Analysis Of E-Commerce Providers' Role In Solving The Issues Of Retail E-Commerce Logistics In Jakarta (Study Case Of PT Acommerce Solusi Lestari)

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Abstract: The rapid growth of retail e-commerce in Indonesia is not supported by good logistics infrastructure resulting in various logistics issues. This research focuses on analyzing the role of e-commerce provider in solving retail e-commerce's logistic issues in Jakarta through a qualitative research. Interview, field work, and supporting theories are used as the source of data. Researcher uses triangulation method to ensure the validity and reliability of the research. The researcher found out that one of the most important requirements for solving retail e-commerce logistics issues in Jakarta is technology utilization.

Keywords: E-commerce Providers, Retail E-commerce Logistics, Technology Utilization

INTRODUCTION

Background of Study. E-commerce has been growing rapidly and becomes the fastest marketing channels for many kinds of product and service without being limited by opening hours and geographic area. Retail e-commerce sales are growing faster than previously anticipated. It is estimated that the total worldwide sales of retail e-commerce in 2016 will reach 2.050 trillion U.S. dollars (eMarketer, 2016).

Graph 1. Retail E-commerce Sales Worldwide, 2014-2019 (in trillion U.S. dollars)
Source: eMarketer (2016)

According to Schöder, Ding, and Campos (2016), global e-commerce sales are expected to reach 2.356 trillion U.S. dollars in 2018, almost twice of sales in 2013.

Graph 2. Global E-commerce Sales and Percentage of GDP from 2013 to 2018 (in billion U.S. dollars)
Source: Schöder, Ding, and Campos (2016)

In 2010, e-commerce boom happened. Increase in traffic congestion and the rise of internet penetration cause Indonesians to choose online shopping (Cosseboom, 2015). Indonesia is a fast-growing market for e-commerce. Based on an article published by Singapore Post in 2014, economic growth, affordable mobile devices and internet, the growth of middle-class population and convenience of online shopping are the factors that drive the rapid growth of e-commerce market in Indonesia.

According to a recent research done by eMarketer, Indonesia has the world's fourth fastest-growing retail e-commerce sales after India, China, and Argentina by having 64.3% growth rate in 2016. In 2019, Indonesian retail e-commerce market is expected to have the highest rate of sales growth in the world (eMarketer, 2016). According to JNE, the market leader in e-commerce logistics in Indonesia, 60 percent of the packages related to e-commerce are delivered within Jakarta area (DBS Asian Insights, 2016).

Problem Identification. E-commerce is facing logistics issues despite of its rapid development and growth (Tech in Asia, 2015). One of the success keys of e-commerce business is the delivery service's timeliness. The transaction in e-commerce will be considered done when the product is delivered safely to the consumer. The delivery service for e-commerce business needs special handling. The understanding of the logistic provider about the product's characteristics is a very crucial factor that will ensure safe delivery of the products. The other important factors that are needed to be understood by the logistics are: terms and conditions of e-commerce transaction, lead time, payment of the products, etc. (Zaroni, 2015).

The issues in e-commerce logistics are different from offline commerce, hence different strategies compared with those used by traditional sellers are needed by e-commerce (CBRE, 2013). The efficient and effective logistics strategies are crucial in ensuring a successful and smooth flow of goods in online business channels. One of the

biggest logistics problems in Jakarta is delivery delay. The problem exists due to poor logistics system that cannot balance the rapid growth of e-commerce. Compared to e-commerce businesses in the country with more well-structured logistics infrastructure and service such as the USA, Indonesia's logistics providers are not ready to fulfill the needs of e-commerce businesses (Kearney, 2013).

Table 1. A Qualitative Assessment of Transport Infrastructure in ASEAN

	Road Network	Port Quality	Air Transport
Indonesia	Bad	Fair	Fair
Malaysia	Good	Good	Good
Philippines	Fair	Bad	Bad
Singapore	Good	Good	Good
Thailand	Good	Good	Good
Vietnam	Fair	Bad	Bad

Source: Kearney (2013)

Logistics problem is one of the biggest barriers for e-commerce in Indonesia due to poor transportation infrastructure (Kearney, 2013). Indonesia has poor road and rail network followed by moderate port and air transport quality. As the result, logistics sector as the main support for e-commerce businesses in Indonesia still faces a lot of obstacles that detain logistics service providers to give the best service for e-commerce. The result of poor logistic infrastructure is expensive logistics cost. According to Indonesian Logistics Association (2011), 46% of logistics cost were for the transportation cost, 36% from inventory costs and the remainder was for administration cost.

