

Port Cluster Strategy to Face Challenges at the Port of Belawan

By

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Brief Summary:

As the fact that the Indonesian total logistic cost, 15% from the value of the goods, is relatively higher than the average total logistic cost in Asia, 4-10%, Indonesian ports have been recognized as a bottleneck in the entire logistic chain. Thus, one way to solve this problem is by accelerating the development of ports in Indonesia. This action has been started by the introduction of a new shipping act number 17 in 2008, by which there will be a clear distinction of responsibilities between port operator and port authority. This act, off course, will change the entire Indonesian port system by involving private sector in port investment and by allowing competition in the port.

With response to that, the port of Belawan, as one of the vital port in Indonesia, has been appointed to be developed in such a way so that it can facilitate the trade flows in its region. One of the ideas for this development is to create this port to be a hub port in the western part of Indonesia due to its geographical proximity to the Malacca Straits.

Therefore, this paper is written to provide an insight for the new established authority and the incumbent port operator, Pelindo-1, on how the port of Belawan should be developed and what the challenges has to face. As a result, the port can be developed properly to reach its optimal solution. Additionally, in this paper, the author elaborates on how port cluster strategy can be positively applied in the port of Belawan resulting an increase in port productivity as well as safety and efficiency.

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List of Abbreviation

BPS	: Biro Pusat Statistik or Indonesian Statistic Bureau
GT	: Gross Tonnage
IMF	: International Monetary Fund
MLWS	: Mean Low Water Spring
Pelindo-1	: Pelabuhan Indonesia I or Indonesian Port Corporation I

Introduction

As an archipelago country, ports in Indonesia obviously play a vital role to facilitate both international and interisland trade. One of the important ports in Indonesia is known as the port of Belawan which is located at the north-western part of Indonesia as shown at figure 1, handled nearly one-fifth of Indonesia's port throughput.

Figure 1: Port of Belawan



The port of Belawan was developed in 1890¹ during Dutch colonialism for handling tobacco and was recognized as the largest Dutch East Indies' port in 1938, known as Haven Bedrijf. However, due to changing in demand from its hinterland, this port has evolved to be a multipurpose port handling variety of cargo. And, since the containerization has become more important, in 1989 a container terminal was built and it stands to become a major cargo in this port. Nowadays, this port is managed and operated by Indonesian Port Corporation I (Pelindo-1) which is a state-owned company focusing on port operation and services.

From its history, it is witnessed that the evolution of this port has mainly been driven and shaped by its cluster which involves all its stakeholders. Thus, in author's opinion, the port cluster needs to be considered in developing a port. A port and its cluster are interdependent one to the other. In few words, the port cluster might benefit as well as challenge the port for its continuity. Therefore, this paper will elaborate more on three main aspects:

- 1) Identify in depth on what are and will be the challenges of the port of Belawan;
- 2) Analyse how strong a port cluster affects the port and its development;
- 3) Twist the challenges to be the opportunities of the port of Belawan by providing some solutions.

¹ Port of Belawan, North Sumatra [accessed 26 September 2011].
Available from: <http://www.portoftacoma.com/page.aspx?cid=509> and
http://www.worldportsource.com/ports/IDN_Port_of_Belawan_217.php

Port of Belawan profile

As any other Indonesian ports, port of Belawan is facing several challenges to meet with an enormous trend in port and logistics. It occurs due to the fact that this port is a natural port having limited water depth and was not actually designed for handling larger vessels as required nowadays, as for example is its fairway which only has 9.5 m water depth and 100 m in width. In few words, there will be several geographical constraints for this port to meet with the newly designed vessels as described in table 1.

