

The Implementation of Smart Port in Tanjung Priok Port for Utilization and Green Port Optimization

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Abstract

In the digital era, Information Technology (IT) has become a major and widespread factor in various sectors. IT becomes a driver of utilization in all aspects, one of which is in the Port. Tanjung Priok Port plays a major role in supporting the mobility of goods and people and the economy in Indonesia. In 2018 Indonesia's Logistics Performance Index (LPI) is ranked 46 with a score of 3.15. LPI score is obtained from several components. According to the level of truck movement density at the port, Indonesian Government has made Delivery Orders (DO) online to maximize efforts to reduce density, which is also one of the Smart Port components. The advantage of Smart Port makes cargo owners/consignee, shipping line, and freight forwarder apply for DO documents via online. Therefore, the manual processing of DO reaches 300,000 in 2 days, 81% saving time and 85% saving queue after applying online DO. This system requires trust and transparency of each stakeholder so that it helps smooth the implementation of Smart Port which also requires synergy between stakeholders and lack of sectoral ego. The optimal smart port will also help to achieve the concept of effective and efficient Green Port. This research was conducted using a qualitative approach because it was about to clearly and deeply describe the activities that had been carried out. We recommend implementing Smart Port at Tanjung Priok Port with Mycargos platform to achieve a port that is well integrated with IT.

Keywords: information technology; smart port; green port; delivery order.

Introduction

Geographically Indonesia is an archipelago country. The port is one part that plays a major role in logistics activities. This is clarified by the definition of the port itself in Law No. 17 of 2008 Article 1 concerning Shipping which states that the port is a place consisting of land and/or waters with certain limits as a place of government activities and business activities that are used as a place for ships to lean on, board passengers and/or load goods, in the form of ship terminals and berths equipped with shipping safety and security facilities and port support activities as well as a place of intra-mode and inter-mode transportation. (Indonesia, 2008).

Nowadays, the world is facing the era of digitalization, the role of Information Technology (IT) in this era will shift activities that are usually done manually to technology or virtual-based ones. As globalization spreads out, port industry is also facing more challenges. Therefore, ports in Indonesia must catch up with major ports in the world such as the Port of Hamburg and the Port of Rotterdam by implementing a solution in the form of digitizing ports.

Located in Tanjung Priok, North Jakarta, Tanjung Priok Port is one of the most widely used port in Indonesia, especially in economic and trade activities in Indonesia. As it is known that the port is a place of goods inflows and outflows, Tanjung Priok Port is the gateway to national and international economic connectivity. (Arnita, 2014). PT Pelindo II (Persero) or IPC continues to optimize the use of information technology and modernize port infrastructure and superstructure as an effort to reduce logistics costs in the country. In addition to improving the service and operational performance of the company, this effort is also a form of IPC's commitment to support the development of national exports. (Ismoyo, 2018).

Level of truck density becomes one of the problems at the port in terms of the flow of goods. Therefore Tanjung Priok Port built a booking system terminal. (Ramadhan, 2018).

With digitalization, the Government of Indonesia has made online Delivery Order (DO) as a maximum effort for a reduction in density and it has been issued in the Minister of Transportation Regulation No. 120 of 2017 concerning Electronic Order Delivery Service (Delivery Order Online) of Imported Goods at the Port. Temporary online DO services are applied to several ports, one of which is Tanjung Priok Port. ("PM Hub RI No.120 Tahun 2017 Tentang Pelayanan Pengiriman Pesanan Secara Elektronik (Delivery Order Online)," 2017).

Online DO as one of the Smart Port components is an innovation to facilitate the flow of goods which is the result of consolidation by the government, service users, and associations. (Gunawan, 2018)

Smart port has been the main issue since June 2015 by high-ranked port operators around the world at the 29th International Association of Ports and Harbors (IAPH) forum held in Hamburg, Germany. Hamburg Port Authority Chairman Jens Meier also said that what would be a challenge for port stakeholders around the world was globalization and the global crisis. Smart port is the answer to these challenges. (Suhendra, 2015).

Smart Port is a solution that will facilitate port activities with facilities and services that are connected to Internet Of Things (IoT) and can be accessed with the port in-house system through an integration scheme. According to the Hamburg Port Authority (HPA), Smart Port has two main pillars: the first is in the energy sector which aims to reduce energy consumption and costs with the concept of innovative mobility, and the second is in the field of logistics which is an online logistics solution that aims to facilitate services to users (Cargo Owner/Consignee, Shipping Line, and Freight Forwarder), as well as improving economic efficiency in the global supply chain. (Ahmadi, 2016).

One of the components of Smart Port is the Terminal Operating System (TOS), which is used as a container terminal operation to accelerate and facilitate planning, ease of interface with third parties, and optimization of operations and monitoring. (ILCS, n.d.).

With improvements to the TOS focused on online DO, it will help the implementation of Smart Port and lead to Green Port. As a result, there will be major effects on the effectiveness and efficiency of the Port which then increase Indonesia's export and import activities which have an impact on financial benefits.

Method

The approach of this research was qualitative to depict in depth how the implementation of the smart port in Tanjung Priok port for utilization and green port optimization was.

Data collection was done through a structured interview, semi-structured and in-depth interview, and focused group discussion. The data analysis techniques used

in this study was an approach developed by Miles and Huberman that included (after data collection) data reduction, data separation from unfocused and too detailed one so that the data could reveal patterns or themes. Next was to display the data (data display) that served to help understand for advanced analysis of certain information or event. The last process was the conclusion of the analysis based on the pattern and theme. Withdrawal conclusion is done continuously and simultaneously with the data reduction and data display (Miles, Huberman, & Saldana, 2014).