Implementation of logistic system and infrastructure technology is also a challenge in Indonesia. Effective and efficient integrated technology is not yet available for Indonesian logistic sector (Saputro, 2015). Problems mentioned above are the major reason of Indonesia's low competitiveness in Asia-Pacific region logistic sector. Consequently, this research will attempt to give a profound examination to discover the role of e-commerce provider in solving retail e-commerce's logistic issues in Jakarta. E-commerce providers are parties who facilitate e-commerce transactions and this research focuses on parties who cater products or services for retail e-commerce and their customers.

Research Questions: (1) What are the specifications required by logistics providers to meet the developing needs of retail e-commerce in Jakarta?;(2) Which relevant e-commerce providers are involved in solving retail e-commerce's logistics issues? (3) How compelling are the moves made by e-commerce providers in tackling retail e-commerce's logistics issues?

The purpose of this research is to find out the specifications required by logistics providers to meet the developing needs of retail e-commerce in Jakarta, relevant e-commerce providers that are involved in solving retail e-commerce's logistics issues, and how effective the moves made by those e-commerce providers in tackling the issues.

This research is focused on retail e-commerce type, with regional parameter in Jakarta area. Researcher will limit the logistic issues in Jakaera. This research only analyzes the role of e-commerce providers in solving the issues of retail e-commerce

logistics in Jakarta through qualitative method by taking PT. Acommerce Solusi Lestari for the case study analysis.

THEORETICAL FOUNDATION

E-commerce. There are many definitions of e-commerce. Nanehkaran (2013) defines e-commerce as an interaction between data management systems, communication systems, and security that makes commercial information exchange becomes available.

According to The Organization for Economic Co-operation and Development or OECD (2016), e-commerce transaction is products or services sale or purchase using internet. E-commerce not only includes buying or selling goods over the internet but also can be defined as the sharing of business information, business relationships maintenance, and conduct of business transactions by using telecommunication networks. E-commerce also includes various business processes that happen within organizations that support the organization's goal (Zwass, 2012).

Types of E-commerce. There are several main types of electronic commerce based on the parties involved in e-commerce transaction (Fernandes, 2014).

1) B2B: Business-to-Business is the type of transaction that happens between companies to transfer products or services. The example of B2B is Alibaba.
2) B2C: Business-to-Consumer transaction happens between a business and end consumers. This type of e-commerce transaction is applied by Reebonz, Zalora, and Net-a-Porter.
3) C2B: Consumer-to-Business is where a person or individual creates or produces products or services and sell it to institutions or businesses. The example is when a designer creates and sells a logo for a company.
4) C2C: Consumer-to-Consumer transaction happens between users of a electronic medium such as marketplace. The examples of C2C e-commerce are Bukalapak and Tokopedia.

Components of E-commerce. There are some components that differs the mechanisms of e-commerce from traditional commerce (Turban and King, 2012). First component is customer; the customer of e-commerce are the internet user who is the target market of the seller. The seller will offer products, services, and information through the internet to the customer. E-commerce gives better access for customers and better understanding of customer's needs so that e-commerce can offer products or services that fulfill and satisfy that needs.

The second is seller. Seller is the party that offers the products, services, and information to the customer. The selling activity can be started from seller's website or a marketplace. The third component is product. The main difference between e-commerce and traditional commerce is the information provided, delivery and distribution system. The fourth component is technology infrastructure; there are two parts in technology infrastructure of e-commerce which are front end and back end. Front end is the website or web application that acts as the medium of interaction with users. There are the electronic catalog, shopping cart, search engine, and payment gateway in the front end infrastructure.

Back end is the application that supports front end application including activities related to the sales order, inventory management, payment, packaging and product delivery.

E-commerce Challenges. There are major challenges that are faced by e-commerce businesses in emerging markets such as Indonesia (Singapore Post, 2014). The first challenge is consumers' hesitancy to purchase online. A Nielsen's survey in 2013 found out that e-commerce's customers' biggest fear is fraud and it causes 34.6% of customers to be reluctant to shop online or make online purchase. Lack of tangibility is also the main cause of the online purchase hesitation, 21.5% of customers in Indonesia were not feeling comfortable purchasing products that they could not touch or feel before buying.

The second challenge is price-sensitive consumers. Boston Consulting Group (2015) found that promotions and deals are the strong drivers for Indonesians to shop. For example, it is very common to see hundreds or even thousands Indonesian queueing for sale events such as Midnight Sale at malls. Merchants should keep their prices low to create demand, but both online and offline sellers need to formulate the right strategies that keep the prices low while still be able to generate profit.

The third challenge is lack of infrastructure and poor logistics. Indonesia's infrastructure is a challenge not only for businesses but also the customers. The customers choose online shopping as an option due to the convenience; since buying goods from the store is taking longer time because of the congested road or traffic jam. The results of poor infrastructure in such a large nation are difficulties in reaching remote areas and highly concentrated sales and deliveries around Jakarta (DBS Asian Insights, 2015). E-commerce businesses need to choose logistics service providers that can give the best services to fulfill the need of delivery timeliness and safety that will ensure customers' satisfaction.

