

Selection Criteria Identification of Delivery Service Providers For E-Commerce Companies

Case Study at PT Hijup

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Abstract—Select the best delivery service provider in an e-commerce companies is a very important activity. Due to each e-commerce company has its own characteristics, comprehensive analysis is needed. Referring to some research paper, this study focuses on identifying of selection criteria for delivery service providers which are in line with a company's characteristics. This research case study is conducted in PT Hijup. The proposed criteria are Facility and Support Factors, Growth and Development of the Company, Level of Logistics Information, Cost Control, Quality Management and Customer Service with some modification in details of the previous research.

Keywords; selection criteria, delivery service provider, e-commerce.

I. INTRODUCTION

E-logistik (2017) said that delivery service provider business has grown more than 30% since 2008. Internet penetration and online selling activities contribute this growing. Delivery service providers play important roles in online selling or e-commerce business. E-commerce companies have to choose the best provider. Slip in selection of delivery service provider may reduce customer's trust. Delivery service providers are the companies frontliners. Every e-commerce company has different delivery service needs. Consequently, particular analysis is needed in determining the delivery service criteria.

Some research papers - related to delivery services - have been conducted. Huang and Yin (2014) proposes five criteria for evaluating third party logistics, namely company growth and development, level of logistics information, cost control capabilities, quality management and customer service. Ligar and Banowosari (2017) suggests some selection criteria such as customer guarantee, service comfort, delivery reliability, employee competency and company image. In the study of Xu & Li (2017), the selection of logistics service providers on e-commerce are service quality, logistics costs, logistics capability, information system level and level of logistics

development. Another research related to the identification of e-commerce shipping service providers is Koh and Tan (2005). They propose cost, service quality, company reputation and technology as selection criteria for evaluating logistics service providers.

This research focuses on identifying selection criteria for delivery service providers which are in line with company needs and conditions. Research case study is conducted in PT Hijup. This study complements the previous research by identifying criteria based on case studies at PT Hijup so that the criteria obtained are applicable in PT Hijup.

II. LITERATURE REVIEW

In this section, some discussion related to e-commerce and logistics are elaborated.

2.1 E-commerce

According to Ustadiyanto (2002), e-commerce is all forms of trade transactions in the form of goods and services carried out through electronic media. This trading transaction activity is more dominant through internet. E-commerce activities are divided into several business models including business to business (B2B) models, business to customers (B2C) models, and customers to customers (C2C) models (Loundon, 2005).

B2B e-commerce business is a transaction made between companies such as transactions conducted by suppliers with retailers. In the B2C business model, e-commerce companies sell products from suppliers using company labels. Not only as an intermediary but the company that offers products and services to consumers.

Other type of e-commerce model is customer to customer (C2C) models. In this model, companies only provide media as a medium for transaction. All transactions can be made through the company or carried out independently by sellers and buyers.

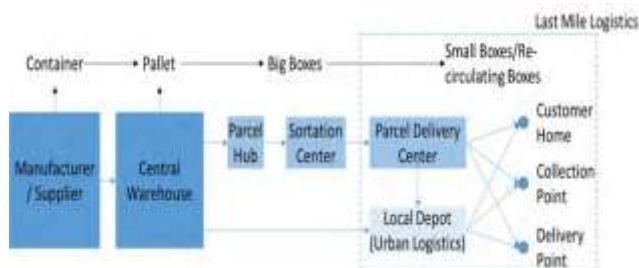
2.2 Logistics

According to Bowersox (1986), Logistic activity is a management that focuses on the transfer and storage of goods from suppliers both within company facilities and to customers. The main purpose of the logistics process is the distribution of finished goods and materials in accordance with the required amount, on time, having good quality goods to the required location and with the lowest total cost (Bowersox 1986). At present, logistics activities have grown from the management carried out independently by the company (self-operated) and logistics management provided to third party logistics parties (3PL).

