

# PERANAN OPERASI PELABUHAN MUARA

DALAM MEMUDAHKANA  
PENGANGKUTAN BARANGAN KE  
DALAM DAN KE LUAR NEGARA



# KANDUNGAN

**1 – PENGENALAN**

**2 – OBJEKTIF**

**3 – KAJIAN LITERATUR**

**4 – ANALISA**

**5 - TINDAKAN-TINDAKAN YANG DILAKSANAKAN OLEH JABATAN  
PELABUHAN-PELABUHAN**

**6 – RUMUSAN**

# PENGENALAN

## PELABUHAN MUARA



- ❖ Pelabuhan air dalam Muara dilengkapi dengan peralatan moden
- ❖ Mempunyai kapasiti 220,000 TEUS / Tahun
- ❖ Dermaga Kontena mempunyai 13 Meter kedalaman dan 250 M lebar
- ❖ Terminal operator International Container Terminal Services (NMCTS Sdn Bhd.)

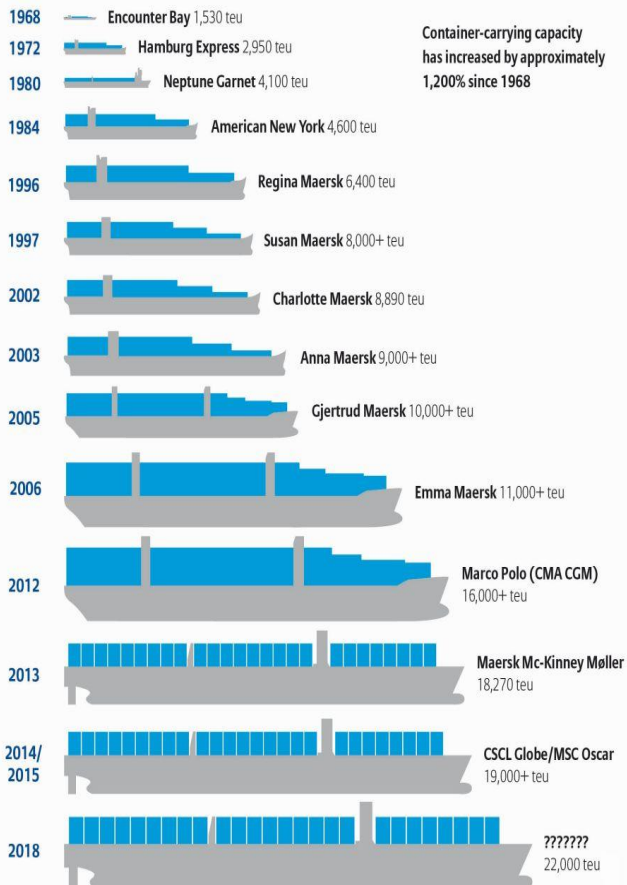
# PENGENALAN

## **WAWASAN 2035 :**

- Sektor pengangkutan memainkan peranan penting dalam mencapai sasaran Wawasan 2035, yang mana sektor pengangkutan dan perhubungan pada masa ini menyumbang sekitar 3.6 peratus daripada jumlah Keluaran Dalam Negara Kasar (KDNK)