Indonesia's E-commerce Law. E-commerce in Indonesia is regulated by Law No. 7 of 2014 regarding Trade (Trade Law) and referred to Law No. 11 of 2008 regarding Electronic Information and Transactions (the "ITE Law") and Government Regulation No. 82 of 2012 regarding the Implementation of Electronic Systems and Transactions ("GR 82/2012″). According to GR82/2012, e-commerce businesses have to provide users/customers with at least: the identity of electronic system provider/operator, detailed information of products/services being offered, procedures of usage, terms and conditions of usage, and users' personal data protection.

Indonesian Investment Coordinating Board (BKPM) finalized Negative Investment List and signed by President Joko Widodo as Presidential Regulation number 44 of 2016 on May 12, 2016. The regulation lists which sector is open to foreign investment in Indonesia and set the permitted percentage of foreign ownership. The regulation is expected to have positive impact on e-commerce business in Indonesia by giving more chances for foreign investors to invest in Indonesian e-commerce startups. The targets of the regulations include spurring the digital economy and reducing logistic costs.

Logistics. Logistics is a part of supply chain management. The term "Logistics" has been used since thousand years ago by Greek generals to describe the process of food, clothing, ammunition procurements for the army (Ballou, 2007). The Council of Logistics Management defines logistics as a process starting from point of origin to the point of consumption that includes planning, implementing, and controlling the efficient and effective flow and storage of goods, services, and information.

E-commerce Logistics. Retail logistics has been changing in term of its distribution property from the 1970s until the present time. Starting from a direct system from the suppliers or wholesalers to shops, now retail logistics applied e-fulfillment system that uses technology to solve logistics problems. The benefits of present e-commerce logistics system including improved communication flow, supply chain transparency, increased customer satisfaction, lower cost, efficiency improvement and on time delivery. These benefits can be enjoyed by shippers, customers and also the third-party logistics providers (Robinson, 2014). The main difference between traditional supply chains and e-commerce logistic is in the commercial and physical channels. In traditional supply chains, commercial and physical channels are combined. While in e-commerce logistics, they are separated and operated independently. The customers who had to go to store to make their purchase, now separately place their order which then has to be processed by the distribution or fulfillment center (CBRE, 2013).

E-commerce fulfillment centers require different warehouse layout with the offline warehouse. Offline warehouses tend to store products in bulk while in e-fulfillment centers products are stored per SKU in structured shelves to make it easier for warehouse staffs to pick and process the products.

In delivery process, offline warehouses usually use big vehicles such as trucks because they tend to send products in bulk. While online warehouses commonly use smaller vehicles as the products need to be delivered directly to end customers (Berge, 2015). According to Metapack (2015), customers expect an accessible delivery status update, fast delivery, delivery time estimation, and timeliness guarantee from delivery. Delivery time and speed is the major motivator for customers to choose which e-commerce they want to shop at (Preston's Friends, 2016).

The use of technology is very important in e-commerce logistic operations. The example is integration of front-end and back-end of e-commerce operation by using software and real-time fulfillment data. The usage of effective system that can process orders and update order status will reduce inefficiencies and help to identify redundant processes (Robinson, 2014). The most advance technology innovation is currently applied by Amazon.com. In 2011, Amazon started using 1,300 robots from Kiva Systems in its fulfillment centers. Now, more than 15,000 Kiva robots are used in 10 Amazon warehouses. Robot utilization by Amazon has reduced fulfillment cost by $450 to 900 million in North America (Kaplan, 2015).

According to Berge (2015), the four main requirements needed by logistic providers to adapt to changes caused by e-commerce rapid development: (i) maintaining automated system to process orders and update orders' status, (ii) efficient shipments organization and tracking to avoid and reduce complaints, (iii) shipment consolidation to lower shipping costs, (iv) maintaining transparency and efficiency of supply chain by improving communication with clients and customers.

METHOD

Case Study. A case study is an empirical inquiry that deeply examines the current phenomenon in real-life context (Yin, 2010). The researcher looks to answer a question that tried to clarify the assumed causal connections, in actuality, mediations that are excessively complex for the survey or experiment systems, hence the researcher uses the explanatory case study in this research. The researcher uses a case study of PT. Acommerce Solusi Lestari or known as e-commerce Indonesia.

Data Analysis. Researcher adapted the Miles and Huberman (2013) model to analyze the data. According to Miles and Huberman (2013), data analysis in qualitative research is done interactively and will continue until analysis result is saturated. Miles and Huberman model could be divided into three analysis activities which are data reduction, model data or data display, and data conclusion drawing or verification.

