The ASEAN Maritime Sector:

How do we push infrastructure growth forward?

16th ASEAN Ports & Shipping

Johor, 3-5 July 2018

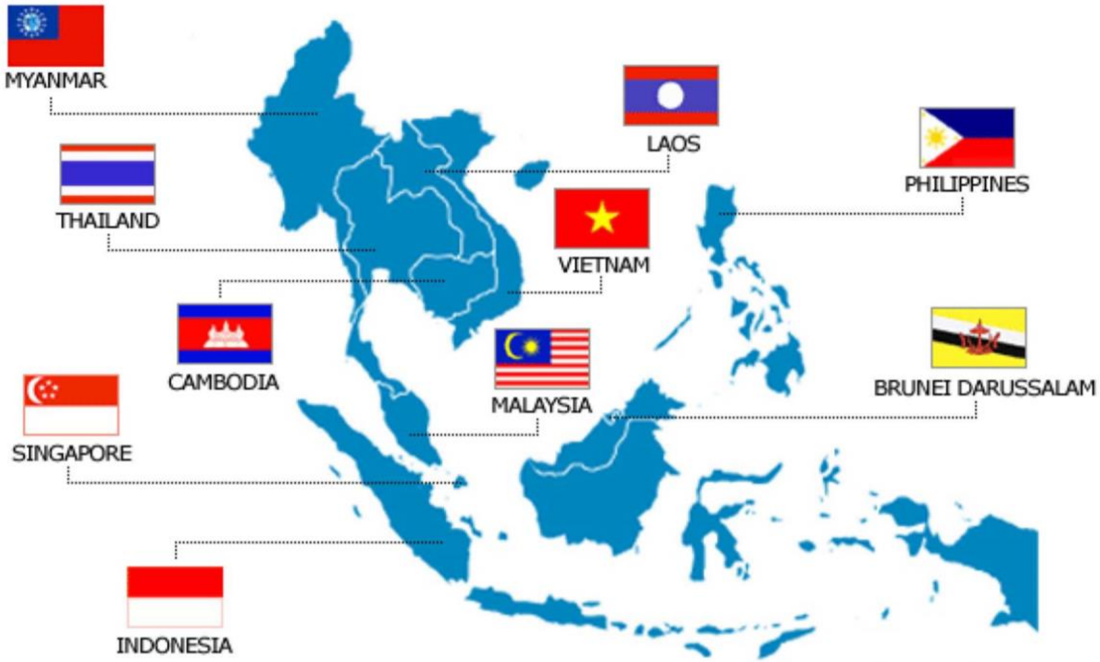
BMT

Contents

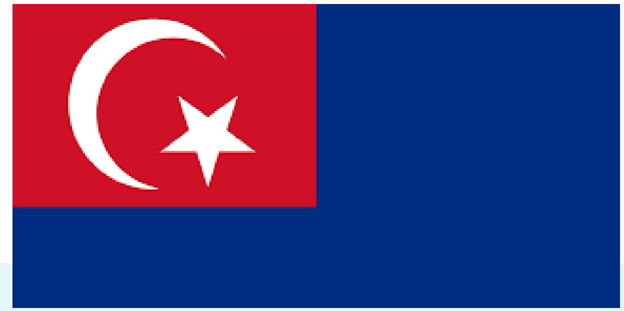
ASEAN Outlook

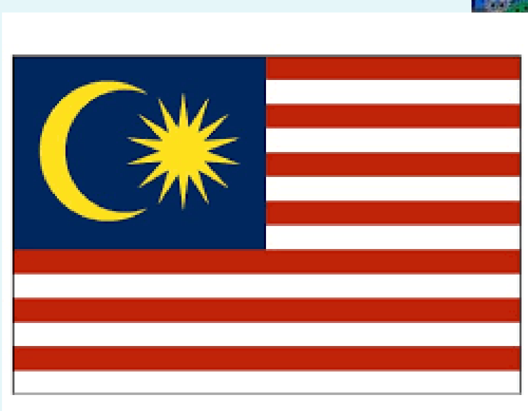
ASEAN

- Member countries:
  - Indonesia
  - Malaysia
  - Philippines
  - Thailand
  - Brunei
  - Cambodia
  - Laos
  - Myanmar
  - Singapore
  - Vietnam



FACES OF ASEAN





ASEAN Countries has Experienced Rapid Growth & Relative Stability Since 2000

GDP 2017, current prices $ trillion	
United States	19.4
China	12.0
Japan	4.9
Germany	3.7
ASEAN	2.8
United Kingdo	2.6
India	2.6
France	2.6
Brazil	2.1
Italy	1.9
Canada	1.7

Real GDP growth, 2000-17 %	
China	8.8
India	7.3
ASEAN	5.2
Brazil	2.0
Canada	1.7
United States	1.5
Germany	1.4
United Kingdo	1.2
France	0.9
Japan	0.7
Italy	-0.3

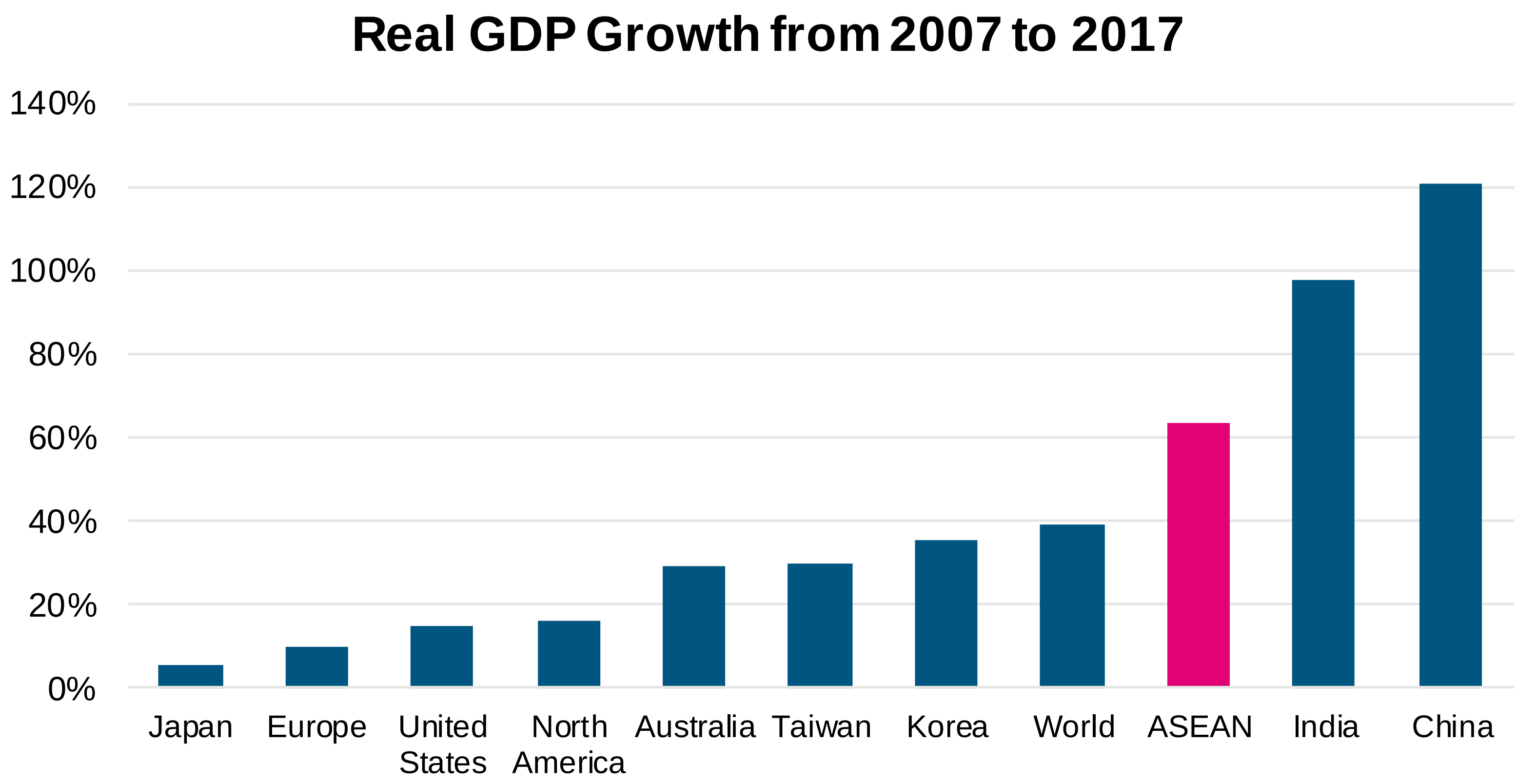
Real GDP growth volatility, 2000-17 %	
Brazil	3.4
Germany	2.5
Japan	2.3
Italy	2.1
China	2.1
United Kingdo	1.9
India	1.8
Canada	1.7
United States	1.6
France	1.4
ASEAN	1.1

Share of debt to GDP, 2017 %	
Japan	217.3
Italy	120.5
United States	95.9
France	87.0
Canada	82.1
United Kingdc	75.8
Germany	72.4
India	70.2
Brazil	66.8
ASEAN	37.7
China	36.5

Inflation rate, 2017 GDP deflator, %	
India	7.6
Brazil	5.9
ASEAN	4.5
China	2.8
United Kingdc	2.4
United States	1.8
Canada	1.6
Italy	1.5
Germany	1.4
France	1.3
Japan	0.3

Source IMF

ASEAN Economies Outperformed the World Average



Source: IMF

Demographic Advantage – Young Population

- Younger population means higher percentage of people in the workforce;
- Favourable demographics in ASEAN countries provide the necessary labour for economic growth;
- The number of seniors dependent on support from the working young are also lower.