Third party logistics is a logistical activity that is carried out outsourced by involving parties outside the company to fulfill operations in certain areas. 3PL activities can be carried out from upstream to downstream. The main objective of using 3PL is to reduce operating costs, meet fluctuating demand and reduce capital investment (Gunasekar, Ngai & Cheng, 2006).

According to Sum et al. (2001), the main reasons for e-commerce companies to outsource logistics activities are:

1. Limitations of logistics technology and information systems
2. Limitations of warehousing investment capital
3. Improve customer satisfaction through the concept of just in time and customer relationship management
4. Keeping the resources that are owned focus on developing the main business.



Source: Paper of the Logistic Institute Vol 16, pp 9

III. RESEARCH METHODOLOGY

This research proposes a method for choosing selection criteria. There are three stages. The first stage is identification of the initial criteria. This stage refers to related research papers. The next stage is selecting suitable criteria for the company. In this case, the company is PT Hijup's. The final stage is concluding the proposed criteria for the company.

3.1 Identification of the Initial Criteria

At identification of the initial criteria stage, some research works related to this research have been studied. Identification process also conducts interviews with staf in department of logistics, PT. Hijup. This stage searches for aspects which affect selection of delivery service providers at PT Hijup.

There are many different models used in selecting delivery/shipping services for e-commerce companies. In a

study conducted by Koh and Tan (2005) identification of logistics service provider models was carried out based on consumer desires. This research concluded that the most influential criteria are quality of service, costs, technology and company reputation. Ligar and Banowosari (2017) identify the model/criteria using questionnaires submitted to consumers of shipping services. The results shows that the criteria for selecting the shipping service provider for e-commerce companies are customer guarantees, comfort, reliability, competition, and corporate image. There are similarities in criteria which are used in the selection of shipping services, namely the company's image.

Another study conducted by Xu & Li (2017) carried out the selection of logistics service providers on e-commerce with the criteria model used are service quality, logistics costs, logistical capabilities, information system level and level of logistics development. Other related studies conducted by Huang and Yin (2014). This research shows that there are five criteria for selecting e-commerce shipping service providers, namely company growth and development, level of logistics information, cost control capabilities, quality management and customer service.

3.2 Selection of Criteria

Based on the first stage, a set of model/criteria which are the most appropriate can be used. For PT. Hijub, Huang and Yin (2014) criteria is the most appropriate, because it has the same type of e-commerce, business to customers model.

In addition, after observing and interviewing logistic employees and all related parts of logistics providers in PT Hijup, the overall criteria model has many similarities. The model to be used is Huang and Yin's (2014) model/criteria. The elements are:

1. External factors
This criterion focuses on the influence outside the shipping service provider company but has a considerable impact on the delivery service.
2. Company growth and development
This criterion is used to identify the experience and how the company's development process has been from its establishment until now. This includes the ability to adapt and survive in the service provider business environment.
3. The level of logistics information
This criterion is more focused on the ability to manage information systems used by shipping service providers. The ability to improve the logistics information system is needed to ensure customer security.
4. Cost control
Is a criterion that identifies the amount of the company's expenses in using shipping services. Costs charged to consumers will certainly affect the purchasing power of consumers to the company. So that a careful calculation is needed related to the costs

that should be issued and can be minimized by the PT Hijup company.

5. Quality management

This criterion focuses on identifying the level of quality of delivery management that is owned by the freight forwarder.

6. Customer service

The focus of this criterion is to provide maximum service to satisfy customers. Good service ability will increase customer loyalty.

3.3 Proposed Criteria

The last stage is validation of the proposed model/criteria. The initial proposed criteria/model are validated by Logistics expert in the company. Proposed criteria may be added or reduced if necessary.

IV. RESEARCH RESULT

PT Hijup is an online company engaged in the first Islamic fashion sales in the world. PT. Hijup sends its products to consumers through third-party shipping services. This company is a model for business to costumer.