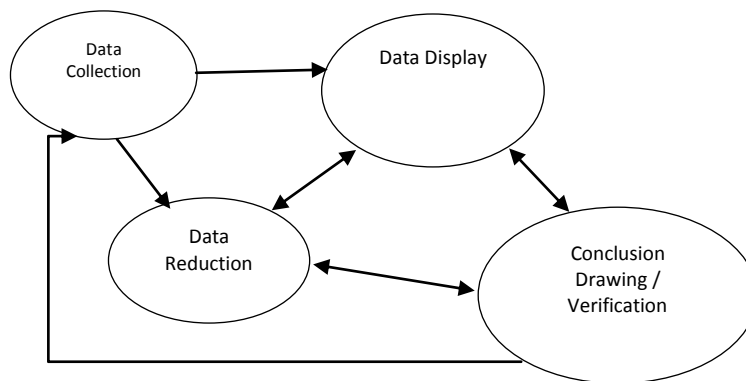


Figure 1.
Data Processing Technique

Source: Miles, Huberman, & Saldana (2014)

Data sources in this paper were informants who had the capability and appropriate expertise of information in accordance with the needs of this study (purposive). Because this study aimed to find out how the implementation of smart ports at Tanjung Priok Port for the utilization and optimization of green ports, the required information from the professionals was not only in terms of logistics, ports and smart ports but also those of daily logistics room. port, and smart port.

The informants in this study were:

1. Mr. Yukki Hanafi as Chairman of Indonesian Logistics and Forwarders Association (ALFI)
2. Mr. Kyatmadja Lookman as Vice Chairman of Indonesian Trucking Association (APTRINDO)
3. Mr. Doddy Himawan as Senior Account Manager and Partnership of Logistics Solution Logistics Integration (ILCS)

4. Mrs. Ira Wibioso as Chief Operating Officer ritase.com of PT. Digital Truk Indonesia
5. Mr. Joseph Lim as Sales Director, APAC of BluJay Solutions

Discussion and Result

Tanjung Priok Port is the target of the implementation of smart ports in this study. Referring to the development of Indonesia's Logistics Performance Index (LPI) in 2018, it achieved a score of 3.15 and was ranked 46 which was previously ranked 63 with a score of 2.98 in 2016. The LPI score is obtained from several subjects namely customs, infrastructure, international shipments, logistics competence, tracking and tracing, and timeliness. From these things, this article focuses only on custom subjects. In 2018 the LPI score on this custom subject reached 2.67 which was the lowest among other LPI subjects. This is a problem for the logistics process in Indonesia. Custom problems in Indonesia are caused by density at the Port of Tanjung Priok that hampers the activities to run well and optimally.

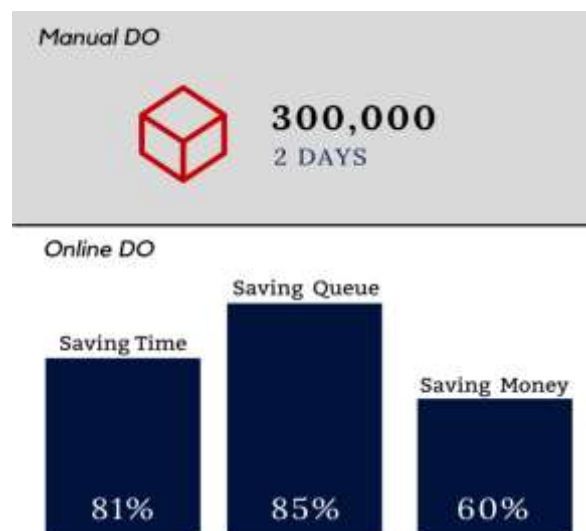


Figure 2.

Source: Smart Port Presentation, ALFI, FIATA diploma (2018)

Manual Delivery Order (DO) processing reaches 300,000 in 2 days, saving 81% time, 85% queue, and 60% cost after the implementation of online DO through the MyCargo platform.

The solution is the implementation of online DO at Tanjung Priok port. MyCargo can be an example of a platform that can be applied to the online DO feature. Online DO will work well if the cargo owners want to use the online DO system in carrying out their activities. Along with the online DO, the application will be maximal if the stakeholders are able to provide trust and transparency and also eliminate the nature of sectoral ego. The application of online DO offers some advantages due to its cashless, paperless, and integrated system. Therefore, implementing online DO will be helpful in reducing or eliminating the density that occurs in Tanjung Priok Port, facilitating the movement of goods and people, reducing wasting time, and increasing revenue in Indonesia through effective exports and imports at ports. Furthermore, it can also make the port environmental friendly.

Conclusion

Tanjung Priok Port has high import and export activities. Information Technology (IT) is one of the important aspects in facing the era of digitalization. Digitizing the port helps the implementation of Smart ports to be a solution in improving the economy and trade in Indonesia. And the way to improve it is by implementing an Online Delivery Order (DO) system at Tanjung Priok Port. The advantages of online Delivery Order are to reduce density at the Port and reduce waste of time. Smart Port that is supported by IT and the Internet, and the maximum implementation of Tanjung Priok port will produce effective and efficient port as well as Green Port output due to the reduction and elimination of waste.

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