Impact of Industrial Technology 4.0 in Improving Service Quality and Customer Experience on E-Commerce Platforms

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Abstract. With the rise of Industry 4.0 technology, e-commerce platforms have the opportunity to enhance their operations and improve customer experience. Industry 4.0 technology, which includes the Internet of Things (IoT), artificial intelligence (AI), and blockchain, has the possibility to revolutionize e-commerce by enabling personalized, secure, and convenient shopping experiences. This research aims to evaluate the effect of Industry 4.0 technology in improving service quality and customer experience on e-commerce platforms. This article is focused on the impact of industrial technology 4.0 on e-commerce for data collection. Finding relevant and reputable papers is the first step in creating this article. Then, the search result is sorted by title and abstract. If it is suitable, it is necessary to conduct a literature review and then make a comparison. It was found that industrial technology 4.0 has a significant effect on improving service quality and customer experience on e-commerce platforms. Moreover, the use of industrial technology 4.0 has also improved the personalization of services on e-commerce platforms.

1. Introduction

The Fourth Industrial Revolution or Industrial Revolution 4.0 has divided the real world and the digital world. Ever-evolving technology impacts all manufacturers because of the use of smart machines to automate and optimize a business. However, what many people forget is that it’s not just technology that determines the long-term success of a business. It is the customer who ultimately determines the success or failure of a business [1].

This might raise the question of how the 4.0 industrial revolution can improve customer experience? Or specifically, how can smart machines better align business processes with customer needs so as to build loyalty and drive sales?

Apart from being great news for businesses, the industrial revolution 4.0 can also provide a much better customer experience [2]. Savvy business people know that providing a better customer experience to their customers is one way to keep them coming back. Whether you are a large or small company, you must position technology as a tool to ensure that your business products/services can reach the right target at the right time.

Digital transformation integrates technology in business and aims to provide more value to customers. The industrial revolution 4.0 digitized manufacturing processes that connected machines with the web (internet) and business management systems, which helped improve and automate all company production. In many companies, they are starting to struggle with the impact of digital transformation. The speed at which products/services are modified, sold, or delivered, places enormous pressure and demands on companies to go digital [3]. On the other hand, customers increasingly expect an exceptional customer experience in every interaction. Customers are looking for companies that can solve their problems and fulfill their needs with faster service than ever before.

To face this challenge, it is necessary to ensure that they have collected, tracked, analyzed customer service and product demand information from various channels or media, in order to provide an extraordinary customer experience. This is very important because companies will be able to provide interactively personalized customer experiences to their customers. Companies that do so will gain competitive advantage, enhance business branding, increase market share, increase customer satisfaction and increase revenue [4]. Here are 4 influences of the industrial revolution 4.0 on customer experience [5].

At present the role of knowledge management in the innovation of company development activities is very important for companies in realizing the era of the industrial revolution 4.0. The role of low, middle and
top-level managers of the company is very necessary in the implementation of knowledge management, how the KM process, namely the creation of knowledge, acquisition, sharing, and application, has an impact on the technology used and the expected innovation, as well as environmental aspects, social aspects, and aspects economics of sustainability [6]. Successful implementation of knowledge management to produce innovations in competitive advantage includes human factors, process factors, technological factors, and governance factors [7].

According to [8], "Defining competitive advantage is an advantage over competitors obtained by offering lower value or by providing greater benefits because of higher prices". "Defining competitive advantage is at the heart of corporate performance in competitive markets, but after decades of great expansion and prosperity many companies have lost sight of competitive advantage in the struggle to further develop in pursuit of diversification." [9].

In corporate knowledge is an important asset for the company, therefore it is necessary for Knowledge Management to any existing knowledge can be utilized as much as possible. Aspects of people play an important role in determining the success of Knowledge Management, therefore it is necessary for Knowledge Management without the support of the people, KM will not be able to run properly [10]. Knowledge sharing culture within the company will be able to assist the process of Knowledge Management. Sharing knowledge among the employees of a company refers to the SECI model, which consists of Socialization is a process of transfer of knowledge from one individual to another in the form of tacit knowledge. Externalization is the process of converting or translating in the form of tacit knowledge into explicit knowledge. The combination is a process of dissemination and development of knowledge-existing explicit knowledge. Internalization is a process of changing explicit knowledge into tacit knowledge, which is generally done through a process of learning and/or research conducted by or through which the experience of each individual [11].

2. Literature Review

E-commerce

E-commerce is a place that is used in buying and selling goods and services through electronic systems [13]. Like television, radio, and computer or internet network. Business transactions that occur in electronic networks such as the Internet. Everyone who has connections Internet can participate in e-commerce activities [14]. From some of the definitions of e-commerce, it can be concluded that e-commerce is a system for buying and selling goods and services through electronic media that provides easy transactions for both sellers and consumers buyer.

