Indonesian ports: Current trends and future requirements

Truong Bui, Project Manager

Roland Berger
Strategy Consultants

Jakarta, June 11&12, 2014

Todays agenda

Page

12th ASEAN PORTS & SHIPPING

A. Key industry trends

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Five key industry trends will underpin the short, medium and longer term port and and shipping landscape

1  Sustained cargo traffic growth

2  Asia benefiting from maritime trade boom

3  Potential changes in shipping patterns

4  Larger container vessels

5 

Regulation and cost efficiency drives technological trends

Source: Roland Berger

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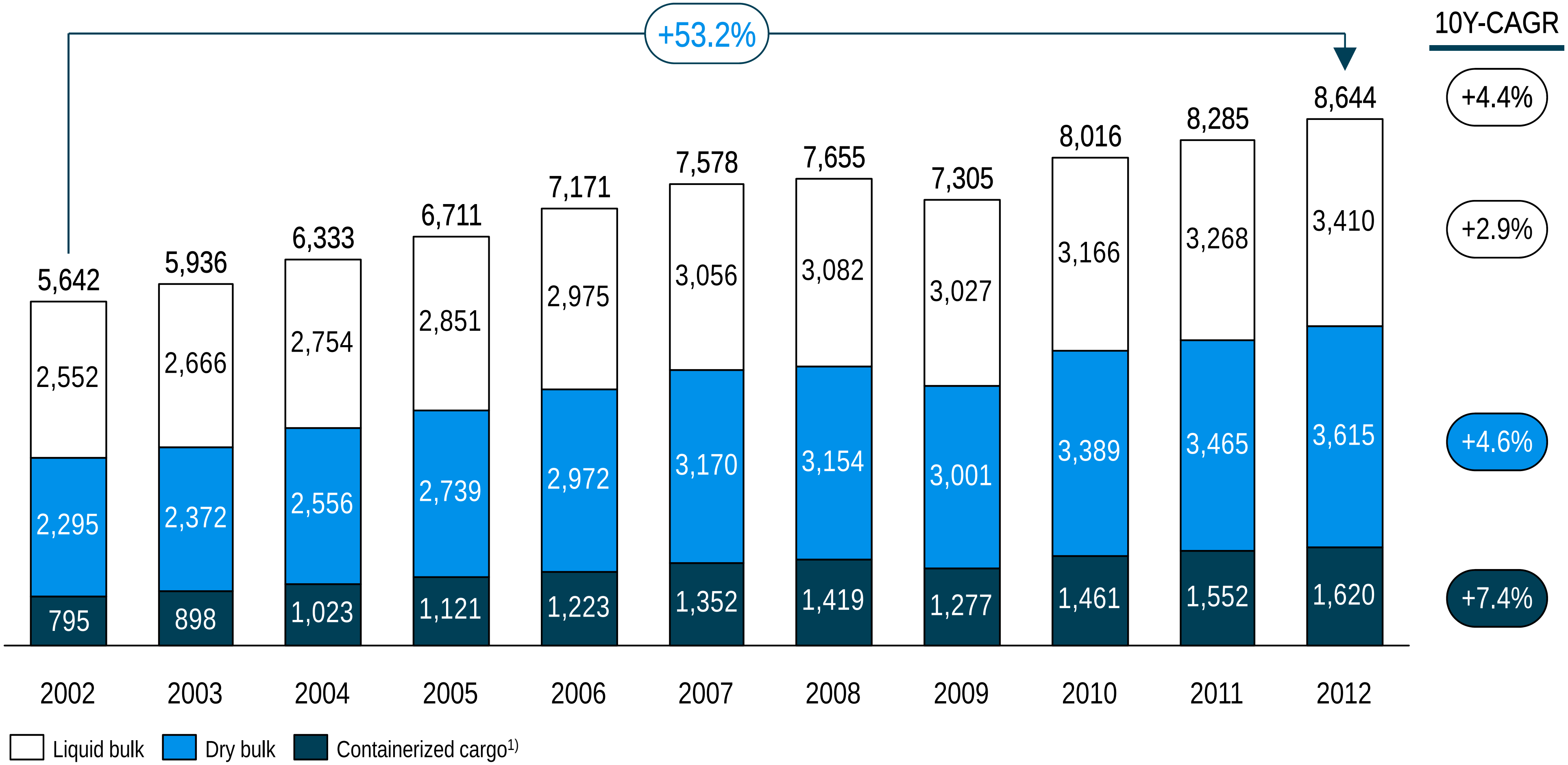
Global shipment demand has expanded by ~50% during the past decade, bolstered by strong growth in containerized cargo

Global shipment demand, historical [2002-12, MT]



1) Incl. general cargo

Source: UNCTAD, Roland Berger analysis

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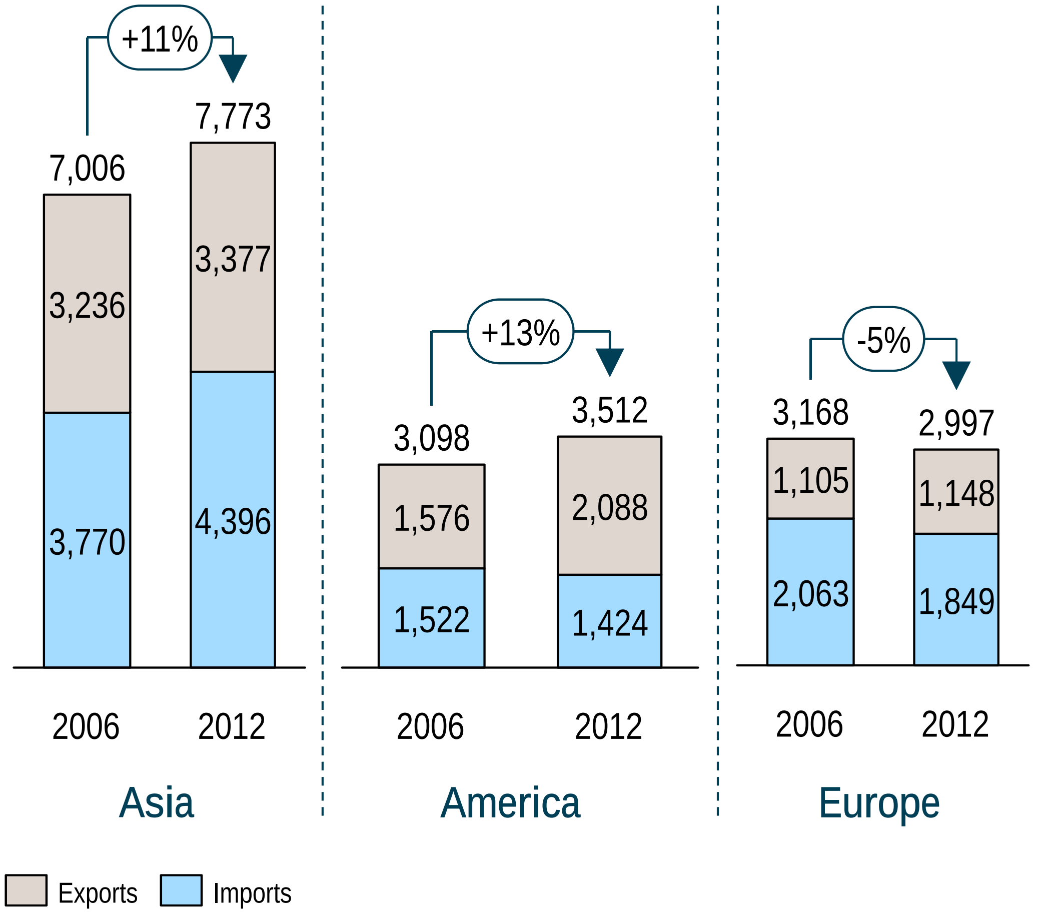
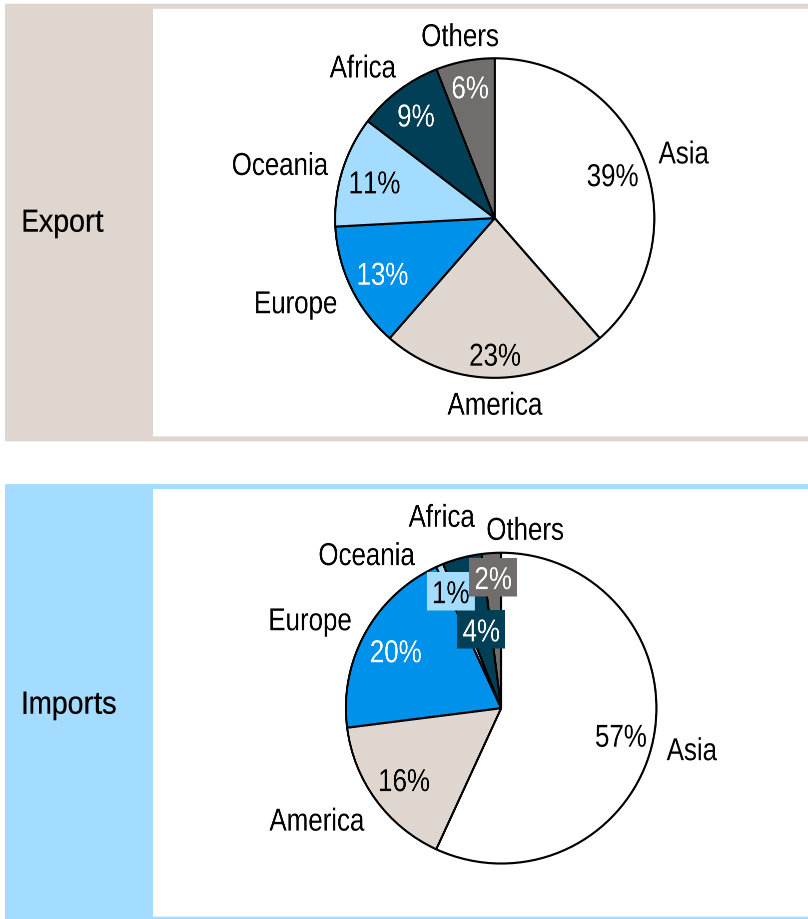
Today Asia accounts for the largest proportion of global maritime trade, recording steady growth in its market share

