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E-commerce in Supply Chain

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Abstrak. This study aims to minimize the losses obtained by e-commerce businesses because of the risk of changes in demand and supply of products that are not balanced through communication strategies. The approach taken was a qualitative approach, a case study method and data collection with literature review, online journal research and observation of the problems that were the subject of research. Based on the result of research, e-commerce and electronic shopping transaction services made it easy for consumers and business people with its online payment system and practical business transactions.

1. Introduction

The business transaction process with digital system is done through electronic commerce or e-commerce. People involved in this field carry out activities such as sellers providing heterogeneous goods and buyers with differences placed in the payment process. E-commerce business also has an interest that will help businesses overcoming such changes in demand and supply of products in the market [1]. In previous study on e-commerce and business on social media shows a discussion on the role of technology and the internet as a medium of communication in e-commerce [2], the importance of communication strategies for understanding global culture and the important role of communication strategies [3], and customer loyalty in the collaborative consumption model for exploration of a collaborative consumption system using e-commerce start-up Babylonia.com with 266 transaction data [4].

Communication strategy and product line design aims to emphasize that communication strategies determine the product lines that will be offered to the public [5]. In previous research on the factors that influence customer satisfaction in e-commerce discussed what factors that create customers satisfactions and loyalty toward brands [6,7]. Mapping the supply, demand, and budget of ecosystem services, the purpose of the demand and supply of ecosystem services can be moved to many spaces using a temporal scale on the problem of the impact of human activities on the environment [8,9]. The determinants of customer confidence in e-commerce and its impact on purchases and word of mouth is to know the demand and supply will be interconnected and influence the supply of products and the analogy of demand as information systems and supply as information systems technology in creating hardware or software technology products [10-12]. From the source research in the previous paragraph, communication strategies are often used by various fields as solutions to deal with the problems and they are adapted to the circumstances of each business. Supply and demand are interrelated and have an impact on the supply of goods and services owned by business people, while e-commerce as an evolution of technology becomes the consumption of modern society with risks that cannot be avoided by business people.



This study aims to minimize the losses obtained by e-commerce businesses because of the risk of changes in demand and supply of products that are not balanced through communication strategies. The approach taken was a qualitative approach, a case study method and data collection with literature review, online journal research and observation of the problems that were the subject of research.

2. Method

The method used was literature review from relevant previous studies, then qualitative methods through descriptive description that had the nature of analysis and prioritized the process of seta meaning or perspective of the subject and finally case studies with the aim of making a research draw.

3. Results and Discussion

The era of technology has occurred more than a few decades, humans are slowly getting used to the development of technology that is entering various fields of life. One of them is the field of business, transactions that in ancient times had to be done directly between traders and buyers through intrapersonal communication or group communication, now changing more efficiently and effectively. E-commerce electronic shopping transaction services in the network make it easy for consumers and business people with an indication that distance is not an obstacle, payments can be made through e-banking, does not require a place to sell and other things that make business transactions practical and easy, can be seen in Figure 1.

