

THE CORRELATION BETWEEN INAPORTNET AND SMARTPORT ON NLE IMPLEMENTATION

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Abstract

Indonesia has many ports all over the provinces, and they have positive impacts on the national economy. However, expensive logistic costs and time-consuming services still become the main issues here. Around five years ago, there are many digital logistic service applications, for example, E-DO, E-payment, E-billing, E-trucking, E-warehousing, Inaportnet, INSW, etc. Indonesian ports have the opportunity to transform into smart ports. However, the absence of the connector or interconnection between the government and private sector has become an issue. An innovative idea named National Logistic Ecosystem (NLE) is expected to help transform the digital technology. The central concept of NLE is collaborating government and private sectors through data exchange, process simplification, elimination of repetition and duplication supported by information technology systems covering related logistics processes and connecting existing logistic systems. This study aims to find out the existence of smart port concept design, which could be connected to the NLE system and implementation to build connection between government and private sectors. To attain that aim, the research was conducted using qualitative method through online interviews data collection from the government sector as primary data, online interviews data collection from private sector as secondary data, and qualitative descriptive method. The result confirmed that Smart port contributed positively on succeeding the implementation of NLE.

Keywords : *Inaportnet, Smart Port, and NLE.*

Introduction

Indonesia is the largest archipelagic country that has a long coastline, which makes Indonesia is called the world's maritime axis. As a naval axis, Indonesia needs to be improved, especially in port activities. Ports, being a part of the marine transportation, supply chain act as a meeting place (interface) in two or more modes of transport as well as the interface of various interrelated needs (Gultom, 2017). In the current era of globalization, ports play a prominent role in which the service is needed for

export and import activities. The activities help improve the industrial economy and trade, both nationally and internationally, especially for potential areas in the vicinity. Export and import activities themselves reflect international trade activities that in the implementation require international cooperation. Bottasso (2018) noted that export activities have a higher good impact on terms of port infrastructure for trade activities. Regarding this function, it is necessary to operate the management of the port business sector in a professional, effective, and efficient manner. That way, port services will be safe, smooth, and faster at an affordable cost.

However, there are problems related to expensive logistics costs, difficulty in processing custom clearance due to the duplication and repetition of processes regarding several documents, extortion actions, berthing time on ships, which often become inhibiting factors. This evidence makes Indonesia ranked 46th on the Logistics Performance Index (LPI) in 2018, with an average timeliness of 3.67% and logistics competence of 3.10% retrieved from The World Bank (2018) report. To address these issues, it is necessary to develop the concept of smart ports.

According to the Secretary of the Directorate General of Sea Transportation, Arif Toha, one of the efforts to support the balance between economic and ecological aspects is through developing Smart Port or Green Port (Direktorat Jenderal Perhubungan Laut Kementerian Perhubungan Republik Indonesia, 2020). An information system that has been used to manage, monitor, and store large amounts of data (for example, maritime traffic information and logistics data) and to provide large-scale digital and paperless transformation in smart ports (Yau et al., 2020). As well as the existence of a system owned by the Ministry of Transportation, namely Inaportnet, an online-based service system is providing integration of standard port information systems in serving ships and goods physically and all agencies and stakeholders related to ports (Menteri Perhubungan Republik Indonesia, 2020). In article 1 chapter II stated that the Ministry of

Transportation organizes Inaportnet online and the Directorate General of Sea Transportation carries out its implementation. In addition, Article 2, chapter II, related to Inaportnet as referred to 1st paragraph for ship and goods services include incoming ships, outgoing ships, moving ships, and extension of moorings of service cancellations. With the help of technology and system efficiency, it can reduce problems at the port and proceed in the design of smart port issues.

Therefore, this will reduce logistic costs and balance the availability of various commodities in Indonesia (Ervianto, 2018). Benny Woenardi, said the smart port concept can be accelerated in the process of entering and leaving goods. That process was completed by implementing an automatic gate system, e-DO, e-Billing, and e-Payment under one roof connected to the port service system, Customs and Excise and Quarantine, and the bank (Waluyo, 2017). Therefore, the government conducts digital transformation and implements an export and import E-document service system that can accelerate the flow of goods applied digitally according to customs export-import activities. It encourages the government to create a National Logistics Ecosystem (NLE) system. NLE is a logistics ecosystem that harmonizes the flow of international goods and documents traffic from the arrival of the means of transport until the goods arrive at the warehouse. It is aimed to cooperate between government and private sector through data exchange, process simplification, elimination of repetition and duplication. It is supported by a technology information system covering all related logistic processes and connected to existing logistics systems (Kementerian Keuangan Republik Indonesia, n.d.) As well as the existence of a Single Window, a national system facility supported by the government or related authorities to support import, export, transit, document standards, and integration of data information flows to meet all requirements and logistics facilities (Tijan et al., 2021).