Total maritime trade by region [m Tons]



Share of world maritime trade [2012 - %]



Source: Review of Maritime Transport 2013; UNCTAD; Roland Berger

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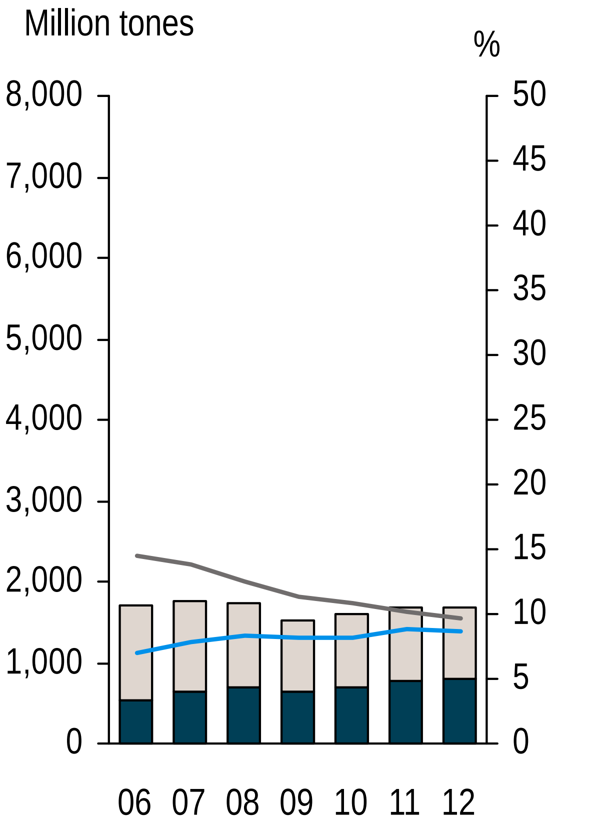
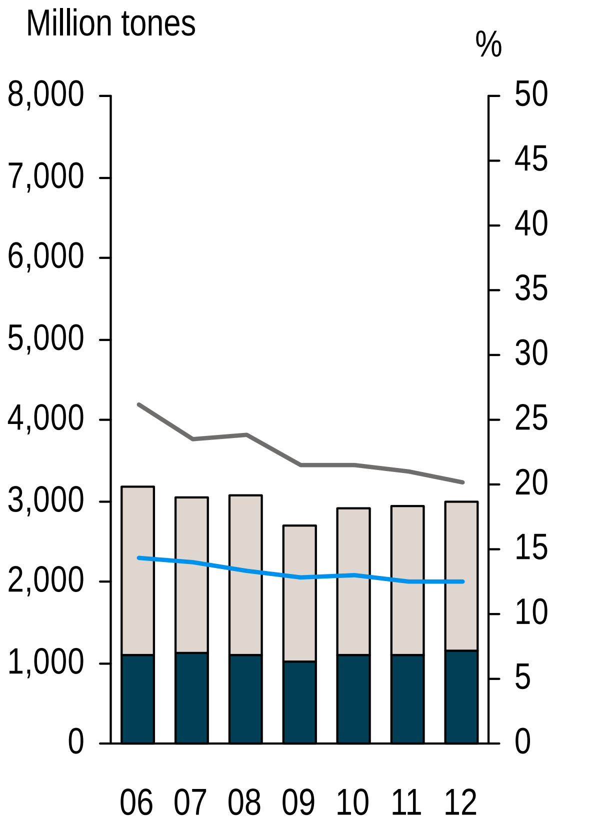
Asia not only contributes the most to the total maritime trade, but has also shown a steady growth in its market share

Global maritime activity, 2006 - 2012

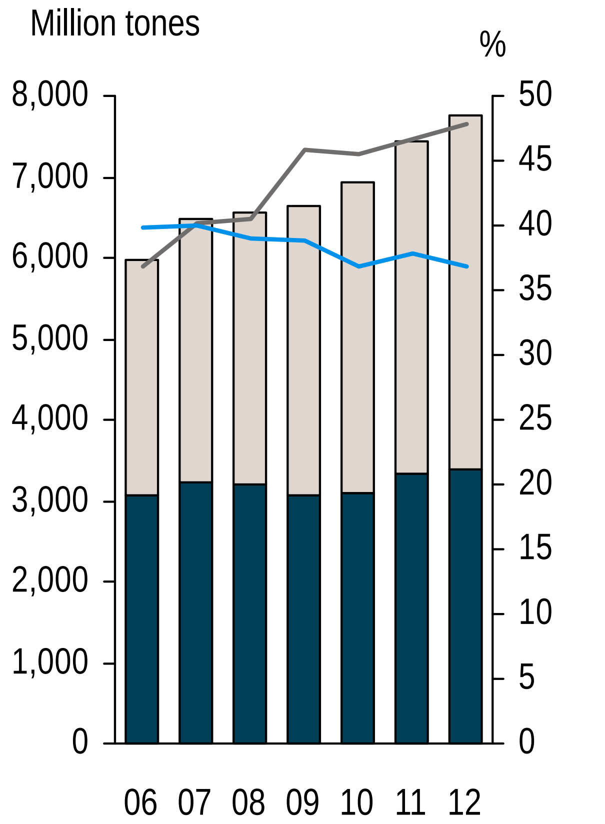
Maritime trade - North America



Maritime trade - Europe



Maritime trade – Asia[1)]