Data Collection Technique. The primary source of data for this research is interview and field work. The interview is done to five staffs at a Commerce Indonesia who have knowledge and capability in giving information and insights into the phenomenon and research problems: (1) Raditya Danu (Head of Distribution); (2) Desti Rama Rumondang (Operation Project Manager); (3) Hadi Kuncoro (Chief Operation Officer); (4) Andry Sugiarto (Channel Management Marketplace Staff); (5) Ranseti Tampubolon (Business Development Manager).

The researcher did the field work while having her internship at PT. Dekoruma Inovasi Lestari, one of the top ten clients of aCommerce Indonesia. Researcher's position in PT. Dekoruma Inovasi Lestari is Logistics Operation Staff that deals with logistics partners and handles logistics issues that occurred. Secondary data will be used in research analysis and compared with the findings (Yin, 2011). This research will use information from journals, articles, and previous researches as secondary data.

Validity. According to Yin (2010), internal validity is mainly used for explanatory studies and refers to certain conditions that may lead to others. In order to achieve high validity of this research, appropriate theories and models were applied. Moreover, the interviewees were carefully selected.

Reliability. Saunders (2007) defines reliability as *"the extent to which your data collection techniques or analysis procedures will yield consistent findings"*. Furthermore, reliability can be divided into internal and external criteria, where internal reliability refers to whether the group agrees on what has been seen and heard; external reliability refers to whether the study can be replicated or not (Bryan and bell, 2007). In this research, internal reliability is assured since the researcher reviews and analyses the data right after the interviews. Moreover, an interview strategy has been developed for primary data collection and the company has involved in the development of research questions and purposes. Thus, external reliability is assured as well.

History of aCommerce Indonesia. aCommerce was created by a group of entrepreneurs and investors at Ardent Group, an operating venture capital firm from Bangkok, Thailand. Ardent Group built aCommerce on 2013 as a solution to the problem faced by their startups in delivering e-commerce to Southeast Asia.

The main problems faced by the startups is the lack of expertise to perform in the emerging market's infrastructure. aCommerce is designed to be a one-stop service to fill the gaps in the Southeast Asian market. Supported by professionals in marketing, technology, operation, and finance, aCommerce has successfully created integrated Order Management System (OMS) and Warehouse Management System (WMS) focusing on four countries: Thailand, Singapore, Indonesia, and Philippines.

Established in November 2013 under the name of PT. Acommerce Solusi Lestari, aCommerce Indonesia aimed to be the best end-to-end e-commerce enabler in Indonesia. Some of the first few clients of aCommerce Indonesia are MAP (Mitra Adi Perkasa) amd Groupon Indonesia. After almost three years of operation, aCommerce now has more than more than a hundred clients, starting from small medium company until multinational companies engaged in various industries such as fashion, electronics, etc. The latest clients of aCommerce including Hewlett Packard, MatahariMall.com, Dekoruma.com, L'Oreal, BliBli.com, and many more.

Vision and Mission. Vision: "To make e-commerce easy in Southeast Asia." Mission: "Build e-commerce technologies and services that help companies build brand value, acquire customers, drive sales, scale their business and connect all parts of the e-commerce value chain"

Core Services. aCommerce Indonesia has three core services which are technology, marketing, and operation service.

1) Technology Service. Even though aCommerce is not a technology company, it provides e-commerce software and technology that will give clients best solutions to make the order processing and fulfillment process automated, integrated, and flexible to clients' need at the same time.

2) Marketing Service. Online and e-commerce marketing needs different approach compared to offline marketing. aCommerce balance clients' brand position with usability, conversions, and Search Engine Optimization to ensure effective marketing that increases clients' sales and revenue. aCommerce provides e-commerce especially the start-ups with best marketing and public relation service in the region.

3) Operation Service. Operations activity in e-commerce is different with the operations activity in offline business, therefore aCommerce built its own fulfillment centers to facilitate clients' need of order fulfillment. Currently, aCommerce fulfillment centers are located at Intirub Business Park in East Jakarta, Bina Sinar Amity Warehouse in East Jakarta, and Metro Feed in West Java. Product storage, product packaging, and product delivery are the activities done in those fulfillment centers.

Equipped with three fulfillment centers located in Jakarta, aCommerce provide logistic service supported by technology friendly logisticians and advanced Transportation Management System (TMS) that is optimized for customer experience and value added services such as COD (Cash On Delivery). aCommerce also equipped its delivery couriers with smartphones that have built-in application which allows couriers to update package delivery status, collect digital signature of recipient, and upload photos as proof of delivery. Couriers manager can monitor couriers' performance and give guidance to couriers through the application.

