

Can We Operate in a Shared Economy: Insights from Global Logistics Sector

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Abstract - The current global environment requires to continue improvement for innovative methods and practices of the business process management to be sustainable performance including three-pillars (economic, social and environment) [1]. The term sharing generally defined as non- ownership and less tangible assets [2]. This paper presents the interconnection of “Sharing Economy” & “Sharing Logistics”. The paper aims to address the understanding of success factors towards sharing economy and development in global logistics and supply chain management. Its achievement is based on a two-research methodology design that consists of the secondary sources review and case studies analysis. The study identifies that share economy logistics has opportunities and benefits from rising costs of warehousing, transportation, and last-mile delivery to create customer value. Such as the omnichannel (customer focus) to increase customer expectation and improve customer experience. Beside generate value to the customer it has driven supply chain sustainability with blockchain as well.

Keywords – Shared Economy, Shared Logistics, Supply Chain Management, Procurement and Transportation.

I. INTRODUCTION

With the advancement in technology and the application of these technological tools in the market, coupled with the global challenges and the need, the concept of sharing economy has gained wide importance towards logistics where most of the services are relied upon the physical services of the organisation and that of wider supply chain networks [3]. The sharing economy model was based on the use of technology that allows companies and people to share and exchange on-demand tangible or intangible goods and service. Sharing economy model has rapid growth in the supply chain due to customer expected fast deliveries. As a result, shared fulfilment center and tracking are increasing. The demand is placed on logistics providers to reduce costs which to improve efficiencies and productivity gains [4], [5]. Sharing economy as digitalization platform for exchange goods and services. These include the understanding of the interaction between consumers and service provided. The consumer and the service provided are brought together by a digital platform. It makes resources available for the consumer at a lower cost & it generates profit from utilizing resources for the companies. Where digitalization has provided the transaction of exchange, information, communication technologies based on the

web-based platform, these contribute benefit for lowered traction, making the possibility for consumer and companies to communicate in online platforms [6] and provide new forms of exchange and solving problem [7]. The effective and efficacy of logistics are important achievement key for E-commerce platform [8]. The key terms of logistics are defined as all activities from final goods to customer, inventory, warehousing, transportation, and documentation (e.g., bills of lading, air waybill, warehousing document, credit, etc.) [9].

II. LITERATURE REVIEW

The paper aims to present findings from the current literature to further develop the understanding and the correlation of the sharing economy and sharing logistics within the supply chain management environments. Through the literature in this area, it will further enhance and provide an opportunity to develop the research framework of the study. The paper presents an overview of sharing economy, sharing logistics with further insight on freight, warehousing, sustainability, and data sharing in shared logistics.

A. *Sharing Economy*

For firms to share and utilise excess capacities with the use of technology is key purpose of sharing economy model [3]. The sharing economy, it is referred to the collaborative consumption, and it is generally organized a platform that facilitates the exchange of goods and services between people across sectors. Studies represent shared economy as an economic activity that influences the business structure [10]. The concept of having temporary access to products and services rather than permanent owned and which become more accepted [11]. The term of "sharing economy" started during the global financial crisis in year 2008/2009. After the great recession Sharing or renting started as a new ideal against overconsumption, which representing a process the company renting out the excess capacity [3], [12]. As the sharing economy is not new in logistics and supply chain. Therefore, the sharing economy is growing as the supply chain trends are a shift or change. Consumers are expecting fast service and fast deliveries from anywhere in the world. As a result, shared logistics, shared fulfilment center, and trucking have become significant. The sharing economy is viewed as a phenomenon that drives sustainable development [13].

B. Sharing Logistics

Research studies highlight sharing logistics as method of sharing resources that are important to any firm with both material and process-based activities. This includes all forms such as freight, warehousing, last mile, sustainability, and others within the supply chain [14]. Sharing logistics has three main characteristics. First, by reducing costs and increasing efficiency which provides economy advantages [15]. Secondly, to reach new markets and potential customers, company quality is increase with better service quality standards. Third, environment performance can be improved such as will bring both or new customer [16, 17, 18]. Several factors have increased in the logistics sectors. First, the demand is significance on logistics providers to reduce costs and which could improve efficiencies and productivity advantages [4, 5]. Good sharing of assets or resources would share the asset costs, in which the size of the economy is generated. Second, the increased of the significant role in logistics players in supporting the supply chain strategies such as facilitating more consolidation shipment/ freight able to minimize the extra costs in delivery services. For example, through sharing, the supplier can be located the inventory closer to their customer and arrange frequent and faster delivery service to be provided. Lastly, on the environmental factor, sharing could a great impact on the logistics sectors. Which could achieve better emission and consumption rates in environment factor. For example, use environmentally friendly transport mode, sharing logistics could make more environmentally friendly and practical like sea freight which combines with multiple shippers into once sea shipping instead of one shipper alone.