In identification stage, Huang and Yin (2014) was chosen as an initial criteria/model. The initial model of shipping service selection is shown in table 4.1.

Table 4.1. Model Criteria for the Initial Selection of Shipping Services

Criteria
S1: External Factors
S11: Government regulation
S12: Logistics standardization
S13: Logistics Infrastructure
S14: Logistics Network
S15: Market Demand
S2: Growth and development of the company
S21: Company reputation
S22: Experience in the e-commerce industry
S23: Health and financial strength of the company
S24: Learning ability / corporate adaptation
S25: Corporate strategy
S26: Innovative ability
S3: Level of logistics information
S31: Information disclosure
S32: Standard system information
S33: The level of progress of information systems
S34: Accuracy of information systems
S35: Flexibility of logistics information systems
S36: Information system security
S4: Cost Control
S41: Packing cost per unit
S42: Storage cost per unit
S43: Transportation cost per unit
S44: Order processing costs per unit
S45: Cost of product loss and damage

Criteria
S5: Quality Management
S51: Accurate delivery of orders
S52: Timeliness of delivery
S53: Percentage of successful delivery
S54: Length of delivery time
S6: Customer Service
S61: The speed of the response of consumer desires
S62: Customer service outside work time
S63: Service attitude
S64: Quality of employees
S65: Time to handle customer complaints
S66: Number of customer complaints
S67: Completed complaint ratio
S68: Ability to protect customer information
S69: Reserve logistics capabilities

The initial criteria are then validated by a logistics expert (warehouse and distribution manager) at PT Hijup. The validated criteria are shown in table 4.2

Table 4.2 Model selection criteria that have been verified

Criteria
S1: Facility and Supporting Factors
S11: Logistics Infrastructure
S12: Logistics Network
S13: Market Demand
S2: Growth and Development of the company
S21: Company reputation
S22: Experience of companies in the e-commerce industry
S3: Level of logistics information
S 31: Information disclosure with customers
S 32: Standard information system
S 33: The level of progress of information systems
S 34: Accuracy of information systems
S 35: Information system security.
S4: Cost Control
S 41: Transportation cost per unit
S 42: Order processing costs per unit
S 43: Cost of product loss and damage
(S5): Quality Management
S 51: Service level Agreement (SLA)
S 52 :Bad address
S 53 :Lead time
(S6): Customer service
S 61: The speed of the response of the consumer's desire
S62: Customer service outside work time
S 63: Service attitude
S 64: Quality of employees
S 65: Time to handle customer complaints
S 66: Number of customer complaints
S 67: Complaint ratio resolved
S 68: Ability to protect customer information
S 69: Reserve logistics capabilities

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Explanations of each criteria used in the selection process are as follows.

