THE MANAGEMENT PROCESS OF REVERSE LOGISTICS AND THE LOGISTICS SERVICES QUALITY IN THAILAND'S ELECTRONICS EXPORT INDUSTRY

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Abstract

Thailand's economic growth is primarily driven by exports. Electronic goods are a key export of Thailand, making it a base for economic mobility and domestic employment, but the supply management of the industry. Such production in operation has a problem with distribution management. It is not possible to reduce the costs incurred by logistics management and reduce the quality of logistics services. Therefore, this academic article focuses on studying reverse logistics management processes to increase the quality of logistics services in Thailand's electronics export industry.

Studies have shown that the reverse logistics management process consists of clear policymaking and return procedures, damaged production is reproduced to reduce costs, and an efficient waste disposal process will make the quality of logistics services available in the field of service information, demand response, on-time delivery, non-damaged transportation, and customer response to problems more efficiently.

Keywords: Quality of Logistics Services, Reverse Logistics Management, Electronics Export Industry

Introduction

The Thai Industrial Development Master Plan in 2012-2031 outlined the direction for the development of the domestic electronics and electronics industry today, aimed at strengthening logistics (Tourism Authority of Thailand, 2020). Supply management of the manufacturing industry in operation has been struck by distribution management problems, unable to reduce the costs incurred by various logistics management (Chan and Prakash, 2012). The current situation of current logistics users is growing but experiencing problems from logistics providers, including unruly services. The quality of transportation that causes damage and loss of freight has resulted in the inability to meet demand in time due to the above problems. As a result, customers do not return to the service and are dissatisfied and then cancel the service and do not return to the service (Abdulrahman, Gunasekaran and

Subramanian, 2014), so logistics providers cannot satisfy customers. While the logistics services industry has seen a growing number of large foreign establishments competing with small and medium-sized Thailand's establishments (Badea, Prostean, Goncalves and Allaoui, 2014), logistics providers experiencing such problems have resulted in losses and rising costs in the country's transportation processes.

Thailand relies primarily on exports to generate economic growth, the Bank of Thailand (2021) said. Thailand's main exports are electronics, equipment and components, followed by automotive and components of processed agricultural products, agricultural products, machinery and equipment, products and petroleum. Electronic goods are severely affected by environmental policies if there are inefficient operations. According to the interview with the Federation of Thai Industries Economic and Logistics Division (Federation of Thai Industries, 2021), it found that electronic goods currently exported abroad are required to pay environmental taxes, resulting in loss of competitiveness in the developed country market. In addition, e-waste must be supported in the reuse process, resoclescular, and destruction processes. Currently, operators in Thailand lack the efficiency of their respective operations. Operators inefficieie in performing the goods' backflow processes, such as collecting goods back into the process, sorting them for reuse or reusing them called recycling or waste disposal, are key to environmental management and management in industrial processes that can bypass trade barrier restrictions of developed countries. It found that the problems arose from improper designation, planning and operations in reverse logistics and logistics activities.

Reverse Logistics Management (RLM) is a modern management concept developed following Forward Logistics Management (FLM) focused exclusively on management related to the forward flow process. Reverse logistics management focuses on the reverse logistics process to enter the reusable or destructive process, one of the main activities that will encourage manufacturers to operate socially and environmentally responsible (Stock et al., 2005). Effective reverse logistics management must be properly attentive from upstream processes, which is why reverse logistics can be carried out effectively, Teppraśit & Yuvanont (2015). The electronics export industry in Thailand has 5 logistics processes affecting reverse logistics management, so it is presented to operators to be vigilant and focus on activities as follows. (1) Product design and decision-making materials that do not harm the environment and can be recycled or fully re-processed. (2) Transportation and Movement must reduce losses that will cause e-waste from fractures while transporting. (3) Manufacturing requires a flexible production process design. It can be easily monitored to deal with waste before entering the consumption market, as well as preventing production risks. (4) Packaging must be chosen to use biodegradable or reusable materials, as well as to protect the goods to remain ready to use, and (5) Communication requires communication to be exchanged and fluid throughout the work process to prevent work mistakes that will cause waste, as well as

enhance communications in exchange for enhancement of reverse logistics management, Chan and Prakash (2012). Reverse logistics management is mainly focused on management to increase efficiency and competitiveness in cost and quality for manufacturers, as well as contribute to the improvement of logistics service quality. The response is correct according to the order. The shipment is on time for the delivery of goods without damage and the solution of the shipment overseas. This increases the likelihood of entering international markets. In particular, developed countries with high purchasing power and are economically important markets.