# PERKEMBANGAN INDUSTRI MARITIM

## 50 years of Container Ship Growth

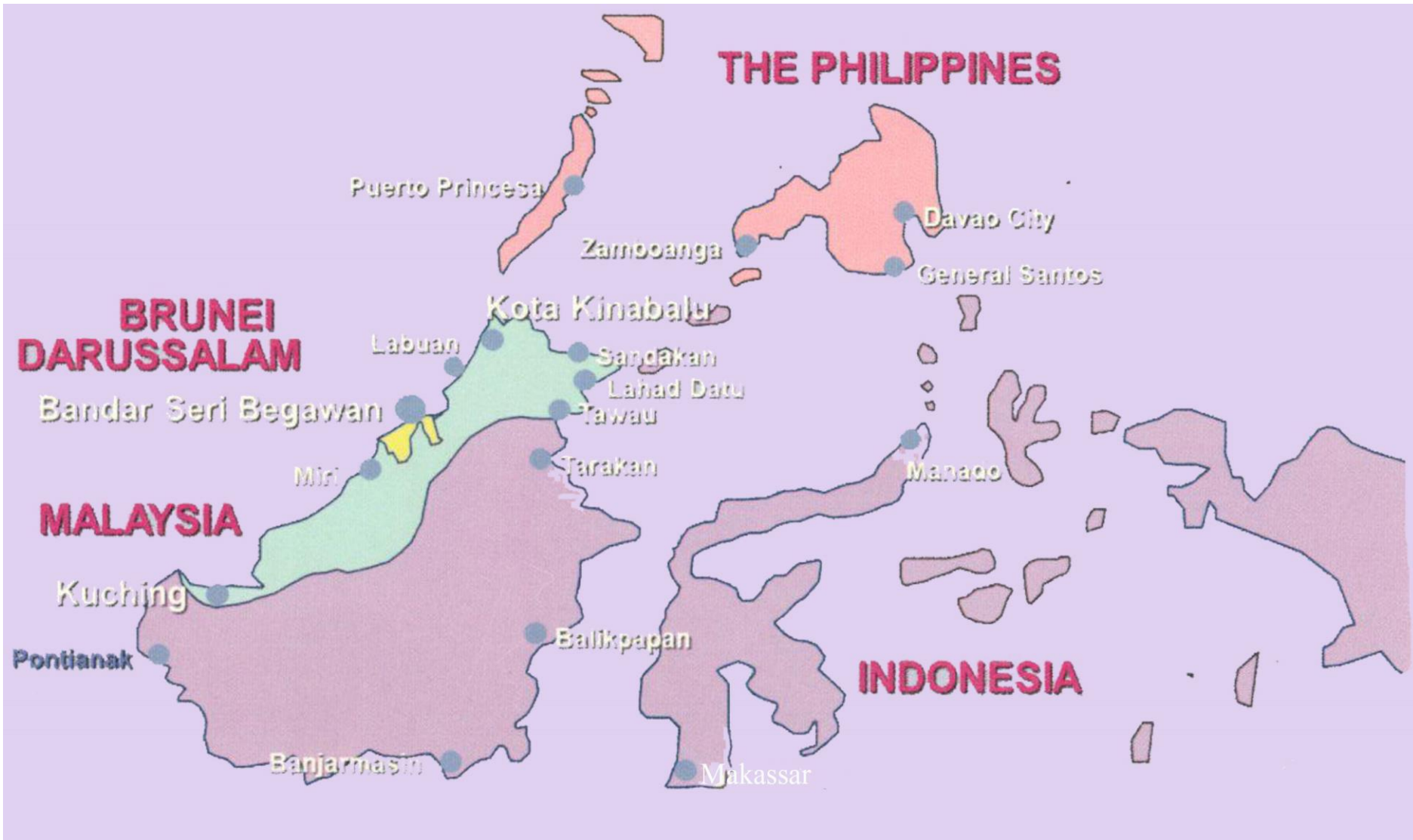


- Kapal-kapal dagang yang semakin besar
- Syarikat perkapalan/syarikat pembuat fokus kepada perkhidmatan yang dipercayai
- Syarikat perkapalan mengkehendaki sistem pengendalian pelabuhan yang cekap
- Perkembangan dalam bidang logistik memberi pengaruh terhadap pembangunan pelabuhan

- 
- Pelabuhan baru dibangun berasaskan konsep pelabuhan Hub



# PELABUHAN-PELABUHAN UTAMA BIMP-EAGA



# FAKTOR PENENTU KAPAL SINGGAH DI PELABUHAN

## Hierarchy amongst the various factors

Carrier' s point of view	Shipper' s point of view	Literature' s point of view	Combination (port operator, shipper and carrier)
<ol style="list-style-type: none"> <li>1.Port efficiency (the most preferred)</li> <li>2.Inland distance</li> <li>3.Port characteristic/ physical</li> <li>4.Vessel schedule</li> <li>5.Larger hinterland</li> <li>6.Volume of import/export transhipment containers</li> <li>7.Port efficiency</li> </ol>	<ol style="list-style-type: none"> <li>1.Port efficiency (the most preferred)</li> <li>2.Port chargers</li> <li>3.Quick response to port users' need</li> <li>4.Reputation for cargo damage criteria</li> <li>5.Location</li> <li>6.Frequency of ship visit</li> <li>7.Adequate infrastructure</li> <li>8.Distance of the shipper to port</li> <li>9.Distance to destination (for export)</li> <li>10.Distance from origin (for import)</li> <li>11.Port congestion</li> <li>12.Shipping line' s fleet</li> <li>13.Handling cost</li> <li>14.Proximity to main navigation route</li> <li>15.Proximity to import/export areas</li> <li>16.Basic infrastructure condition</li> <li>17.Feeder network</li> </ol>	<ol style="list-style-type: none"> <li>1.Lower transit and inventory cost</li> <li>2.Larger/good hinterland connection</li> <li>3.Centrality</li> <li>4.Volume of Domestic traffic</li> <li>5.Adequate Feeder networks</li> <li>6.Good infrastructure</li> <li>7.Competitive port pricing</li> </ol>	<ol style="list-style-type: none"> <li>1.Monetary cost (P.O), (S&amp;C)</li> <li>2.Time efficiency (P.O)</li> <li>3.Geographical location (P.O)</li> <li>4.Service quality/level (P.O) (S&amp;C)</li> <li>5.Cargo volume</li> <li>6.Port facility</li> <li>7.Total logistic cost</li> <li>8.Freight cost</li> <li>9.Hinterland characteristics</li> </ol>

