

## Port of Batam Revised: Options In The Middle of Policy and Market Dynamics

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### Abstract

*Despite having similar inherited factors such as strategic location doesn't make the Port of Batam to have similar performance and capability like its neighbouring ports in Malaysia and Singapore. This study explores the possible options for Port of Batam in the middle of market and policy dynamics for ports in the Malacca Strait. This study uses a combination of competitive advantage of the nations, market rivalry, and resource based theories to understand the phenomenon. The study develops several options based on main resources such as land and water area. There are several business opportunities in the water area such as ship to ship transfer and anchoring business. Port of Batam may also look at the terminaling opportunity on the water, i.e. by implementing the floating container, storage, and transshipment terminal (FCSTT) concept along with the implementation of the same concept in the form of floating, storage and offloading (FSO) for the liquid and gas cargo, thus tapping the oil transfer market in the Malacca Strait as well.*

*Keywords: port of batam, malacca strait, sea port business, transshipment, floating container terminal*

### Abstrak

*Pelabuhan Batam memiliki faktor warisan lokasi strategis yang sama seperti pelabuhan di Malaysia dan Singapura, namun tidak membuatnya memiliki kinerja dan kemampuan yang sama dengan para tetangganya tersebut. Studi bermaksud mengkaji opsi-opsi yang tersedia bagi Pelabuhan Batam di tengah dinamisnya kebijakan mengenai pelabuhan di Selat Malaka maupun dinamika pasar di kawasan tersebut. Penelitian ini menggunakan kombinasi pendekatan keunggulan kompetitif negara, persaingan pasar, maupun perspektif sumber daya internal untuk memahami persoalan yang terjadi.*

*Serangkaian opsi berdasarkan sumber daya utama berupa lahan dan area perairan menjadi pilihan yang mungkin bagi Pelabuhan Batam untuk melangkah ke depan. Potensi besar di kawasan perairan membuat Pelabuhan Batam bisa memasuki berbagai peluang bisnis di perairan seperti alih muatan antar kapal (ship to ship) dan parkir kapal (anchoring). Potensi lainnya adalah peluang bisnis terminal di air, dengan mengimplementasikan terminal apung untuk kontainer, penimbunan, dan transshipment, yang memiliki konsep implementasi yang sama dengan terminal apung untuk muatan cair dan gas, sehingga juga bisa menangkap pasar alih muatan minyak di Selat Malaka.*

*Kata kunci: pelabuhan batam, selat malaka, bisnis pelabuhan laut, transshipment, terminal apung*

## 1. Introduction

Port of Batam, despite its strategic location in the Malacca Strait as one of the busiest sea lanes in the world, only capture a small amount of approximately 50 TEUs of cargo passing by the strait (Komiss & Huntzinger, 2011). While its neighbours, the Port of Singapore and Port of Tanjung Pelepas (Malaysia) has reported the ability to serve 32 million TEUs and 6.2 million TEUs per year respectively, the maximum capacity of Batu Ampar Port (the biggest dry port in Batam) is only 230.000 TEUs per annum (Silalahi, 2011). That is not even sufficient to serve the need of Batam's own local industry, yet talking about capturing the business opportunity at the Malacca Strait that is estimated will reach 80 million TEUs in 2015 (Silalahi, 2011). Future development in Batam area will increase the capacity up to 4.8 million TEUs, still far below the possible business opportunity in that busy strait.

Porter (1990) analyse why particular industries flourish or decline in particular locations and how competitive advantages help a nation achieve international success. Porter develop the model for national competitive advantage (the "Diamond Theory"), which comprises four determinants of national competitiveness (Productive Factors, Demand Conditions, Related and Supporting Industries, and Firm, Strategy, Structure and Rivalry) and two variables (variables Government and Chance). While the Chance variable (that also correlates with the Demand Conditions) is relatively clear, the Government variable is the becoming the source of uncertainty in determining the strategy for Port of Batam.

The island initially is positioned as the oil storage and bunker place for state-owned oil company, Pertamina. The purpose is as the intermediary place to facilitate the oil trading in and out of the country. The port business in that area is mainly to serve that purpose. When Batam transformed as the industrial area, along with its free trade area facilities in the mid 1970s, there was a shift toward transshipment business and vessels anchoring. Another shift has been made in mid 2000, going back to the focus the port as facility and utility to increase foreign investment.