Import | Export | % of world import | % of world export

1) Developing nations in Asia

Source: Review of Maritime Transport 2013, UNCTAD

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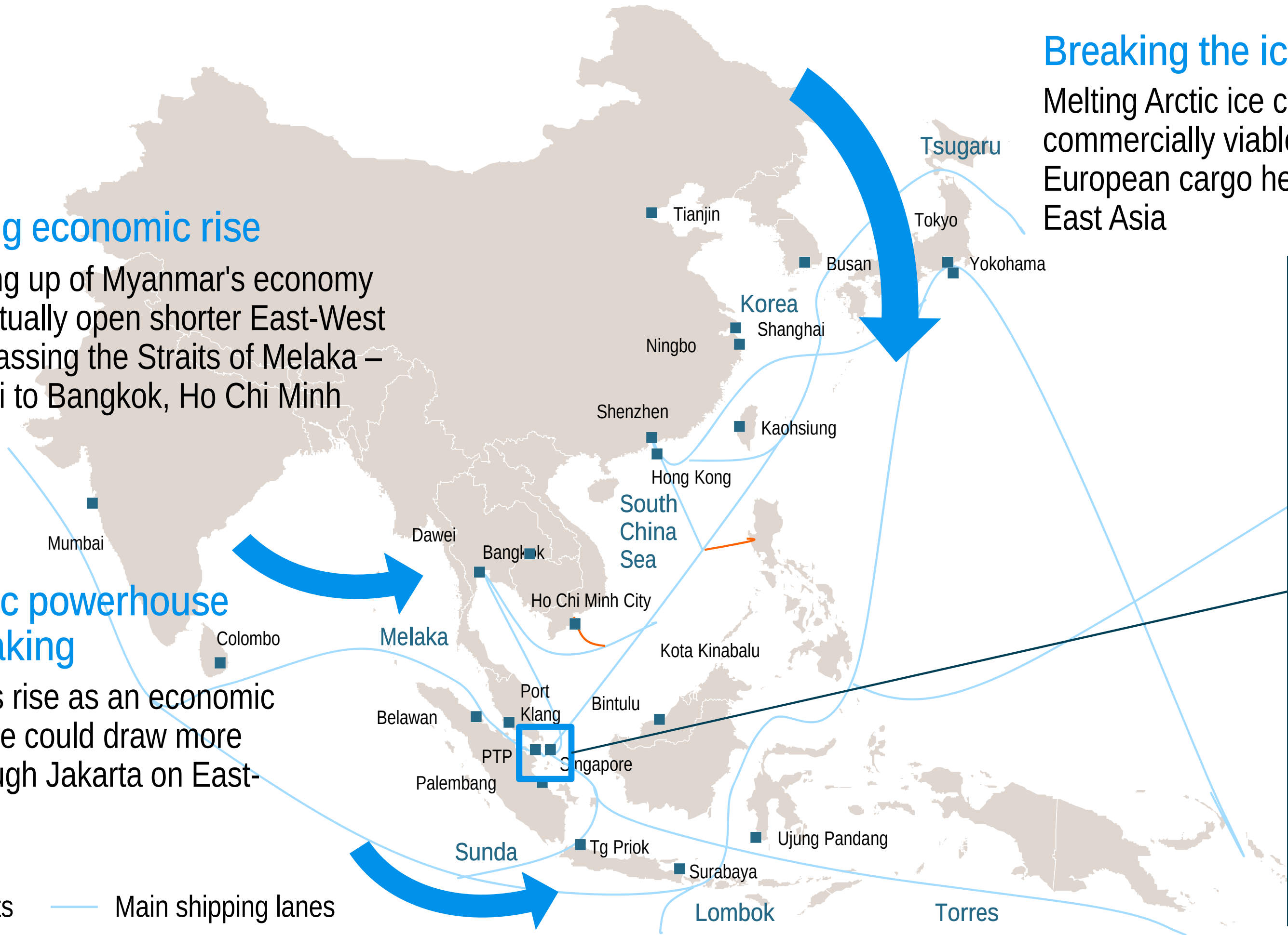
While Singapore remains an important hub for east-west cargo flows, alternative trade routes may potentially arise in the longer future

Cargo flows – East Asia



Breaking the ice

Melting Arctic ice could open commercially viable trade routes for European cargo heading towards North East Asia

Promising economic rise

The opening up of Myanmar's economy could eventually open shorter East-West routes bypassing the Straits of Melaka – from Dawei to Bangkok, Ho Chi Minh

Economic powerhouse in the making

Indonesia's rise as an economic powerhouse could draw more cargo through Jakarta on East-West route

Singapore – The pre-eminent trade hub

> Situated along main East-West trade route – 30% of world trade passes through the Straits of Melaka
> Natural mid-point between 2 key growth markets – India & China
> Strong inter and intra-regional trade flows in ASEAN
> Crossroads for Middle East – America west coast

■ Major ports —— Main shipping lanes

Sources: UNCTAD, Roland Berger

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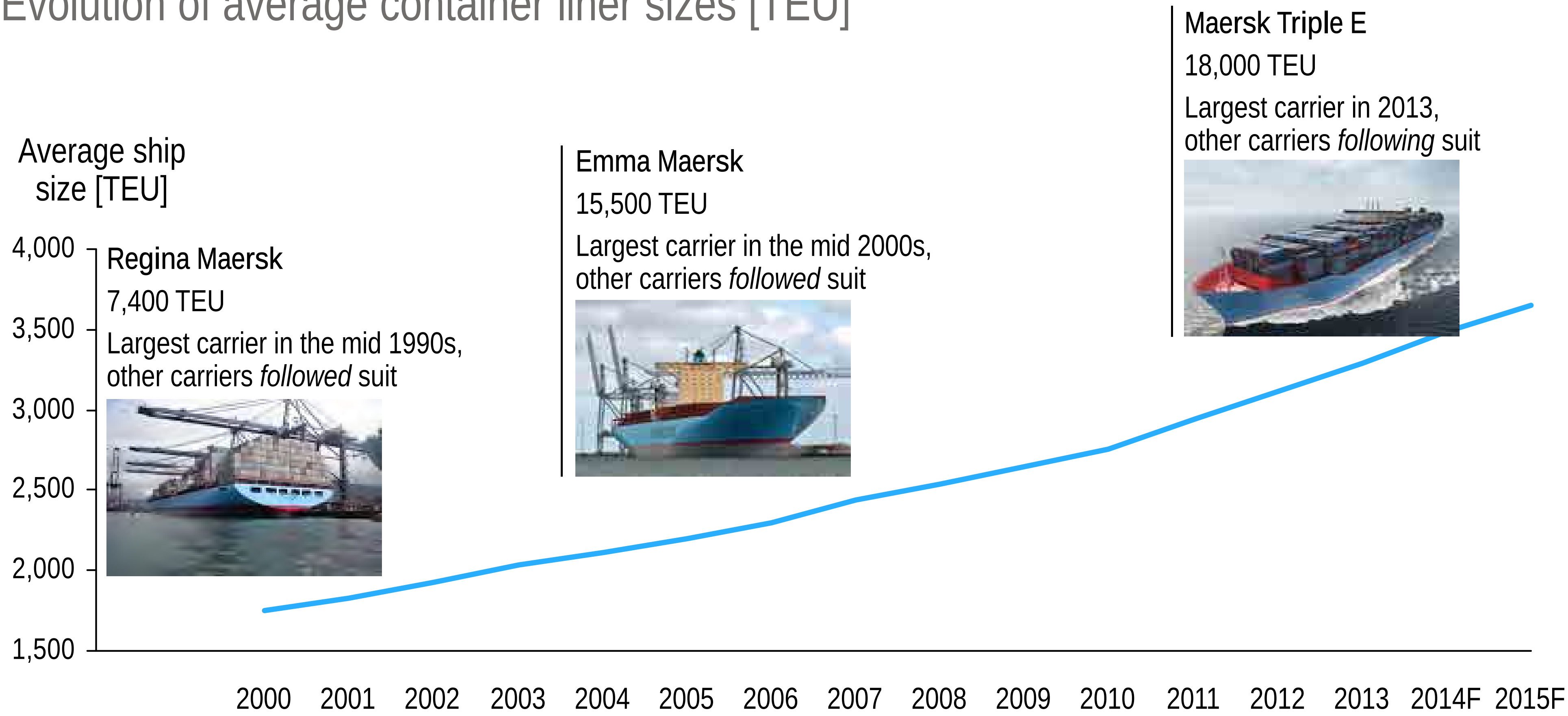
There is a clear and persistent trend towards larger container liner sizes

Evolution of average container liner sizes [TEU]



> Average size of container vessels has steadily grown over time

> When a market leader introduces a significantly larger vessel into the market, other players eventually follow suit

Source: Alphaliner; Drewry Maritime Advisors; Roland Berger

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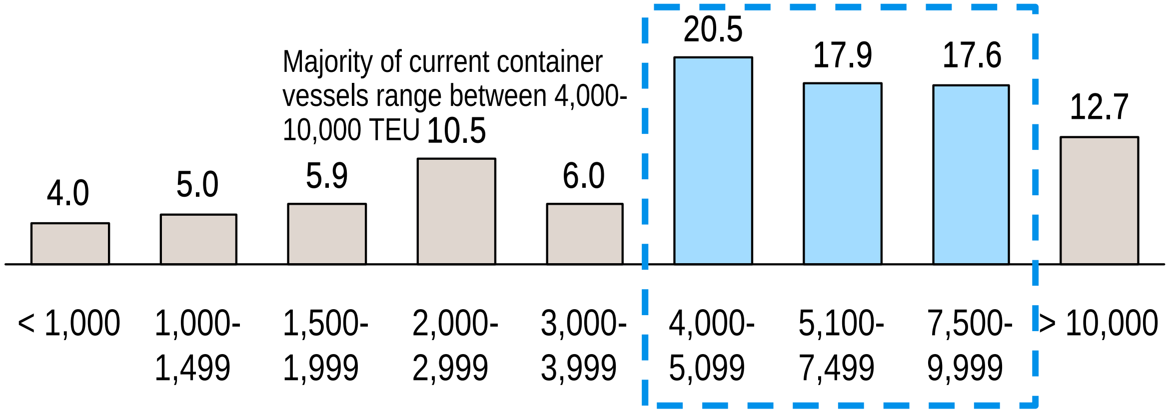
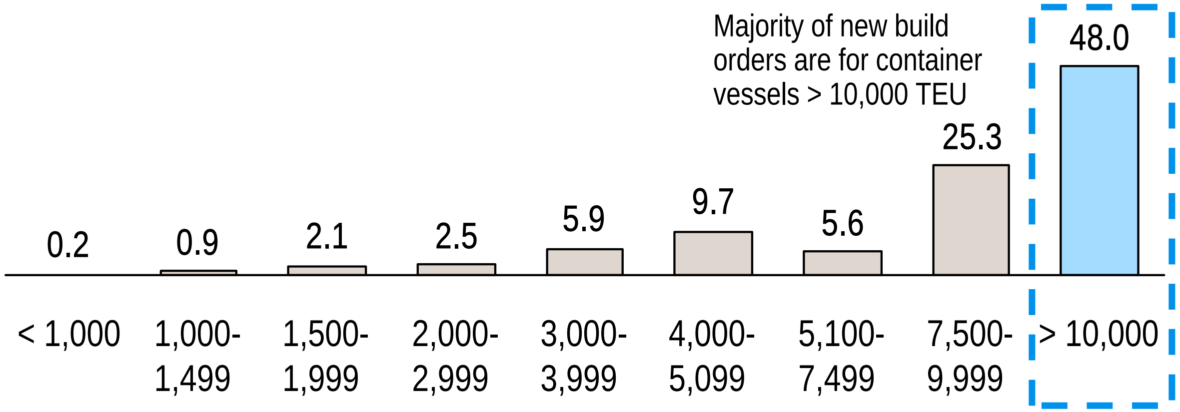
Fleet profile of the future will feature a greater proportion of ULCVs, - Implications on port planning, design and operations