This encourages the design of smart ports that can be integrated with the NLE system. In this research, the authors examine the ideas applicable in Indonesia to make it easier for stakeholders through implementing a smart port in operational activities for private parties with an IT platform system in each entity and government. That phase aims to create interconnections in the distribution of data information flows, goods or ships information flow , and a port services improvement faster. Based on the description above, the framework in this study can be described as follows:

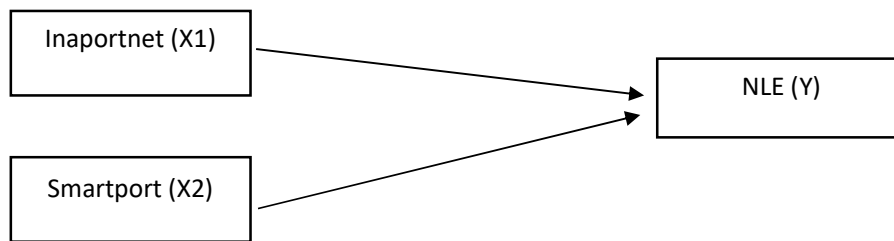


Figure I – Thinking Framework.

Temporary Hypothesis

H1: There is correlation between Variable X1 (Inaportnet) and Variable Y (NLE).

H2: There is correlation between Variable X2 (Smart Port) and Variable Y (NLE).

H3: There is a correlation between variable X1 (Inaportnet) and variable X2 (Smart Port) to Variable Y (NLE).

Research Method

To examine the hypothesis regarding “The correlation between Inaportnet and smart port on NLE Implementation”, a qualitative descriptive method was employed. The data were obtained from interviews, one can know things that are clear about the participants that explain the situation and

phenomenon that occur and that cannot be found in observing (Sugiyono, 2016). Specifically, direct face-to-face interviews were conducted using ZOOM to obtain information regarding the development of NLE starting on July 7, 2021.

These are interviewees in this research

1. Doddy Himawan Triyasa ST. as CEO in private company.
2. Vickar Muhammad S.Pi.,M.Sc as a Co-Founder Digico.Id that collaborated with NLE
3. David Pandapotan Sirait SE, MMTr, MBA as Commercial and Business Development Director Acting Operations and Engineering Director PT IPC Container Terminal
4. Mirza Chaidir Rachman, ST, MSc as Development team of NLE and Strategy and Change Manager II.

Discussion and Result

Inaportnet is a huge system owned by the government of the Ministry of Transportation. Inaportnet is an electronic portal providing fast, safe, neutral, and easy exchange of port service data and information connected to related government agencies, port business entities and logistics industry players to increase the competitiveness of the Indonesian logistics community (Kementerian Perhubungan Republik Indonesia, n.d.). Several services covered in Inaportnet are PKK (Notice Arrival Ship), RKSP (Plan Arrival Ship Carrier) which intersects with Customs and Excise reporting on arrival of the means of transportation called submit manifest. Other services include LKK (Ship Arrival Report), PPKB (Request for Ships and Goods), and PPKB(Request for Ships and Goods), related to goods operation such as a ship's entry permit leaning, obtaining Ministry of Transportation or the Directorate of sea traffic permission. As referred to PPKB-D, the ship has a time permit set for parking and unloading in TGH (Times Gang Hours), and UPP(Ship Management Unit); such as, associate

for unloading or loading, gantry crane, tango truck. This activity is also completed under the authority of port operator; for instances, JICT, Koja port, NPCT1, CIQ (Customs Immigration Quarantine) to manage goods or passengers, SPOG (Operate Approval Letter), SPK (work order of letter). The Inaportnet has been used in other Indonesian ports, for instance, Tanjung Emas port, Makassar port, Tanjung Priok port, etc. In 2016, Makassar port was the first one using the most successful Inaportnet system by Drs. I Nyoman Gede Saputra as the head of port authority. According to Arif Toha as Secretary of the Directorate General of Sea Transportation, which is interpreted as a smart, environmentally friendly and integrated the port that aims to support the blue economy (The Blue Economy) (Direktorat Jenderal Perhubungan Laut Kementerian Perhubungan Republik Indonesia, 2020). Therefore, the transformation of innovative and intelligent digital technology may help create a connected smart port from simple logistics and transportation activities with an open and efficient platform that can participate in the world trade. Smart ports excelling in terminal operation are ready to expand economic their facilities, extend their port business scope and take all possible advantages.