1) Freight:

Collaborative shipping, logistics in the sharing economy, allows integrated view across each supply chain to achieve advantages within logistics. According to Malaysia transportation emissions (by the Ministry of Transport) [19] is expected to reduce transport emission by up to 71Mt of CO₂ per year which means a 50% reduction of transportation emission by the year 2030. This provides a significant improvement in transport sustainability. The actual Malaysian CO₂ emissions per GDP spending that is expected to meet their 40% reduction commitment is shown in figure 1, which may not be achieved unless other measures are implemented within the structure. Freight is not new; some company is outsourcing their logistics activity.

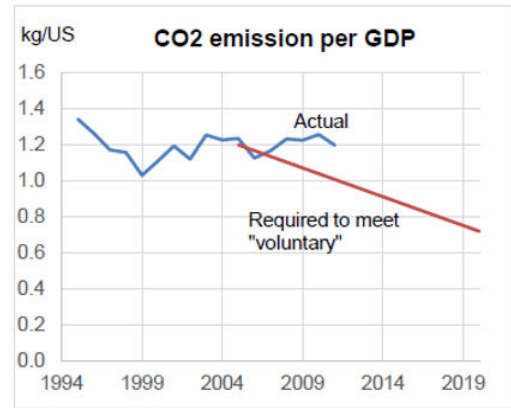


Fig. 1. Overview of Malaysian CO₂ Emissions [20]

The collaborative shipping has an important impact in logistics sectors, which allows the company to reduce transportation costs. The other primary objective of shared transportation that enhances the sustainability practices of the firm through reduction of transportation methods. The greater the economy of scale could be achieved from consolidating shipping, while a company with freight is getting loads hauled at competitive rates [21]. Figure 2 shows the consolidation point that allows the transport vehicles fuller utilized before transported.

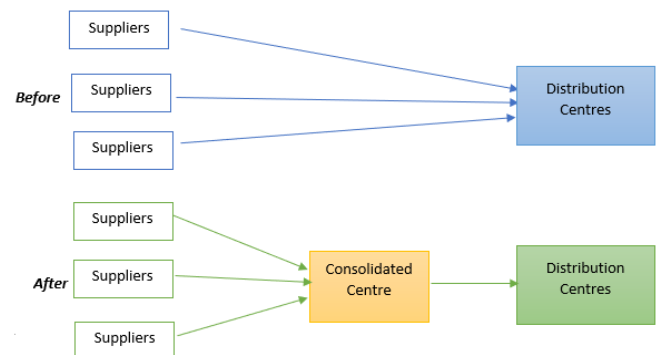


Fig. 2. The Consolidation Point

2) Warehousing:

Studies have highlighted that warehousing plays an integral part in global logistics and supply chains, with the global demands of mass customisation of products and services from consumer demands, thus increasing higher levels of warehousing space within the supply chain [22]. The warehouse is a more decentralization model which a strategy net of a warehouse located closest to the market space sharing. The on-demand warehousing platform can help match the supply and demand to create a cost-effective supply chain. The networks could help and provide better geographical coverage, connects an appropriate warehouse with extra space, manages inventory data and manage inbound and outbound delivery with real-time analytics [23]. Multi-facility provides flexibility in space [24]. The digital sharing platform allows utilization of vacant warehousing space.

3) Last-Mile:

In the current year, the rise of e-commerce whereby increases rapidly and one of the biggest developments that impacts the logistics sector. The expectations for last-mile logistics are fast, efficient, convenient, meet customer demand and expectation. E-commerce forms important challenges such as customer expectations, compared to brick-and-mortar retail. Hence, outbound delivery with small order quantities send directly to each customer. The delivery time is pressure such as customers may expect the item received by one to two days or same-day delivery [25]. E-commerce has a new challenge that more and more demanding in modern logistics practice [26]. One of the common challenges within last mile concept is non availability of customer to receive the goods ordered. Which as the last stretch of the business parcel delivery to the final consignee who received the parcel from a collection point as an alternative mode self-collection service [27]. To reduce cost door to door delivery service, transport company setting up a drop off locker in which customers can pick up their parcel or package when convenient such as locker in train/ subway station, office building [28]. Self-collection services within last mile deliveries are for parcel deliveries with the use of crowdsourcing [29]. Whereby self-collection delivery involves the process of the network service point (courier center) which courier company deliver the parcels and customer collect or return their parcel [30]. From a company perspective, improving order fulfilment processes through reduction of failed deliveries, thus enabling businesses to be cost effective [31]. However, from environmental and social dimension, customer self-collection services enable reduction of transportation traffic to fulfil orders through delivery networks reducing congestion and emissions levels [32, 33].