Current fleet profile breakdown[1)] [TEU, %]



Orderbook fleet profile breakdown[1)] [TEU, %]



> Key implications:
- Port planning & operations
  - Deeper drafts, longer berths, wider channels etc.
  - Higher gate pressure – needs increased productivity, larger capacity equipment, greater inter-modal capacity
- Vessel cascading
  - Vessel upsizing on corresponding spoke routes
- Rationalization of shipping routes
  - Re-drawing of hub and spoke alignments; some hubs dropped

Note: ULCV – Ultra large container vessels > 10,000 TEU
1) Breakdown by total capacities in TEU. Based on data as on 1 March 2013.
Source: Alphaliner; Roland Berger

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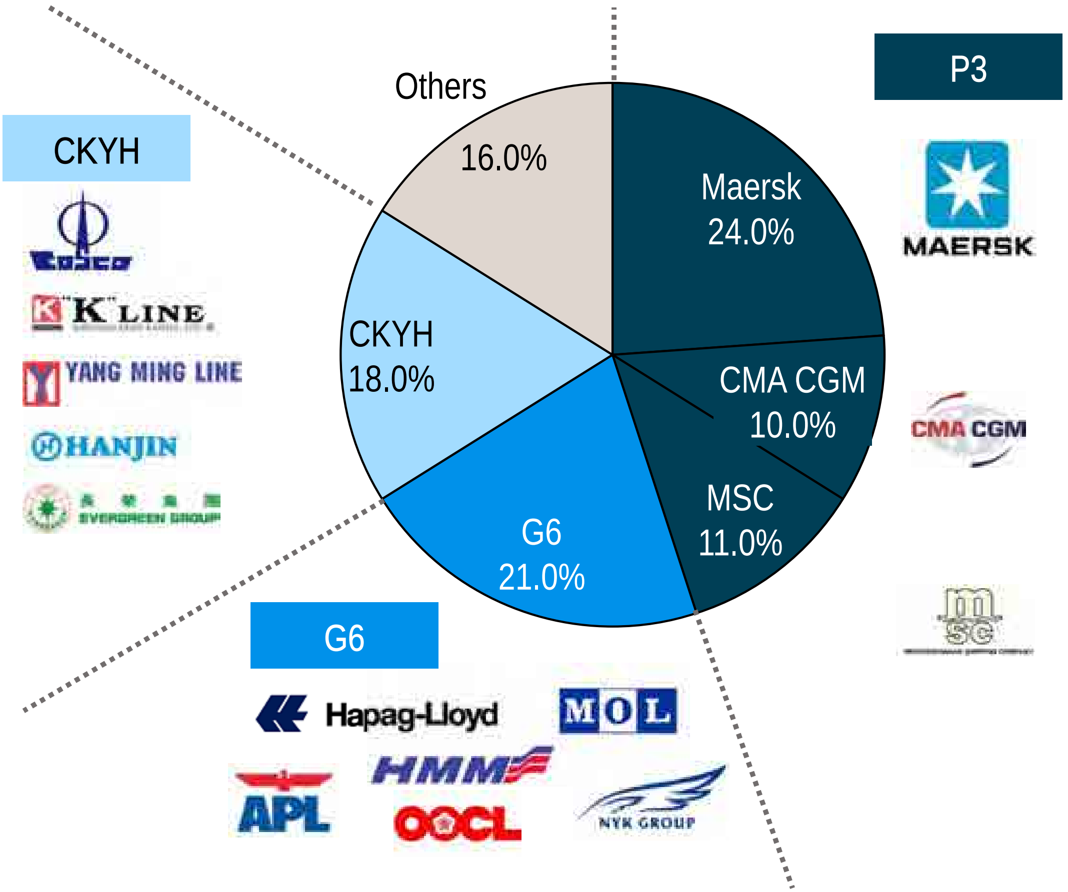
The trend towards ultra-large container vessels drives the forming of alliances among liner operators to achieve greater scale

Trends in alliances

Asia-North Europe capacity shares [%]



- > **Pursuit of scale** has led towards even **larger vessel sizes**
- > In order to **fill the ships, reduce operational risks** – liners have entered into **operating, non-commercial alliances** with each other
- > Since 2011, the **trend towards alliancing has intensified** – there remains now only 3 major alliances controlling > 80% of market share
- > Others are under pressure to "join the pack"

Increased leverage of liner alliances over port operators

Source: Drewry Maritime Advisors; Roland Berger

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As such, consolidation in the container shipping segment via alliances or mergers is likely to accelerate…

It is likely that P3 would start its operations by end of 2014…

The world's three largest container liners - **Maersk Line, CMA CGM and MSC to establish the P3 Network**, which is due to start operations **in mid-2014**

It is estimated that Maersk Line put market control of such an alliance at about 42% on the Asia to Europe route, 24% on the transpacific routes, and 40-42% on the transatlantic route.

If approved, P3 will control up to 40% of total cargo moved in containers from Asia to Europe, and across the Pacific and Atlantic ocean. The P3 Network will operate a capacity of 2.6m TEU (Twenty-foot Equivalent Units), with an initial combined fleet of 255 vessels on 29 loops

…and would pave the way for expansion or creation of other alliances.

Evergreen Line will join with members of the CKYH alliance -- COSCO, "K" Line, Yang Ming and Hanjin -- in operating container services to the United States East Coast.

Evergreen, along with COSCO and Hanjin, has filed a vessel-sharing agreement with the Federal Maritime Commission saying they will cooperate on services between the Asia and the U.S. Atlantic Coast

Germany's Hapag-Lloyd has just merged with Chilean peer Compania Sud Americana de Vapores SA, creating the world fourth-largest container line and controling 4% of the Far east-Europe trade route

Source: Expert interviews, Roland Berger

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Changes in regulation and the continuous pursuit of cost efficiency will drive future technological innovation

Technological trends

Regulation

> Historically, **technology adoption** in the maritime sector most **strongly influenced** by **regulatory changes** – often as a consequence of accidents/incidents

> Increased implementation of **environmental regulation** will drive research and innovation in **new emissions control technologies** and **advanced fuel technologies**

Advanced fuel technologies

Solar sails ship, low carbon fuels e.g., LNG ships, slow steaming, electric ships

Automation

Increased automation of port land and marine operations

Environmental technologies

Selective catalytic reduction converters to reduce NOx, low energy ship design e.g., improved hull design reduces drag

Information technology

Ship voyage real time tracking, voyage optimization by using latest ocean and weather data, e-Navigation

Cost efficiency

> The continuous **pursuit of greater cost efficiency** and savings will drive innovation

> The **maturity stage** of individual technologies **affects** costs and its subsequent **adoption**

> Increased drive for cost efficiency will drive research in **advanced fuel technologies** due to **high fuel costs** as well as increased adoption of **automation and ICT**