# PENILAIAN TAHAP KECEKAPAN DAN DAYA SAING PELABUHAN-PELABUHAN UTAMA KAWASAN BIMP-EAGA

- Ports throughput
- Market share
- Market concentration
- Port tariff
- Capacity utilisation
- Measuring port technical efficiency

# PENILAIAN TAHAP KECEKAPAN DAN DAYA SAING PELABUHAN-PELABUHAN UTAMA KAWASAN BIMP-EAGA

## Ports throughput

Year	2002	2003	2004	2005	2006	2007	Growth
Total BIMP-EAGA market	1,298,351	1,487,459	1,588,036	2,097,386	2,231,035	2,449,679	10.17%

Source: Author's own calculation derived from Brunei, Indonesia, Malaysia and Philippines Port Authority,

# PENILAIAN TAHAP KECEKAPAN DAN DAYA SAING PELABUHAN-PELABUHAN UTAMA KAWASAN BIMP-EAGA

## Market share

Port	Terminal operator	2005 TEU	2005 % M.S	2006 TEU	2006 % M.S	2007 TEU	2007 % M.S
Muara	PSA MCT*	101000	4.7%	100719	4.5%	108000	4.4%
Bintulu	Bintulu Port Authority	147800	6.8%	199644	8.9%	251800	10.3%
Kota Kinabalu	Sabah Port Authority	147800	6.8%	156386	7.0%	183608	7.5%
Makassar	PT (Persero) Pelabuhan Indonesia IV	236776	11%	245803	11%	282573	11.5%
Davao	Filipinas Port Services, Inc. Davao Integrated Port Services & Stevedoring Corp.	225721	10.5%	258104	11.6%	298675	12.2%

\* Former MCT Terminal Operator 2000-2007

# PENILAIAN TAHAP KECEKAPAN DAN DAYA SAING PELABUHAN-PELABUHAN UTAMA KAWASAN BIMP-EAGA

## Port tariff

	Muara (MCT)		Bintulu		Kota Kinabalu	
	B\$	US\$	B\$	US\$	B\$	US\$
20ft loaded	100	57.45	22.5	12.93	85	48.83
20ft empty	65	37.34	12.5	7.18	85	48.83
40ft loaded	150	86.18	28.75	16.52	127.5	73.25
40ft empty	89	51.13	25	14.36	127.5	73.25
Average per teu-per move**	71.77	41.23	15.23	8.75	69.07	39.68
Average per teu-per cycle**	143.54	82.46	30.46	17.5	138.12	79.35
Average per container per move**	114.81	65.96	24.37	14	110.5	63.48
Average per container complete cycle**	229.64	131.93	48.76	28.01	220.99	126.96