1. S1: Facility and Supporting Factors. This criterion consists of some following details criteria.
 - a S 11: Logistics Infrastructure is the number of transportation fleets owned by the shipping service both couriers and mass transportation.
 - b S 12: Logistics Network is the number of branches or agents in various regions in Indonesia.
 - c S 13: Market Demand is the amount of input received by the company from the customers in relation to the desired shipping service.
2. S2: Company Growth and Development. This criterion consists of some following details criteria.
 - a S21: The company's reputation is the view of shipping service companies in the eyes of consumers and companies.
 - b S22: The experience of companies in the e-commerce industry is the length of time the company is engaged in freight forwarding services in handling e-commerce companies.
3. S3: The level of logistics information. This criterion consists of some following details criteria.
 - a S31: Information disclosure with customers is how much information can be displayed to customers regarding the delivery made.
 - b S32: Standard information system is the quality of information systems owned by freight forwarding companies.
 - c S33: The level of progress of information systems is the technology and innovation used by e-commerce companies.
 - d S34: Accuracy of information systems is the accuracy of the information provided to both customers and companies.
 - e S35: Information system security is the company's commitment to maintain the confidentiality of data owned by both business and consumer companies.
4. S4: Cost control. This criterion consists of some following details criteria.
 - a S41: Transportation cost per unit is the shipping cost paid by the company to the shipping service. This unit of cost is in the form of discounts given by shipping services.
 - b S42: Order processing costs per unit are costs incurred by the company at the time of the transaction cast on delivery.
 - c S43: The cost of loss and damage to the product is the guarantee fee provided by the freight forwarding service to the company.
5. S5: Quality management. This criterion consists of some following details criteria.
 - a S51: Service level Agreement (SLA) is an agreement related to the length of delivery offered by the shipping company to the company.
 - b S52: Bad address is the level of error in sending to consumers.
 - c S53: Lead time is the level of accuracy and speed of delivery of goods to the consumer.
6. S6: Customer service consists of
 - a S61: The speed of the response of consumer desires is the level of readiness of employees of freight forwarding companies in responding to consumer desires.
 - b S62: Customer service outside work time is a commitment to service to customers at urgent times.
 - c S63: Service attitude is an attitude that is shown by employees of the freight forwarding service to customers.
 - d S64: Quality of employees is the level of service provided by employees so as to satisfy customer desires. This also relates to the level of company human resources.
 - e S65: When handling customer complaints is the response time and resolution of customer complaints.
 - f S66: Number of customer complaints is how many complaints received by the company from customers to shipping services.
 - g S67: Complaints ratio that is resolved is the number of complaints that can be resolved properly by the freight forwarding company.
 - h S68: Ability to protect customer information, commitment of shipping service companies protect consumer data.
 - i S69: Reserves logistics capabilities is ability of companies to provide Logistics or fleets when shipping service companies experience overload

There are some differences between the proposed criteria and the initial model.

1. For S1, it is changed from external factors to facility and supporting factors. This was done so that the criteria focuses more on facility and support factors such as logistics networks, logistics infrastructure and market demand only. While government regulations and logistical standardization were ignored because they did not affect the selection of shipping services at PT Hijup.

2. For S2, there is a sub-criteria reduction, namely health and financial strength, learning ability and adaptation, company strategy and innovation ability. All criteria are eliminated due to the selection of delivery/shipping services in PT. Hijub are not considering the company's internal factors, so that all of these factors have no effect for PT Hijup.

3. For S3, one sub criterion is omitted, namely the logistics information system flexibility. That is because the level of flexibility is quite evenly distributed across all shipping service providers. So there is currently no system that has a more significant effect.

4. For S4, there is a sub-criteria reduction, namely packing costs per unit and storage costs. All of these criteria cannot be used because there is no additional packing fee and storage costs that are charged to PT Hijup.

5. For S5, there are additional sub criteria, namely service level agreement. This sub criteria is the main element used by PT Hijup in considering delivery/shipping service providers. This is caused by service level agreement is used as a benchmark for companies to assess the services provided by the shipping service provider. Service level agreement is an agreement regarding the length of delivery time that has been set by the company with the delivery/shipping service provider. For other sub-criteria there are naming adjustments such as lead time and bad addresses. Lead time represents the previous criteria, namely the accuracy of delivery of orders and the timeliness of delivery. While bad addresses represents the percentage of shipments.

6. For S6, there is no addition or reduction criterion because all elements are appropriate and can be used as a consideration in the company.

V. CONCLUSIONS AND SUGGESTIONS

Based on the identification of the selection criteria for shipping service providers, it is known that each company has different characteristics. To get the most appropriate selection criteria/model, a particular analysis and observation are needed. In PT Hijup, the selection of delivery service providers is selected with six criteria with 25 sub criteria. The final criteria used are facility and support factors, customer growth and development, level of logistics information, cost control, quality management and customer service.

For future research, proposed selection criteria may be applied to select the best delivery service provider at PT. Hijup. Analytic Hierarchical/Network process method may be used in the future research.

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