Under the draft of national port master plan (IINDI, 2010), Batam is positioned as the international hub for sea transportation in the West. Its premium location is the main reason for this decision. But under the Presidential Decree No. 32/2011 on the Master Plan for the Acceleration and Expansion of the Indonesian Economy 2011-2025 (known by its local abbreviation, MP3EI), the government plan to build a new port in Kuala Tanjung (North Sumatera) as the new international hub. In 2012, The Batam Free Zone Authority signed a Memorandum of Understanding with state owned company Pelindo II to establish a new port at Tanjung Sauh, just a stone throw from Kabil, to capture the traffic at the Malacca Strait (Hussain, 2012).

This study wants to explore the possible options for Port of Batam to capture the market opportunity, despite it faces the policy dynamics on its position as the international hub in the Western part of Indonesia. The ability to provide ample supply to meet the demand in Malacca strait compare to its closest neighbours (Port of Singapore and Port of Tanjung Pelepas) is also the immediate business challenge for Port of Batam. Several studies that correlates the Government policy variable in the transport industry put the policy as clear and deterministic in defining how the ports will compete in the region (Arbak, 2010; Gordon et al., 2005; Subhan & Gani, 2008; Wang & Hong, 2011). Port of Batam has its uniqueness since it has limited capacity and ability to meet the market demand and has to work in the more dynamic political environment.

This exploratory research will try to elaborate the possible options for Port of Batam to resolve the capacity problem, in order to capture the market in Malacca Strait based on its limitation both in term of resources and its ability to influence the national and regional policies. Several interviews and literature studies will be used to explore and analyse the situation. The research will put more focus on the Productive Factors in the Porter's diamond. Previous researches (Gordon et al, 2005; Subhan & Gani, 2008; Magala, 2004) have acknowledge the importance of internal factors (or resources) as the main determinants for the competitive advantage in port business.

An elaboration from the perspective on the required resources (Dierickx & Cool, 1989; Barney, 1991; Rumelt, 1991; Hamel & Prahalad, 1994) to compete will also be made to analyse the lack of resources problems being faced by Port of Batam. The market rivalry will be described using the classical Porter model (Porter, 2008). An appreciative reflection on the resource availability then will be used to determine the way forward for Port of Batam. The reflection will use insights from Levitt (1960) to look at over the window, not the mirror as well as Hamel (1999) to look and learn outside the port industry. Port of Batam could reflects on what happened across industries, strategic groups within port industry, chain of buyers, as well as complementary product and service offerings as suggested by Kim & Marbougne (1999).

As of an exploratory study, this research has the risk of too general or too specific that may not be able to determine the possible solutions for Port of Batam. The use of Resource Based View that is used in various studies on port competitiveness may often be criticised as too inward looking and not capture the external dynamics. This study try to overcome this risk by combining it with the external analyses in both the policy and market dynamics. As Barney (2001) has emphasized, that the RBV concept often misunderstood. It complements the Porter's framework in order to unveil the complete black box (Barney, 2001). The limited number of quantitative data hence make the result is limited in term of quantitative recommendations.

## 2. The Policy and Market Dynamics

There are several political, economics, and legal context that is relevant for Port of Batam, such as cabotage principle and national logistics blueprint that are supported by the relevant laws and regulation as well. Some of the economic, social and environmental concerns also addressed in the studies on port development and containerisation in the region (Syaffi & Kuroda, 2004; Ueda et. al, 2005; Tan, 2007; Lee, et. al, 2008; Lee & Ducruet, 2009; Arbak, 2010; Yang et. al, 2011). Studies on resource-based perspective of the port business by Gordon et.al. (2005) and Subhan & Gani (2008) has elaborated the

role of technology for Port of Singapore and Port of Tanjung Pelepas respectively. The overall PESTEL context for Port of Batam is depicted in Figure 1.