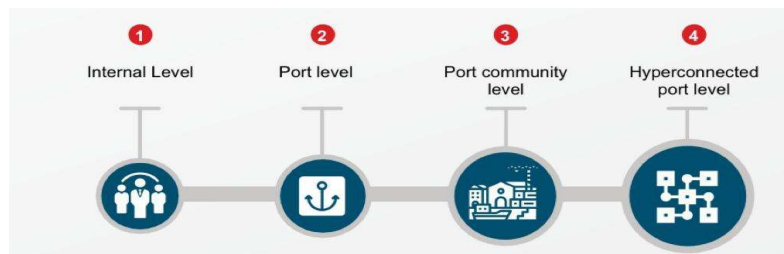


Figure II – Level of Digital Transformation into Smartport. *Source:*
(Sinibaldi, 2019)

According to (Sinibaldi, 2019) about smart port manual - strategy roadmap, digital transformation generally has four stages. Firstly, internal digital transformation process in port activities. Secondly, implementing digitize all of the port facilities. Thirdly, the expansion of connections to

stakeholders connected to port community. Lastly, the interconnection existence of entities in the logistics services (Hyperconnected Port Level). Currently, most ports are at stage II, but some have advanced to stage III. However, there are challenges in implementing smart ports such as governance and funding models, managing change and innovations, social rejection, cyber security problem, cooperation, and lack of qualified personnel. Consequently, it is necessary to consider several points in the application of smartphones that focus on operations, energy, environment, safety, and security points. For instance, PT. Pelabuhan Indonesia II is currently heading to stage III. It starts expanding its interconnection and is ready to start to collaborate using TOS (Terminal Operating Systems) or having the latest application platform named i-Hub by PT Pelabuhan Indonesia II.

The TOS system in several Indonesian ports is still in smart port designing. These are based on the scope of smart ports, which is expected to cover all activities, but the process at ports is currently still carrying out digital transformation. The COVID-19 pandemic, the hopes and desires began to emerge in designing smart ports that could be carried out in interconnection in various agencies and stakeholders as well as related private parties at ports. The interconnection of all logistics chain activities at the port and operational automation or machine tools can make smart ports have a positive value for overall competitiveness. (Yau et al., 2020). It can give the impact to movements of goods rapidly and the organize flow of documents or data information using NLE as API (Application Programming Interface).

Concerning the existence interconnection of all logistics chain activities, the government introduces innovations through a collaborative API (Application Programming Interface) that can share data and communication with (end-users) companies that have logistics services, products or services called NLE (National Logistics Ecosystem). The

National Logistics Ecosystem was created in order to create more collaboration, integrity and connectivity to each other. Specifically, this service has two aspects, the government aspects and the private aspects. Those two aspects can connect by the NLE, aiming to give a positive impact on the sustainability of the national logistics system. According to President Instruction number 5 year 2020, concerning the arrangement of the national logistics ecosystem, It is stated that program helps to simplify government service business processes in the field of logistics based on information technology to eliminate repetition and duplication. In addition to that, the mechanism is also expected to provide a collaboration of logistics service systems both international and domestic between logistics activities actors in the government and private sectors, eases the state revenue payment transactions and facilitation of payments between business actors related to logistics processes, and arranges systems and port layouts as well as distribution channels (Presiden Republik Indonesia, 2020). The program has an agency in charge of the ministry of finance and several activities have a person in charge of the Ministry of Transportation and other relevant agencies.