Therefore, given the importance of the problem of education, the reverse logistics management models of the electronic export industry in Thailand. According to domestic and international research studies, reverse logistics management is a new concept developed further from logistics management concepts and research studies in management to apply it to create strategies or guidelines to improve the quality of logistics services more efficiently.

The Management Process

The new era of the business management process is focused on the three components which is leading the business competitive advantage. Business must continually innovate the new goods and services and must adapt to changes in consumer demands and to new competitors. Products do not sell forever; in fact, they do not sell for nearly as long as they used to because so many competitors are introducing so many new products all the time. Business must innovate, or it will lose their competitiveness and get liquidate (Bateman and Smell, 2013).

Greve & Davis (2012) Service quality is the excellence of your product. The importance of the quality and the standards of quality have increased drastically in the present. Customers now demand goods and services with the high quality. And speed is the rapid execution, response, and delivery often separates the winners from the losers. How fast the business can develop and get a new product or services? If business are faster than the competition and able to respond quickly to your competitors' action.

All of the management process competitive advantage components; innovation, quality and speed is related to the logistics management practice which is goal to develop all of the components. The Reverse Logistics Management (RLM) Theory used to develop to meet the performance that used the innovation, logistics quality and speed of respond to be the achievement model.

From the literature review, it can be concluded that the implementation of management processes requires operational management as a driving force to achieve competitive advantages. This article will describe the operational level of the role of logistics (Greve & Davis, 2012) in Reverse Logistics Management. If the organization has an effective

logistics management process from logistics planning, management follow-up, and traceability, superior logistics management quality compared to competitors will be achieved.

Reverse Logistics Management (RLM) Theory

Reverse logistics management has received more attention in recent years due to its strategic meaning. A well-managed reverse logistics program can result in savings in inventory transportation costs and waste disposal costs, as well as improving customer service (Rogers and Tibben-Lembke, 1998) Greve & Davis (2012). Reverse logistics management is a related management that covers the use or disposal of all products, raw materials, and components under the responsibility of the manufacturer, with the aim of managing the reuse of products, raw materials, and components for economic and ecological reuse. Such a method that results in the greatest reduction in the amount of waste (Rogers & Tibben-Lembke, 1998). Logistics Management Concepts. Factors influencing reverse logistics activity are different from those of conventional logistics, reverse logistics management values forward logistics management, which will result in reverse logistics management (RLM), defines it as a process that involves planning, implementation and efficiency control, the cost-effectiveness of raw materials, in-process inventory, finished goods, and related information from consumption point to origin point for the purpose of properly bringing value back or into the disposal process (Rogers & Tibben-Lembke, 1998). Further studies on reverse logistics management (RLM) were conducted to explain inbound flow (Fleischmann, 2001), a process that involves planning, implementation and control of efficiency and effectiveness in inbound flow, and storage of goods and data to determine supply chain routes that are appropriately aligned with the objective of bringing value back or into the disposal process. The two definitions mentioned are close and consistent with the application of forward logistics concepts. It can also be further explained that reverse logistics is a process that involves planning, implementation and control that aims to maximize value creation and clean disposal processes in reverse logistics flows by raw materials, in-process inventory, finished goods and related information from consumption point to origin effectively (Ait-Kadi et al., 2012).

The review can effectively summarize the characteristics of reverse logistics management as processes related to supply chain planning, implementation and control of raw materials, in-process inventory, finished goods, and related information from consumption point to origin effectively to create added value from reuse by various means, and raw materials management, in-process inventory, efficient finished goods.

Reverse Logistics Management is characterized by an operational management process, prioritizing the logistics operations of the business. This operation is a priority

process from supply chain management to customer demand management. It is a response to the market that meets the needs of customers. Reverse Logistics Management is a process for achieving demonstrable efficiency over time by benchmarking against industry competitors and continuously improving performance.