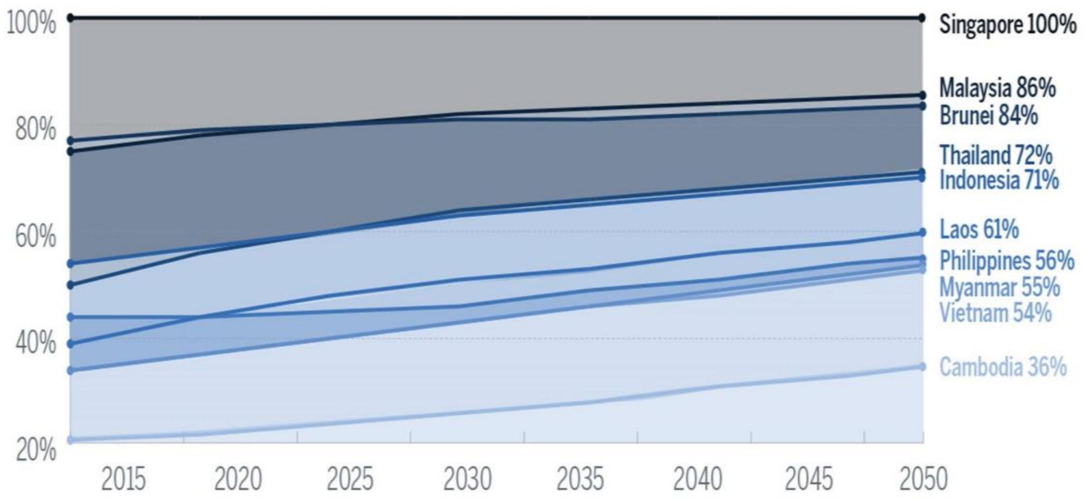
	Population (Thousand)	Median Age	Population Age Under 64	Urban Population
Lao P.D.R.	6,680	22.7	96%	38%
Philippines	105,305	23.1	95%	44%
Cambodia	16,013	24.6	95%	23%
Malaysia	32,050	28.5	94%	74%
Myanmar	52,645	28.9	94%	30%
Brunei Darussalam	429	29.7	96%	79%
Indonesia	261,989	30.2	95%	53%
Vietnam	93,643	30.5	93%	33%
Thailand	69,095	37.7	91%	49%
Singapore	5,612	34.6	92%	100%
China	1,390,080	37.4	89%	58%

Source: Various Statistics Departments

Opportunity for Growth – Urbanisation

- **Urbanisation** will be a key driver of economic development in ASEAN;
- Most of South East Asia's cities are small to mid sized with a population 750k – 2M;
- Urbanisation will increase middle class population and purchasing power.

Projected Urbanisation Rate for Southeast Asia Countries



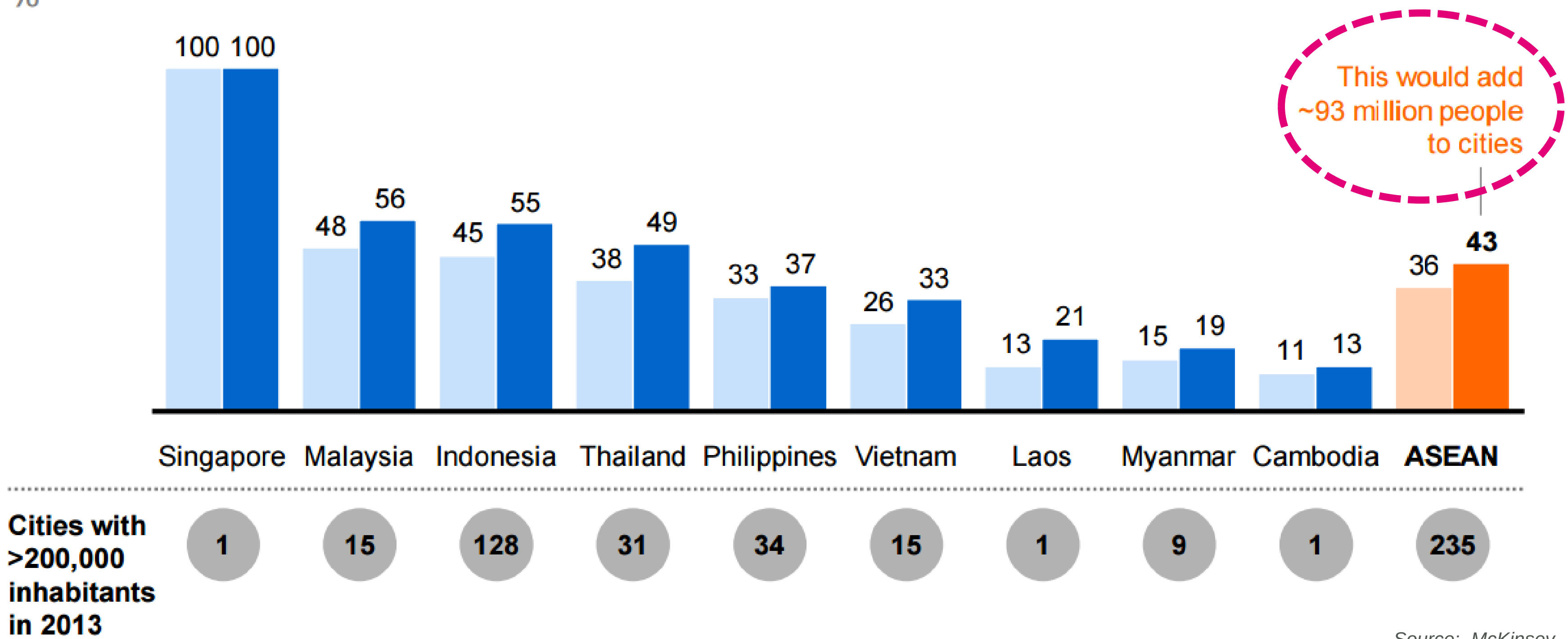
Source: UN Department of Economic and Social Affairs

ASEAN Cities are Expected to Expand by >90M by 2030

More than 90 million people are expected to move to Southeast Asia's cities by 2030

Share of country population living in cities of more than 200,000 inhabitants, 2013–30