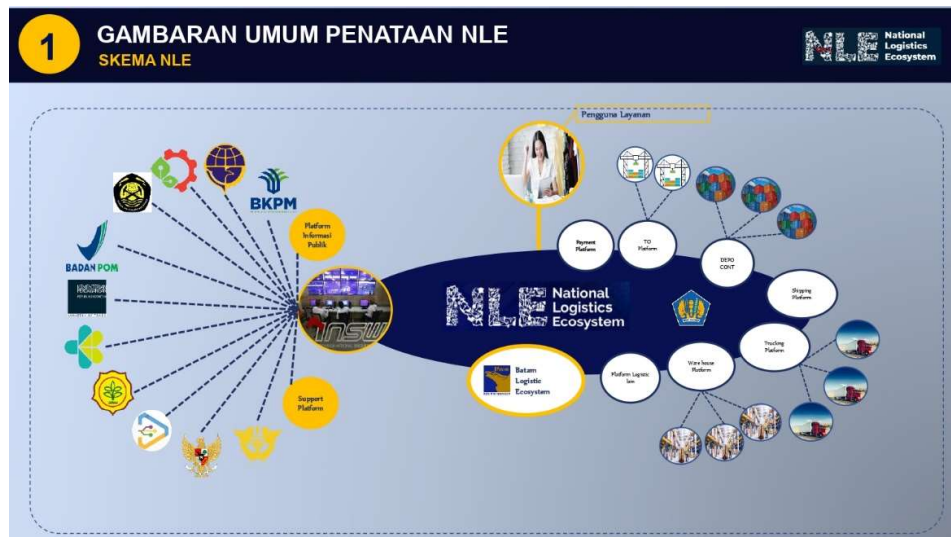


Figure III – NLE Design Concept. *Source: Public Hearing RPMK Collaboration – NLE (n.d)*

From that picture, there is a collaboration between the government sector (G2G) in integrating existing portal system, without replacing existing systems through API (Application Programming Interface); such as, Inaportnet, SP2 online DO, and PPJK agencies or related institutions (BPOM, Ministry of Transportation, Ministry of Finance, and others). The government (G2B) invites private sector to collaborate (logistics platform) by providing facilities in the form of NLE as an API provider, manager, and eliminating duplication in document requirements and process repetition through data sharing related to transported goods. All logistics service processes on each logistics platform and NLE only save the process status of their respective existing processes. This benefits customers, which is called omnichannel, a model of interaction between users and service providers through many channels. The omnichannel concept is suitable for NLE because there is no need to deliver on a single track and customers are given a choice to choose a logistics platform. This action will minimize the impact of the platform losing customers due to system errors. Technically, the NLE system is also connected to various logistics platform entities.

NLE allows login using Logistics Personal Access (LOGPASS). Through the LOGPASS system, users quickly access various government service entities and private services in the logistics sector in managing PEB letters, Delivery Orders, SP2, or related to payment transactions on each platform easily. Thus, the development of technology as an integrated ecosystem, the higher efficiency in national logistics activities, is aimed to reduce problems such as high logistic costs, lack of data transparency, as well as licensing issues at each licensing agency. As a result, the creation of such connectivity will positively impact the continuity of the national logistics system and the flow of goods.

The discussion above shows a relationship with the smart port concept design that can be connected to the NLE system. It can facilitate government and private parties in distributing the data information flow so

that it is not duplicated and secure. The application of Open API guarantees transaction security aspects and mitigates cyber and fraud risks. The intended open API is an entity that stores consumer data or provides a service and provides an API so that third parties can access or use consumer data or use its services through the API that is carried out based on consumer approval. Constraints faced by the current NLE system are domestic, which means payments are still very long but still running and have minimal restrictions. On the other hand, on the export-import side of the global supply chain, you have to adjust the situation. According to data from the Central Statistics Agency (BPS), there is a decrease in the volume of the logistics sector influenced by the negative growth of Indonesia's exports and imports. The exports decreased by 6.37 percent while the imports decreased by -11.89 percent on every quarter. It can disrupt systems such as NLE and smart port designs. Then, the benefits experienced by the customers who use NLE during this pandemic, especially domestically, are the ease of processing orders such as the release of DO, SP 2, on weekends so that customers feel the efficiency of the NLE system itself. According to Widuri (2014), the customs clearance process without an NLE system takes three days and a maximum of 14 days. However, the NLE system can speed up the custom clearance process quickly. The impact is the fulfillment of the needs of consumers who experience delays, a lot of time is wasted and the costs incurred are enormous. Therefore, with the NLE system, there is a reduction in time to be more efficient in the logistics flow.

Conclusion

Indonesia has a lot of platforms in logistics. Digital transformation has a profit on the logistic process to reduce logistic costs by transparency and increase the efficiency time in the customs clearance process and other supporting documents. The government strives for the logistics role to be organized in ecosystems connected between the government and private sector for customers or entrepreneurs which is realized through the

implementation of NLE. The role of the Smart port design concept greatly helps the efficiency to implementation of NLE. However, the implementation of NLE is still in the development process of collaboration between entities such as the scope of trucking, operate SP2, and online DO. The authors hope that there is collaboration between NLE and all logistics service processes to impact the future positively.

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