Source: Roland Berger

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B. Indonesia port sector

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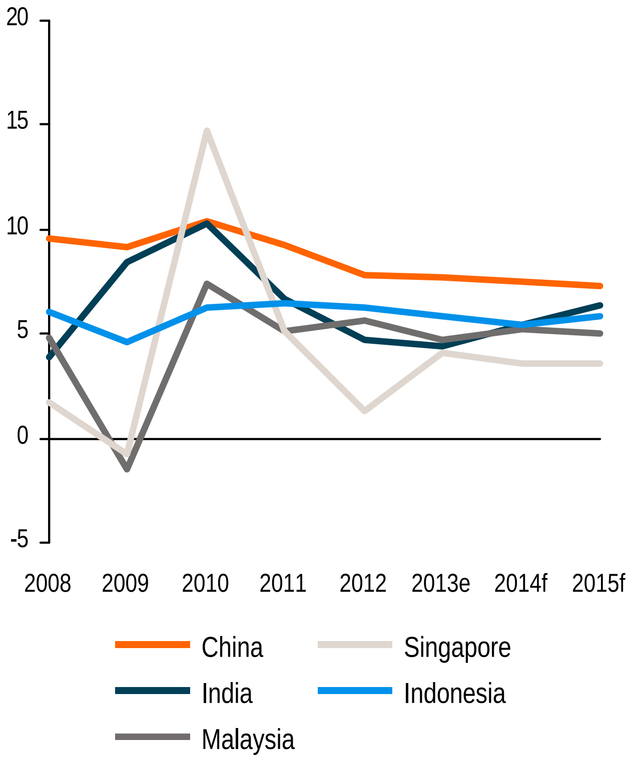
Indonesia is going through a period of unprecedented growth and economic development

Brief economic snapshot of Indonesia

Sustained strong economic growth in recent years and for foreseeable future

GDP Growth Rate, 2008 – 2012 [%]



Analysts predict Indonesia to be among top 10 largest economies by 2050 ...

World GDP Ranking, 2012 [USD bn]

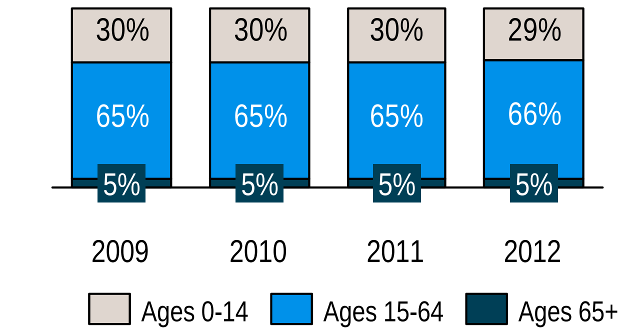
1	United States	16, 245
2	China	8, 227
3	Japan	8, 227
4	Germany	3, 428
5	France	2, 613
10	India	1, 859
16	Indonesia	878

World GDP Ranking, 2050 [USD bn]

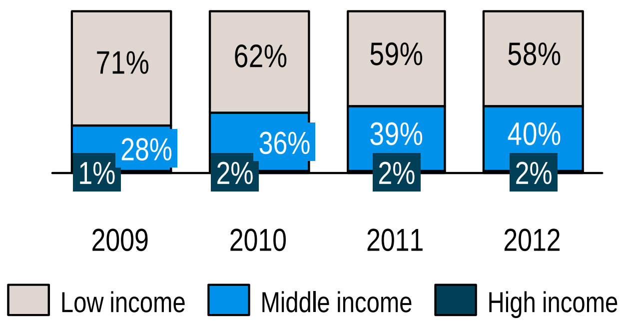
1	China	52, 620
2	United States	34, 580
3	India	24, 980
4	Brazil	9, 710
5	Russia	8, 010
9	Indonesia	6, 040
11	France	5, 360

A young, growing population with rising affluence will sustain growth

Population Ranges '09-'12, [% total population]



Population size per income segment[1)] [pax]



1) Based on population of age 15+

Source: World Bank, IMF, Goldman Sachs, Roland Berger

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However, existing infrastructure and operational hurdles may affect the country's port and logistics development progress

Global Competitiveness Index Rankings[1)]

The quality of infrastructure is insufficient to support the country's target to become a major logistics and maritime hub ...

Quality of Overall Infrastructure

1	Switzerland
2	Hong Kong SAR
5	Singapore
25	Malaysia
61	Thailand
82	Indonesia

Quality of Roads

1	United Arab Emirates
2	France
7	Singapore
23	Malaysia
42	Thailand
78	Indonesia

Quality of Port Infrastructure

1	Netherlands
2	Singapore
3	Hong Kong SAR
24	Malaysia
56	Thailand
89	Indonesia

Quality of Railroad Infrastructure

1	Japan
2	Switzerland
10	Singapore
18	Malaysia
44	Indonesia
72	Thailand

... and operational difficulties may dampen interest of new investors

Number of Procedures to Start Business

1	Canada
1	New Zealand
10	Malaysia
10	Singapore
20	Thailand
104	Indonesia

Burden of Customs Procedures

1	Singapore
2	Finland
3	Hong Kong SAR
23	Malaysia
74	Indonesia
80	Thailand

1) Ranked out of 148 countries

Source: World Economic Forum – Global Competitiveness Index 2013- 2014, Roland Berger

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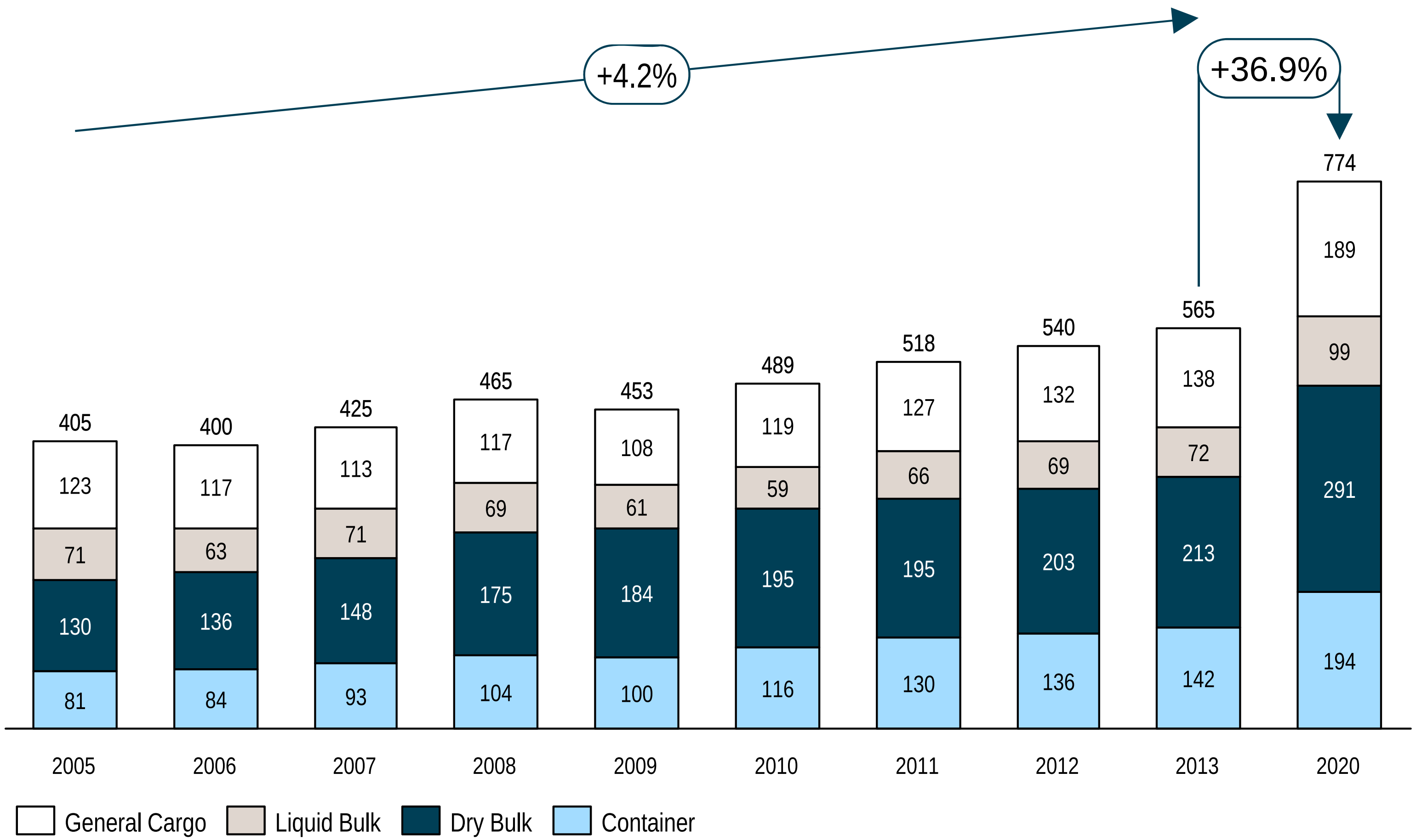
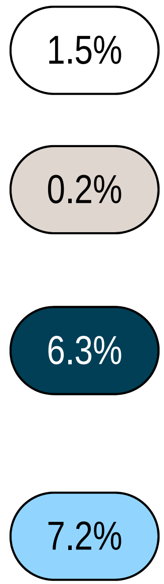
The total tonnage handled by these ports has experienced annual growth of 4.2% to reach 565 m MT in 2013 from 405 m MT in 2005