<p><b>Political</b> Domestic orientation as reflected in the cabotage principle, MP3EI, and Pendulum Nusantara. The decision to put the international hub National Transportation Strategy National Logistics System Blue Print National and ASEAN Single Window MoU between BIFZA and Pelindo II to develop the new port in Tanjung Sauh. Past decision to put port as "utility"</p>	<p><b>Economic</b> The significant role of Malacca Strait in world's transport system The increasing trend of goods flowing in the Malacca Strait The increase of containerisation and transshipment hubs The increased capacity of ports in the region Sea transport is still the most economical way to transport bulk cargo (dry and liquids)</p>
<p><b>Social</b> National aspiration to self-transport incoming cargo (cabotage principle) and increasing the traffic in the interior sea lane for logistical efficiency. Faster transfer of cargo versus the choke-point at Phillips Channel in Malacca Strait Ship to ship transfer and anchoring aspiration. Marine Electronic Highway for Security in Malacca Strait</p>	<p><b>Technological</b> Technology-driven efficient cargo handling Vessel Traffic Monitoring Systems Technology integration with logistics systems, customs clearance and other trade facilitation systems Port security technology</p>
<p><b>Environmental</b> Environmental concerns on the impact of busy traffic in the Malacca Strait Environmental concerns on the risk of accident occurring oil tankers in the Malacca Strait Initiatives such as Marine Electronic Highway for Environmental Management and Protection, Safety and the Control of Pollution, and Marine Pollution Control in Malacca Straits The need to regularly clean and do the maintenance for oil tankers</p>	<p><b>Legal</b> Cabotage principle as set in the Shipping Law No 17/2008 Type of business in the port as set in the Shipping Law No 17/2008 Government Regulation No. 46/2007 on Batam Free Trade and Free Ports Area as amended with the Government Regulation No. 5/2011 Minister of Transportation Decree No. 330/2009 on the Free Ports in Batam, Bintan and Karimun. Working Area in the Port of Batam Master Plan as set in the Ministry of Transportation Decree No. 77/2009</p>

Figure 1. The PESTEL contexts for Port of Batam

From the context of the market rivalry, the imminence appearance of Tanjung Sauh as well as Kuala Tanjung as the new entrants as well as the existence of ship to ship transfer in the transshipment business will definitely increase the bargaining power of both the buyers and suppliers. On the other hand, the capacity expansion of Port Tanjung Pelepas and Port of Singapore will also increase the existing market rivalries. From the capacity perspective, Port of Batam could only gain a very minor share on the 50 million TEUs of traffic in the Malacca Strait, i.e. only 0.46%. Even the quadruple expansion at the North Dock of Batu Ampar will marginally double the ability to serve the increased traffic in the Strait. A combination with Tanjung Sauh will make Batam get 6% of shares, still far below Port of Singapore and Port of Tanjung Pelepas.

Both ports are predicted to lose small amount of shares in the future. Compare to those two ports, currently Port of Batam only has 0.72% and 3.71% of the capacity of Port of Singapore and Port of Tanjung Pelepas, respectively. The increased capacity in Batu Ampar will improve the proportion into 1.60% of Port of Singapore and 8.42% of Port of Tanjung Pelepas. Only the future combination of Batu Ampar and Tanjung Sauh will drive up the proportion into 9.60% and 50.53% respectively. But since the market itself will grow 60% from 50 million TEUs to 80 million TEUs in the upcoming three years, there are still lots of opportunity to pursue. Figure 2 provide the compilation of the market rivalry situation in the region.

	Current		Future (2015)	
	Capacity (TEUs)	Share	Capacity (TEUs)	Share
Traffic in Malacca Strait	50,000,000		80,000,000	
Port of Singapore	32,000,000	64.00%	50,000,000	62.50%
Port of Tanjung Pelepas	6,200,000	12.40%	9,500,000	11.88%
Batu Ampar Port	230,000	0.46%	800,000	1.00%
Tanjung Sauh Port	-	-	4,000,000	5.00%
Other	11,570,000	23.14%	15,700,000	19.63%

Figure 2. Shares of Traffic in the Malacca Strait

Note: Capacity and traffic data as presented by Huzair, Deputy Director of Bank of Indonesia, Batam Office, as quoted from Silalahi(2011). Kuala Tanjung is excluded, only involved ports around the Singapore Strait.

The Port ability to compete could also be determined by the availability the required resources. Study by Magala (2004) shows that port resources that can be beneficial for growth are better logistics, good transport networks and intermodal arrangements, available land for expansion, skilled labours and managerial talent, efficient cargo handling and storage facilities, and effective configuration of supply chains. Previous works by Gordon et.al. (2005), Subhan & Gani (2008) and Arbak (2010) have shown the importance of internal resources to drive the port growth. Figure 3 shows a simple comparison between Port of Tanjung Pelepas, Port of Singapore and Port of Batam using the list of resources suggested by Malaga (2004) as well as studies on Port of Tanjung Pelepas (Subhan & Gani, 2008) and Port of Singapore (Gordon et. al., 2009). It shows that Port of Batam is lagging behind in most of the resources.