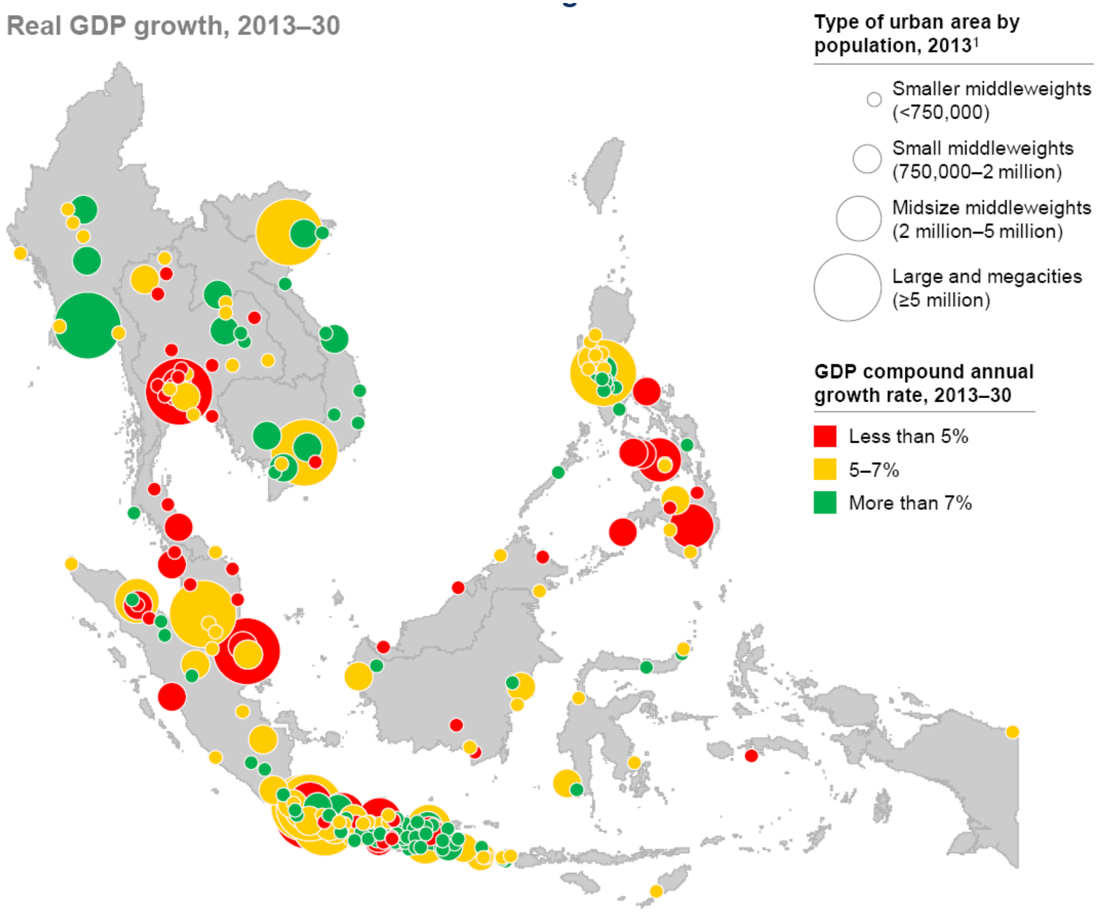
%



Source: McKinsey

Opportunity for Growth – Urbanisation

- **Urbanisation** will be a key driver of economic development in ASEAN;
- Most of South East Asia's cities are small to mid sized with a population 750k – 2M;
- Consumption will increase with additional **purchasing power**, particularly in **Java**, Indonesia.

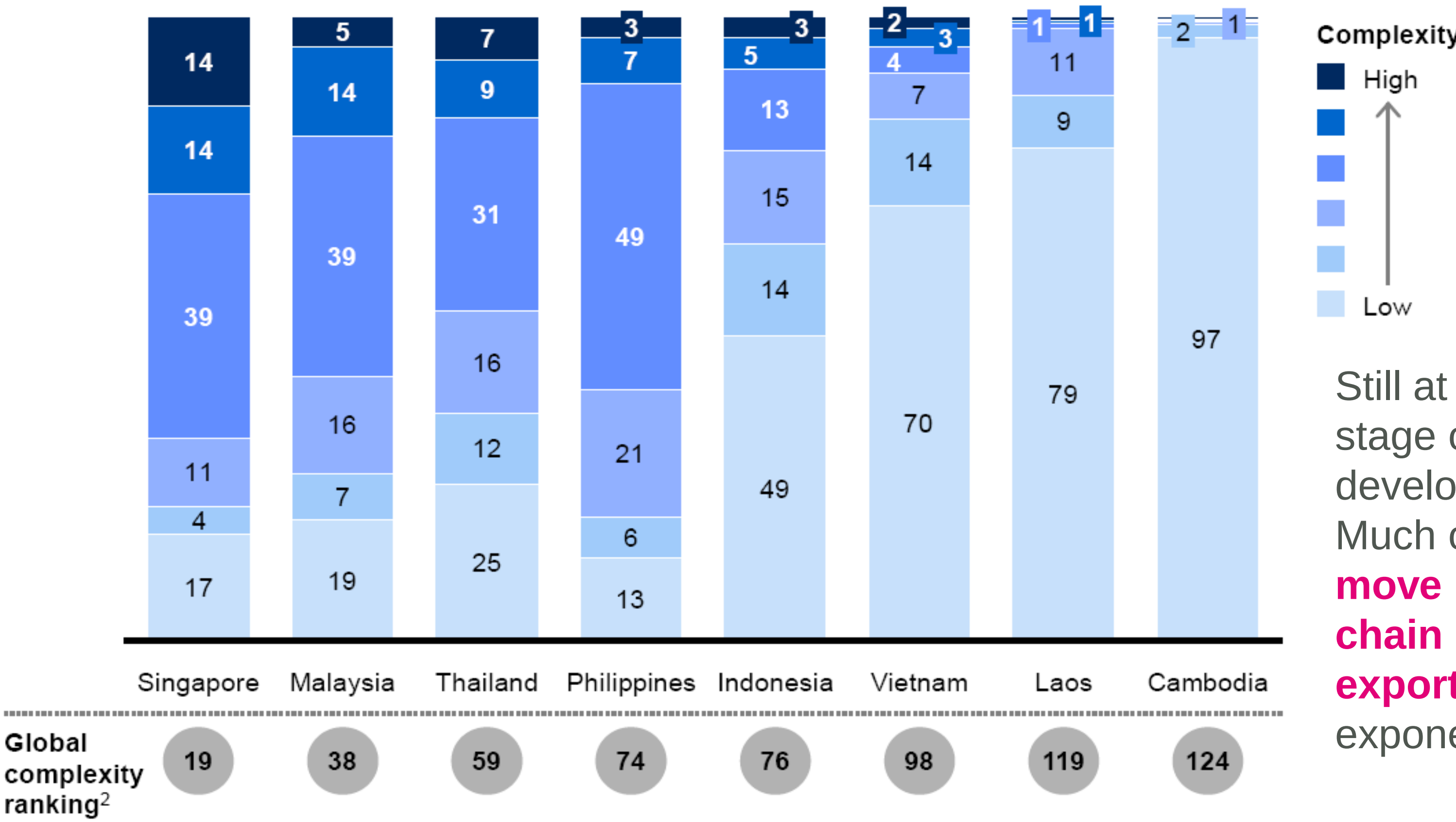


1 Includes cities with more than 200,000 inhabitants.

SOURCE: McKinsey Global Institute Cityscope database; IHS; local statistics offices; McKinsey Global Institute analysis

Only Singapore Ranks in Top 30 via Complexity of Exports

(most complex = machinery & chemicals, least complex – raw materials & agricultural produce)

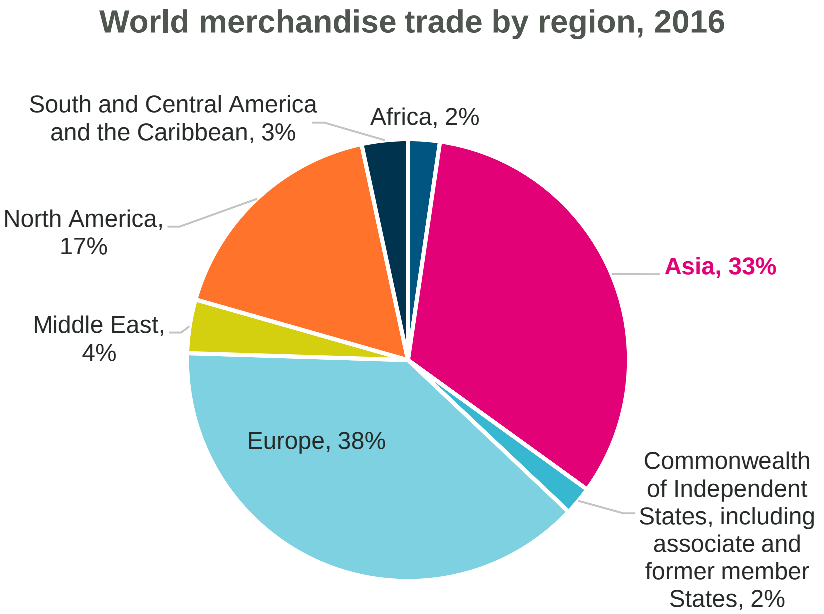


Source: McKinsey

Still at the early stage of development curve - Much opportunity to **move up the value chain** and **increase export values** exponentially

Key Market Trends

1. Trade with Asia Continues to Grow Rapidly

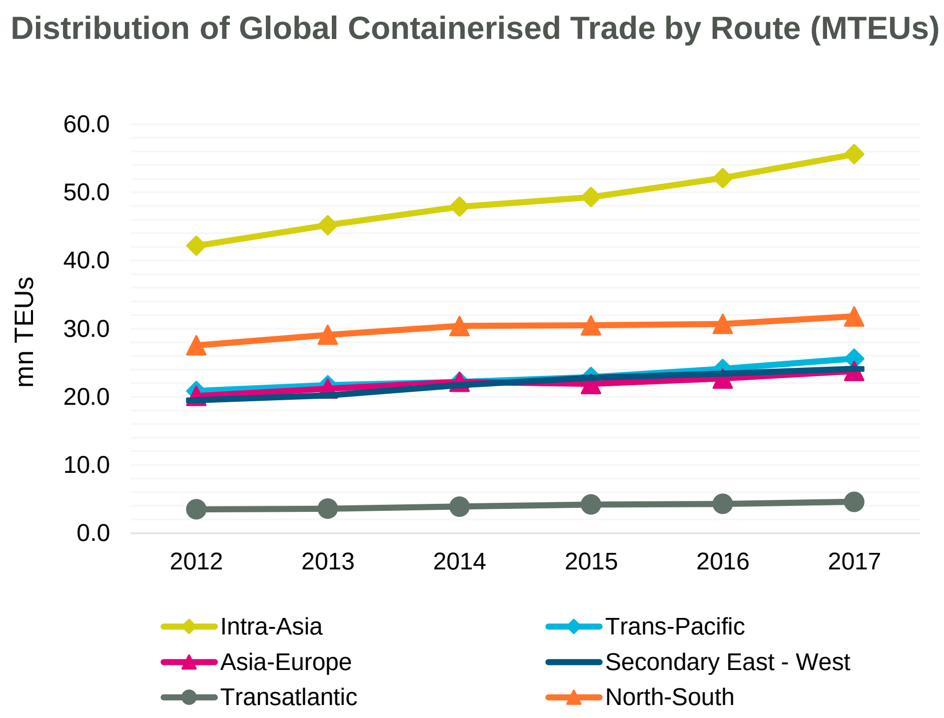


Source: WTO

- Asian economies are an important and growing, component of world trade;
- Asia’s rise have corresponded with declining shares for North America and Europe.

