



Improving Ship Services Efficiency through Inaportnet Application Effectiveness Analysis

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ABSTRACT

Technology and digitalization have been affected into all aspects of life, including transportation, particularly local marine transportation. Customer service plays an important role in companies' growth as well as all aspect in larger community. This research reviews the effectiveness of Inaportnet application used in Indonesian port system based on a program from Directorate General of Marine Transportation. The method uses in this research is descriptive qualitative which uses problem formulation to explain the research problem. Data collection method is conducted through observation, interviews, and documentation with the research object is the Inaportnet Application at KSOP II Bitung through a sample of all officers who handle the Inaportnet application system. Based on the research result, it obtained that Inaportnet application has been very effective and efficient in reducing time and costs. It also can be accessed from anywhere by users who connected to Inaportnet. Unfortunately, there are obstacles such as poor internet network connections, large capacity sizes of ship documents, and improvements from other auxiliary applications, as well as LAB Module improvement that have been handled well by port officials.

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1. Introduction.

Human civilization has known about the transportation from simple transportation methods, overhead goods transportation systems, animal-drawn carts to technological inventions in transportation infrastructure and superstructure (Akbar, Jinca and Rahim, 2019). The transportation system of a country is influenced by geographical conditions, economics, technological

development, and socio-political factors that caused the differences in transportation system between the regions. The characteristics of transportation modes can be divided into 4 systems, called road, rail, air transportation, and marine transportation (Akbar, Jinca and Rahim, 2019). The marine transportation mode is also referred to as sea transportation that consists of a network of infrastructure and services.

The port is a facility used to drive sea or marine transportation modes that has important function in regional, national and international trade and development, as a gateway for goods and passengers to and from an area where the port is located (Akbar, Jinca and Rahim, 2019). Indonesia is an archipelago consisting of islands, from Sabang to Merauke. Most of Indonesia's territory is dominated by sea which is very strategic for international trade flows (Rahayu and Susanto, 2020; Suryandi et al., 2022). The availability of infrastructure and service delivery are the main activities at the Port. Then, the issuance of a sailing approval letter is a supervisory process conducted by Syahbandar for ships that will sail (Adenanthera, Mafruhah and Susilowati, 2018; Gurning, 2019).

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All administrative activities that occur at Port are service for customers, including shipping lines/agents, freight forwarders, Container Freight Stations (CFS), Custom brokerage (PPJK), importers and exporters, container depots, warehouses, and inland transportation (Andromeda and Putra, 2020). The provision of services and information is greatly influenced by the development of information and communication technology. Currently, the world of information has shifted towards the digitalization era (Nurwan and F. Payu, 2022). Therefore, it affects digitalization in Indonesian ports. Currently, Indonesian ports use the Inaportnet system, which is used to facilitate the exchange of data and port service information quickly, safely, and neutrally (Prastyo M., Moeheriono and Sulistyanto, 2022).

Port is the first interface of import-export industry and plays an important role in national economic growth. The large flow of shipping and traffic that occurs between shipping agents or shipping companies with international entrepreneurs requires accelerated exchange of information in real time through port community system which developed into port-net and advanced into Inaportnet by Directorate General of Marine Transportation. The implementation of this application is intended to accelerate the flow of goods at the port. In addition, this application is an electronic system for completing export-import activity procedures in an integrated manner. This application is expected to accelerate export and import traffic process and reducing the costs. Then, there is no need to issue the export and import permits directly to the office. The information plays a very important role in service activities at the Port. The relevant and up-to-date information is the main success of ship service efficiency at the Port in the process of collecting data to distributing information for related parties (Mufidasari, Octavian and Herlina, 2019). The optimalization of port administration services that supported by Inaportnet application to provide maximum services is encouraged by the advancement and developed business world along with the increasing flow of goods and foreign and domestic ship which entering the port area (Sekarwati Ariadi, Malisan and Sugiharti, 2022).

