained from customer interactions are used to get a better idea about customers' motivations, preferences, characteristics and behaviors. Thus, businesses are able to optimize their marketing channel performances, improve customer experiences and provide customer-specific products. It is possible to gain higher profits with more satisfied customers (Djteam, 2020). According to Fickel (1999), practices used in CRM technology connect customer touch points to both front office functions such as sales, marketing and customer relations, and back office functions such as finance, operations, logistics and human resources. Chen & Popovich (2003) states that the customer touch points of a company are the channels it connects with customers. For example, the Internet, e-mail, sales, direct mail, telemarketing operations, call centers, advertising, fax, pagers, stores and kiosks are touch points. These points are generally controlled by separate information systems.

Tourism businesses and customer relations management

It is necessary for hotels to find as many customers as possible and determine accurate strategies and targets to preserve these customers while expanding the market. Each hotel competes to provide the best service and to leave the best impression on customers. Positive or negative opinions of customers obtained as a result of CRM activities will shape the image of the