2. Trade within Asia Continues to Grow Rapidly

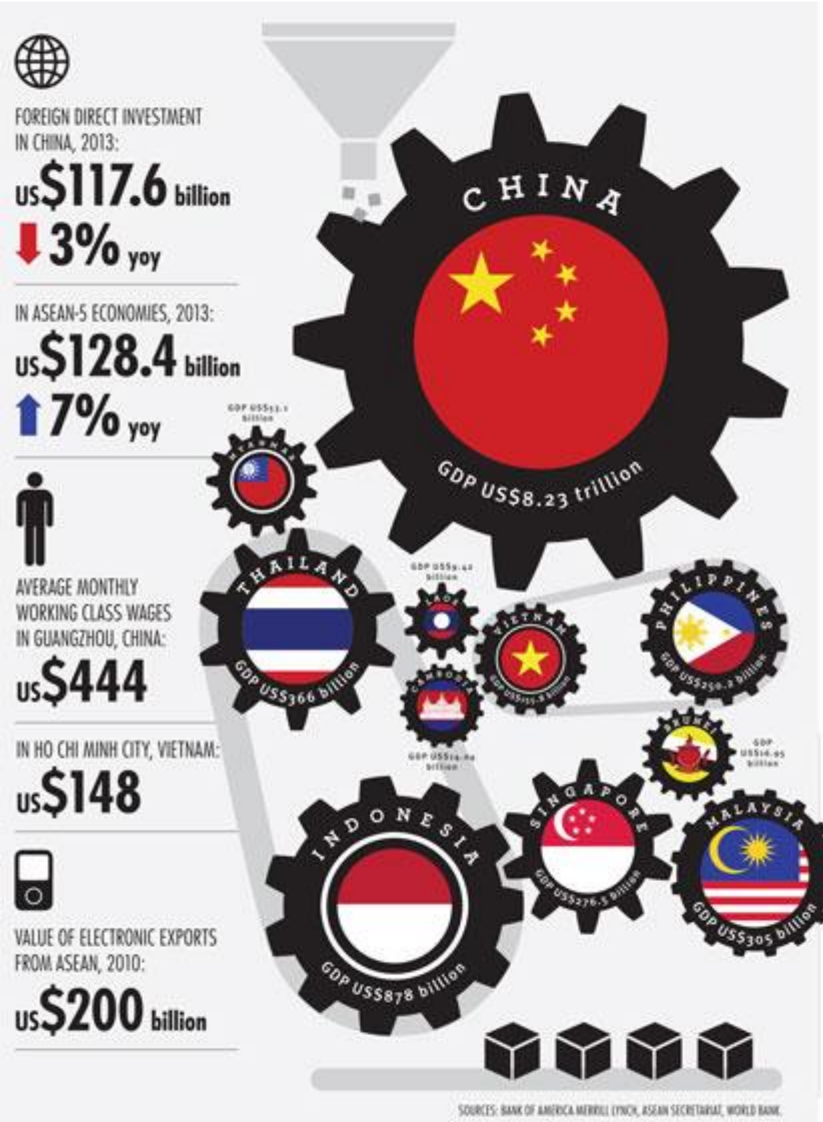
- Intra-Asia container trade volume grow with CAGR at 5.7% p.a. from 2012 to 2017, above world average 4.3% p.a..
- With the rapid growth of intra-Asian trade, the long-distance trade (e.g. Asia-Europe and trans-Pacific) volume has been offset, and the average transport distance for container cargo decreased slightly.



Source: UNTCAD

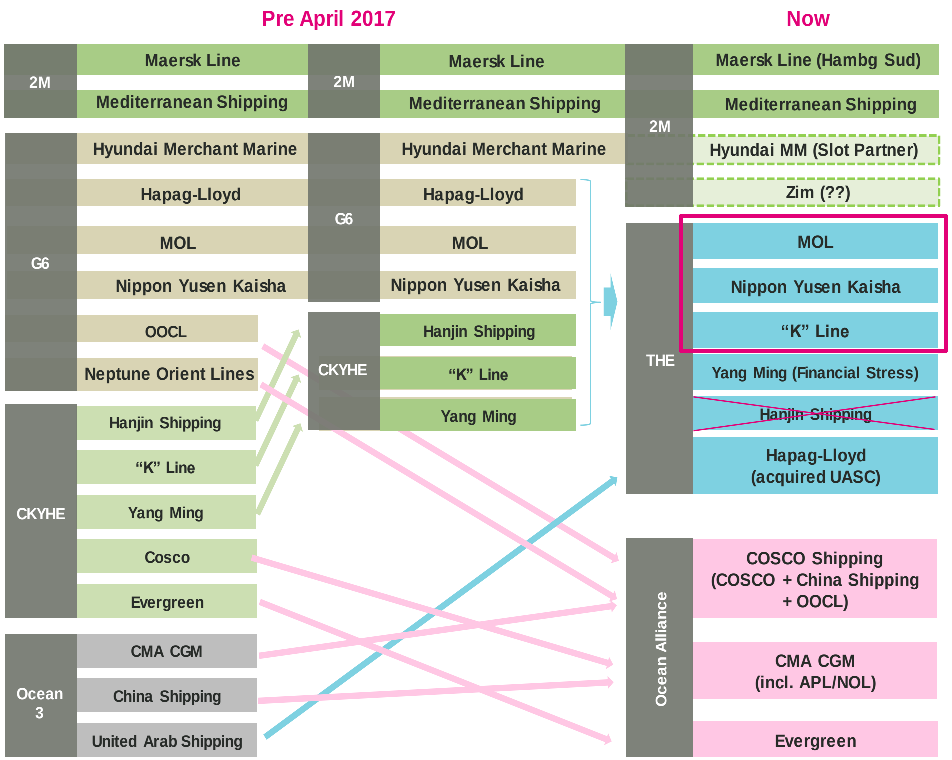
3. Migration of Manufacturing

- The “World Factory” is rapidly shifting out of China and into SE Asia where production costs are relatively lower.
- This change is welcomed by ASEAN countries who are eager for more foreign investment and industrial development.
- Major businesses move their manufacturing to locations with lowest costs; going south to ASEAN is a natural choice.



3. Mega Ship Alliances

- Three mega alliances, including **2M**, **Ocean Alliance** and **THE Alliance** were formed and have been in competition.
- Alliances provide service covering all major routes, namely Asia - Europe / North America, Asia - North America (West Coast / East Coast) and Trans-Atlantic routes. Meanwhile in the Asia - Middle East - Red Sea routes, alliance members are also sharing their container slots.
- In the last two years, consolidation within or across shipping alliances occurred frequently.
- Alliance reshuffle and industry consolidation will influence **port choices** and **calling frequency**. Further restructuring is expected in future, but the scale will be limited.



Singapore, PTP, Port Klang, Cai Mep, Jakarta and Laem Chabang are the direct ports of call in Southeast Asia for the three mega alliances.

The three mega alliances will adopt a 2+1 model in Southeast Asia, i.e. 2 hub ports +1 gateway port (potential hub port) – for example, the Ocean Alliance calling Port Klang & Singapore + Cai Mep.