Elaboration in the PESTEL analysis has shown the influence of policy dynamics in affecting the capability of Port of Batam. The resource comparison confirmed Porter's thesis that the competitive advantage of a nation is not merely determined inherited factors such as land, location, natural resources, labour, and local population size (Porter, 1990). In Porter term, Batam lack of the "specialised" factors of production. It is important to acknowledge that the specialised factors lead to a competitive advantage since they make the business more difficult to duplicate. The development of the specialised factor are driven and influenced by the government policies. Study by Gordon et. al. (2005) also said that a combined internal and external resource, influenced and strongly facilitated by government efforts, has driven the growth of the ports.

### 3. Possible Options

Previous elaborations show that that government plays an influential role in order to make the ports becoming competitive. The developments of the demand conditions, the incentives to enable related and supporting industries, as well as the development of factors conditions are crucial for the ability of Port of Batam to compete with its rival. The development of the specialised factors is consistent with the importance of internal resources to determine the competitive advantage of a port (Arbak, 2010; Gordon et. al, 2005; Subhan & Gani, 2008; Magala, 2004). Figure 3 shows that Port Batam lacks all of the specialised factors due to the mixed policy directions.

Resources	Port of Tj. Pelepas	Port of Singapore	Port of Batam
Strategic location	v	v	v
Natural harbour	v	v	v
Logistical Ability	Medium capacity. Important logistics hub in PTP.	Very large capacity. Lots of logistics centre in Singapore	Mainly internal orientation. Limited capacity
Transport Network & Intermodal Arrangement	Close proximity with transport infrastructure in Iskandar Development Region (railway, road, Senai Airport, Pasir Gudang)	Large interconnection to other ports in 100+ countries. Chang Airport as air transport hub. Connection to the Malacca Peninsula via Johor.	Limited intermodal arrangement
Efficient Port Operations, Cargo Handling, and Storage Management	Efficient Port	Efficient Port	Less efficient compare to those ports
Supply Chain Configuration Land for Expansions	Efficient and integrated Limited, but the ocean facing land is mostly used for port operations purposes.	Efficient and integrated Limited, but the ocean facing land is mostly used for port operations purposes. Aggressive reclamation.	Limited Limited
Water area	Limited	Limited	All over the island
Skilled Labour and Managerial Talent	Medium	Strong	Limited
Local Demand	From Iskandar Development Region Friendly.	Strong industrial base in Singapore. Friendly.	Industries developed during the BIDA era Less friendly.
Political and Investment Climate	Strong direction on the Johor local government, protecting from relatively less stable national political climate (compare to Singapore)	Regional Financial Hub. Stable political climate.	Political tension between BIFZA and City Office of Batam. Debates on the FTZ coverage.

Figure 3. Resources comparison between Port of Tanjung Pelepas, Port of Singapore, and Port of Batam (own analysis based on parameters developed by Malaga (2004) and data from Subhan & Gani (2008), Gordon et. al. (2009))

The possible options will be determined mainly by its inherited factors: the strategic location, natural harbour, as well as the land and water area. To overcome the insufficient specialised factors, i.e. the need to develop its operational effectiveness, there is option to establish joint operation with experienced party. Strategic location and natural harbour are given factors, thus the possible alternatives are expanding to the land and to the water area.

### 3.1. The Land

The land related expansions are including the reclamation (like the construction of the North dock at Batu Ampar) and relocation of the existing “tenants” that occupy the land. Under the Ministry of Internal Affairs Decree No. 43/1977 on The Management and Utilisation of Land in the Batam Industrial Area, there is no land ownership in Batam except to the authority. The companies who occupy the land only rent them at the maximum of 30 years. The rent period could be extended based on the review by the authority. Freeing the land is technically possible, but it will have some complexity during the implementation.

Political pressures as well as the financial burden to compensate the relocation should be well considered. Having the additional land will definitely give room for Port of Batam to expand its capacity as well as providing new services like better interconnection with the hinterland, including building off-site storage facility for logistic base. Land based expansion is natural for the port business. In the context of Port of Batam it will enable them to utilise the whole 1,250 metres long of quay from the North, East and South Jetty.