Figure 1. Serviceof PT Acommerce Solusi Lestari
Source: aCommerce (2015)

FINDINGS AND ANALYSIS

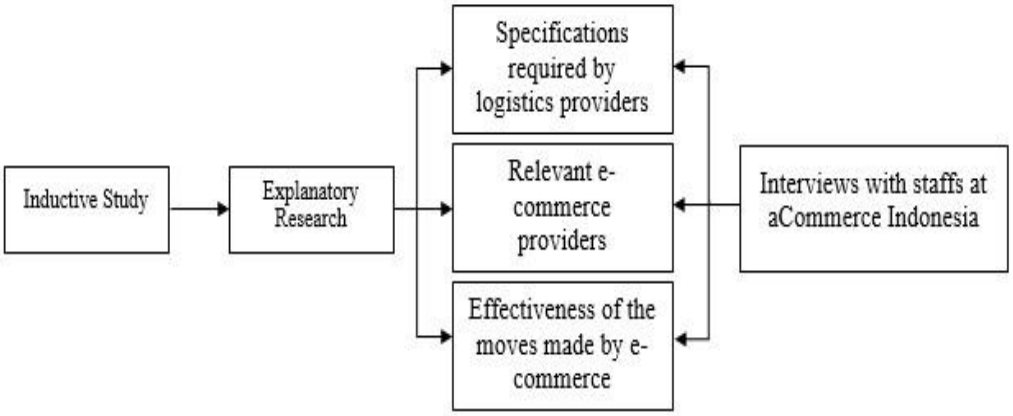

Figure 2. Structure of Findings and Analysis Chapter Based on Research Questions and Purposes
Source: Researcher's Development

Significant Issues of Retail E-commerce in Jakarta

1) **Insufficient Infrastructure**. The first infrastructure problem in Jakarta is unstructured address. Unstructured address means addresses in Jakarta are not named and numbered systematically (Tampubolon, 2016). Some roads are double named or even unnamed, which causes logistic providers to face difficulties in delivering goods on time. Unstructured address makes it hard for the courier to find the right address which leads to wrong delivery and longer delivery time. Even though logistic providers have developed their own mapping system to reduce the chance of delivery errors, the mapping system needs to be improved to further reduce the possibility of delivery errors such as wrong and dead-end delivery (Danu, 2016). The next issue is insufficient road infrastructure and a low road to total area ratio that cause traffic congestion (Rumondang, 2016). From 2004-2010, while the number of vehicles keeps growing at 12 percent, the growth of road length is only 0.01 percent. According to assistant to the governor for industry, trade, and transportation Soehodho (2015), Jakarta's road to total area ratio is 6.29% in 2015 and it was much lower than other urban cities such as Singapore (12 percent) and Tokyo (24 percent). The imbalanced growth of vehicles number and road length led to sever traffic congestion in Jakarta which is troublesome for logistic service providers causing customers to receive their goods late. The recent service improvement can maintain the goods to be delivered within three days in Jakarta area. However, the service still can be affected during holiday or when natural disaster happened (Tampubolon, 2016). Another following issue in this matter is inadequate logistic and supply chain infrastructure. According to Kuncoro (2016), Indonesia's logistic and supply chain infrastructure is still left behind compared to other countries such as Singapore. Based on World Economic Forum's Global Competitiveness Index (GCI), Indonesia is the 39th rank holder for transport infrastructure while Singapore is on the 3rd rank. Logistic providers still need to adjust the warehouse layout, management system, and operational infrastructure to fully support and benefit retail e-commerce logistics.
2) **Human Resources Performance.** Human resources performance in logistics industry is an issue for logistic providers. Some delivery couriers do not have sufficient knowledge of SOP which causes them to perform in a way that is not expected by the

company and customers. Sometimes, the couriers are rude to customers when they should be friendly and professional as the front-end employee in logistics service. The operational staffs are also not being equipped with the knowledge of e-commerce logistics process causing errors in data processing (Rumondang, 2016). Indonesian logistics' human resources are also not technology friendly yet. The staffs need more knowledge in technology utilization to optimize their work (Kuncoro, 2016).

