

Virtual Container Yard: Assessing the Perceived Impact of Legal Implications to Container Carriers

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Abstract—Virtual Container Yard (VCY) is a modern concept that helps to reduce the empty container repositioning cost of carriers. The concept of VCY is based on container interchange between shipping lines. Although this mechanism has been theoretically accepted by the shipping community as a feasible solution, it has not yet achieved the necessary momentum among container shipping lines (CSL). This paper investigates whether there is any legal influence on this industry myopia about the VCY. It is believed that this is the first publication that focuses on the legal aspects of container exchange between carriers. Not much literature on this subject is available. This study establishes with statistical evidence that there is a phobia prevailing in the shipping industry that exchanging containers with other carriers may lead to various legal implications. The complexity of exchange is two faceted. CSLs assume that offering a container to another carrier (obviously, a competitor in terms of commercial context) or using a container offered by another carrier may lead to undue legal implications. This research reveals that this fear is reflected through four types of perceived components, namely: shipping associate; warehouse associate; network associate; and trading associate. These components carry eighteen subcomponents that comprehensively cover the entire process of a container shipment. The statistical explanation has been supported through regression analysis; INCO terms were used to illustrate the shipping process.

Keywords—Container, legal, shipping, virtual

I. INTRODUCTION

VIRTUAL container yard has its fundamental concept rooted in collaboration between shipping lines. It is believed that more than 90% of world trade is transported by sea. Globalization has increased the need for the interconnectedness for the respective countries to cross their borders [1]. According to the International Maritime Organization (IMO), in 2017, containerized trade accounted for 17% of total seaborne trade [2]. Shipping is a derived demand [3] of the international trade in economic terms [4]. The VCY is a modern Container Inventory Management (CIM) system. It has been introduced to minimize the cost of empty container repositioning through exchange of containers between CSL.

Logistics and supply chain cost reduction became the focus

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for companies today [5]. The United Nations Conference on Trade and Development (UNCTAD) estimates that in 2017, 752 million twenty-foot equivalent units (TEUs) were moved at container ports worldwide. Container shipping plays a significant role in the global supply chain [6].

The VCY concept is fundamentally rooted in container exchange (CE) between carriers. Since carriers usually experience variations in container availability, it is possible to exchange them economically rather than re-position empty containers. Repositioning of empty containers becomes necessary when the cargo is de-stuffed and there is lack of cargo in the same location to stuff them again for onward carriage. Therefore, VCY is a solution to the global Container Inventory Imbalance (CII) that ultimately leads to reduction of transport and logistics costs in international trading. The demand for shipping has direct impact to supply chains [7]. Carriers have been exchanging ships' space (slots) for more than two decades in the same manner. Slots and containers complement each other. Unlike in break bulk, tanker, or bulk ships, carriage in a container ship cannot be affected without both components (i.e. slots and containers) being simultaneously available at a given location, and in equal quantities. Carriers formed various alliances and consortia in order to facilitate effective and efficient collaboration between them under mutually agreed terms and conditions. Identifying the similarities between slots and containers, some carriers also incorporated CE in alliance/consortia agreements. However, CE has so far not achieved popularity like the slot exchange. CII shows an increase in trend along with increased volumes of global trading. This additional transportation cost in turn leads to higher prices of consumer goods [8]. Therefore, the cost of empty container re-positioning has also continued to increase. However, carriers are reluctant to exchange containers citing various reasons. If the transport cost brought down the price of associated goods and services, it also may reduce proportionately in a competitive market [9]. As clarified in the exploratory study, there are four major justifications for this scenario according to CSL. Firstly, the carriers perceive that there is no opportunity to exchange due to the derived demand characteristics in shipping. Therefore, they do not wish to invest their resources in perusing this concept any further, and commercialization of VCY is thus a challenge. Shipping is a derived demand of international trading. Therefore, the carrier actions, and their reactions are usually impacted on supply chains [10]. Secondly, carriers are reluctant to exchange containers with competitors due to obvious marketing reasons. A similar resistance was also evident during the initial stages of implementing slot exchange