Figure 2: Port of Belawan Layout²

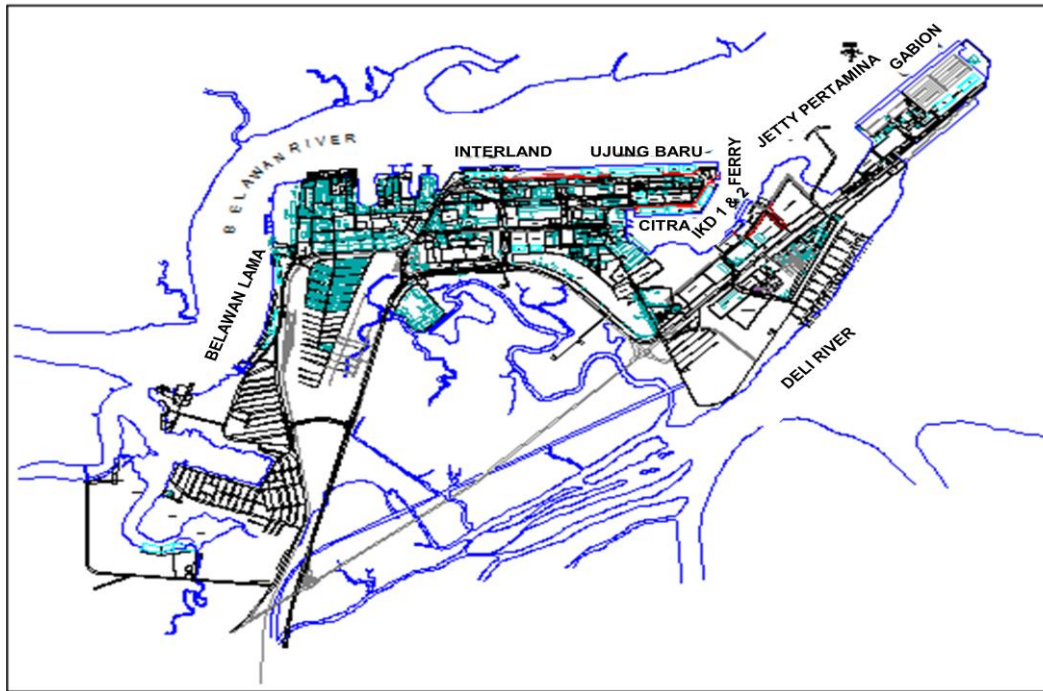


Table 1: Port of Belawan Infrastructure³

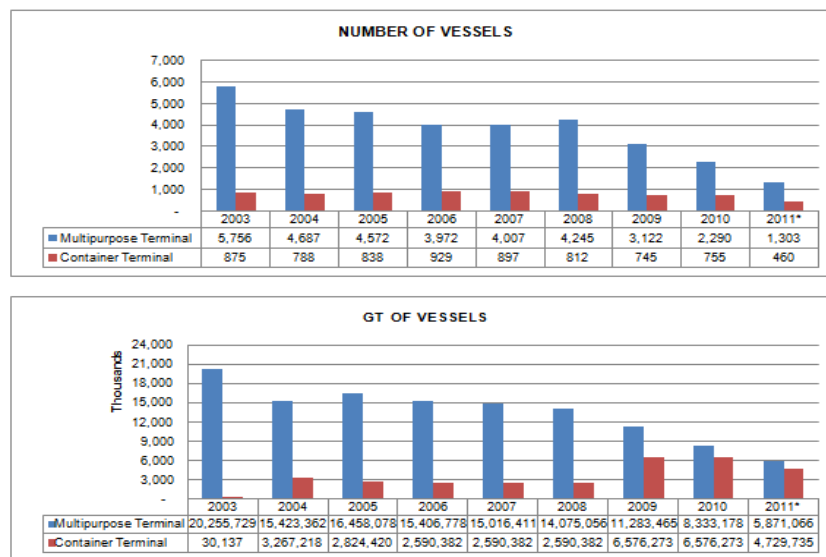
Description	Quay length	Water depth
Belawan Lama	688.7 m	4-8 Mlws
Ujung Baru	1555.8 m	6-12 Mlws
Ferry Terminal	115 m	10 Mlws
Citra	625 m	6 Mlws
IKD I	150 m	6 Mlws
IKD II	150 m	3 Mlws
Domestic Container Terminal (Gabion)	400 m	9-11 Mlws
International Container Terminal (Gabion)	550 m	9-11 Mlws
Oil jetty (Jetty Pertamina)	-	10-12 Mlws

These sort of restrictions obviously affect the number and type of vessels entering the port, influencing the performance and productivity of the port. From facts, as can be seen in the figure 3, number of vessels entering the port is facing a decline trend at its multipurpose terminal while a relatively steady trend with larger vessels, as the fact that GT shows an upward trend, at its container terminal. So, it is witnessed that shifting in carrying cargo from conventional to containerized cargo also occurs in this port.