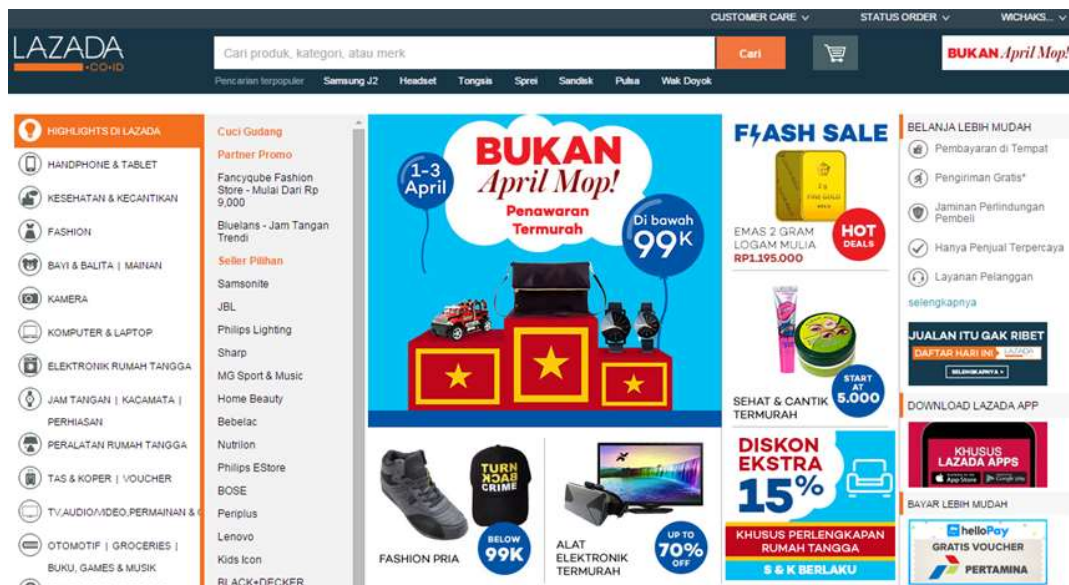


Figure 1. Display of One E-Commerce Site in Indonesia. This image was adopted from <http://marcellariesta.blogspot.com/> on October 24, 2019.

Based on Figure 1 above, the consumers easier to check the product before decision do the transaction on electronic commerce.

In Indonesia there are various kinds of e-commerce that provide needs ranging from food, clothing, household appliances, to various kinds of goods such as cars and two-wheeled vehicles. Businesses must be smart in understanding the conditions of market demand and supply that is done, it is related to the benefits that business people will get, then can be seen in Figure 2.



Figure 2. Display of Various E-Commerce Brands in Indonesia. This image was adopted from <http://www.vondanote.com/> on October 24, 2019

Based on figure 2 above, it is about display of various e-commerce brands in Indonesia. There are many brands that can be choose by consumers. From the Indonesian Central Statistics Agency based on their economic census, in 2016 there were data results while the number of e-commerce in Indonesia has increased by 17% since the last 10 years with a total of 26.2 million. One sector that can optimize its performance is B2C or Business to Consumer through indication of customer experience, then can be seen in Figure 3.

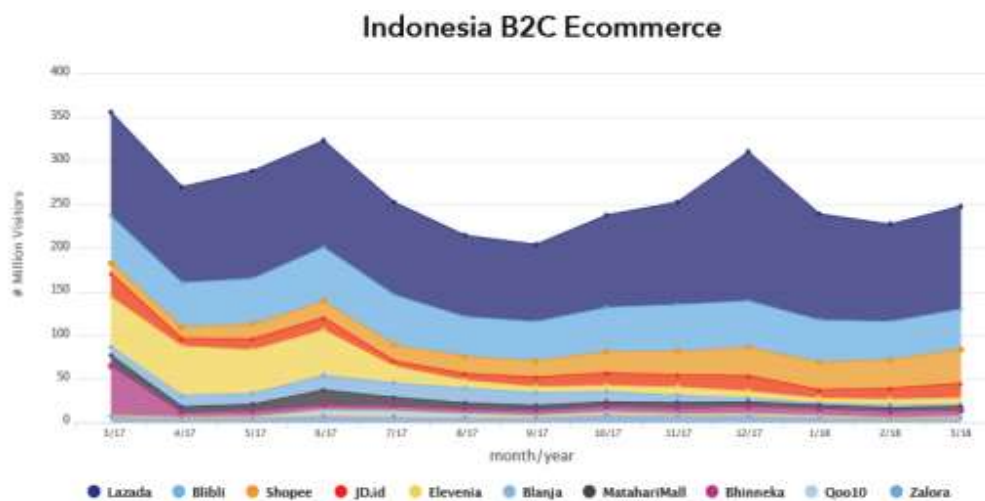


Figure 3. Display the B2C e-Commerce Competition Curve in Indonesia. This image was adopted from <https://dailysocial.id/> on 24 October 2019

Based on figure 3 above, there is a display of B2C on many market places in e-commerce. Then the consumers can be choosing the market place which they like and they need. Although e-commerce provides convenience, businesses cannot stay away from the risk of changing supply and demand for unbalanced products. Classical economics provides an explanation of the demand and supply will affect product prices in the market. On the other hand, the products available with the level of production affect prices and demand, in such situations it is necessary to take appropriate steps to make the price and income conditions stable through a communication strategy, can be seen in Figures 4 and 5.