4) Sustainability in Shared Economy and SCM:

The key principle of SCM is to fulfil customer demands in the most cost-effective ways while achieving customer satisfaction [34]. Although, researchers determine SCM through its quality improvement levels and cost effectiveness in the market [35]. Earlier studies have identified the importance of sharing economies as part of marketing and business strategies for businesses, thus resulting in promoting the importance to end consumers. To achieve long term stability and fulfil sustainable goals, firms have introduced and highlighted the importance of sharing economy while maintain profitability and addressing the key business goals [36]. The performance measures of any business sustainability aim to be achieved through interconnection of supply chain functions to that of sustainable principles and practices of the business [37]. Sustainability SCM needs collaboration among all partners including company, supplier, and customer [38]. This collaboration can improve the company's operational effectiveness as well as increasing competitive advantages in the environmental [39]. Researchers had suggested the sharing economy could

impact sustainability by reducing consumption assets, in which customer products are shared instead of owned [40].

5) Data sharing in Logistics:

However, the sharing process in the supply chain is information. The integration models include sharing information and as an important factor influencing the logistics factors [41, 42]. Technology data drive logistic in sharing Integration of Electronic Data Interchange (EDI) in logistics system data technology has enabled the vertical supply chain (like supplier managed inventory) between supply chain alliances. The overall performance in logistics services essentially depends on information sharing among stakeholders because sharing able to reduce the cost to the company [43]. Effective information important role of SC to product and financial flow [44].

C. *Example of Sharing Logistics*

The two important areas of transportation and warehousing are considered as sharing processes within logistics and supply chains. The sharing economy in logistics is explored, but also the company is a collaboration between the competing company that engages in both competition and cooperation. To gain advantages by using the same supplier of a related product. The expansion on global markets has allowed firms to evaluate lowering logistics costs, while meeting higher levels of customer demands and pressures to achieve environmental awareness through collaborative partnerships and sharing resources within all logistics activities in supply chain. An example of best practices of sharing in transportation and warehousing like Ikea. The company Ikea has share warehouse space in the consolidate point which located near Kalisz, Poland. It contains 26 Polish suppliers consolidate the volume of furniture and home furnishing product offered by Ikea each year. This will together deliver to 17 European Ikea distribution centers and more than 250 stores. The business partner is using different types of transport modes such as road, railway, sea, or multimodal transport mode. This will provide importantly sustainable of the company project. Ikea is well knowing the innovative of product packaging to reduce the outbound logistics cost and time. Research has been exploring the use of alternative methods other than wood pallets used in packaging to achieve environmental goals [45].

It has been noted that Ikea presents best model for sourcing and supplier relationship management, as their inbound logistics are interconnected through IWAY standards. This standard includes a statement of confidentially placed upon trust and relationship between suppliers and Ikea and reassures the information between the partners is confidential [45]. Sustainable factors, relates three pillars (social, environmental, and economy) provide significantly reduce transport and distribution costs and short lead time [45]. However, Ikea has reinvented the business models from brick and motor retailer changes in consumer preferences and the

emergence of the sharing economy [46]. Another best practice sharing economy in the logistics sector is DHL. DHL has embraced the sharing economy concept to their business and by setting up their digital sharing platform as well as adding value to their business. The shared warehousing is a multi-customer warehouse which customer able to book online by using a digital sharing platform which can help customers find space need. The advantages are to maximize space utilization and able to manage inventory effectively [47]. It provides the customer with a piece of real-time information about location tracking [48]. The logistics sectors are potential for both user and contributor. To help meet the increasingly urgent demand for last-mile logistics in on-demand staffing.

III. RESEARCH BACKGROUND AND METHODOLOGY

The objective of this study is to review the impacts of sharing economy on the logistics sectors. While there are very few research studies conducted in this topic, and besides having changed in the hospitality and transportation industry, the sharing economy is steadily making its mark on the logistics sector as well. This study will redound to the benefit small business with new opportunity by reducing cost and wastage. Based on a case study has been applied and best practices in logistics and supply chain management.

