Multimodal Freight Transport Regulations in Indonesia And Its Implementation (A Case Study of Tanjung Priok Port)

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Abstract. The purpose of this paper is to present the current situation of multimodal transport in Indonesia and the various ways in which it is implemented. This paper will also examine the existing regulations and overcome barriers in implementation for providers and users of services. The paper also aims to correlate the elements of government regulation into the logistics chain, to understand the need for the application of Multimodal Transport. Indonesia has realized the benefits that can be achieved by implementing multimodal transport, an important alternative to improve logistics performance. As the government plays an important role in offering the legal and institutional framework, this paper assesses the implementation of regulatory linkages, infrastructure, and why multimodal transport is still not implemented properly.

1. Introduction

Efficient transportation is a key factor in logistics performance. Transportation greatly affects what happens in the trading corridor. Logistics is an indicator of the difference in the performance level of a company or country (macro context) in reducing costs and increasing productivity. Indonesia is plagued with the problem of high average logistics cost. The total cost of logistics in Indonesia in 2016 is quite large: 24 percent of Indonesia’s gross domestic product [1]. In addition, the high transaction cost makes Indonesia to be the archipelagic country with the biggest cost of goods inter-island distribution of goods [2]. The World Bank data in 2016 reveals that Indonesia's logistics performance is 63rd out of 160 countries. That data also reveals that while Indonesia is in the top 10 performers for lower-middle income countries, Indonesia is ranked lower than other ASEAN countries, namely Vietnam (48), Malaysia (25) and Singapore (5). Indonesia’s container handling cost is highest among all ASEAN countries. Despite being an archipelagic country, the majority of Indonesia’s ground transportation does not support inter-island interconnections. As a result, the cost of Indonesia’s intercity and inter-island transportation is much higher than that of Singapore. Dwelling time at Tanjung Priok Port, which counts at the 3.9 days range, occurs due to the long forwarding process of goods from consignee (consignee) and consignor (freight forwarder service). This process is generally undisciplined, causing the accumulation of goods and significant container queue. Delay leads to additional incremental costs which means additional costs for consignees and consignors.

The government of Indonesia has implemented efforts to build a multimodal transportation system in support of national logistics system, among others, through the issuance of several regulations related to national logistics system (Perpres 26/2012) [3] and multimodal transportation system
(Government Regulation 8/2011 and Permenhub 2012) [4 and 5]. Unfortunately, they haven’t seemed to run smoothly as reflected in the relatively low performance of the logistics system as a whole.

There are various factors contributing to the success of multimodal transport. A key constraint of multimodal transport is the lack of willingness to cooperate and coordinate between operators of different modes. Collaboration among logistic stakeholders is strongly influenced by institutional aspects especially for logistic decision-making processes (3). A number of studies discuss the importance of institutional aspects in the functioning on multimodal transport [6, 7, 8, 9, 3, 10, 11, 12, 13, and 14].

Multimodal transport and logistics are cross-sectoral and the institutions that manage them must also be cross-sectoral and cannot be managed partially, because of their nature. Multimodal transport requires an institutional approach that explains cross-cutting of multimodal transport, such as the role of the Port Authority as a regulator, indicates the formation of Multi Operators in order to create a more balanced competition between different modes of transportation, investment regulation, financing, government roles, the role of the private sector, and matters related to coordination in multimodal transport where the role of the port occupies a very strategic and important role in Multimodal Transportation. This paper investigates the structural problems with the regulatory and institutional aspects of the multi-modal development at Tanjung Priok Port.

As such, Multimodal Transport requires an approach that explains the macro and cross-cutting of multimodal, especially in terms of regulation and institutional aspects. The purpose of this paper is to link government regulations, institutional aspects, and logistical transportation chains in analyzing the implementation of Multimodal Transport in Indonesia. This study aims to identify regulatory issues and the development of multimodal transportation that impede its implementation.