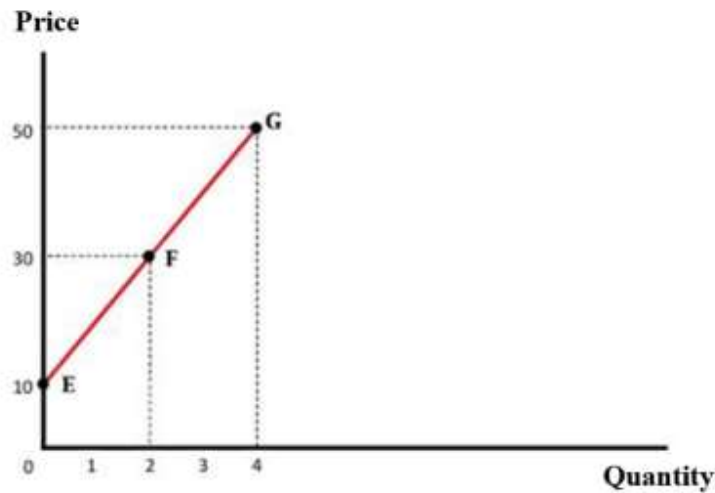


Figure 4. Example of a Supply Curve Display in Business. This image was adopted from <https://www.ajarekonomi.com/> on October 24, 2019

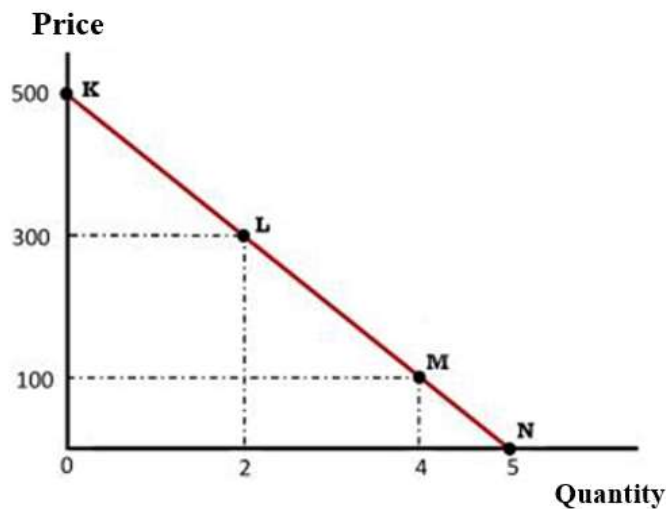


Figure 5. Example of the Display of Demand Curve in Business. This image was adopted from <https://www.ajarekonomi.com/> on October 24, 2019

Based on figure 4 and 5, there are about display of demand curve in business. It is very helpful to know more information about price and quantity. In the risk of demand and supply separate analyzes need to be carried out to produce indications that can be evaluated and determine the communication strategy to be carried out.

1. Demand, the standard for measuring consumer demand for products can be divided into two things: First how much is the target of searches carried out by consumers, for example on a scale of how many times the name of a product brand is searched on e-commerce sites, then the accumulation of results from searches that can be data to find out what brand names most consumers want on e-

commerce sites. Second, consumer buying interest for the product through keyword analysis, if words such as cheap, discount and price come along with the name of the product in the search, then the consumer is in a state of interest to buy besides that special services offered by e-commerce by entering goods the choice in the queue that consumers will pay is also included in buying interest. Web quality design plays important role to attract, gain and retain customers. A high quality website not only determines customer decision to purchase, but also becomes a main reason whether a customer will purchase online or not . Low quality of website could impact on customer lost, cost escalation and profit reduction. Therefore, it is important to know how web quality impact on customer trust of the website, that eventually determines purchasing decision. Some of web quality elements, they are information quality, response time and visual attraction, impact to what customers perceived .If customers feel the website has high quality, then they tend to have high trust to seller. They believe the seller has competence, integrity, benevolence and they have willingness to depend to the seller [9].