Elements of reverse logistics management in the electronics export industry (RLM)

Rogers & Tibben-Lembke (1998) described the reverse logistics management in the industry as a remanufacturing process, namely the disassembly of products that are still on the market to replace spare parts in production. While refurbishment sorts out components of products that end the product lifecycle, replace other products and then resell them to the secondary market, or the market for defective goods or undeveloped countries and final elements, (3) waste disposal is the last important process and will affect external stakeholders the most, as it involves designing or determining procedures, as well as choosing ways to destroy components and equipment that do not meet the standards of reuse or into the process for recycle in accordance with Badea, Prostean, Goncalves and Allaoui, (2014). They presented the same elements, including return policy and procedures, remanufacturing or refurbishment, and waste disposal that summarizes the research by demonstrating the key elements of the return policy and procedure that mark the beginning of all reverse logistics activities and operations, which must be placed or formulated appropriately and consistently. It must also be linked to forward logistics activities. For the second element, remanufacturing or refurbishment requires a design that supports a wide range of products or products that the organization can have at all, and must control that reprocession does not create a longer-than-scheduled waiting time, and the upcoming cost of designing the process at a lower cost than all new productions from the beginning. According to the review, remanufacturing or refurbishment, Kumar and Nath's research (2014) explains the elements of reverse logistics management (RLM) in the manner of remanufacturing or refurbishment, in which organizations must design processes aimed at creating value. To clarify, it must be able to effectively reuse both time, cost and Value Recapture). As for waste disposal, Winter & Knemeyer (2012), Tang et al. (2013) and Zhang, Hui & Chen (2013) have always encouraged organizations to be vigilant against the design of such processes because they are elements that will always be at the last point for reverse logistics management (RLM). If this element is lacking in suitability, such as the design of a destructive method, a point of destruction, or the selection of experts to break the wrong way or inappropriately in accordance with WEEE regulations, it will adversely affect the organization, either reverse logistics operations or the image of the organization and the risk of breaking the law. It also found the point of different composition by Abdullah & Yaakub (2014), designating landfills, where places that are as far away from community sites and away from natural sites as possible can be prevented from affecting the value of minerals

and matter in the land that are important food sources of nature. Because if you're too close to natural sites and communities, you're not able to do that. The soil in the surrounding area will not be able to be brought back to farming or even cultivating trees for shade in daily living. The review on the composition of reverse logistics management (RLM) can be summarized.

Return Policy and Procedure: Guidelines for returning goods from consumers who are final consumers or as wholesalers or retailers, must define the form of return or packaging types, including the determination and planning of the return loading, as well as the procedures for receiving goods from the point of return of goods, remanufacturing or refurbishment, a process or procedure that starts from sorting back goods or products to inspection, sorting equipment and components within a product that is still valuable and can be reused immediately simply by going through the reuse process and some of which must be recycled before entering into production or assembly at different stages of production (for components and components that are not valuable, that is, cannot be reused or recycled) before entering into production or assembly at different stages of production (for components and components that are not valuable, that is, cannot be reused into the process of reuse or recycling, waste disposal, a process or procedure that occurs later, sorting product components and equipment, involves reusing equipment and components that are not valuable to the process of remanufacturing or refurbishment goes to carry out the destruction correctly in accordance with the methods required by law by landfill.

According to the review, the composition of reverse logistics management (RLM) includes Return Policy and Procedure Remanufacturing or Refurbishment and Waste Disposal process, which are related procedures or processes and can be used to properly measure reverse logistics management (RLM), in line with research conducted by the researchers. The composition of reverse logistics management (RLM) can be depicted.

Concepts on Service Quality

Parasuranam, Zeithaml and Berry (1991) studied the effects of service quality and identified positive connections made from service quality to dictum from loyalty, resulting in increased service consumption, and a willingness to pay higher prices to use. Li, L. (2012) has identified why it affects the quality of that service on behavioral intentions. There are 5 areas of consideration including: 1) Concrete services are tangible physical facilities, 2) Reliability in service standards, from the reliability of service as promised to customers, 3) Customer response, willingness to help customers provide services instantly and quickly, 4) Confidence in the standards of service staff must be knowledgeable, competent, honest, and reverential, which will lead to reliability and trustworthiness, 5) Understanding and compassion, caring for and paying attention to the personality that the organization has for the recipients, and in accordance with Ausilio and Anton (2003), it is stated that the quality of service has

relationships with the service providers, since the quality of service is achieved when customer service is available to satisfy the recipient and reinstate the service.

Logistics service quality elements in the electronic goods export industry

The SERVQUAL Service Quality Model found that the services of different organizations or logistics providers often experienced problems caused by a lack of clarity in the role of the service, for example, that the service did not have standards, that the standards of service were excessive, that the service providers were lacking alertness, that the overall standards were set, that the service providers had little management guidelines and restricted the operation of the service providers, that the standards of poor communication with customers prevented customers from entering the service and that the standards of the service could not be linked to concrete measurements, and that the reward system made the tools used to measure the quality of management too little for that reason. (Parasuraman, Zeithaml and Berry, 1991) studied the patterns of quality measurement in the service business. In various organizations and in line with research as well, including banks, garages, dry cleaning services, hotels, restaurants, as well as other service businesses, based on the difference between expectations and the perception of customers coming to the service.