5. In the Asian Port Market

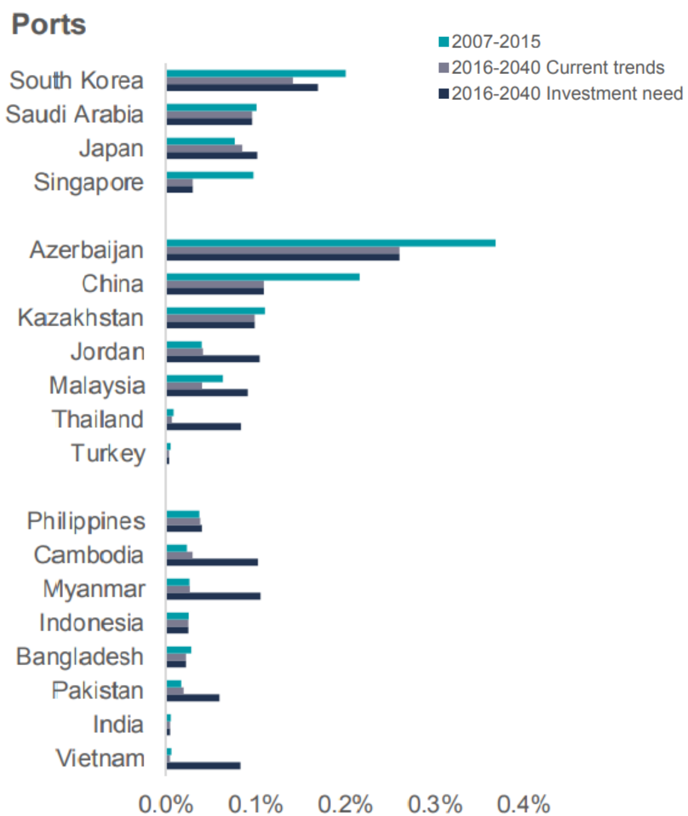
- Intra-Asian trade is growing rapidly and driving up demand for port services, resulting in port traffic increases at an average of about 4% per year.
- Competition among Asia Pacific ports are heating up, particularly for the transhipment business.
- Hub ports are upgrading to accommodate the trend of mega vessels currently approaching 22,000 TEUs.
- More of Asia's port operators are acquiring foreign ports to gain control of international shipping routes and at the same time have direct access to raw materials- OBOR
- **Ports are also evolving rapidly from traditional land & sea interfaces to providers of complete logistics networks.**

Drivers for ASEAN Infrastructures Developments

Infrastructure Development in Emerging Asia

Need for Infrastructure Upgrade

Asia Port Infrastructure spending needs, 2007 to 2040, percent of GDP



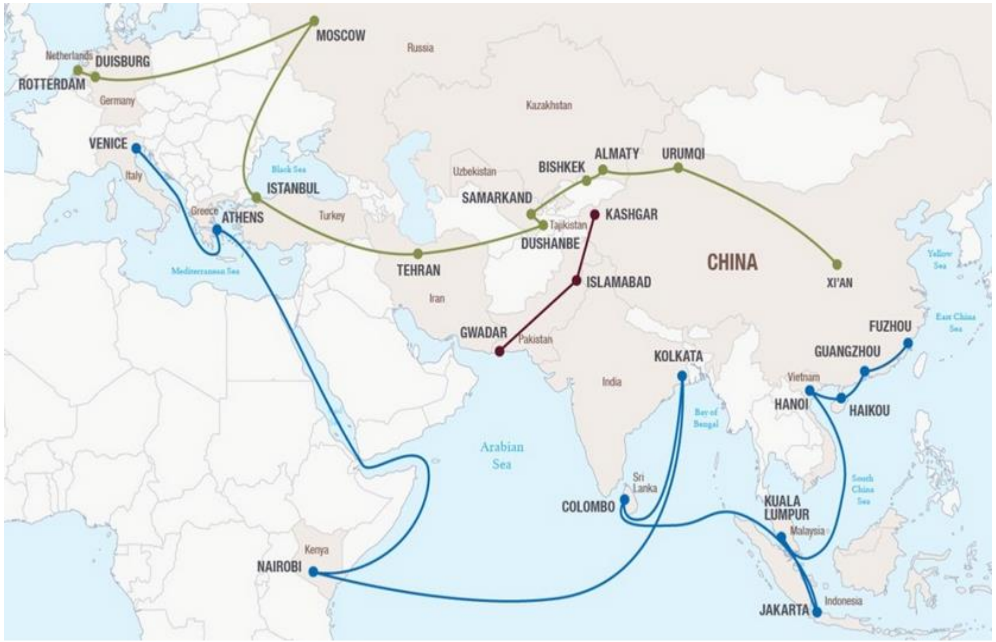
Source: Oxford Economics, PWC

- Migration of industrial activity into SE Asia will result in huge exports.
- Increasing demand from intra-Asian trade is putting pressure on existing infrastructure.
- Port expansion and improvement of inland connectivity (e.g., road, barging and rail) are priorities.
- Amongst the low income countries in Asia, Pakistan, Cambodia, Myanmar and Vietnam are all estimated to require a substantial uplift in investment in port infrastructure to support their development.

→ ***Reducing the logistics cost of moving cargo in both domestic and international markets***

China’s “One Belt One Road” Policy

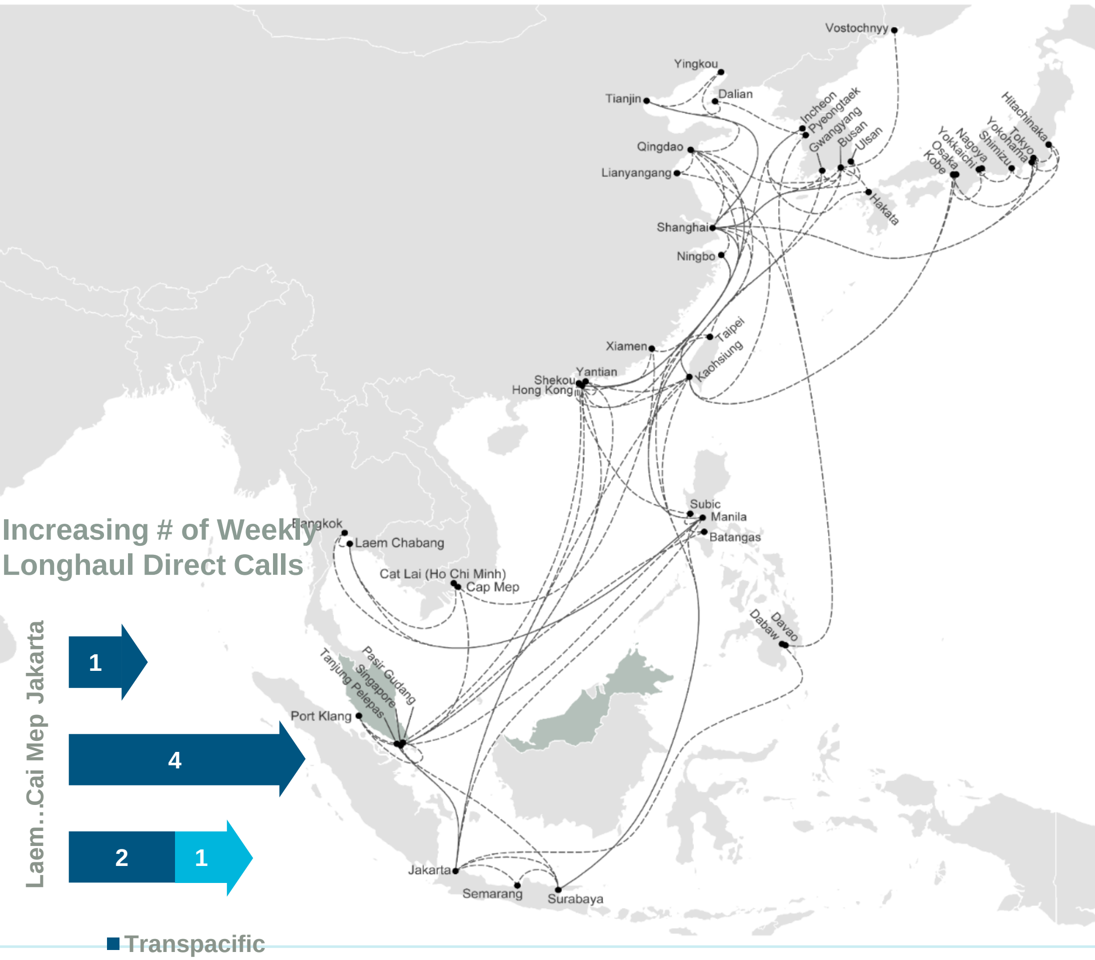
Supply Driven Strategy



- Landside & seaside corridors
- Infrastructure projects (ports, rail, road, industrial parks, power plant etc.) in developing countries
- Aim to reduce logistics cost and boost trade
- Politically driven, commercially viable?
- What are the TRUE investment opportunities?