2. Methodology and Data Collection
This paper employs the content analysis methodology. Qualitative Content Analysis aims to sort relevant data and clarify information obtained from different sources. This analysis includes summarizing, explicating, and structuring [15]. The technique is used to analyze secondary and primary data about legislation and related institutional issues. In regulatory analysis, this technique is used to look at existing legislation both vertically and horizontally and analyze how the interrelationship between regulations – whether there are regulations that encourage the implementation of multimodal transport, whether existing regulations are not aligned, or whether the implementation of those regulations are not conducted properly. Thus, through this analysis, we identify that one of the empirical problems of multimodal transportation in the Tanjung Priok Port. On the institutional issues of multimodal transport, this technique is used to analyze the role of the actors involved, who are the actors involved, the role of each actor, who is the leading stakeholder, and what factors are the main causes of the impediments of multimodal transport implementation. A comparative analysis is performed to provide reference and benchmark on the institutional issues surrounding multi modal implementation in other countries.

The data collection is done by survey on secondary data collection and primary data on the regulation and institutional issues of multimodal transportation in relation to the logistics system activity at Tanjung Priok Port. This research is intended to analyze regulation and institutional aspects in multimodal logistic transportation in Tanjung Priok Port. The data collection for this study is based primarily on interviews with staff of Port Authority conducted on April 2017, and secondarily by collecting data from documents such as relevant regulations.

3. Multimodal Freight Transport Concept
Multimodal transport is a transport that uses at least two modes of transport to deliver goods to places to be shipped under the Multimodal Transport Contract. Goods are handled by and under the responsibility of Multimodal Transport Operators [16]. Multimodal Transport Operators is an entity
that holds a Multimodal Transport Contract, acting as the sole responsibility for the assigned tasks in the contract of carriage either alone or through other parties under its supervision.

In contrast to segmented transport where each document is required for each mode and other logistics activities such as warehousing, the use of more than one transport document describes the number of bureaucratic activities, which also explains how and to what extent the responsibilities of the actors play a role. In this segmented transport every mode of transportation, as well as other supporting logistics activities, is responsible for specific activities [17].

In SISLOGNAS document (2012) [18], by the end of 2025, we will have seen the conception of a multimodal transport system (illustrated by the diagram below) developed using the paradigm and perspective of multimodal transport which takes into account the type and characteristics of the transport system used and with consideration to the efficiency, effectiveness and ease of system operation, with the ultimate aim of delivering a highly competitive transport system.

![Figure 1. Multimodal Freight Transport Concept. [18]](image)

The implementation of multimodal transport is carried by the multimodal transport operator (Multimodal Transport Operator, MTO) under the name of Multimodal Transport Provider (Badan Usaha Antar Moda, BUAM) as per Government Regulation No.11 of 2011. This legal entity (or its legal representations thereof) realize and perform multimodal transport contracts. Although MTO is the entity responsible for an entire chain of logistics, in its implementation, MTO can divert some or all to the transportation operators such as transport trucks, train, river and ferry, sea and air transport. Each node of transportation and logistics in such a system must build multimodal transportation facilities physically.

4. Multimodal Freight Transport Advantages
Logistics is an indicator of the difference in the performance level of a company or country (macro context) in reducing costs and increasing productivity. In that context, multimodal transport has an important role. Multimodal transport leads to the adoption of integrated and door-to-door transportation systems.
Companies that do not use multimodal systems typically opt for commercial transport schemes like conventional CIF (Cost, Insurance, Freight) scheme and FOB (Free on Board) scheme, where only a few chain logistical transport operations are not door-to-door.

The advantages of the Multimodal Transport Operator (MTO) will be more pronounced when compared with other transport alternatives. For a company operating with a fleet of self-owned logistics and equipment, MTO will assume responsibility for fleet purchases, maintenance, financing, human resources training and the provision of infrastructure for logistic activities [16].

If a logistics operator is used, whether segmented or multimodal transport, upon hiring they will negate the need for investment and logistic activities will be categorized into transport service purchase. If the company has its logistics, operating costs will be borne by the company. If using the MTO, the operational costs will be divided by the MTO another customer. The greater the volume of cargo, the greater the apportionment of direct and indirect costs.