3) **Limited Technology Implementation.** Logistic providers in Jakarta do not fully implement technology for their operation activities. Many logistic providers have built tracking system that helps customers track their goods' delivery process (Danu, 2016). However, the tracking system is not 100% accurate yet. The inaccuracy of the tracking system makes customers feel insecure or hesitant to shop online as they cannot trace the shipment status of the goods bought real-time. Even though most of the operation activities is done using computer and technology, researcher found from the field work that some parts of the work are still done manually. The example of the impracticality is the use of handwritten Air Way Bill. The disadvantages of manual work include time consuming and risk of human error.
4) **Expensive Logistic Cost.** The logistic cost in Jakarta is the most expensive compared to other capital cities in ASEAN (Kuncoro, 2016). Even though some retail e-commerce businesses have created their in-house delivery service (e.g. Lazada Express and Zalora Delivery Express) to lower the logistic cost, the delivery cost is still considered high. Another thing that can be done by retail e-commerce to keep their customers is giving additional values or promotions, so customers will not mind if they have to pay for expensive logistic cost.
5) **COD (Cash on Delivery) Transaction.** Gaining customers' trust is still a challenge for retail e-commerce in Indonesia including in Jakarta. The risk of online shopping fraud in Indonesia is the highest among ASEAN nations. The top reason for Indonesian customers' hesitancy to buy online is the fraudulent image of shopping online (McKinsey, 2013). Customers are also hesitant to use credit card for making online payment because they are worried about their financial security (Southeast Asia Online Shopper Study Insight Report, 2014).

The most common form of payment for online shopping in retail transaction is bank transfer. Then, in 2012 Cash on Delivery system is introduced to the Indonesian market, initiated by Hadi Kuncoro who was Vice President of Rocket Internet and Operating Director of Zalora Indonesia that time. COD system enables customers to pay for their ordered goods when they receive the packages. In customers' perpective, COD reduces the fraud risk and is more convenient (Ilyas, 2016). Some e-commerce even cooperating with banks to provide EDC (Electronic Data Capture) machine for customers to pay with debit or credit card upon delivery. However, customers prefer to pay in cash to avoid the risk of financial security caused by leaked PIN or hacked credit card.

The logistic cost in Jakarta is the most expensive compared to other capital cities in ASEAN (Kuncoro, 2016). Even though some retail e-commerce businesses have created their in-house delivery service (e.g. Lazada Express and Zalora Delivery Express) to lower the logistic cost, the delivery cost is still considered high. For retail e-commerce and logistic providers, COD also causes problems due to cash money handling. Human resources and system management is a challenge for logistic providers. The challenge includes the risk of money being stolen by the delivery couriers and difficulty of

reconciliation between e-commerce and the logistic providers. The e-commerce might experience loss and logistic providers' company image could be damaged.

Another thing that can be done by retail e-commerce to keep their customers is giving additional values or promotions, so customers will not mind if they have to pay for expensive logistic cost.

Specifications Required by Logistic Providers. Researcher divided the specifications into two based on the analysis of the issues mentioned above.

1) **Being Up-to-date to Current Demand and Challenges.** The e-commerce industry is growing rapidly with more players competing in the market. Logistic providers have to keep updating their knowledge and understand the situation change in the industry (Rumondang and Tampubolon, 2016). The first thing logistic providers have to do is keep maintaining their service performance. Maximization of system and integration is crucial for them to meet the needs of retail e-commerce. Logistic providers also need to expand its coverage so that customers and retail e-commerce can reach a wider market. Human resources of logistics services (couriers and operational staffs) need to have better understanding of e-commerce logistic process (Tampubolon, 2016). According to interviewees, human resources' limited knowledge led to customer's complaint because the customers did not get a satisfactory answer for their questions regarding the fulfillment and delivery process (Tampubolon, 2016). Uberization can be the answer to current trend that requires logistic providers to be able to meet the demand. Uberization is a term in logistic industry that refers to the ability of logistic providers to connect with supply and demand anywhere, so that they can balance supply and demand. The main point of uberization is how logistic providers combine technology with logistics operation process to establish a connection between supply and demand (Rumondang, 2016). Uberization is closely related to how logistic providers utilize technology, therefore it is very important for the human resources to be technology friendly. Customer education is also important. The logistic providers and other related parties need to educate customers about what the customers can do to support overall delivery process. For example, by asking customers to write their address clearly and providing additional useful information if their address is located in small streets and hard to find. Customers giving complete, clear, and precise address will help to reduce the risk of dead-end delivery because researcher found that customers not giving their complete addresses is also a factor causing dead-end shipment.
2) **Improvement and Quality Control.** The logistic providers should not only focus on service innovation and system development, but also on their service quality (Rumondang and Sugiarto, 2016). Logistic providers should assess whether their service quality has meet the customers' expectation or not. Logistic providers have to maintain its quality while keep creating innovations demanded by the industry. By maintaining and improving service quality, logistic providers can show their capability, reliability, and positive brand image to customers (Tampubolon, 2016).

Relevant Involving Parties in Solving Retail E-commerce's Logistics Issues. Based on researcher's observation during field work, interviews, and secondary data, researcher classified the parties into four.