It should be noted that currently only about 250 metres of the South Jetty that could be utilised for container handling, with the adjacent container terminal there. With that limitation, Port of Batam could handle 200,000 TEUs of container per annum. The utilisation of the whole area will multiply the capacity into 1.2m TEUs per annum. The North Dock expansion will provide additional 600,000 TEUs, resulting a total capacity of 1.8 million TEUs per annum. A “full expansion” by reutilisation of the surrounding empty spaces as the interconnection to the hinterland will add the new capability for better interconnection with the other transport network. In the long run this will enable the new logistical capability for the Port of Batam, hence providing another source of revenue. The pros and cons of the land-based expansion is summarised in the Figure 4.

Options for land-based	Pros	Cons
Extension of the docks	Relatively easy and “no harm” to the existing player. Provide additional 600,000 TEUs of capacity Already started	Takes time to build High cost to reclaim and build the physical facilities. Flexibility limited by its physical shape.
Reallocation of sea-side space	Enable the full utilisation of the quay, resulting 1,8m TEUs of capacity. Additional spaces for land-based storage area (for container handling) Full control over the port area.	The above cons, plus the implementation complexity since the area already conceded to the private parties.
“Full” expansion	Additional spaces for storage area and container handling. Enable the new capability to serve as the logistics base.	Even more implementation complexity.

Figure 4. Pros and Cons of land-based expansion (source: author’s own analysis)

### 3.2. The Water

The other option is expanding to the water area. Currently there are several transshipment activities in the water like the ship to ship transfer as well as the operations of Floating Storage Offloading (FSO) facilities in the other part of the Malacca Strait, mainly in the Port Klang and Port Tanjung Pelepas in Malaysia as well as in Port of Singapore. There is a raising similar model of floating container terminal based on the FSO principle that is initiated in the Europe, called the Floating Container, Storage and Transshipment Terminal (Baird & Rother, 2011). By using one container ship, the port could easily reach the throughput of 800,000 TEUs per annum. There is also another opportunity in the water. Currently some companies operate the space to anchor (park) for the vessels and then receive additional services such as tank cleaning as well as ship repairs. The Southern part of Batam is the ideal place to provide this kind of service. Figure 5 shows the whole working area in Batam’s water.



Figure 5: The Working and Interest Area of Port of Batam (source: Minister of Transportation Decree No. 77/2009)

The option to expand to the water area follows the suggestions from Levitt (1960) and Hamel (1999) to look at outside the port industry as well. Kim & Marbougne (1999) suggested a comprehensive look at the substitute industries, strategic groups within industries, the chain of buyers, complementary product & service offerings, functional or emotional appeal to buyers, and time. The elaboration concludes that the options for doing business in the water are: ship to ship activities, anchoring, miscellaneous services (tank cleaning, service to anchored ships), and floating container terminal (adaptation from the practice at the energy and mining industry). The pros and cons for expansion to the water area is summarised in the Figure 6.

The ship to ship business and floating terminal are basically categorised as transshipment business. While the other two fall under the possible services in the anchoring business, there are several anchoring operator in the surrounding area. The water near Galang Baru Island in the Southern part of Batam has been used as the anchoring area. The anchoring business is basically a “parking business”. Since the business is relatively simple, it requires simple operation as well. The operators usually gain further benefit by providing additional services to the vessels, ranging from supplying water and meals, security services, repairing services, up to providing tourism facilities in the area.

Options for water-based expansions	Pros	Cons
Anchoring & Misc. Services	Easy to start, low startup investment. The business has been there (high familiarity)	Low revenue due to low involvement as well (except if the port provide the miscellaneous services) Require the use of vessel monitoring technology for better anchoring management
Ship to Ship	Easy to start, low startup investment. The business has been there (high familiarity)	Low revenue due to low involvement as well Require the strengthening and enforcement of the regulation. Require the use of vessel monitoring technology for better traffic management.
Floating Container Storage and Transhipment Terminal	Increase the container handling capacity. Faster implementation that the construction of physical terminal. Lower cost of implementation. Similar practice with the FSO business. Practice in the bulk cargo has been existing in the Indonesia's mining industry. Flexible to move to the needed area.	New kind of innovation, bearing the risk of first mover implementation. Less familiarity with the operation

Figure 6. Pros and Cons of water-based expansion (source: author's own analysis)

The options for transhipment are ship to ship and establish the floating terminal. The implementation of ship to ship business requires no significant investment. A formal regulation is needed to administer the transaction in the area. It has been in operation in the area so far, but with minimum economic benefits for Port of Batam. The reason is that Port of Batam could only charge port fees (port dues) to the participating vessels for anchoring in the area. So in some sense, it is just like an anchoring business. The transaction conducted on their own by the participating vessels without any services being procured from Port of Batam.