OBOR – The Context of Asia Ports

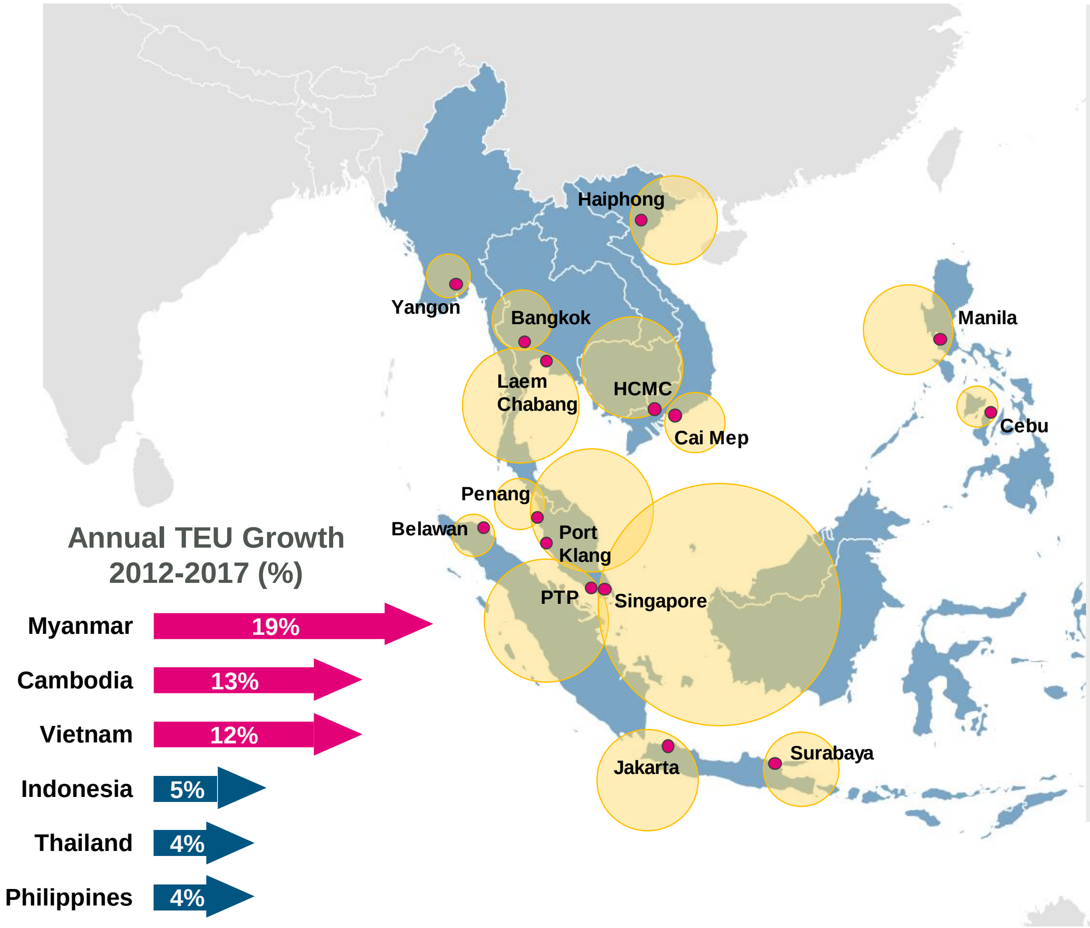
Evolving from transhipment towards direct calls



- Largest trade in volume @ 60 mil p.a. (5-6 times the AE/TP trade), fastest growing (CAGR2011-2016 @ 5.5%), due to
  - Factory Asia / world factory of China
  - Migration of manufacturing within the region
  - Multi-locations of assembly and manufactures (resource advantage, technology base, agile logistics etc.)
- Increasing direct calls to traditional feeder ports
- First time for Jakarta to have the longhaul direct service

OBOR – The Context of Asia Ports

Lack of Presence in Southeast Asia



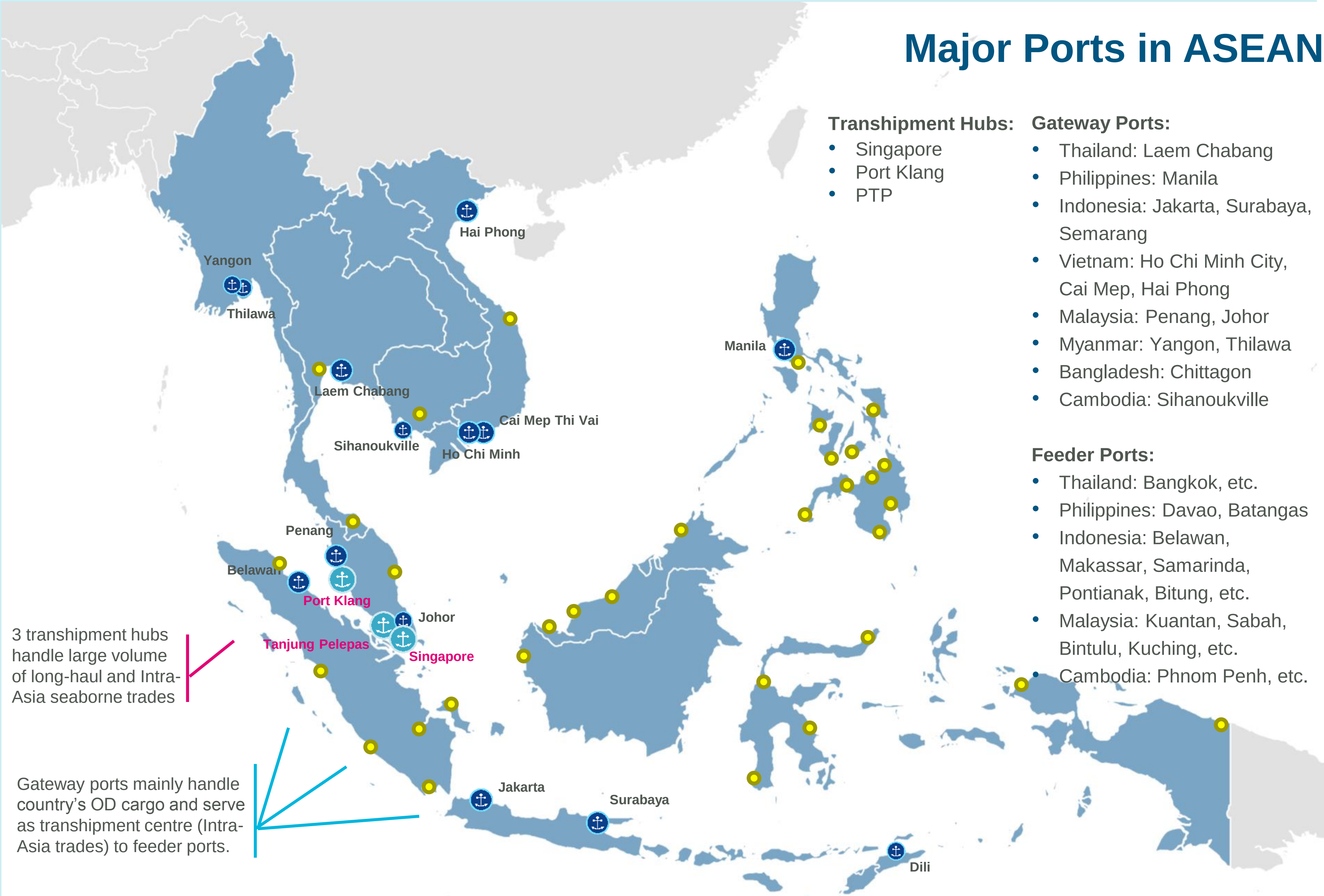
- A region at the heart of global shipping where world's trunk trades converge
- Significant volume of transhipment cargo
- Singapore, Port Klang and Tanjung Pelepas (PTP) move 90% of the transhipment in the region
- Singapore the largest port in the region, handling 34 mil TEU in 2017, above 80% is transhipment
- Myanmar and Vietnam recorded highest port throughput growth in the past five years
- Lack of OBOR project presence in the region

BMT Asia Pacific

BMT

Industry Changes Adapted

Major Ports in ASEAN



Transhipment Hubs:

- Singapore
- Port Klang
- PTP

Gateway Ports:

- Thailand: Laem Chabang
- Philippines: Manila
- Indonesia: Jakarta, Surabaya, Semarang
- Vietnam: Ho Chi Minh City, Cai Mep, Hai Phong
- Malaysia: Penang, Johor
- Myanmar: Yangon, Thilawa
- Bangladesh: Chittagon
- Cambodia: Sihanoukville

Feeder Ports:

- Thailand: Bangkok, etc.
- Philippines: Davao, Batangas
- Indonesia: Belawan, Makassar, Samarinda, Pontianak, Bitung, etc.
- Malaysia: Kuantan, Sabah, Bintulu, Kuching, etc.
- Cambodia: Phnom Penh, etc.

3 transhipment hubs handle large volume of long-haul and Intra-Asia seaborne trades

Gateway ports mainly handle country's OD cargo and serve as transhipment centre (Intra-Asia trades) to feeder ports.