Due to the challenging business environments in logistics and supply chains, it requires to search for innovative business strategies in business process management. Research on sharing economy has indicated how sharing economy impact among sectors and affect brick and mortar business. Company has been well known in global and local sharing economy business such as Uber (ride-hailing transport services), and Airbnb (P2P accommodation services) has a regular increase in their platform [49]. For example, Airbnb does not own any assets or home for their business, and Airbnb promotes apartments look good on their platform to drive higher booking rates [50]. Researcher have been specified on the sharing economy on consumer drive. It is highly regarded that sharing economies changes consumer expectation through increase levels of transparencies, collaboration and sharing, in turn allowing consumer to achieve higher sustainability levels [51]. Sharing economy technologies enable to help applied to any industry, and logistics, such as Grab Express has introduced on-demand delivery services program in Malaysia to providing same-day expedited, convenient and highly affordable delivery services [52]. Logistics provided have important role growth of the sharing economy to streamline the pickup, delivery shareable, lower overhead costs, and increasing demand for logistics services. Share economy logistics has change how people travel between place and how goods are being transported. Uber launched into freight business in 2017 and offered attractive payment term as well as using an app for the driver to carry a full load

instead of empty return load it increases the capacity of the trucks [53]. In that study, share economy logistics has opportunities and benefit from rising in warehousing, transportation, and last-mile delivery also to create value to the customer. Such as the omnichannel (customer focus) to increase customer expectation and improve customer experience. Beside generate value to the customer it has driven supply chain sustainability with blockchain as well. To enable users within supply chain to reduce waste and be greener and more sustainable, sharing economy models are highly applicable [54]. However, there challenges facing by logistics sectors such as trust, transparency concern, and sharing economy in different fields of logistics sectors. The key research objectives that the paper aims to examine and to further expand upon this research, once after an extensive literature study is completed.

1. To identify the theoretical concepts of “sharing economy” in the context of logistics.
2. To review and synthesize the sharing economy impact in logistics sectors.
3. To explore and analyse the benefit and challenges of sharing economy logistics.

The scope of this study is focused on leveraging on shared services in logistics sectors, although the sharing economy practices is not new concept in the provision of logistics. Many recent developments enhance data technology, and recent studies of sharing economy in logistics exists. However, this study aims to address the benefit and future challenges of sharing economy within global logistics environment. Limitation of this study are based on the case study, existing best practice from multinational companies, and the theoretical statement on this topic. Authors aim to analyse a sharing economy that is successfully practiced by logistics companies. However, the study will be based multiple case studies with expert interviews (primary date). Another limitation is although a company (e.g., DHL) best practiced the business approach but will it remain successful or may change in the future. The method used in this study is qualitative research method, to gain an understanding of the sharing economy. Our research explores two research methods: the analysis from literature sources of topic area, and future case study-based approach of multinational company. The second method is expert interviews using semi structured interviews with logistics industry professionals. Lastly, third will provide a questionnaire to answer by collecting qualitative data from a smaller group. Designing the data collection, the purpose of this study was to gain more primary sources information from the logistics industry expertise on how they perceive sharing economy and impact on logistics sectors.

IV. CONCLUSIONS AND FUTURE RESEARCH

It is highly noted through our research and previous studies that shared economy enables logistic firms to achieve higher efficiencies through shared resources

within the supply chain. Best practices are based on the business strategy to share tangible and intangible assets in logistics. In the transport and warehousing aspect of logistics, sharing practices has been defining the features of logistics. The fundamental aspect of the sharing economy increasingly continuous improvement approach. In warehousing, the sharing economy to expand the existing shared customer warehouse. Logistics companies can growth of sharing. Sharing Economy in logistics sectors is an increasing future modern logistics and the potential of sharing economy in logistics derived by technology (e.g., Share system and marketplaces). The sharing economy is increasing making a succeed on the logistics sector. The technologies able to be applied to any industry as well as logistics. The trend is motivated, and company given the speed and efficiency in logistics sector by leveraging the sharing economy to help smaller business or business opportunities. Smaller business can relay the sharing economy to reduce cost and wastage by combining the orders and engaging logistics company or may share the shipping with multiple customers. It can help company to utilize the assets and reduce emissions by enhancing the cargo space available in shipping containers.

With the inception of sustainability and resources capacities, last mile delivery services are gaining important within Malaysian supply chains. This works well in urban areas with high traffic city, company can invest on large network and technology of courier to reach customer faster and efficient with few clicks at mobile application. This will improve the customer experience and increase customer expectation as they can expect more accurate delivery. Transport modes need to be considered, to reduce the unutilized the transport modes and wastes. Sharing freight transport able to improve the environmental performance and allow more sustainable methods. For instance, increase use of sea freight or rail freight instead of road transport. In urban areas recommend to consolidating loads for customer parcel courier delivery, less vehicle loading and improving on better loading fills track. Focused study group such as client only to have a clearer understanding on the issues. The study presented within this paper aims to provide valuable direction through the identification of research gaps for any future studies and investigations towards sharing economies and sharing logistics in global logistics and supply chain management environments, and any specific methods or practices that have been adopted to address it.

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