Port throughput evolution [m MT]



CAGR 05-13 [%]



Source: IPC I, II, III, IV

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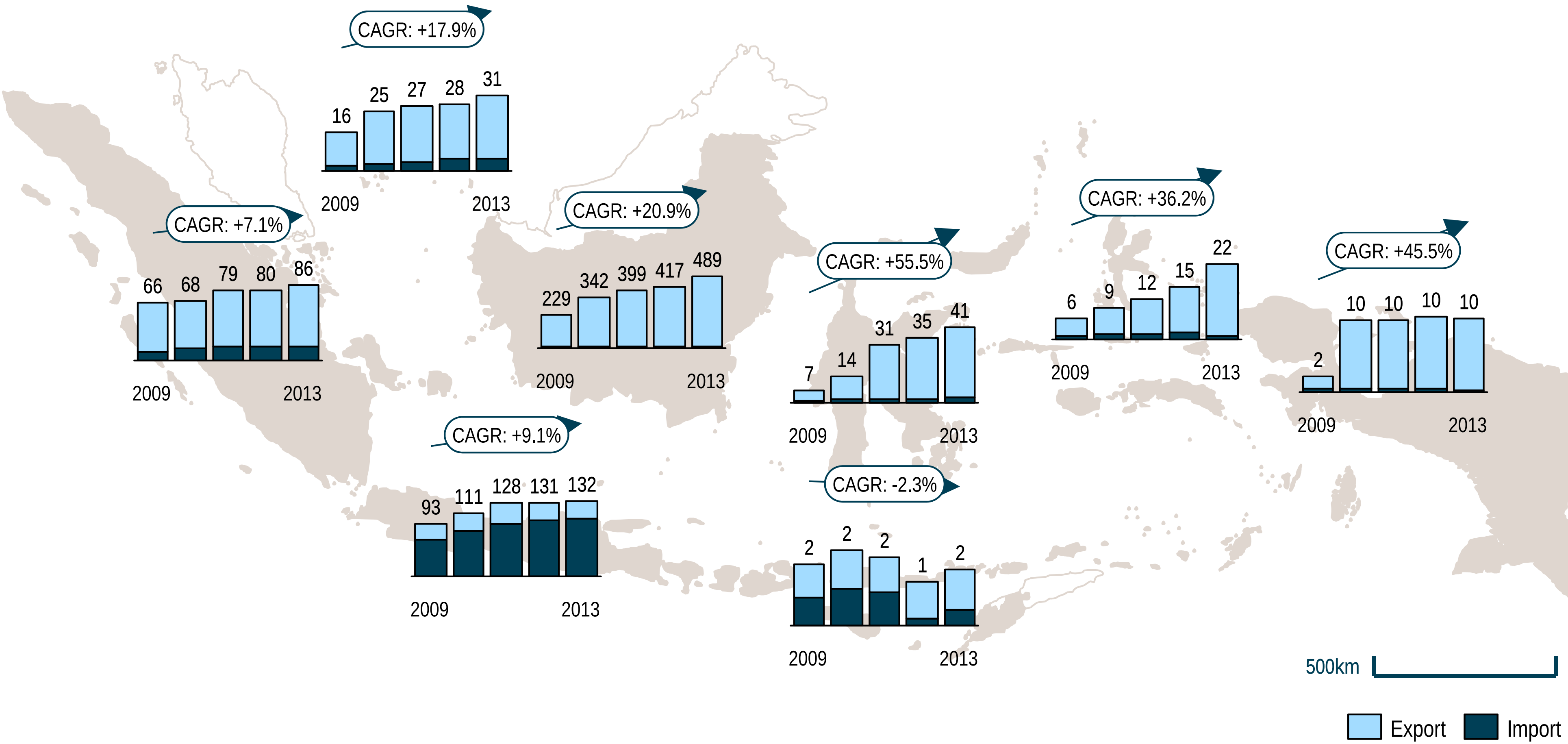
Driven by favorable economic drivers, trade activity has been on a rapid rise

Historical trade data by region, 2009 – 2013 [mil MT]



Source: Statistics Indonesia, Roland Berger

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C. Main challenges for port and maritime industry

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With the new shipping laws in place, port investment opportunities for private players have been realised...

Evolution of port sector regulations

1960
Eight National Port Companies (NPC) for port management and administration

1964
Port Authorities to handle operational matters and NPCs to handle commercial

1969
Government Regulation No. 1: Port Management Boards (PMB) to manage public ports

1983
PMBs were restructured into
> Public Port Corporations (PELINDO) I–IV for commercial ports
> Directorate General of Sea Transportation for non-commercial ports

1992
Categorisation of general and special ports:
> PELINDO - ~70 commercial ports
> UPTs/ Regional Administrations – small ports
> Owners – special ports

2008
Shipping and Port Act No. 17: PELINDO removed as regulator only to act as operator setting tariffs freely, subject to local port authorities' approval

2009
> National and Local Port Master Plan,
> Port/ terminal development & operational approvals
> Permits and tariffs
> Foreign-trading ports promotion
> Port information systems

Port sector privatization

Source: Roland Berger

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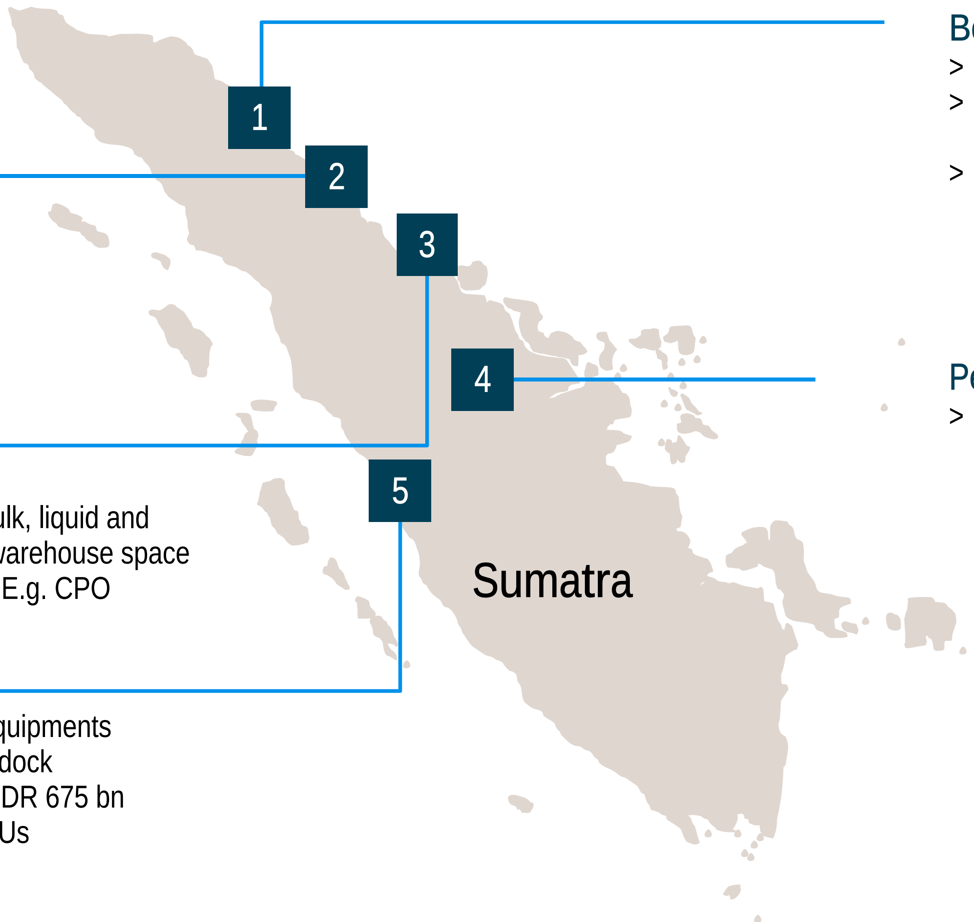
... allowing an increase in influx of capital investment to further development and expansion of the port industry

Summary of upcoming port developments & investments in Sumatra



Belawan
> IDR 3 trn investment
> Dock and equipment addition being done urgently
> Additional CY space, to be fully ready by 2015