² Technical Department Pelindo-1 branch of Belawan, 2011

³ Technical Department Pelindo-1 branch of Belawan, 2012

Figure 3: Vessel statistics at Port of Belawan⁴



In terms of management, this port was managed and operated by Pelindo-1 although it has been changed since 2008 with the introduction of a new port and shipping act number 17. This act has classified two main functions in the Indonesian port management model, changing from tool port to landlord port concept, by which there will be an established authority who is fully governmental body functioning as a regulator and terminal/port operator who will run the port/ terminal under concession agreements. The operator might be either state-owned companies such as Pelindo-1 or fully private companies. By launching this new act, it is expected that the acceleration of Indonesian port development can successfully be achieved. Consequently, not only will the total logistic cost in Indonesia be minimized but also Indonesian economy growth be triggered.

Apart from that, to analyse and assess a port, it is important to look at the port as a system which is strongly depending on its hinterland and foreland. The development in its hinterland and foreland will positively influence the development of a port. As a main gateway in the north-western part of Indonesia, the port of Belawan serving several provinces in Indonesia such as North Sumatra, Aceh, Riau and Riau Islands, etc, in which agriculture, forestry, and mining are the major commodities produced. Furthermore, from this port, around 10 km away there is an industrial area for giving added value to raw products either from local or coming from outside the area such as spareparts of machinery, etc. These all commodities are majority transported by road to and from the port. Thus, if this port could not be developed to be a transshipment hub, it is wise to underline the development strategy of this port on the growth of its hinterland and foreland. Hence, the port will function as the main gateway.

What are and will be the challenges of the port of Belawan ?

As partly being elaborated in the port of Belawan profile, in author's opinion, followings are and will be the main challenges of the port of Belawan:

A. External challenges

1. The trend of increasing vessel size with the cutting-edge technology, especially for container vessels to minimize the unit cost by gaining as much economies of scale as possible, puts a lot of pressure for the port to be developed since it was not designed for that purpose;

⁴ Pelindo-1 vessel traffic data, 2012

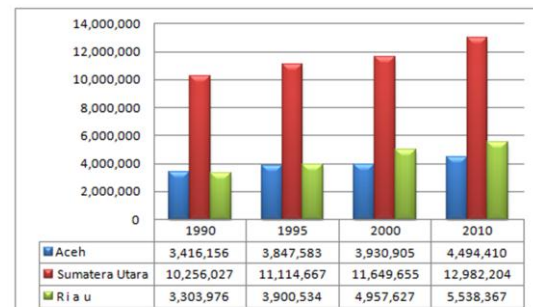
- The economy and population growth both in its hinterland and its region, as can be seen in figure 4 and 5, will also require the port to be developed to facilitate the trade flows.

Figure 4: Historical Indonesian GDP Development 2001-2012



Source : IMF

Figure 5: Historical Hinterland Population Growth 1990-2010



Source : BPS

B. Internal challenges

- The scarcity of land and water area. The former occurs due to the fact that the port has proximity to living areas where people are not fully aware of the importance of a port. Additionally, this port is also having limitation of working area because it stands on territory of city of Medan and borders to Deli Serdang regency. Meanwhile, the latter should also need to be considered to ensure safety in port operation as the fact that the port has limited width and depth in its fairway and basin;
- The geographical constraints due to its location which is not only in the estuary but also in the meeting point of two rivers, Belawan and Deli river. This adds up to another factor to be considered;
- Although currently surrounding people are not fully aware of the environment, in author's opinion, these environmental impacts need to be seriously taken into account in planning a port development. Otherwise, a port development project such as dredging works will harm the ecosystem;
- The institutional and financial problems leading to confusion who will take care this enormous investment for upgrading the port. This aspect should be engineered in such a way to govern a level of playing field in the port of Belawan.
- The level of vertical and horizontal competition in the port which will give a dynamic force for the port to be developed. Otherwise, the port users might shift their port of call.