World Top 30 Container Ports of 2017 (7 ports in ASEAN)

Port	Million TEUs
Shanghai	40.2
Singapore	33.7
Shenzhen	25.2
Ningbo	24.6
Hong Kong	20.8
Busan	20.5
Guangzhou	20.4
Qingdao	18.3
Los Angeles/Long Beach	16.9
Dubai	15.4
Tianjin	15.1
Rotterdam	13.7
Port Kelang	12.0
Antwerp	10.5
Xiamen	10.4

Rank	Port	Million TEUs
16	Kaohsiung	10.3
17	Dalian	9.7
18	Hamburg	8.9
19	Tanjung Pelepas	8.4
20	Ho Chi Minh City	8.4
21	Laem Chabang	7.8
22	NY / NJ	6.7
23	Yingkou	6.3
24	Colombo	6.2
25	Jakarta	6.1
26	Suzhou	5.9
27	Bremerhaven	5.5
28	Tokyo	5.1
29	Valencia	4.8
30	Manila	4.8

ASEAN

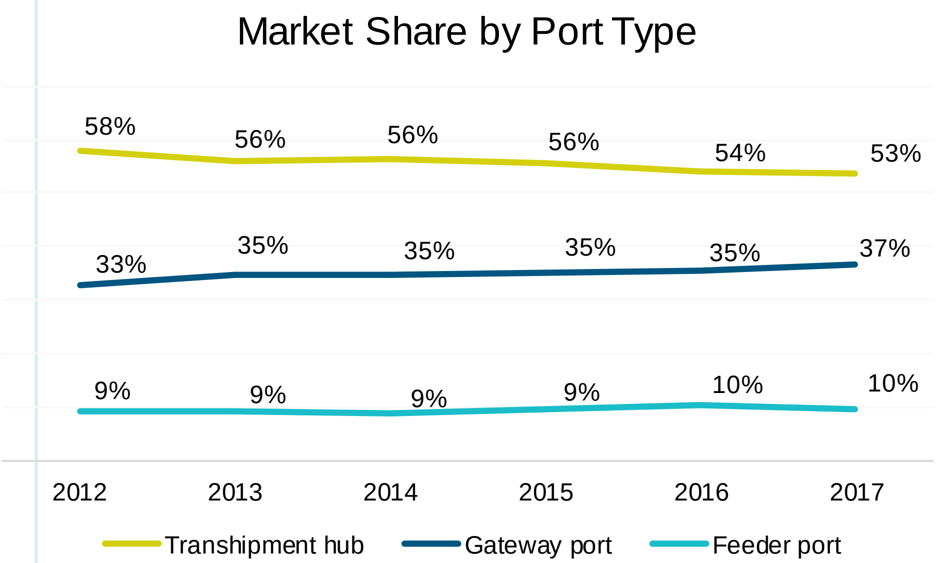
China

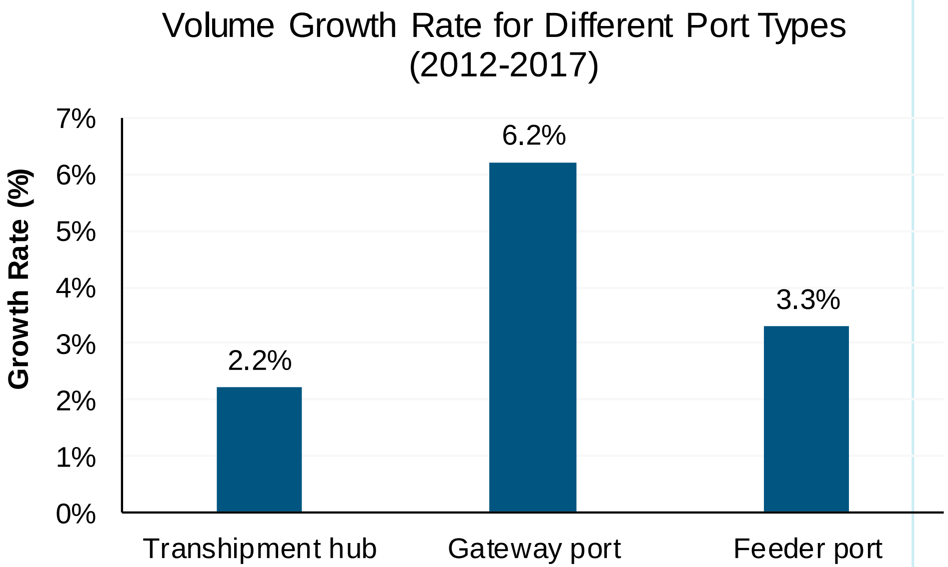
Other Asia

Source: Various Port Authorities

Growth Prospects by Different Port Types

Transhipment Cargo Diluting to Major Gateway Ports:





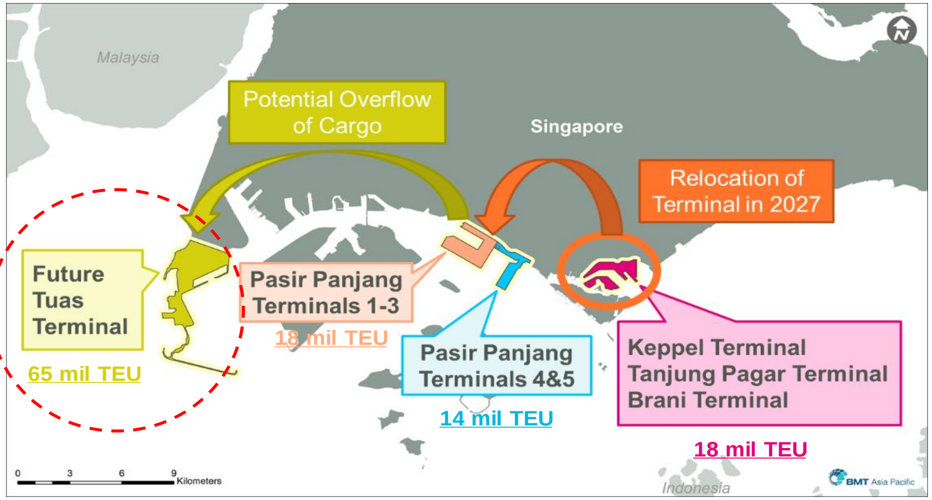
Source: Various Port Authorities

Changes Adapted by Port in the Strait of Malacca

Port of Singapore

- In 2016, PSA and CMA formed a joint venture company CMA CGM-PSA Lion Terminal Pte. Ltd. (CPLT) to operate and use four mega container berths at Pasir Panjang Terminal Phases 3 and 4.
- 9% growth in throughput in 2017, due to shift of CMA's transhipment cargo from Port Klang to Singapore.
- To accommodate increasing transhipment cargo, PSA started to relocate all its container operations to Tuas.
- Full operation shall be resumed before 2027.