Commonly, the implementation of ship document services in Indonesia still uses a conventional or manual system through port administration officers from ship arrival services, moving ship services, and outbound ship services. This requires more energy and qualified resources. Although the transition to using digital apps has progressed slowly, there are still issues that need to be resolved. The Inaportnet system does not always run smoothly without obstacles since there are internal factors like system maintenance at certain uncertain hours that hamper the port clearance process. The Inaportnet application often experiences network problems that crucial for an online system. This obstacle causes ship services to be hampered because the administration has not been completed as a requirement for departure. In addition, the data storage capacity of Inaportnet system is still limited, which makes ship documents not uploaded optimally. Some of these challenges reduce the efficiency of the ship's officers' duties, requiring additional time to complete the ship's administrative documents, delayed ship's departure, the ship's license is rejected by system, and the activities in and out of the ship and the ship's move are hampered which has a fatal

impact on the goods that need to be shipped.

Based on the explanation above, the novelty focuses on reviewing the effectiveness of inaportnet performance and its function in increasing work efficiency at the port through digital systems. It is used to maximize port administration service activities. Considering the importance of optimal infrastructure services in Indonesian Port system for the future, as well as to minimize the losses arising by subpar services. This research aims to analyze the level of effectiveness of Inaportnet application system as long as it is used for port service activities, and formulate solutions for the Inaportnet application work system in the future through literature studies that will be full presented based on relevant researches.

2. Literature Review.

Inaportnet is an internet/web-based single electronic service system to integrate with standard port information systems in serving ships and goods physically from related agencies to stakeholders at the port (Malau et al., 2022). Based on the Regulation of Minister of Transportation Number PM 8 of 2022 amending the Regulation of Minister of Transportation Number PM 157 of 2015 concerning Procedures for Ship Services through Inaportnet stated that "The electronic port service system or Indonesia Portnet which is referred to as Inaportnet is a single service system for ships and other activities related to ships that are implemented electronically and standardized".

Research on the effectiveness of Inaportnet application has been successfully researched by several previous researchers by presenting varied results and revealing the use of Inaportnet application in improving Indonesian ports system. The efficiency factor of port services is a parameter of the effectiveness in the use of applications described in previous researchers. Almaida & Fitri, (2018) proved in their research that information technology is the most important factor that supports the competitiveness of world's best ports strategically. This shows that the change from manual systems to digital systems with the application of information technology is needed to increase the competitiveness of national and international ports. Meanwhile, until 2023, there are still 109 ports that have shifted to digital systems out of 636 ports in Indonesia.

The system quality and the quality of information produced by Inaportnet application have met all the needs required by users, and it also able to provide user's satisfaction. This research has passed the classical assumption test, multicollinearity test, heteroscedasticity test, hypothesis test, and T test (Maryana et al., 2019). In line with this, Hidayat et al., (2022) explained in their research that Inaportnet application has been very helpful in issuing sailing documents and the flow process of issuing a Sailing Approval Letter using Inaportnet has been running in accordance with applicable SOP. The implementation of use of Inaportnet application in document management has not been fully handled properly. Then, it is necessary to increase the accuracy in filling ship document data in minimizing the errors, limited storage capacity that causes officers to have to double check in processing ship documents.

2.3. Services.

Service is an activity provided to assist, prepare and take care of goods or services from one party to another (Hidayatullah, 2017). Service is producers' behavior in order to meet the needs and desires of consumers to achieve customer satisfaction (Ingaldi and Ulewicz, 2019; Mainardes, Coutinho and Alves, 2023). Service is an attitude taken by the seller or service provider to meet consumer needs. The services provided at port are for public interest (Mardikawati and Farida, 2013). Port activities are heavily involved with interests such as export and import, loading and unloading goods, both in administrative and technical aspects (Abu Bakar et al., 2023).

Suryandi et al., (2022) explained that the government has helped to improve the service quality in port sector by providing various policies to regulate the services according to standards. The service improvement continues to be conducted by integrating technology into customer service, called parties related to port service users. The customers would feel satisfied when they receive good service. This will affect the agency image and will be profitable for service providers. The port itself requires quick adaptation to the times from system, technical, to sustainability services (Sambera and Suparto, 2022).