Kuala Tanjung
> IDR 6.5 trn investment
> Capacity of 1.5 m TEUs/ year
> With a 2.5 m ton/ year CPO terminal
> Ready by 2015

Pekanbaru
> Investment in dock area, CY space, container port terminal, road access and also access within the harbor

Dumai
> Investment of IDR 6 trn
> Yard storage, container, dry bulk, liquid and passenger terminal including warehouse space
> Primarily serving commodities E.g. CPO

Teluk Bayur
> Procurement of equipments and expansion of dock
> Projected cost of IDR 675 bn
> Capacity of 4k TEUs

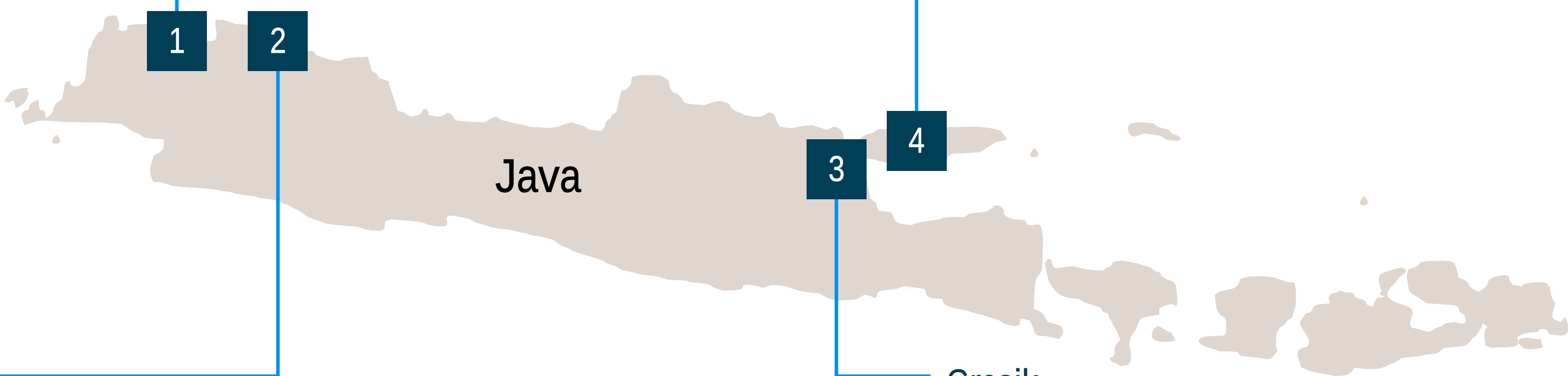
Source: Roland Berger

... allowing an increase in influx of capital investment to further development and expansion of the port industry

Summary of upcoming port developments & investments in Java

Tanjung priok
> Development of new Priok Port in North Kalibaru adding an additional capacity of 9 m TEUs by 2023

Madura
> Privately developed industrial city (Lamicitra Nusantara Tbk)
> 10k ha land as an integrated seaport
> USD 600 m/ project x 10 projects



Cilamaya
> Proposed investment of USD 1.03 bn
> Capacity of 10 m TEUs
> Operators still to be chosen
> Scheduled completion in 2019

Gresik
> Increase the general cargo, liquid bulk, channel and basin over two stages
> Scheduled final completion is 2014
> IPC III to jointly build an industrial estate and deep water port with AKR of Gresik

Source: IPC II. Roland Berger

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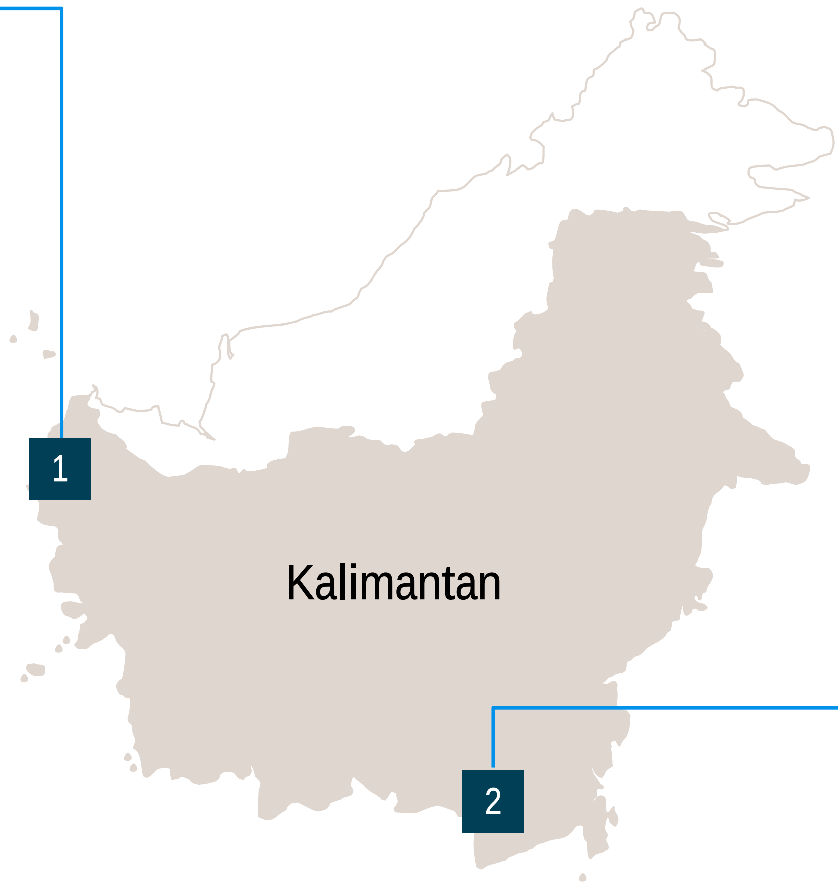
... allowing an increase in influx of capital investment to further development and expansion of the port industry

Summary of upcoming port developments & investments in Kalimantan



Pontianak

> The proposed port would be able to process up to 3 million TEU pa as well as 15 million tonnes of bulk cargo and over 20 million tonnes of liquids

Banjarmasin

> New channel built by private company increasing throughput greatly
> Revenue earned by users on /MT basis

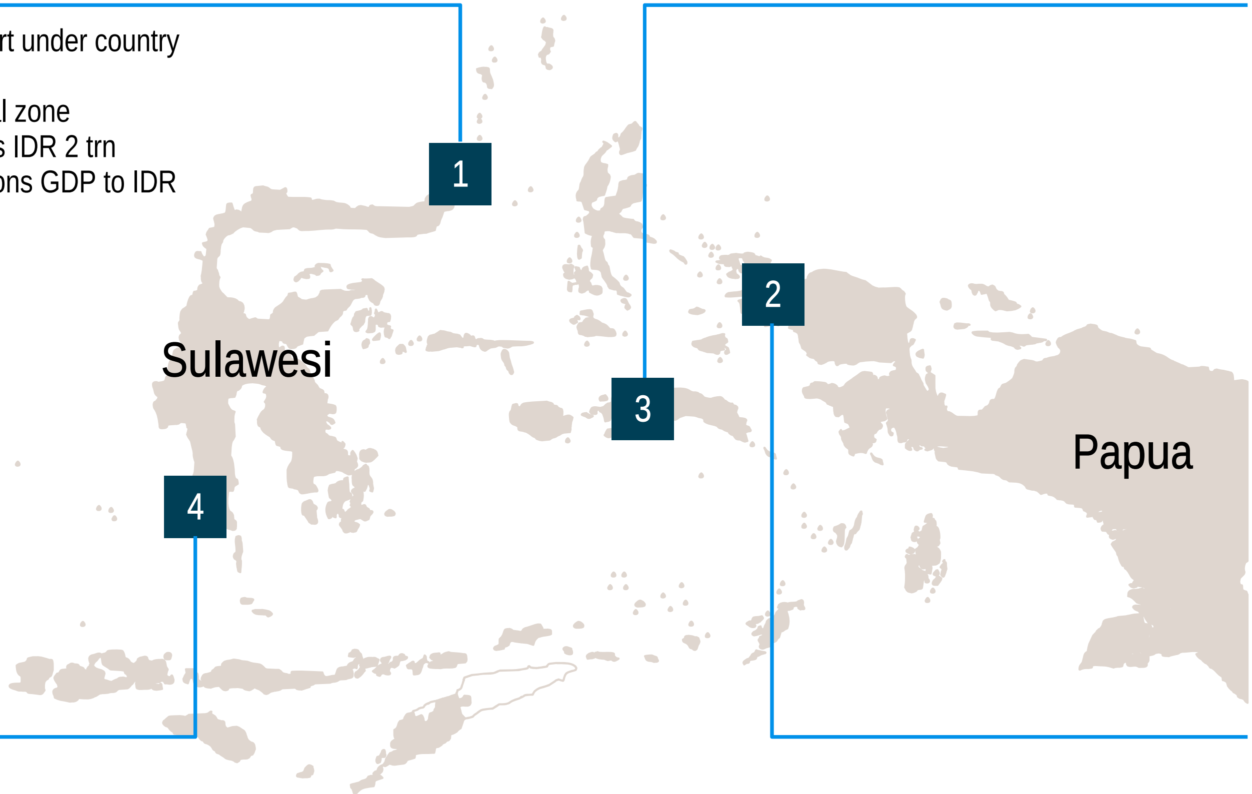
Source: IPC II. Roland Berger

... allowing an increase in influx of capital investment to further development and expansion of the port industry