2. Supply, in this process the quantity of goods and business opponents is not the main focus, but business people must be able to make strategic steps in Google search, a business person will benefit more if the name of his product and store are included in the first 10 articles compared to the first article. 30. Customer value perceptions are theorized to be an important reflection of the level of DSI in a firm. When a firm's marketing and supply chain functions are managed in such a way that their coordination ensures customers receive what they are promised (e.g. a reduction in the firm's carbon footprint), then customers perceive value from the firm's products and services. While customer perceptions are a component of the broader concept of stakeholder perceptions, how customers perceive a firm are of particular interest, as these perceptions are directly affected by how the organization presents itself. including information regarding a firm's products and operations that are deliberately communicated [11].

Then the communication strategy is to create a good image for consumers by creating advertisements, giving discounts and maintaining product quality and improving service. If the conditions of consumer demand are quite consistent in searching for goods and stores, create a higher consumer buying interest by offering discounts and cheap but quality product offerings. Meanwhile, in the process of offering, advertising, service and consumer trust is very important to make the company's rating increase.

4. Conclusion

Business has existed since prehistoric times, the form of transactions that were originally only intrapersonal communication or face to face is now increasingly revolutionizing and improving functions to be more effective and efficient. E-commerce is one of the results of technological developments that humans have felt in the past few decades, business people get various conveniences with the presence of the digital network business sector. However, risks remain present and cannot be avoided such as unbalanced changes in product supply and demand, so the analysis is carried out to make the right stages of communication strategies so that in the long run the business can be controlled.

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References

- [1] Soegoto, E. S., Eliana, E. 2018. E-commerce and Business Social Media, **407**, pp. 1-6.
- [2] Michael, G. H., David, A. G. 2002. Developing Effective Intercultural Relationships: *The Importance of Communication Strategies*, **44**(4), pp. 455–476.

- [3] Adhi, S. S., Arlo, E. 2015. Customer Loyalty in Collaborative Consumption Model: Empirical *Study of CRM for Product-Service System-Based e-Commerce in Indonesia*, **72**, pp. 543–551.
- [4] J. Miguel, V-B. 2004. Communication Strategies and Product Line Design, **23** (3), pp. 304–316.
- [5] Togar, A. N., Hendra, C. A. 2015. Factors Affecting Customer Loyalty in Business E-Commerce: *A Case of Indonesia*, **76** (3), pp. 386-392.
- [6] Escobar, A. 2016. The Impact of the digital revolution in the development of market and communication strategies for the luxury sector (Fashion Luxury), **5** (2), pp. 17-36.
- [7] Shintaro, O., Javier A. R. 2002. A content analysis of multinationals' Web communication strategies: cross-cultural research framework and pre-testing, **12** (5), pp. 380-390.
- [8] Benjamin, B., Franziska, K., Stoyan, N., Felix, M. 2012. Mapping ecosystem service supply, demand and budgets, **21**, pp. 17–29.
- [9] Achmad, N. H., Arfian, H., Nur, F. A. B., Yudho, G. S. 2014. Determinant of Customer Trust on E-Commerce adits Impact to Purchase and Word of Mouth Intention: A Case of Indonesia, **10** (12), pp. 2395-2407.
- [10] Skott, P. 2019. Autonomous demand, Harrodian instability and the supply side. *Metroeconomica*, **70**(2), 233-246.
- [11] Jon, F. K., Chris K., Bridget, S. N. 2011. Stakeholder perceptions of green marketing: the effect of demand and supply integration, **41** (7), pp. 684-696.
- [12] Baumeister, C., & Hamilton, J. D. 2019. Structural interpretation of vector autoregressions with incomplete identification: Revisiting the role of oil supply and demand shocks. *American Economic Review*, **109**(5), pp. 1873-1910.