The floating or offshore container terminal is started to gain the popularity. The European Union also conduct a comprehensive study on the viability of the Floating Container Storage & Transhipment Terminal (FCSTT). The plan of implementation has been announced at the Port of Bremen (Germany), Mumbai (India), Djibouti (Ethiopia), Port of Venice (Italy) and Scapa Flow (Scotland). The development of floating container terminal will enable the Port of Batam to provide container handling service, storage facilities, as well as increasing the port fees since vessel will have more flexibility to do the transhipment in the area.

The Floating Container Storage & Transhipment Terminal (FCSTT), provides the capability to transfer (i.e. tranship) containers from one ship to another. It is based on using either a barge or converted containership as the FCSTT platform, upon which cranes are installed. The cranes can be either fixed or run on rails. A study by EU's StratMos Project (Baird & Rother, 2011), shows that the FCSTT gives annual capacity of over 500,000 TEUs based on 600m berth length (300m on each side of the FCSTT). This will require the capital cost of €40m, compare to the €120m needed to create a 600m land-based concrete terminal (handling equipment included).

The annual operating cost of the FCSTT is about one third of a conventional concrete terminal. In the context of Batam, this not only addressing the capacity and capability issue, but also enabling the lower fees to be charged to the participating vessels. Combined with its large watery area, this will enable the Port of Batam to play the cost leadership strategy in the transhipment business, compare to its neighbouring ports. The establishment of FCSTT also reduce the cost for feeder ships in the short-sea shipping. This will enable the new opportunity to serve this market.

The development of industry in Batam as well as Sumatera Corridor under the MP3EI effort will raise this kind of possibility. Thus, instead of confronting the MP3EI, the future development of Batam may ride the wave of this new policy.

#### 4. Implementation Scenario

Looking at the above elaborations, the most possible option for land-based expansion at current time is merely expanding the dock. It has been executed by the current construction of the North dock in Batu Ampar. The other option although will provide greater benefit, the implementation complexity is beyond the organisational reach of Port of Batam. The expansion to the water could be executed as soon as possible for the anchoring and ship to ship business. They need clearer regulation and stringent monitoring to ensure that Port of Batam could charge the proper port dues to the participating vessels. The terminal extension to the existing vessel monitoring system is needed to enable that capability. The implementation of the FCSTT will provide the greater benefit, but it needs careful examination as the new kind of innovation. The pro cons comparison of those two big options (with its corresponding sub-options) as well as the possible way forward is depicted in the Figure 7.

Options	Sub Options	Pros	Cons	Way Forward
Land based	Batu Ampar North dock expansion	Easy to start, no harm. Increase capacity.	Takes time. Less flexible. Higher cost.	Already executed
	Sea-side land reallocation	Greater benefit. Full control over port area.	Implementation complexity and possible political pressures.	Wait and see, influence the policy makers.
Water based	Full land expansion	Provide logistical ability.		
	Anchoring Ship to Ship	Easy to start. Easy to start.	Low margin of revenue	Refine the regulations and implement vessel monitoring.
	FCSTT	Increase capacity. Flexible. Lower cost to build and operate than physical terminal.	New kind of innovation. Less proven.	Closely monitor the development of FCSTT concept and implementation. Build upon operational success story.

Figure 7. The combined pros and cons

The implementation of the solution is largely depend on the ability of Port of Batam to monitor its water area. The provision of such system will be conducted through a terminal connection to the existing Japan International Cooperation Agency (JICA) funded facility operated by the Ministry of Transportation. Whenever the system is ready, Port of Batam could immediately manage the ship to ship activities and anchoring business better. Currently the business is conducted in "grey" environment, in the sense that the compliance level to report the incoming vessels is low and that Port of Batam doesn't have the necessary tool to monitor as well.