Source: Drewry Shipping Consultants Ltd Muara terminal market study

# PENILAIAN TAHAP KECEKAPAN DAN DAYA SAING PELABUHAN-PELABUHAN UTAMA KAWASAN BIMP-EAGA

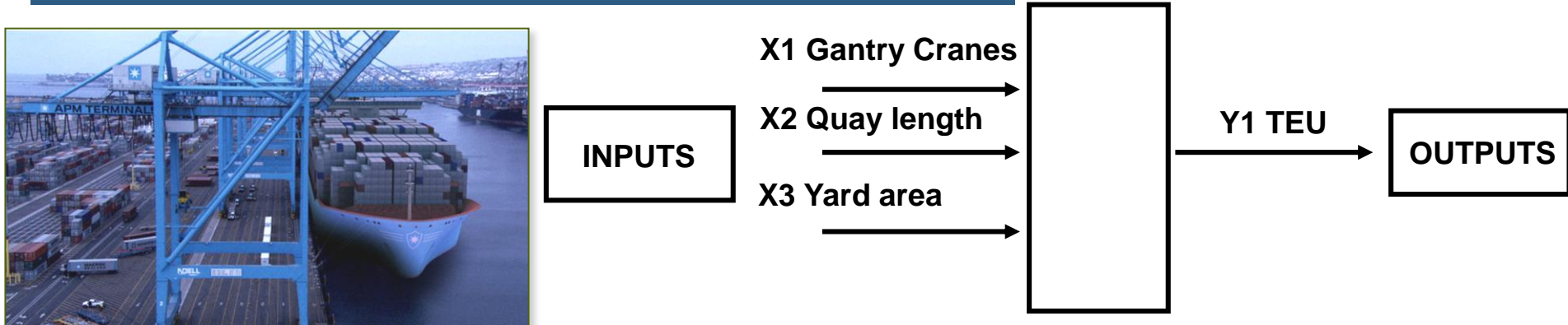
## Capacity utilisation

Region	2005			2006			2007		
	Throughput	Capacity	% utilisation	Throughput	Capacity	% utilisation	Throughput	Capacity	% utilisation
Sarawak	360,012	575,000	62.6%	422,423	575,000	73.5%	502,342	575,000	87.4%
Sabah	147,800	285,000	51.9%	229,084	285,000	80.4%	271,010	285,000	95.1%
Federal Territory	0	25,000	0.0%	0	25,000	0.0%	0	25,000	0.0%
Muara	101,000	250,000	40.4%	100,719	250,000	40.3%	108,000	250,000	43.2%
Kalimantan/ Sulawesi	554,179	615,000	90.1%	558,326	615,000	90.8%	632,679	615,000	102.9%
Eastern Indonesia	83,564	300,000	27.9%	100,623	300,000	33.5%	113,127	300,000	37.7%
Mindanao	704,354	780,150	90.3%	685,602	780,150	87.9%	707,050	780,150	90.6%
Visayas	146,477	500,000	29.3%	134,258	500,000	26.9%	115,471	500,000	23.1%
<b>Total</b>	<b>2,097,386</b>	<b>3,330,150</b>	<b>63.0%</b>	<b>2,231,035</b>	<b>3,330,150</b>	<b>67.0%</b>	<b>2,449,679</b>	<b>3,330,150</b>	<b>73.6%</b>

# MEASURING PORT TECHNICAL EFFICIENCY USING DEA

DMU (INPUT-OUTPUT), CRS, VRS

FINAL MODEL (INPUT AND OUTPUT)



- X1 and X2 (number of cranes and length of berth) related to the operations and efficiency of berth
- X3 (terminal area) related to the efficiency of yard
- X4 is the number of TEU moved

# PENILAIAN TAHAP KECEKAPAN DAN DAYA SAING PELABUHAN-PELABUHAN UTAMA KAWASAN BIMP-EAGA

## Measuring port technical efficiency using DEA

DMU No.	DMU Name	Efficient Input Target			Efficient Output Target
		Yard area (ha)	No. of gantry cranes	Quay length (m)	Terminal throughput (2007) TEU
1	Kuching	3.62988	0.00000	574.45872	163338.00000
2	Bintulu	7.00000	2.00000	480.00000	251800.00000
3	Kota Kinabalu	2.45396	0.00000	422.69504	83608.00000
4	Muara MCT	5.00000	2.00000	250.00000	108000.00000
5	Makassar	11.50000	4.00000	500.00000	282573.00000
6	Bitung	2.27997	0.00000	647.51097	113847.00000
7	Ambon	2.40000	0.00000	320.00000	63675.00000
8	Davao	5.30000	0.00000	920.00000	298675.00000
9	General Santos	2.32781	0.00000	574.19290	103577.00000
10	Zamboanga	2.40000	0.00000	320.00000	63675.00000
11	Cagayan de Oro	4.10829	0.43452	501.43038	161992.00000
12	Iloilo	2.54941	0.00000	350.91149	75782.00000
13	Samarinda	2.00000	0.00000	937.00000	139046.00000
14	Balikpapan	1.40000	0.00000	675.00000	78163.00000