Table 1. Related Source of References

<table>
<thead>
<tr>
<th>Source</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Huang, Dai, and Liang, 2014 [15]</td>
<td>&quot;E-commerce allows electronic payments and transactional information to be transferred via the Internet&quot;</td>
</tr>
<tr>
<td>Kannaiah, Desti, 2015 [16]</td>
<td>&quot;E-commerce offers a level playing field and consumers face the efforts of the e-tailers to present products/services&quot;</td>
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<tr>
<td>Damak, 2018 [17]</td>
<td>&quot;E-commerce is revolutionizing supply chain management and has enormous potential for manufacturing, retail and service operations&quot;</td>
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Customer Experience on Customer Satisfaction

Customer experience is a smart way of marketing strategy to provide customer satisfaction and loyalty through the five dimensions created by Schmitt. The five dimensions enjoyed by consumers are important factors in the effort to create satisfaction and loyalty to a brand [18]. This theory and research is an indication that it is true that there is an influence between customer experience and customer satisfaction, so the authors conclude that customer experience has an effect on customer satisfaction.

E-Service Quality on Customer Satisfaction

E-service quality is an evaluation and assessment from consumers that is created from the existence of value and quality in a shopping platform that is presented virtually [19] argues that service quality is a value expected by customers. Consumer satisfaction will occur if the satisfaction is experienced repeatedly by seeing and feeling the pros and cons of the products they consume.

Customer Experience and E-Service Quality on Customer Satisfaction

Customer experience is something that has happened and is felt by consumers in their use of a product. If what he has done creates a good experience then the response he gives will be even better. The quality factor given to a product also influences the perceived satisfaction, the higher the service perceived by the consumer, the greater the quality measure of the satisfaction he feels. The relationship between the three variables above is shown in Figure 1. The relationship between the three variables above is shown in Figure 1.
Fig. 1. The relationship between Customer Experience, e-Service and Customer Satisfaction

Consumer-to-consumer is trading between individuals (sector private sector) with consumers, and can also be defined as a transaction in which Consumers sell products directly to other consumers. Transaction C2C involves reverse auctions, where consumers are the dominant force can process transactions. Transactions performed in activities. This C2C is carried out by third parties who provide applications or platforms online as a transaction medium, therefore sellers and buyers can directly sell and buy goods on the application or platform that has been provided by the third party [20]. There are three types of C2C, including:

- Disability auctions on certain portals, such as eBay, are possible offers in real-time on the products/services sold on the website.
- Peer-to-peer systems, such as the Napster model (a protocol for sharing files between users using chat forums such as IRC), file exchange and foreign currency exchange.
- Classify ads on portal sites such as Excite Classifieds and eWanted (an interactive online trading place where buyers and sellers negotiate through the “Buyer Leads & Want Ads” feature.

Industries that can be impacted, include:

a. Financial Services, including mobile banking.
b. Telecommunications, where changes in services, payment of bills and accounts
c. Review can be done on the same device, a mobile phone.
d. Service/retail, consumers are given the ability to place and
e. pay for on-the-fly orders.
f. Information Services, including entertainment, financial news, sports and
g. traffic updates sent to the mobile phone [6].

Table 2. E-Commerce Technology Platform

<table>
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<tr>
<th>Technology</th>
<th>Examples of uses</th>
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<tbody>
<tr>
<td>Internet of Things (IoT)</td>
<td>“Improve consumer experiences, track inventory in real-time, manage orders more effectively”</td>
</tr>
<tr>
<td>Artificial intelligence (AI)</td>
<td>“Order products online, track orders, and perform other e-commerce activities”</td>
</tr>
</tbody>
</table>

3. Methodology

This article was composed using the literature review method. A literature review is a research method that entails conducting a thorough evaluation of current literature and scholarly sources on a certain topic. It is a critical examination of published materials such as academic articles, books, and other related sources. A literature review’s primary goal is to give a summary and appraisal of existing knowledge on a topic, identify gaps or contradictions in the literature, and suggest future study options [21].

This article employs narrative review specifically. A narrative review is a conventional approach to evaluating existing literature, focusing on a qualitative analysis of established knowledge and findings. In simple terms, a narrative review aims to provide a summary or compilation of the existing literature on a specific topic, without attempting to generalize or aggregate the reviewed material. Rather than relying on a systematic approach, the responsibility of gathering and summarizing the literature to support a specific perspective often lies with the review committee. To support their argument, writers may selectively disregard or downplay certain studies. This unstructured method of review is subjective in terms of selecting information from primary sources, lacking clear guidelines for inclusion or exclusion. Consequently, it can lead to flawed interpretations or conclusions [22]. In this article, the literature review methodology will be useful for understanding:

1. Organization information system and e-commerce concept.
2. eCommerce landscape implementation which is divided into single-vendor, best-of-breed, traditional in-house, and cloud-hosted.
3. Comparing and contrasting the implementation of different types of eCommerce systems.
4. By Determining the advantages and disadvantages of each e-commerce implementation, it will be possible to determine which eCommerce type will best suit the organization.

4. Result and Discussion

Customer Experience

Customer experience is a way for a product to understand lifestyle and view of the market to the consumption activities carried out. A simple example, when dissatisfaction felt by consumers due to products that are not received is not appropriately, then there will be complaints received by the service provider but with the same service well then the consumer will experience an experience that will continue to remember but if conversely, the perceived experience will also get worse (23). Customer experience is the response given by the
higher the level of product service quality, the more it will affect customer satisfaction.

References

[1] Int. J. Eco. Fin. 6 (2016)