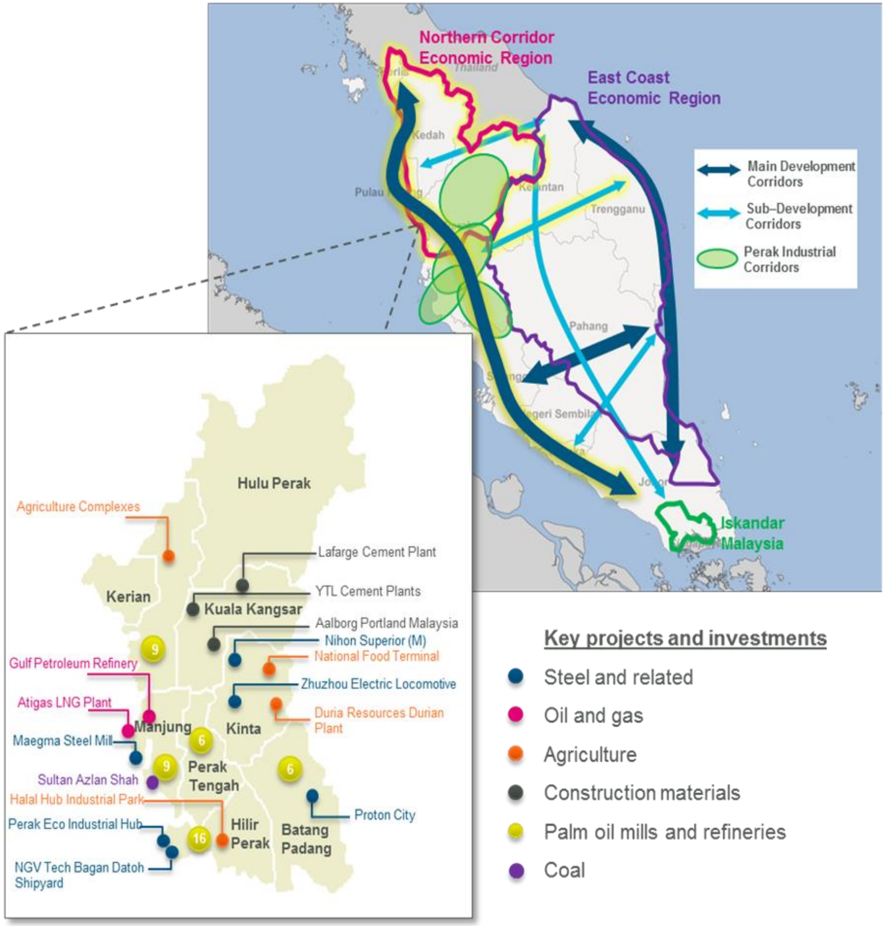
Land Use Plan 2030



Changes Adapted by Port in the Strait of Malacca

Malaysian Ports

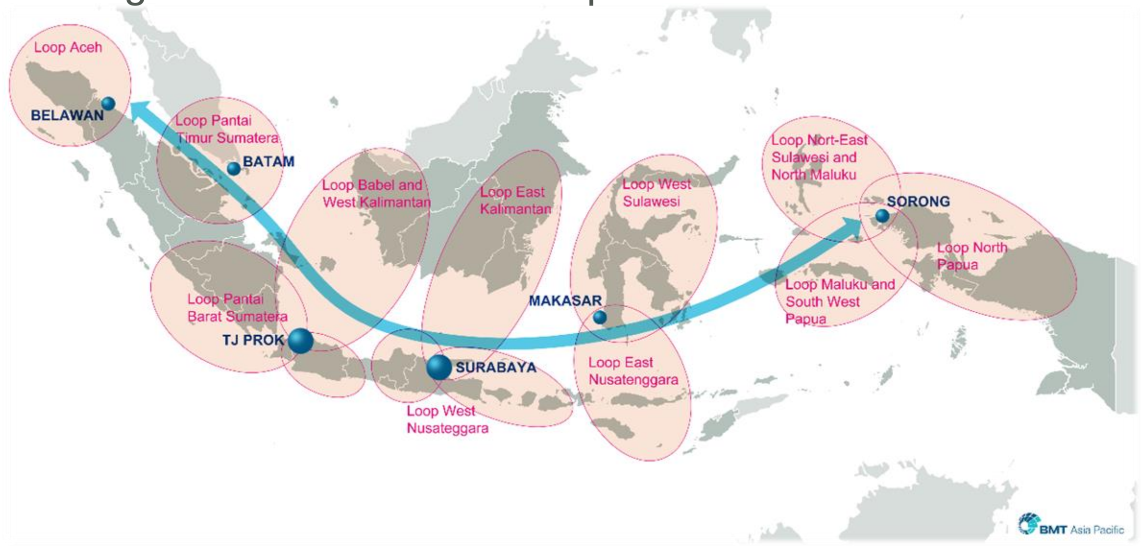
- Diversify cargo mix by growing hinterland cargo base instead of solely relying on international transhipments.
- Volume loss (-9% for Port Klang) due to changes of new ship alliance.
- “Dual hub” model is still favourable for alliances port deployment in Southeast Asia.
- Improve inland connectivity network to reduce overall logistics cost and increase competitiveness.
- Develop free trade zones and high tech parks to increase value of locally produced goods.



Changes Adapted by Indonesian Ports

Indonesian Ports

- With the increase in the volume of hinterland, Jakarta has recently welcomed the first ever direct service (transpacific).
- With the improvement of network coverage, Jakarta have potential to provides transhipment services for Australia, New Zealand, and Pacific Islands.
- Government focuses on promoting investment and development in infrastructure and manufacturing sectors.
- Improvement on efficiency after expansion of Tj. Priok – Kalibaru Terminal.
- Establishment of new gateway ports in Kalimantan, Sumatra and Papua.



Changes Adapted by Vietnam Ports

Vietnam Ports

- Surge in volume at Cai Mep ports, 22.7% growth in 2017.
- All three ocean alliances have deployed direct services at Cai Mep.
- Number of mother vessel deployed by new alliances on transpacific services increased by 4 call per week.
- The joint-venture terminal of CMA (ocean alliance) and Gemadept at Cai Mep is expected to be completed in 2019.
- Development of Lach Huyen International Gateway Port in Haiphong, North Vietnam (draft 14m; capable for 6,000 to 8,000 TEU vessel)

Changes Adopted by Thailand Ports

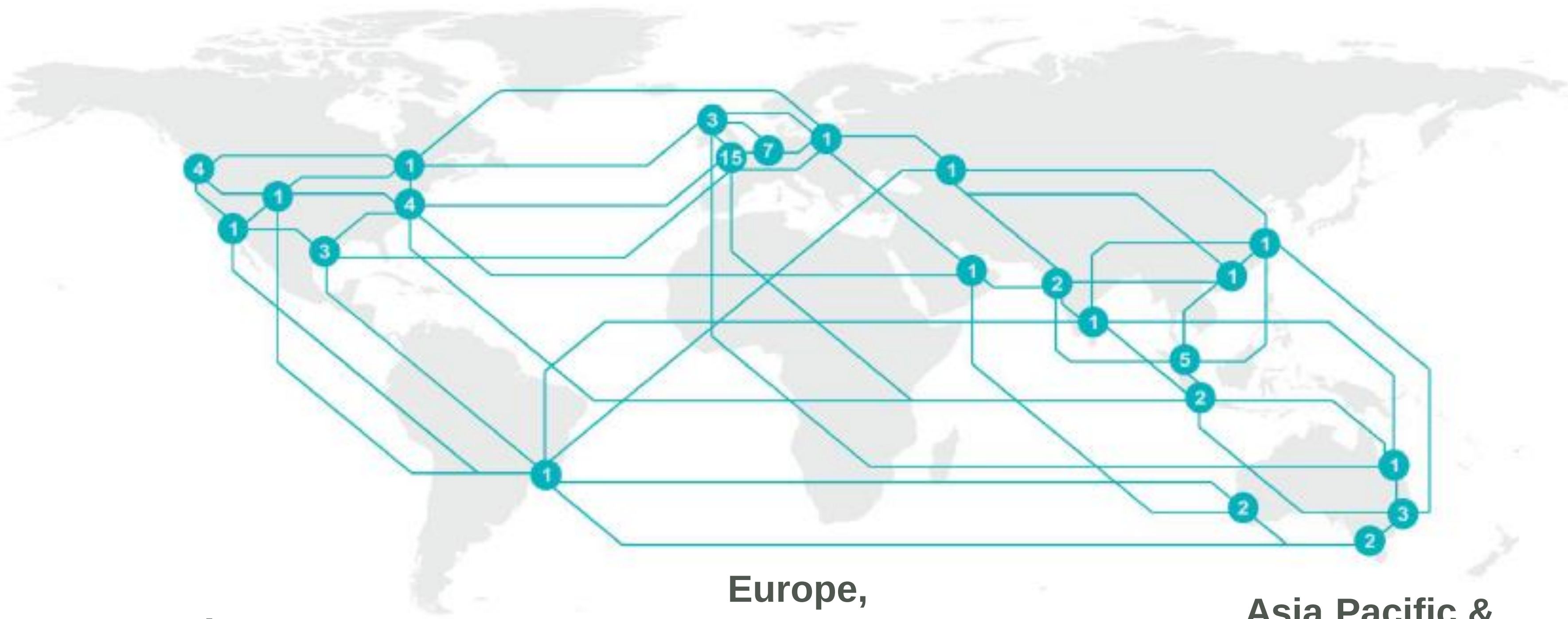
Thailand Ports

- First direct service to Europe established in 2017.
- Transpacific service increased to 6 per week.
- Emergence of East – West network coverage.
- Leam Chabang Phase 3 project, additional 7 million TEU capacity, expected to complete by 2022.
- Enhance inland connectivity – Single Rail Transfer Operator Project (complete in 2017) to increase rail transfer efficiency in Leam Chabang.

SUMMARY

BMT Group Global Network

45 offices worldwide.



Americas
15 offices
3 countries

Europe, Middle East & Africa
15 offices
3 countries

Asia Pacific & Australasia
15 offices
5 countries

We are port & infrastructure consultants

>> BMT helps clients make critical decisions at every stage of port development.

Our experts combine deep sector and regional knowledge with core strengths in specialist market and economic, masterplanning, engineering, risk management and environmental consulting to provide effective, reliable, real-world solutions and products to our clients.

BMT Asia Pacific

- Market, Industry and Cluster Analysis
- Regulatory Economics
- Investment Appraisal & Facilitation
- Socio-economic Assessment
- Port & Terminal Infrastructure Design
- Environmental Services
- Marine Access
- Risk Assessment

Why BMT?

BMT has **direct recent International** and **Southeast Asian** experience in the **port and logistics** sector **industries**.

TERIMA KASIH!!

mark.yong@bmtglobal.com

+852-61843747