Differences of Multimodal Transport which is implemented by the MTO is a problem that can be mentioned the following benefits:

- Better Purchase and Contract
- Better Use of transport capacity
- Energy efficiency of their blend modes
- Better use of IT
- Benefits of scale of use;
- Better use of logistic infrastructure
- Gain MTO experience and the maintenance of the trade procedures
- Reduce overhead costs

5. Comparison of Multimodal Freight Transport Regulation in Other Countries
Some countries in the world has joined forces with several regionally agreement and other have set their own laws. Multimodal Transport in Germany and the United States are good examples. Germany has not promulgated a new regulation for Multimodal Transport. Instead, Germany streamlined all of their disparate regulations into one simplified, integrated body of regulation. The United States does not make specific laws for Multimodal Transport system but instead streamline the implementation of existing regulations effectively, supported by adequate infrastructure, proper transfer terminals and good national security [20].

| COUNTRY          | REGULATIONS                                                                 | APPLICATION                                                                 |
|------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Brazil           | Law 9611 of February 19, 1998 on Multimodal Transport of Goods.              | This regulation covers national and international multimodal transport.     |
| German           | Transport Law Reform Act, 1998                                              | This regulation applies to the multimodal contract for all nodes of cargo transport: road, air, water and, maritime. |
| United States of | The United States does not have a specific law on Multimodal Transport       | The US has an effective multimodal transport supported by adequate infrastructure, transfer terminals and good national security. |
| America          |                                                                             |                                                                             |

6. Multimodal Freight Transport Regulations in Indonesia
Referring to the UN Convention on multimodal transport "Multimodal Transport Convention" in 1980, the Indonesian government has planned regulations on multimodal transport. The first regulation on multimodal transport, the National Transportation Systems [21] promulgated in 2005, regulated Indonesia’s door-to-door transport. Indonesia also referred to the ASEAN Framework Agreement on Multimodal Transport (AFAMT) in 2000 in developing multimodal transport. Indonesia’s primary laws regulating multimodal transport are as follows:

- ASEAN Framework Agreement on Multimodal Transport (AFAMT) [21];
- National Transportation Systems (Minister Regulation 49/2005) [22];
- Article 147 paragraphs (1), (2), and (3) of Law 23/2007 on Railways, governing the integration of multimodal transport [23];
- Articles 50-53 paragraphs (1) and (2), Article 54, and Article 55 of Law 17/2008 on Sea Transport, governing the integration of multimodal transport [24];
- Article 182 paragraph (11) governing multimodal cohesion responsibility and Articles 187-191 governing multimodal transport of Law 1/2009 on Flights [25];
- Article 165 of Law 22/2009 on Road Transport, governing the integration of multimodal transport [24];
- Government Regulation 8/ 2011 on Multimodal Transport
-  

The implementation of multimodal transport is mandated by the regulations governing traffic and transportation (road, shipping, railways, and aviation). Law 22/2009 on Road Transport mandates multimodal transport in the following articles:

- Article 2 item h, stating that the traffic and road transport was organized with unified principles;
- Article 33, paragraph 1 states that for the smooth movement of people and goods with multimodal integration in certain place, it can be built and held terminals;
- Article 93 paragraph 2 point e stating that management and traffic engineering done by integrating various modes of transport;
- Article 165 paragraph 1 and 2, among others stated that public transport on the road which is part of a multimodal transport performed by legal body/entity of multimodal transport operator and implemented based on an agreement made between the legal entities of road transport and multimodal transport or legal entity of other modes.

Law 23/2007 on Railways mentions the integration of multimodal transport in the following:

- Article 2 point e stated that the railway is a part of the integral national transportation system was organized based on the principle of integration;
- Article 6, paragraph 3 states the order of the public railway must be integrated with other transport modes;
- Article 147, paragraph 1, paragraph 2 and paragraph 3 states among other things that rail transport can be part of a multimodal transport performed by legal entity of multimodal transport, and implemented based on an agreement between the organizers of railways facilities with legal entities or organizing multimodal transport and other modes.