Summary of upcoming port developments & investments Eastern regions

Bitung
> National strategic port under country Masterplan (MP3EI)
> Incl. 500 ha industrial zone
> Road works to port is IDR 2 trn
> Would increase regions GDP to IDR 50 trn by 2025

Ambon
> Land reclamation
> New dock
> Quay extension
> Increased container volume ~320k TEUs by 2025/ month
> Currently 36k TEUs per month
> Expansion delayed due to financial problems (gov't budget)



Makassar
> IDR 7 trn investment
> Starting in 2014 with Pelindo IV
> Looking for private/ state run companies to construct the port or foreign entity

Sorong
> IPC II would work on the plan to build a new Sorong to be one of the hub in Eastern region of Indonesia.

Source: Roland Berger

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Despite new legislation and increased capital, there are general concerns regarding the development progress of the port sector

Repercussions of changes in legislation

Widespread expansion of development across the archipelago through:

> Competition in the development and operation of ports thus breaking state monopoly

> Improvement in inter-island transports connectivity

> Reduction of transport costs

Concerns

- Lack of coordination between different institutes within the port sector
- Slow yielding projects – Port projects take significant amount of investment and time to realize returns
- New Port Authorities staff have poor expertise in port sectors.
- The overlap and ambiguity over the role of new Port Authorities and Operators (especially the Pelindos)
- Multiple implementation of the law
- Lack of clear master plan for the country's port sector

Source: Roland Berger

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D. Vision for the port sector

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The port vision should focus on the transport chain which has three main segments

Supplier | Port of orgin | Port of destination | Customer

Transport to port | Transport to destination port | Transport to customer

Forwarder/3PL

Connectivity to port

> Road quality and capacity
> Train frequency, punctulity and number of destinations
> Pipe size
> River width and draft

Connectivity between port

> Location to nearby sealane
> aligned paperwork between ports
> Aligned operations between ports
> Relationship with shipping lines

Connectivity from port

> Road quality and capacity
> Train frequency, punctulity and number of destinations
> Pipe size
> River width and draft

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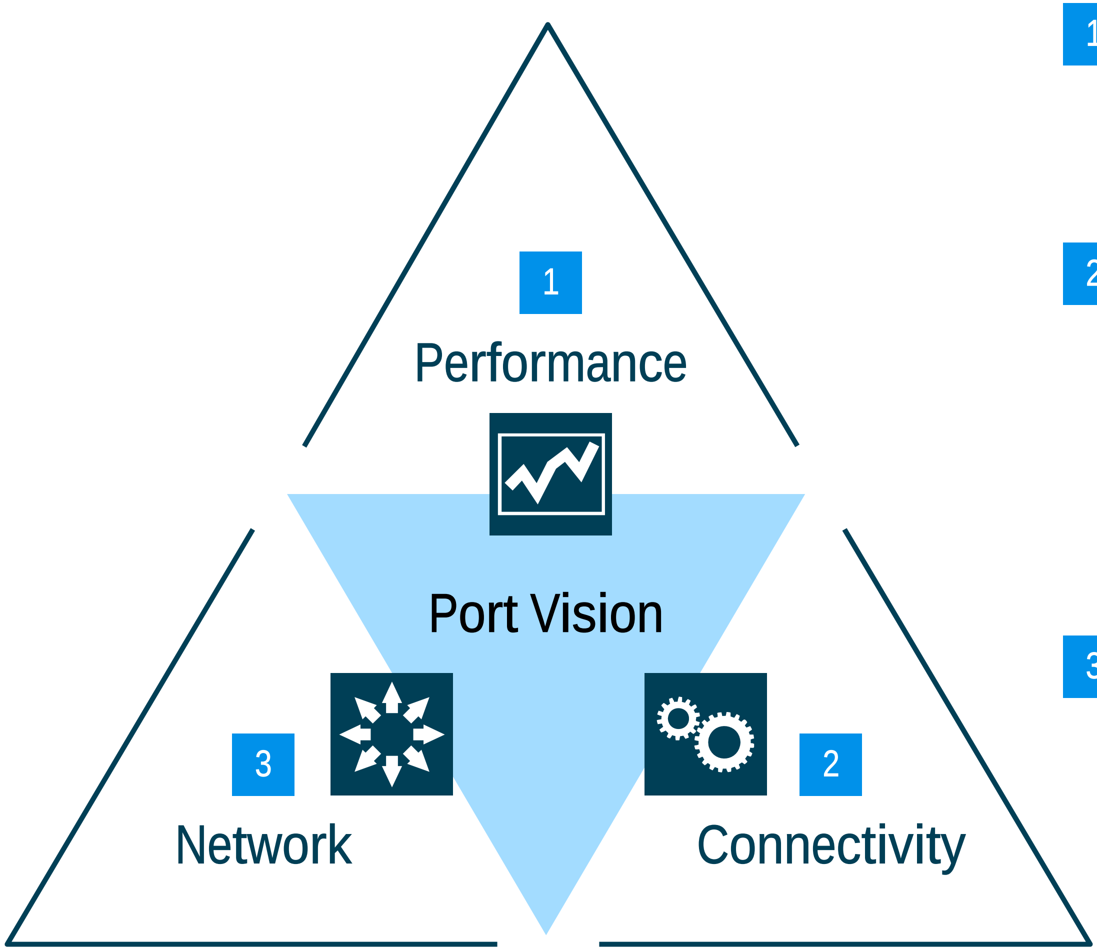
Port vision for Indonesia ports should contains solid plans to increase port performance and connectivity and network expansion

Port strategy elements



1 Port performance

- > Improve port facilities
- > Improve the skills of port labours
- > Improve master planning

2 Increase connectivity

- > Road quality and capacity
- > Train frequency, punctuality and number of destinations
- > Attract the industry
- > Increase river width and draft
- > Increase connectivity with associated ports

3 Expanding the network

- > Follow the industry
- > Create the shipping corridor /shipping network
- > Create own network
- > Develop strategic parnerships with other port in containers, energy, petrochemicals and dry bulk

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E. Strategies for the future

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Key goals have been identified in order to further the nation's efforts in developing its port industry

Key industry goals

1 **Overcoming institutional challenges**
The process to establish and expand existing ports are still heavily bureaucratic

2 **Revising Java-centric economic initiatives and policies**
The nation is primarily focused in further developing the economy in Java

3 **Reducing reluctance to expand eastwards**
There is an existing lack of enthusiasm to tap into the growing potential of the port industry in the East

4 **Improving under investment in ports, particularly in the East**
Investments are almost solely fixed on the Sumatera-Java-Kalimantan belt which excludes finances pouring into the East

5 **Developing logistics infrastructure in remote areas**
Considering the isolated locations of some regions, there may be difficulty in establishing operations there

6 **Modernising commercial and internal traffic fleets**
Dated fleets are hampering the growth of the shipping and logistics industry in Indonesia

Source: Roland Berger

Roland Berger
Strategy Consultants

Three core strategies should serve as a guide to the development initiatives of the Indonesian port sector

Core development strategies

1

Increase attractiveness to invest in the Indonesian port sector

> Process to establish and expand existing ports are still heavily bureaucratic
> Investment climate in recent years has not been encouraging

2

Shift and expand development focus from Java

> Existing initiatives and policies are heavily centred around development of the port industry in Java
> There is a lack of enthusiasm to tap into the growing potential within the East
> Investments are almost solely fixed on the Sumatera-Java-Kalimantan belt, excluding participants further east
> Disinterest in developing the logistics in the east

3

Revitalise existing ports and fleets

> Indonesian port infrastructure is ranked in the bottom half of global port rankings[1)]
> Dated fleets are hampering the growth of the shipping and logistics industry in Indonesia

Source: Roland Berger

Truong Bui

Project Manager

Roland Berger Strategy Consultants Pte. Ltd.
50 Collyer Quay, #10-02 OUE Bayfront
Singapore 049321
Tel +65 6597 4567
Mobile +65 8321 2170
Fax +65 6597 4531
truong.bui@rolandberger.com
<http://www.rolandberger.com>

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