Quality of service is important to make a difference in the hospitality business, maintaining various levels of service that transcend competitors, and meeting customer expectations need to consider Word of Mouth Communications. In addition, personal needs and past experiences related to services, word of mouth assessment of the quality of services that complicate the risk of purchasing decisions, must consider the offers offered by the seller, as well as relevant information on the quality of service from various sources such as friends, experts in service lines and non-personal resources, such as communicating with customers to use two sources of information to explore information about service quality. When making a purchase, customers trust the information they receive from a personal source because the media sent to the customer shows little in the quality of service in the past. Opposition and advertising bans in certain service businesses, service providers have focused on the influence of word-of-mouth in service tasks. This importance directly affects customer expectations, it is difficult for customers to assess the quality of service before purchasing from direct experience. Word of mouth from a friend Family is a resource that affects the level of demand in the service. Ensuring customer satisfaction and loyalty to the organization Supports word-of-mouth information, which is a way to find new customers and retain existing customers with low operating costs in the long run.

Customers can recognize the quality of service, the quality of service is based on the needs of the customer, which meets the expectations and uses it to solve the problem. Businesses offer a wide range of products and services to serve customers on a personal

level, and customer groups prioritize issues they want to solve. There are several approaches to solving problems, which the service needs personally, which determines the way a potential product or service is to meet the needs. Service providers must deliver the service value as customers expect to the extent possible. Customer experience related to the service is dashed. The circumstances of the service are the result of activities arising from the decision to purchase the service, the experience of receiving the service is called Service Recognition (Gronroos, 1990). Corporate executives must know the expectations of customers as a basis for determining the quality of service that delivers value.

Therefore, service quality measurement tools have been developed to assess the quality of service to ensure customer satisfaction. Parasuraman (1998) created a quality measuring instrument for 5 classified services as follows: (1) Tangibles, service tasks should be tangible that can be tangible, with physical characteristics that are visible. (2) Reliability, the service must meet the communications offered to the customer, every service task assigned to the customer must be accurate, appropriate, and consistent that can build trust in customer service. (3) Responsive, the staff is responsible for willingly serving customers who come to the service and are ready to assist or serve them immediately. Customers get convenient and fast service. (4) Assurance, services from knowledgeable, competent, skilled employees to meet the needs of customers and have a good relationship with humans. It can help customers gain trust and ensure that they receive good service. (5) Empathy, the staff provide services to each customer with care and attention to the visitors.

With that said, it can be concluded that the quality measurement of logistics services was applied by the researchers to the quality of service of the various services businesses involved from the above. In addition, many researches have contained material content consistent with logistics service quality, regarding the ability of the performance of the responses expected by the service provider, as well as solving problems with the service provider and satisfying the service provider or being able to define the quality of the service as the difference between the hope of the service and the service received by the service provider. If expected, there are more than the services received. The recipient concludes that the service is not of quality. This causes dissatisfaction with the recipient. But if expectations are less than the service received, the recipient summarizes the service quality. This makes the recipient satisfied. Logistics service quality can be measured by 5D subspecies: 1) preparing service information, 2) responding correctly according to purchase orders, 3) delivering on-time goods, 4) transporting goods without damage, 5) solving the problem of shipping. The researchers used a measurement that the researchers made improvements from the measurements of Parasuraman, Zeithaml and Berry (1995), Mentzer, Flint and Hult (2001). There are 13 5-level estimation questions with each dimension defined as follows: 1) Information Quality means the provision of information that is of the benefit of the service provider in full and sufficient for the quality of service that the customer can use

to make decisions on each supplier's purchase. 2) Ordering Procedures refer to the logistics service to deliver exactly the amount and the goods are correct according to the order, there are no service faults. 3) Timeliness means the ability to manage time well and efficiently. The length of time from the order was received to the length of time the goods were delivered to the customer service recipient. The shipment meets the agreed date and the length of time it takes to replenish the goods, terms of service. 4) Order Condition means that the goods are safely delivered to the customer without damage. 5) Order Discrepancy Handing means the ability to manage problems that arise. When a product is found damaged or the shipment is faulty, it does not meet the order.