1) **Logistic Providers.** One of the primary parties is the logistic providers. The logistic providers are the ones who understand the logistic industry the most. In response to rapid growth of e-commerce business, many logistic providers prepare themselves to serve the needs of retail e-commerce. The competition among logistic providers forces them to give their best service in order to survive.
2) **Retail E-commerce.** Retail e-commerce as the main player of e-commerce business in Jakarta is playing role in solving the logistics issues. Retail e-commerce have the data of customer behavior, the analysis of industry growth, as well as market competition. Those data significantly can be used to solve the logistics related issues which can directly affect retail e-commerce business.
3) **Logistics Support Technology Companies.** Technology companies are involved in solving retail e-commerce logistic issues as they have advanced technology that can be used to reduce the obstacles in logistics operation. By using technology utilization, tech companies offer support and help for retail e-commerce to solve their logistics issues. The examples of tech companies are Go-Jek, Deliveree, and Grab.
4) **Logistic Associations and the Government.** The rapid growth of e-commerce industry has moved the government to participate in solving logistic issues faced by retail e-commerce. The government authorized the Presidential Regulation number 44 of 2016 targeted to spur the digital economy and reduce logistic costs. The regulation is expected to affect e-commerce business in Indonesia positively by giving more chances for foreign investors to invest in Indonesian e-commerce startups (BKPM, 2016). Indonesian logistic associations such as ALI (Asosiasi Logistik Indonesia) and ASPERINDO (Asosiasi Perusahaan Jasa Pengiriman Ekspres Indonesia) are actively involved in conducting mediation among government, retail e-commerce, as well as logistic providers. In the mediation, logistics issues are discussed and possible actions to be taken in the future are planned (Kuncoro, 2016).

Moves Made by e-commerce Providers in Tackling Retail E-commerce's Logistics Issues

1) **Logistic Providers.** Early established logistic players who just realized the e-commerce phenomenon are preparing to compete in the industry. The example of old player is government-owned Pos Indonesia who has started to join e-commerce boom last year. Pos Indonesia is improving its tracking system and infrastructure to meet the developing needs of retail e-commerce. Pos Indonesia is investing on processing centers and planning on enlarging its storage capacity up to 12 times, from 40,000 sqm to 500,000 sqm, in three or four years (Singgih, 2016). According to Kuncoro (2016), logistic providers are doing the line-haul and last-mile operation adjustment based on the shipment volume. aCommerce, for example, has a fulfillment center in Halim, East Jakarta. aCommerce's courier will send packages directly from Halim to end user's house (e.g. in Kebayoran area). If the delivery volume to Kebayoran keeps increasing, aCommerce will build a line-haul station in Kebayoran then aCommerce will use a big vehicle such as van to deliver packages from Halim to Kebayoran and then couriers will deliver the package from line-haul station in Kebayoran to end users using

motorcycle. The purpose of line-haul and last-mile operation adjustment is to reduce length of delivery and delivery cost. There are some actions that have been taken by aCommerce to tackle retail e-commerce's logistics issues:

a) aCommerce was the first logistic provider who created real-time tracking system by placing tracking software into courier's smartphone. The movement of delivery couriers can be traced and the couriers can report if they have done delivery directly from the tracking software. By the time the couriers report their shipment status, the system will automatically update the package delivery status.
b) aCommerce has built and released an application named aDelivery that can help logistic providers to manage and monitor couriers' job assignment, delivery, and pick up. The application can do real-time tracking, send proof of delivery, and count the COD (Cash on Delivery) nominal accepted by delivery couriers (Rumondang, 2016).
c) aCommerce prioritizes the quality of its human resources by giving training program for new recruits, especially the delivery couriers. During the training, aCommerce introduces e-commerce system and logistic for e-commerce to new delivery couriers. aCommerce also has a regular briefing for the delivery couriers where they discuss delivery issues, possible actions to solve the issues, and evaluate the couriers' performance (Rumondang, 2016).
d) aCommerce always introduces up-to-date technology to the couriers. aCommerce trains the couriers step by step so that they can adapt to the new technology. The delivery couriers can keep up with the technology and become technology friendly due to the consistent training given in spite of their educatioinal background (Danu, 2016).

2) Retail E-commerce. In-house delivery service helps retail e-commerce to control the delivery time. The examples of e-commerce that have in-house delivery are Zalora (Zalora Delivery Express) and Lazada (Lazada Delivery Express) (Danu, 2016). Other e-commerce businesses that do not have their own in-house delivery yet, they are very selective in choosing the right logistic providers for them to cooperate with. e-commerce players choose the logistic providers based on their track record and capability to fulfill the developing needs of the particular e-commerce. Researcher found that many retail e-commerce businesses are having contract with new or start-up logistic players that they consider trustworthy and capable of supporting their operations rather than using the service of old logistic players whose services are not good enough to support the needs of retail e-commerce. From the field work done by researcher, researcher found that retail e-commerce helps logistics providers to reduce the risk of dead-end delivery by requiring customers to give their complete address. Retail e-commerce provides accurate and interconnected selections of subdistricts (kecamatan), cities, and provinces for customers to choose on the checkout page. According to an interview the researcher has done with retail e-commerce staff, retail e-commerce are working on giving more values and better online shopping experience despite the high logistic cost. Retail e-commerce businesses use marketing budget to give promotions that attract customers such as free delivery and discounted products.