Regarding the FCSTT implementation, Port of Batam must also put into account the plan to develop the internal capability. Port of Batam may start with joint operation in the BOT (built, operate, and transfer) scheme. This public-private partnership approach is needed since currently Port of Batam lack of both the financial and technical capability to operate it. This will also reduce the risk of implementing the new kind of innovation, including to strengthen the ability to face the political pressures by bringing more allies to the game. Port of Batam should also allocate the required people to manage this new commercial opportunity. The required knowledge to do the traffic monitoring and engineering, as well as operations supervisions is currently dispersed among various units under the Commercial Division as well as at the other divisions. Port of Batam could establish a temporary task force as a start and make it permanent after the operations have been started.

After getting the lessons learned on operating the FCSTT, Port of Batam may fully invest and operate the FCSTT on their own or take more roles in the operations, thus entitled for more royalty from the business. The operations of the FCSTT could be implemented in the various STS (ship to ship) area in Batam. There are 15 (fifteen) possible areas for both ship to ship and floating container terminal operations.

The combined plan for the implementation in the area consist of the steps to implement the monitoring system, developing the high level operating picture in the area based on the monitoring system, issuing the regulation, the selection of business partners (for both anchoring, ship to ship, vessel services, and FCSTT) as well as the provision of the FCSTT facility itself. The utilisation in the water area for commercial purposes will requires the discipline of the users to follow the already determined traffic lanes. Currently it is hard to detect the lane violation due to the lack of the monitoring system.

Based on Port of Batam past experience in changing the customer behaviour, it will take about one to two years until they really follow the regulation. In order to cope with the potential resistance and difficulties dealing with the existing ship to ship players, Port of Batam could offer them a preference to be the FCSTT operator in the area, in partnership with internationally known operators that has reputation an experience to operate similar facilities, such as in the FSO business.

The possible capacity increase in the next three years (until 2015) on those options could also be seen in the Figure 8. This will gives clearer picture on the expected capacity increase by implementing the options. The number shows that the implementation result of FCSTT is similar with the result from current land based expansion (Batu Ampar North dock construction). The combination of the reachable options (without land reallocation), will provide the same capacity as of Tanjung Pelepas nowadays. The competitive ability then will be determined by the capability to operate the efficient container handling.

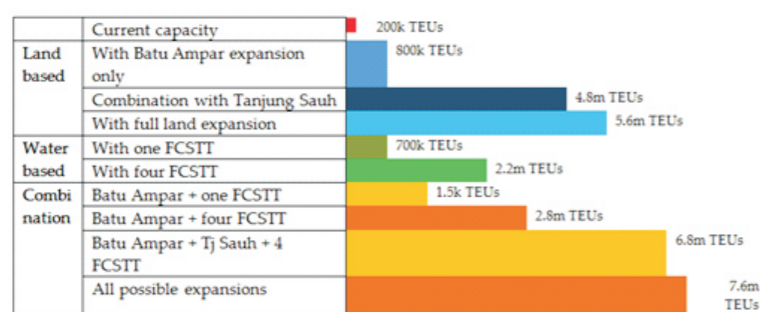


Figure 8. The estimated possible capacity increase

## 5. Conclusion

Looking at the combined pros and cons of those options, it is clear that the land reallocation should be less considered. The reason is that the implementation complexities as well as the possible political pressures are beyond the organisational reach of Port of Batam. What Port of Batam could do on those sub-options are merely looking at the possible changes of policy while gradually influence the policy makers and the impacted stakeholders. The Port of Batam should also do similar approach on the FCSTT, but in the context of the operational success of its implementation. There has been very little practice on the FCSTT operations, except its similarity with the FSO and bulk cargo transfer in the mining industry.

The concluding options for Port are expanding to the land base by continuing the construction of the North dock in Batu Ampar and expanding to the water to increase the capacity by implementing FCSTT and entering the ship to ship and anchoring businesses. The expansion to the water will also enable Port of Batam to participate further in supplying the additional services to participating vessels.

This research contributes to the study on the implication of both policy and market dynamics to determine future business directions. The uncertain political directions is mostly relevant to the business that is located in border area such as Port of Batam. It is also highly relevant to the Government Linked Company (GLC) or State Owned Company (SOE) that its business directions are heavily influenced by the government policies and positions. Further studies could be conducted to quantify the impact of the policy to the business performance. Such studies will make the business decisions more certain for the involved companies.

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