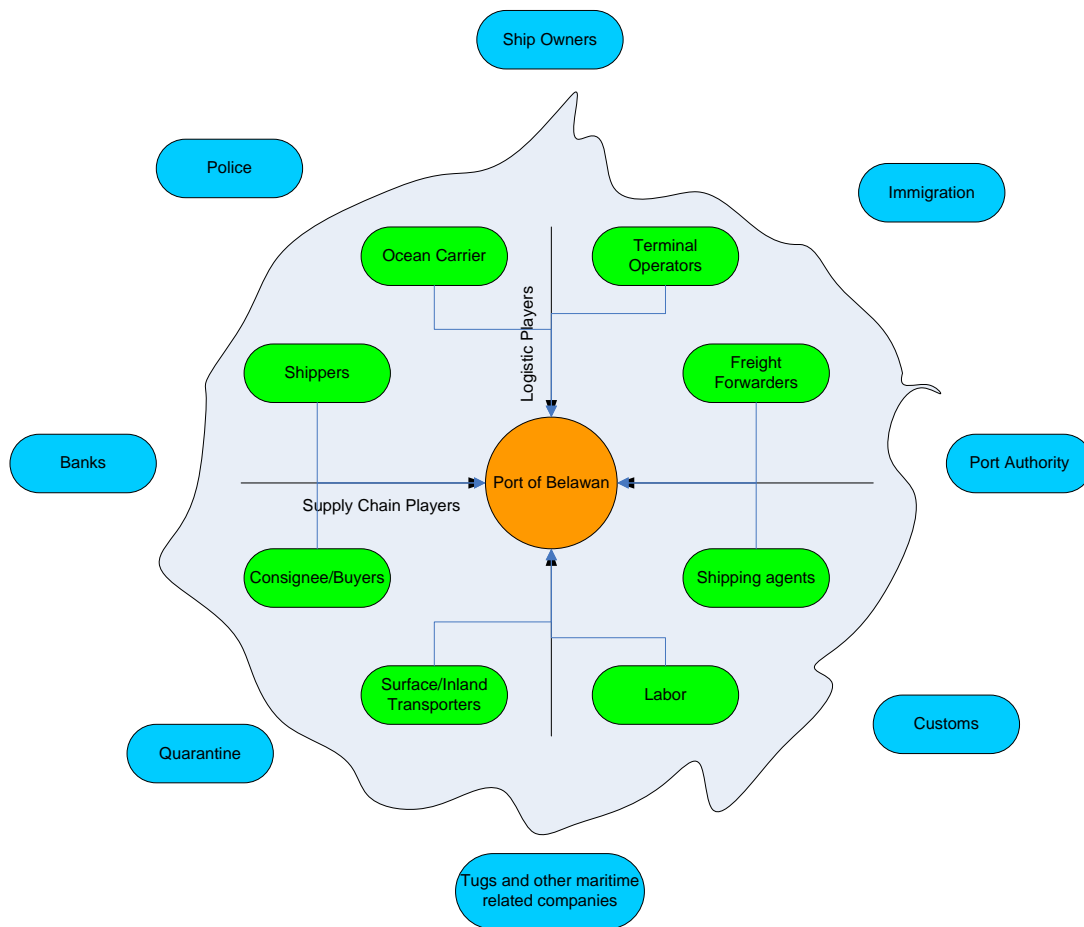
What are the solutions of the port of Belawan ?

To overcome those mentioned challenges, these are several solutions offered as follows:

A. Strategy marketing (Port Cluster Strategy)

Since the port has lots of stakeholders involved, in author's opinion, the "port cluster" strategy is the best action to be taken when drafting a marketing strategy of the port of Belawan. In this strategy, the idea of port competition and collaborative relationship appears. Having defined a port cluster, the role and interest of each parties can be identified. This will provide a better understanding of managing a port. By doing so, the new established authority can strengthen the port profile internally while at the same time will be able to compete externally.

Figure 6: Port of Belawan Cluster⁵



Looking specifically at the port of Belawan profile, in author's opinion, the best visionary approach of the port is to be the main gateway instead of a transshipment hub, which is very important to state. Otherwise, the investment spent will not properly result in the optimal port development. This stands to reason when looking at lots of geographical constraints it has, requiring an enormous fund available.