In the Law 17/2008 on Sea Transport, multimodal coherence was mentioned in the following:

- Article 2, item g, stated that the cruise organized based on the principle of integration;
- Article 9, paragraph 4 point d, stating that the route network and common sea transport established based on the integration of intra and multimodal transport;
• Article 18 paragraph 4 states that the rivers and lakes transport activities prepared and conducted in an integrated way with due regard to intra and multimodal transport
• Article 22 paragraph 2 point t stated that the determination of crossing freight traffic carried by considering the sea transport route network to gain integration of transport
• Article 50-55 states that water transport can be part of a multimodal transport
• Article 68 item c said that the port has a role as a place of activity over the modes of transport;
• Article 96, paragraph 2, states that the development of seaports must fulfill attention to the integration of intra and multimodal transport.

While in Law 1/2009 on Aviation regulated multimodal alignment:
• Article 123, paragraph 2, which states that the route network and flights abroad, among others, pay attention to the integration of intra and multimodal;
• Article 182, responsibility to multimodal transport;
• Article 187-191 states that air transport can be a part of a multimodal transport, and implemented based on an agreement made between the enterprises of air transport and multimodal transport entity or entities other modes;
• Article 194 states that the airport has a role as a place of activity over the modes of transport;
• Article 214 states that the construction of airports should consider the integration of transport

Internationally Indonesia has ratified ASEAN’s Framework Agreement on Multimodal Transport so that the multilateral agreements, this considered as to strengthen legal basis and step the implementation of the multimodal freight transport in Indonesia.

Here is a detailed explanation of the implementation of multimodal regulation in Indonesia:

| Regulation | Mandate | Progress in the Implementation |
|------------|---------|-------------------------------|
| Government Regulation 8/2011 About Multimodal Transportation | Development of Multimodal Transport Operator (MTO or BUAM) and Preparation of STC (Standard Trading Center) | None of logistic provider has requested MTO permission yet. In the case of transport documents, intermodal transport in Indonesia also has not used a single document. Each mode of transportation in general still uses its own transport documents that are not yet integrated with other transport documents, so the responsibility of the carrier is often unclear. In addition to this, the process of completion of the document is relatively long because it is still done manually, so it tends to inhibit the smooth flow of goods. |
| Regulation | Mandate | Progress in the Implementation |
|------------|---------|---------------------------------|
| Transportation Minister Regulation 8/2012 on the Implementation and Undertaking of Multimodal Transportation | Order documents, Facilities and Infrastructure Multimodal Transport Operator (MTO/BUAM) | The purpose of multimodal transport is to realize one stop service with single operator-tariff-document for freight transport. Logistic Actor No one has used port railway service in Tanjung Priok Port even though it has been developed, the motive and cost rationality. Lack of commitment from cargo companies to use the hinterland service under development (railway from port to hinterland), so the volume is not reached so that new channels cannot be sold beyond the minimum volume limit. Logistic actors do not have sufficient means of information to coordinate. The most generally relevant coordination issue between rail and truck transport is the inadequate exchange of information and coordination between the Shipping Line Container, the Port Operator and the rail transportation company. |
| Law and Human Rights Minister Regulation 20/2013 on the minimum terms and conditions of service (Standard Trading Conditions-STC) in the Multimodal Transportation Field. | STC is a reference and guidance in the preparation of multimodal transport documents. | In the process of transporting responsibility still resides in each segment / section of transport activities, because the existing legislation cannot yet cover all aspects of the responsibility of the parties involved in the transport chain, or if there is often not enough clear so sometimes giving rise to different interpretations / conflicts. This is partly evident from the fact that there are two main constraints still in place, namely sole responsibility and the use of one transport document (single document). |
| Regulation of Port Authority UK 112 On Procedures of Shipping and Handling [26] | These government regulations are issued to support the national logistics system through the presence of multimodal transport of goods and services in operations in various modes. Multimodal transport supports business entities in carrying out multimodal transport activities that may cooperate with road, crossing, railway, shipping, or aviation business entities. | |
| Transportation Minister Regulation 49/2005 on National Transportation System (Sistranas) | | |
| Law 22/2009 on Road Transport: inter-mode road connections is arranged in the fifth section of the multimodal transport of Article 165. | | |
| Law 17/2008 on Sea Transport arranged in the tenth section | | |
| Law 1/2009 on Aviation that specifically regulates the multimodal pattern in paragraph 11 | | |
| Law 23/2007 on Railways, especially in article 147 | | |

### 7. Analysis

Regulations mentioned above demonstrate that there are legal frameworks in play when it comes to multimodal transport. When it comes to implementation, however, the pace is still very slow due to two aspects: quality of regulation/institution and quality of implementation.