Effectiveness of Moves Made by E-commerce Providers in Tackling Retail E-commerce's Logistics Issues. Researcher analyzed the effectiveness of the moves on each issue.

1) **Insufficient Infrastructure.** Logistic providers have been upgrading their services to solve the infrastructure issue. aCommerce for example, adjusts its line-haul and last-mile operation by building and developing better infrastructure for more efficient and effective delivery (Kuncoro, 2016). Other logistic providers such as JNE, build larger network by cooperating with agents to open more counters all over Indonesia. The purpose of cooperating with these agents is to make it easier for customers to send, pickup, or even return their packages. Qualitatively, these actions have been effectively alleviating the issues caused by poor infrastructure.
2) **Human Resources Performance.** Regular briefing and training done by logistic providers for the couriers helps the couriers to become more technology friendly, understand how e-commerce operates and the differences between offline and e-commerce logistic (Rumondang and Sugiarto, 2016). It is not easy to teach the delivery couriers who are not used to technology usage or utilization, but the logistic providers have to be determined to help couriers to learn and adapt to current situation and technology. Researcher found that continuous guidance from the company, the couriers are able to keep up and catch up with the latest technology.
3) **Limited Technology Implementation.** e-commerce providers have realized the importance of technology implementation to in e-commerce logistics. Tech start-up companies such as aCommerce have built real-time tracking software to enable logistic providers, retail e-commerce, and end customers to trace the location of the packages (Rumondang and tampubolon, 2016). It is proven qualitatively to improve customer satisfaction and help customers to feel more secure in shopping online. aDelivery that is created by aCommerce helps reducing manual paperwork by utilizing mobile application (Danu and Tampubolon, 2016). Beside automatic update of package shipment status, the application also reduces time consumption and the risk of human error in data input.
4) **Expensive Logistic Cost.** Line-haul and last-mile operation adjustment helps to lower the logistic cost by reducing variable and overhead cost (Kuncoro, 2016). These actions taken by logistic providers qualitatively have been effective in tackling high logistic cost issue in Jakarta.
5) **COD (Cash on Delivery) Transaction.** For issues related to COD, aDelivery built by aCommerce has become one of the solutions. aDelivery makes it easier for logistic providers to collect and report the cash money obtained from COD transactions (Danu, 2016). By using aDelivery, logistic providers will know the exact amount of money received by delivery couriers and finance staffs could collect an accurate amount of money from delivery couriers. The in-house delivery system also helps e-commerce to control the people and system. The self-managed system is easier to operate and evaluate (Danu, 2016).

CONCLUSION

During past few years, e-commerce has been growing rapidly in Indonesia and Indonesia has the world's fourth fastest-growing retail e-commerce sales in the world.

Despite the rapid growth of retail e-commerce businesses in Jakarta, e-commerce is facing bottleneck on its logistics. Logistics providers are still not ready to support the needs of retail e-commerce. Issues such as delivery delay and tracking difficulty cause customers to be hesitant to purchase online.

Through this research, researcher found the major logistics issues faced by logistic providers. The issues are the parameter for researcher to develop the specifications required by logistics providers to meet the developing needs of retail e-commerce in Jakarta. Based on data collected, researcher found that logistic providers and other relevant parties have made moves to solve the logistic issues.

The current most important requirement needed by e-commerce providers is technology utilization and technological friendly human resources. Moves made by logistic providers, retail e-commerce, logistics support technology companies, the Indonesian government, and logistic association as relevant e-commerce providers have been alleviating the logistic issues, especially in Jakarta. To conclude, e-commerce providers have done a big role in solving logistic issues of retail e-commerce by reducing the severity of e-commerce logistics issues.

Recommendation

aCommerce Indonesia. We suggest aCommerce Indonesia to keep on developing its technology to fulfill the current and future needs of e-commerce logistics. For example, by providing more details on delivery status so that clients (retail e-commerce) and end users (retail e-commerce's customers) can monitor their packages without confusion and they don't have to frequently contact aCommerce to get detailed information on delivery status update. We also recommend aCommerce Indonesia to keep on improving the quality of its service, both to their clients and end users because as logistic service provider, it will represent not only its own company image but also the retail e-commerce's image as its clients.

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