There are many parties involved in the maritime industry's services, particularly in the port sector (Lange and Grafelmann, 2022). The first is that the port itself is a place where traffic in and out of ships from within and outside the country occurs. Ports provide services in the form of operational, technical, and administrative facilities for all ships sailing in Indonesia. Law No. 17/2008 on shipping which leads to liberation provides opportunities for Indonesian private sector to participate in managing ports, especially terminal operators with the aims of fostering competition that results in efficiency and effectiveness at the port. The second is agent role of the agency business conducted by shipping companies that provide services in managing something related to the interests of ships, cargo, containers, and freight from the principal. An agent is a national trading company that acts as an intermediary on behalf of the principal under an agreement that has a role in providing services to the goods' owner to conduct the loading and unloading at local port by getting compensation from the appointing party. The service activities at the port are not only conducted in operational field but also in terms of administration, such as the issuance of certifications, ship documents and disbursement fees that must be incurred while at the port.

3. Material and Method.

This research used a qualitative method with a descriptive approach that uses problem formulation to guide research, explore or portray the social situation to be studied thoroughly, broadly, and deeply. A qualitative approach is a research procedure that produces descriptive data in written or spoken words from people and observed behaviour (Taylor, Bogdan and DeVault, 2016). This research was conducted at Bitung Class II Port Authority Office within 6 months from April to October 2022.

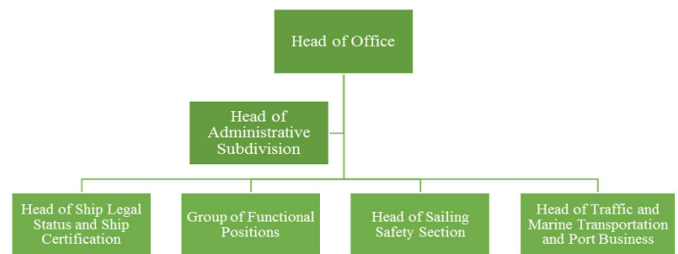
The data collection method used primary data sources and secondary data sources that conducted through observation (direct observation) in the work area of Bitung KSOP Office. The interview method is conducted to officers who are related to the use of Inaportnet system and experience obstacles inhibiting services on ships. In addition, the communication conducted directly between officers and researchers that can strengthen the basis for author's opinion. The documentation is conducted to record ongoing activities and to record evidence that research activities actually occur. The literature review is conducted to add reference sources to strengthen the results of this study. The population in this research is the entire object of research, called Ship Services that use Inaportnet application system at KSOP Bitung, while the sample in this research is the officer who handles the Inaportnet application system.

The variables in this research are Inaportnet system as a freighter service system, which includes incoming ships, moving ships, outgoing ships, mooring extensions, and service cancellations that occur at the port. The next variable is efficiency as an act of maximizing existing resources to get the best results, in this case is the effectiveness of using Inaportnet system at Indonesian ports. Through descriptive qualitative research that directs research to describe a phenomenon through descriptions in the form of sentences and language using scientific methods, it is expected that it will be able to reveal the phenomena that occur at the port and provide new insights for future improvements.

4. Results and Discussion.

The Class II Bitung Harbor and Port Authority Office is a technical implementation unit located and responsible to Director General of Marine Transportation of the Ministry of Transportation which is led by an office head based on the Minister of Transportation Regulation No.PM.36 of 2012 as amended in Ir. Soekarno No. 4 Bitung. Figure 2 shows the organizational structure of KSOP Class II Bitung.

Figure 2: Organizational structure of KSOP Class II Bitung.



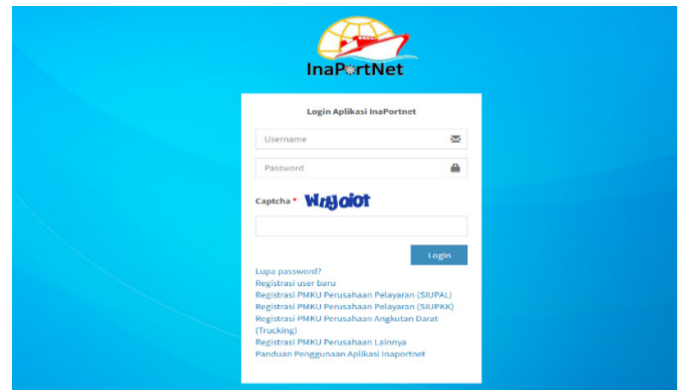
Source: Kantor Kesyahbandaran dan Otoritas Pelabuhan Kelas II Bitung, 2022.