Indonesia does not have a good implementation of multimodal freight. Despite having regulations on procedures for the transportation of multimodal goods, field implementation of these regulations
and procedures has not been strong enough. At the same time, there is access problem for multimodal transportation, such as when goods are unloaded at Tanjung Priok Port, the subsequent access of goods transport is only via road. Due to limited road traffic capacity, Tanjung Priok Port congestion, and this happens despite the government regime change. Access to existing port railways is not yet effective even though rail lines are available, so there is no alternative to increase the effectiveness of the distribution of goods unless it still rests on the trucking mode. In addition, access from the Tanjung Priok Railway is still not accessible directly to the container yard from and to other stations, for example, Gede Bage Bandung, causing any goods transfer to undergo through two customs handling. In addition, there are still inadequate transit warehouse, both at port and at sea port.

Besides the difficulty of achieving equality in the regulation based on what has been established, there are regulatory barriers to making more effective multimodal transport in Indonesia.

1. **Multimodal transport operator regulation**
   - In Indonesia, no one has requested permission to become MTO/BUAM. There is a problem of motivation and perception of the regulation, which is considered complicated. Besides, there is still conflict of interest motivated by economic factors, resulting in very low motivation to use railway as end container shipping. Ultimately, the use of the railway is under review by the maritime minister and find a development strategy.
   - These situations encourage inefficiencies in logistics, where the transportation is done by issuing many documents (and a lot of layers of bureaucracy).
   - Standardization and compatibility of multimodal traffic increasingly as important role. The key to the smoothness of multi-modal transportation is the compatibility between transport modes, ranging from liners, container handling equipment, to the transporter truck. This compatibility should also apply to rail and air transport, and even inter-trucking so multi-modal transportation really can be run efficiently.
   - Preparation of legislation and policies on multimodal through optimization policy making role dry port existing (Gede bage, Rambipuji, Solo Jebres, and so on) as the terminal multimodal, standard setting units and dimensions to improve the efficiency of transportation equipment and facility operational support multimodal transport and logistics, the review and preparation of guides and standardization in order to realize compatibility of conveyance and operational support facilities multimodal transport and logistics, as well as policy formulation development / construction of multimodal terminal and logistics centers.

2. **Actor perception and information regarding multimodal transport logistics**
   - Perceptions of multimodal transport for logistic actors have not been well established. In using the service, only few logistics actors who use railway logistics service from Tanjung Priok Port to Cikarang Dry Port since when it was developed. The use of the train (to Cikarang Dry Port) which has been operated earlier this year but is still not effective, it is because the mode of the truck is still competing with this railway mode. The theory expressed by De Langen in 2008 [28] also elucidated a lack of commitment from the freight company to use the services hinterland are being developed (train from the port to the hinterland), so that the volume is not reached so that this new logistics channel cannot be sold because the limits the minimum volume.
   - Logistic actors do not have sufficient information tool for coordination. Ministry of Transportation has to propose a multimodal transport operator and coordinate with many actors including cargo owners, shippers and 3PL.

3. **Tax incentives**
   - Other barrier to using multimodal transport is as a matter of tax incentives or cost. There is no clear distinction between using a multimodal transport with unimodal. In multimodal transport, cargo transported by multiple modes, before it reaches its final destination, there are a few differences in the rules between each mode in terms of tax collection, in this case
more burdensome taxes train users. Train use would incur charges imposed on providers amounting to 30-40 percent of the operating cost. This charge is categorized as a state revenue outside of tax set by the Ministry of Transportation. Train use would incur net cost of approximately IDR 5.5 million per 40 feet container while truck use incurs IDR 4.4 million per 40-feet container. That train is more expensive because of this non-tax charges.