# MEASURING PORT TECHNICAL EFFICIENCY USING DEA

## Result of DEA

DMU Name	<i>Input-Oriented</i>	Efficiency CRS	Scale efficiency CRS/VRS
	VRS		
	<i>Efficiency</i>		
Kuching	0.46030	0.40315	0.8758
Bintulu	1.00000	1.00000	1.0000
Kota Kinabalu	0.61349	0.37378	0.6093
<b>Muara MCT</b>	<b>1.00000</b>	<b>0.78447</b>	<b>0.7845</b>
Makassar	1.00000	1.00000	1.0000
Bitung	0.45599	0.37154	0.8148
Ambon	0.71111	0.27730	0.3900
Davao	1.00000	1.00000	1.0000
General Santos	0.77594	0.57912	0.7464
Zamboanga	1.00000	0.61293	0.6129
Cagayan de Oro	0.43452	0.38330	0.8821
Iloilo	0.68404	0.45503	0.6652
Samarinda	1.00000	1.00000	1.0000
Balikpapan	1.00000	0.80305	0.8031

# 1. PENGKORPORATAN JABATAN PELABUHAN

## Maritime Port Authority (Brunei Government)

Responsible for safeguarding public interest and act as the landowners to retain ultimate ownership of the port.

**Objective:** To ensure port efficiency, competitiveness and attractiveness.

### Government's Responsibilities:

- Grants concession to Port Operator
- Invest in major port infrastructure and certain superstructure

### Port Operator's Responsibilities:

- Collects revenue from shipping/logistics companies for handling containers/cargoes
- Pays Govt. an initial fee for taking over rights to operate the port.
- Pays Govt. an annual lease for the use of port infra- and superstructure
- Pays Govt. royalty for every container/cargo handled by port operator

## Port Operator (Investor)

Responsible for port operations and assumes the commercial risks of operations. Invests in certain machineries, equipments and management system.

**Objective:** To ensure sustainability of the port through efficiency and increased throughput volumes.

**Alignment of interests in which port operator is incentivized to bring in/handle more containers/cargoes and improve efficiency**

2. Pengurangan kadar pengendalian perkhidmatan kontena import dan export sebanyak 36%. Melanjutkan tempoh percuma penyimpanan untuk semua kontena import dan eksport berkuatkuasa mulai 1 Ogos 2016

Import / Export Laden Container	Current Rate		Discounted Price by 36%	
	20ft	40ft	20ft	40ft
Terminal Handling Charges	BND\$ 170	BND\$ 255	BND\$ 110	BND\$ 162
LOLO (Handling Charges)	BND\$ 60	BND\$ 90	BND\$ 38	BND\$ 58
Wharfage	BND\$ 50	BND\$ 100	BND\$ 32	BND\$ 64
<b>Total</b>	<b>BND\$ 280</b>	<b>BND\$ 445</b>	<b>BND\$ 180</b>	<b>BND\$ 284</b>

Storage Period / Storent Charges	Current Free Storage Period		New Free Storage Period	
	20ft	40ft	20ft	40ft
Storage	2 days (48hrs)		5 days (120hrs)	
Storent per 24hrs	BND\$ 9	BND\$ 18	BND\$ 9	BND\$ 18
	<i>48hrs Retrospective</i>		<i>120hrs Retrospective</i>	



**International  
Container Terminal  
Services, Inc.**

### 3. Pengurusan menggunakan khidmat operator terminal bertaraf antarabangsa di Terminal Kontena Muara. (Syarikat New Muara Container Terminal Sdn Bhd)



**Competitive  
technical and  
financial**



**Extensive  
Experience  
16 Ports  
11 Countries**



**“Best Under a  
Billion Company” for  
2 consecutive years  
*Forbes Asia September 2008***

4. Jabatan Pelabuhan-Pelabuhan sedang melaksanakan beberapa inisiatif untuk meningkatkan fasarana kemudahan Terminal Kontena antaranya, lanjutan projek Terminal Kontena Muara sepanjang 150 meter



# RUMUSAN

- Pelabuhan Muara hendaklah meningkatkan tahap daya saingnya dari segi penyediaan infrastruktur yang canggih dan mencukupi, perkhidmatan yang baik, kadar tarif yang kompetitif, proses pengendalian kargo yang cekap dan efisien, sambungan yang meluas dengan pelabuhan-pelabuhan antarabangsa dan perkhidmatan sokongan yang lengkap bagi menarik syarikat-syarikat perkapalan utama.
- Pelabuhan Muara harus bersikap fleksibel dapat menyesuaikan diri dengan arus perkembangan industri maritim dan pelabuhan, bersedia dalam proses dan operasi dengan kehendak semasa yang dinamik dan menyelaraskan diri ke arah mencapai integrasi dengan rangkaian pengangkutan global.

# Terima Kasih