Nevertheless, the port performance and productivity can still be improved by establishing a smooth operation in the entire logistic chain. So, cooperation and competition are key factors in its marketing strategy. It means that on one hand, the port management should cooperate with both local government and private sectors to build an inland access connectivity and a distribution center outside the port area in which cargo can be transferred and dwelled. On the other hand, the management should establish a level of competition in the port area by allowing more than one terminal/port operators. So, the handling activities can be accelerated as well as the burden of financing can partly being shifted. Afterwards, the involvement of surface or inland transporters is also playing a vital role as part of the chain.

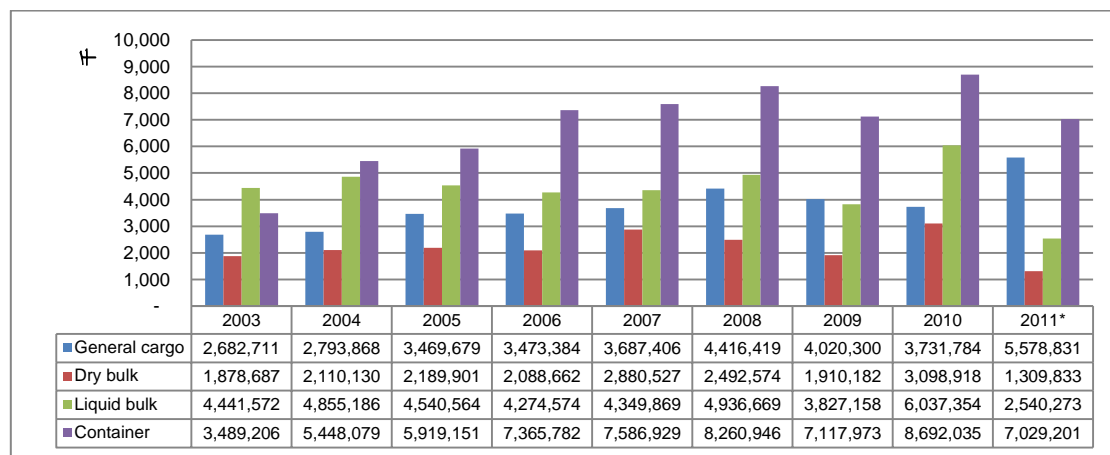
B. Infra and Suprastructur Improvements

Having identified its cluster and defined its strategy in facilitating the trade flows, then several infra- and supra-structure improvements can be executed such as:

⁵ Author's elaboration

1. Deepening the marine infrastructure such as port basin, turning basin, fairway, etc to be able to accomodate safely larger vessels entering the port, has to be done, taking into account the environmental aspects. So, the environmental impact assessment should be conducted in advance. Moreover, providing clear aids to navigation such as bouys, lights and communication channels is a must to ensure safety in operation.
2. Since the container cargo shows an upward trend in the port and is counted as the main cargo in the port of Belawan, as shown in figure 7, the extension of container terminal should be done including its container yard and handling equipments to speed up the operation.

Figure 7: Cargo at the Port of Belawan⁶



C. Safety, Productivity and Efficiency

A port development should not only focus on having as much traffic as possible. Yet, in author's opinion, the increase in port productivity should be in line with the increase in safety and efficiency.

The state of art to do so is to establish a better operational and management system in the port. Indeed, the role of information and communication technology plays a vital role. The key actors in the port cluster should be able to interact one to the other by means of clear communication. For instance, a vessel shall be obliged to provide information of its arrival or departure 24 hours in advance. By doing so, all required assistance to ensure safety in operation can be well-planned such as tugs, pilotage, etc.

Conclusion

From the port of Belawan profile, challenges and proposed solutions, we can see that a port nowadays has become a more dynamic industry. It occurs due to the globalization in trade and logistic sectors, demanding the port to be developed.

This trend has shaped a port, like Belawan, in such a way to be an active part in the logistic chain. Therefore, the collaborative relationships and competition should be underlined in its strategy. In author's opinion, the best approach for Belawan to be able to face current and future challenges is the port cluster strategy by defining the logistic and supply chain actors. Eventually, the optimal port development can successfully be achieved.

⁶ Pelindo-1 Cargo Traffic Data, 2012

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