Reverse logistics management towards logistics service quality in electronic goods export industry

Reverse Logistics Management (RLM) is important and it is an operation that leads the organization to the operational efficiency of logistics performance (LP), both financially related, such as cost and assets to generate non-financial value, such as reliability, responsiveness and agility, important processes of reverse logistics management (RLM), such as return policy and procedure (RPP), which contributes to the quality of logistics services in the electronic export industry.

Ait-Kadi et al. (2012), with its return policy, means that the Company has shown readiness and willingness to show environmental responsibility, social and economic, leading to the creation of logistics performance (LP) by establishing return receipt procedures with a pattern of returns. The location of backhaul by structured cross-dock return transport network resulted in a reduction in transport traffic, which affected fuel economy. This affects reduced energy consumption, as well as cost savings on return transport. As a result, the organization incurs costs, resulting in a positive impact on increasing the profit from cost reductions. It also includes creating value for customer service. This creates convincingness, as well as agility of systematic management and operations and reduced energy consumption, which reduces environmental impact, social society. Remanufacturing or Refurbishment is the use of broken or damaged goods to isolate reusable equipment or components to reassemble electronic products and resell them in either new or refurbished products in underdeveloped or developing countries, reducing the amount of e-waste generated that reduces the impact on the environment and community society, as well as creating added value from the use of equipment, quality components return to production or assembly as new products. As a result, the Company has reduced the cost of purchasing materials, equipment or raw materials, as well as tax and commercial opportunities supported by developed countries that provide special privileges to organizations with environmentally aligned operating processes Zhang, Hui & Chen (2013). Reverse logistics management is an environmentally consistent operational activity and value-effective

optimization of service and operations. In addition, the review found that reverse logistics management (RLM) also affects long-term cost reductions arising from the Value Recaptured. From components or products brought back under reverse logistics processes creates added value to organizations that are in line with or related to sustainability in economic issues. In the case of waste disposal (WAD), efficient and efficient reverse logistics management (RLM) operations will result in the availability of service data. Responded correctly on time. Transportation is not damaged and can solve the problem of shipping (Li, 2012).

Therefore, it can be concluded that reverse logistics management (RLM), which has clear policies and return procedures, has been reproduced with damaged production to reduce costs, and that the waste disposal process will effectively increase the quality of logistics services that customers receive.

The future of reverse logistics management towards the Corona Virus Outbreak in Thailand.

The pandemic has changed the way of planning, operations and distribution of all business context. There are many challenges for the preparation to cope with this crisis. The increased of costs and limited budgets are one of the main challenges in the reverse logistics management, investment in advanced technology, new facilities, new transportation modes has created the need for funds. Their usual budget will not be enough in this situation (Patale and Zohair, 2021).

Restrictions on transportation route due to this pandemic has caused vulnerable impact. And there are increased demand on the data centers due to increased number of orders. The increased number of orders has eventually increased the number of returns. Product collection and handling with safety precautions was one of the major challenges. Quarantined products were to be avoided from the supply chain. The exposure to corona virus needs to be minimized (Patale and Zohair, 2021).

Ait-Kadi et al. (2012) this pandemic situation can be handled with proper planning and execution of those plans. These challenges cannot be eliminated completely. But it can be limited to a certain extent. Reverse logistics management process of online system has to work efficiently in this pandemic as the number of returns were increased due to increased number of sales. Creating strategic plans according to the demand of situation may work to operate in this situation. Contingency plans can be a better option to start with. Working with existing partners rather than finding new partners will create a trust base for the business among them. For managing the returns old partners are having better experience. Sometimes, new partners should be added to mitigate the impact of this outbreak.

After the COVID-19 outbreak, the reverse logistics management model obviously will be a management model that reflects the management under the risks posed by the epidemic with limited access to customers, in which the reverse logistics management

demonstrates the process of managing the supply chain from the upstream, from the import of raw materials to the concept of customer orientation in planning the production capacity in accordance with customer needs.

Conclusion

Reverse logistics management is an operational management process that is driven by a company's logistics department yet is critical to the company's operations, in which the logistics management process is an upstream management process that involves procuring and importing raw materials for business operations and creating value for those raw materials to meet rapidly changing market demands.

The reverse logistics management process, as can be observed, has an impact on logistics performance by Return Policy and Procedure Remanufacturing or Refurbishment and Waste Disposal process, which will lead to logistics service quality in electronic goods export industry that adopts the concept of service quality of Parasuraman (1998) tangibles service, reliability service, responsiveness that concentrate in willingly serving, assurance and staff empathy. In the electronic goods export industry, the quality of such logistics services is of great importance in building confidence in the reliability of the products.

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