4.1. The obstacles in the use of Inaportnet application system.

Based on the research results, several obstacles were found in the use of Inaportnet Application system at Port of Bitung, such as:

- Poor internet connection, the number of types of ship documents and the capacity of the ship document size is too large that need to be uploaded, which causing the hampered in clearance process.
- Sometimes the Inaportnet application takes a while to read a PNPB Billing Code that has been paid in Simponi application (Ministry of Finance).
- The Freight Transportation Report (LAB) module from Inaportnet to DO Online BUP Container Terminal application is still not integrated (not locked yet) in the system.
- Module Addition/Application Development for the users are unable to access the application.
- Maintenance and disruption of applications, both from Inaportnet application and other supporting applications like a Vespa owned by BUP PT. Pelindo.

Figure 3: Inaportnet Application Login Menu.



Source: Authors.

4.2. The implemented policies in handling constraints on Inaportnet application system.

The leadership receives reports of difficulties when using the Inaportnet application system in order to implement the appropriate policies, such as:

- It will be made the official report before the follow-up due to internet connection limitations.
- For payment constraints, application and maintenance disruptions in accordance with Ministerial Regulations that for goods ships are given manual service after 2 hours and for passenger ships are given service after 1 hour with a note that it is mandatory to remain the cycle on Inaportnet system when the disruption has been completed.
- For the problem on Goods Transportation Report, the direct supervision is conducted by field officers
- For the obstacle on the addition of Modules/Application Development, it is necessary to conduct a socialization for the users have a better understanding about how to use the application.

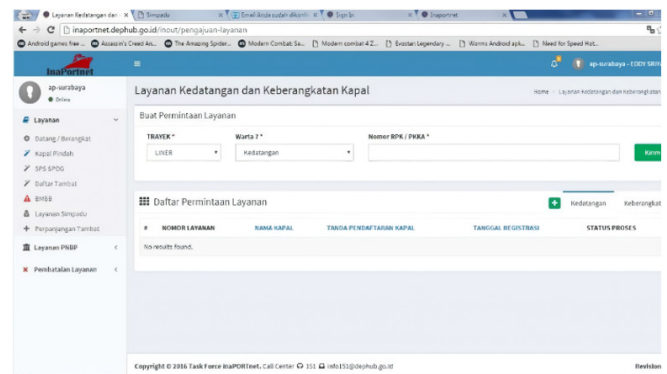
4.3. Inaportnet website.

Inaportnet is a system based on the internet / web service network related to ships' arrival and departure and loading and unloading activities (Sekarwati Ariadi, Malisan and Sugiharti, 2022). Inaportnet can facilitate the service process for shipping service users. The implementation of the use of Inaportnet system can run well although there are some obstacles that occur due to the internet network. In joining the Inaportnet system, every portal user must have an account, password, and code on member login page will appear for the user. It can be seen in Figure 3. After logging in, the service users can see the first page of Inaportnet system with the username when the service user logs in according to user's privilege. It also can be shown in Figure 4.

Conclusions.

Based on the research results and discussion, the following conclusions are (1) The Inaportnet system is one part of the

Figure 4: Inaportnet System Homepage.



Source: Authors.

implementation of Indonesia National Single Window (INSW) program which is an electronic system in operating and integrating all activities both services and clearance from all agencies involved in the activities of ship service, cargo service, and other port services. Then, it will be able to develop the performance of trade activities and goods traffic, especially encouraging the acceleration of clearance process, enabling the documents delivery for import and export activities through one gateway portal that can be accessed from their location or entity connected to the Inaportnet system. (2) The use of Inaportnet application is very effective because in addition in reducing time and costs, it can also be accessed anywhere and anytime without having to come to KSOP Bitung office. This application makes it easier for officers to control various types of ship and goods service activities online, as well as payment for Non-Tax State Revenue (PNBP) collection is easier and more accurate since it is locked in application system. (3) The use of Inaportnet system has several obstacles such as poor internet connection, large ship document capacity size, PNPB Billing code payment in Simponi application which reads Inaportnet applications slowly and incompletely, Freight Transport Module (LAB) from Inaportnet to the DO Online BUP Container Terminal application is still not integrated. It also gives effect to Module Addition, Maintenance and application disruption.

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