4. Dispute resolution
The formulation of the responsibility of the parties in the port of goods involved in multimodal transport are still unclear and thus potentially lead to conflict, despite the provision of the Civil Code. Claims for compensation on goods transported by land transport modes in practice difficult to solve satisfactorily, especially in trucking.

5. Infrastructure policy aspects
The existing transport infrastructure in Indonesia is an obstacle to the integration of different transport modes. Transportation of goods (logistics) in Indonesia is still dominated by road transport, these conditions lead to frequent traffic accidents and the rise in road damage. It is not based on considerations of the territorial dimension of the Indonesia as archipelagic country. Bappenas [29] reported the largest proportion of about 84.1 percent was served by a road mode, as shown railroad serves only about 7.3 percent of the national transport market, the mode of sea and air modes respectively serve only 1.8 percent and 1.5 percent. The figure 2 below, shows the transportation proportion in Indonesia.

Indonesia's transportation operation is inefficient, one of the main causes is the high economic costs, mainly driven by: (a) multimodal load irrational, resulting in excessive burden on the road network and the development of other transport modes, (b) transportation infrastructure conditions that have worsened due to the economic crisis have led to declining service performance, (c) multimodal transportation does not run perfectly, mainly because of the lack of interconnection between modes, operation management is not optimal, and support systems are inadequate, and (d) role-sharing between modes.

![Figure 2. Transportation Sector Participation in Indonesia.](image)

The image above shows the portion of transport in some countries. The development of multimodal transport is to develop an effective operation of multi-modal transportation network that connects the logistics node, and the smooth transport accessibility of basic and strategic commodities as well as the leading commodity export in each economic corridor to an international hub like the Tanjung Priok Port.
8. Conclusion

This paper assesses the implementation of multimodal transport in Indonesia by examining the case of Tanjung Priok Port from the regulatory and institutional perspective. The analysis finds out that there are still some impediments and issues to implement the concept. The reasons are, among others, (1) that the existing regulations are not strong and encouraging enough and (2) there is no dedicated institution that is able to fix complicated problems with multimodal transportation, a problem that involves many actors such as port managers, port authorities, governments, logisticians, and logistics service providers. In addition to involving many actors, referring to best practices in other countries, multimodal transport actually combines aspects of the transportation system, the type of mode provided by logistics service providers, business decisions of logistics actors, regulations and coordination between the actors. Of course, the latter need to be underlined, that the coordination aspect needs to be intensified between various public and private sector actors, through various platforms and ways, so that an efficient multimodal system can be implemented.

In improving the performance of multimodal transport that has not been implemented yet, there are several actions to be taken:

- The development of multimodal transport network and logistics centers to improve the smoothness of freight traffic from the production center to the outlet-inlet import-export, through standard-setting unit and dimensions to improve the efficiency of transportation equipment and facility operational support multimodal transport and logistics, development of guidelines and standards in order to realize compatibility of transportation equipment and facility operational support multimodal transport and logistics, and the development / construction of the terminal multimodal and logistics center.
- Mapping functions and roles of the stakeholders in the development of multimodal transport and empowerment strategies and the strengthening of the respective businesses that handle or related to multimodal transport.
- Standardization of procedures and legal guidelines for the formulation of responsibility, particularly in resolving disputes.
- Formulation of the application of relevant tax exciting multimodal transport service providers and users; Build incentive fees
- Assign roles and competitive conditions of different modes in order to create fair competition;
- Improve coordination between stakeholders can be strengthened through a specialized institution that handles multimodal transport
  - Creating an attractive investment environment in the field of multimodal transport;
- Improving the management of the legal, institutional and economically more efficient flow of goods, with the continuous updating of procedures, reducing the execution time and bureaucracy in the port. Multimodality is dependent on the efficiency of the use of multiple modes and combinations of modes that ultimately aim at reducing transport and logistics costs. Overall door-to-door integration runs to reduce costs and optimize the flow of goods. Multimodal transport must be implemented in the shortest time by taking action to eliminate legal obstacles and accelerate the construction of multimodal infrastructure, especially from the investment side.

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