Seaport Consultant Asia

The development of the container shipping sector looking at alliances and mergers and how they may impact ports (and terminal operators) of all sizes over the next five to ten years

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Date: December 2016

What are we going to talk about?

- The three T's of Trade
  - Trump
  - Technology
  - Transhipment
- The three C's of Container Shipping
  - Cash
  - Capacity
  - Collapse
- The three P's of Ports
  - Peaks
  - Pressure
  - Profitability

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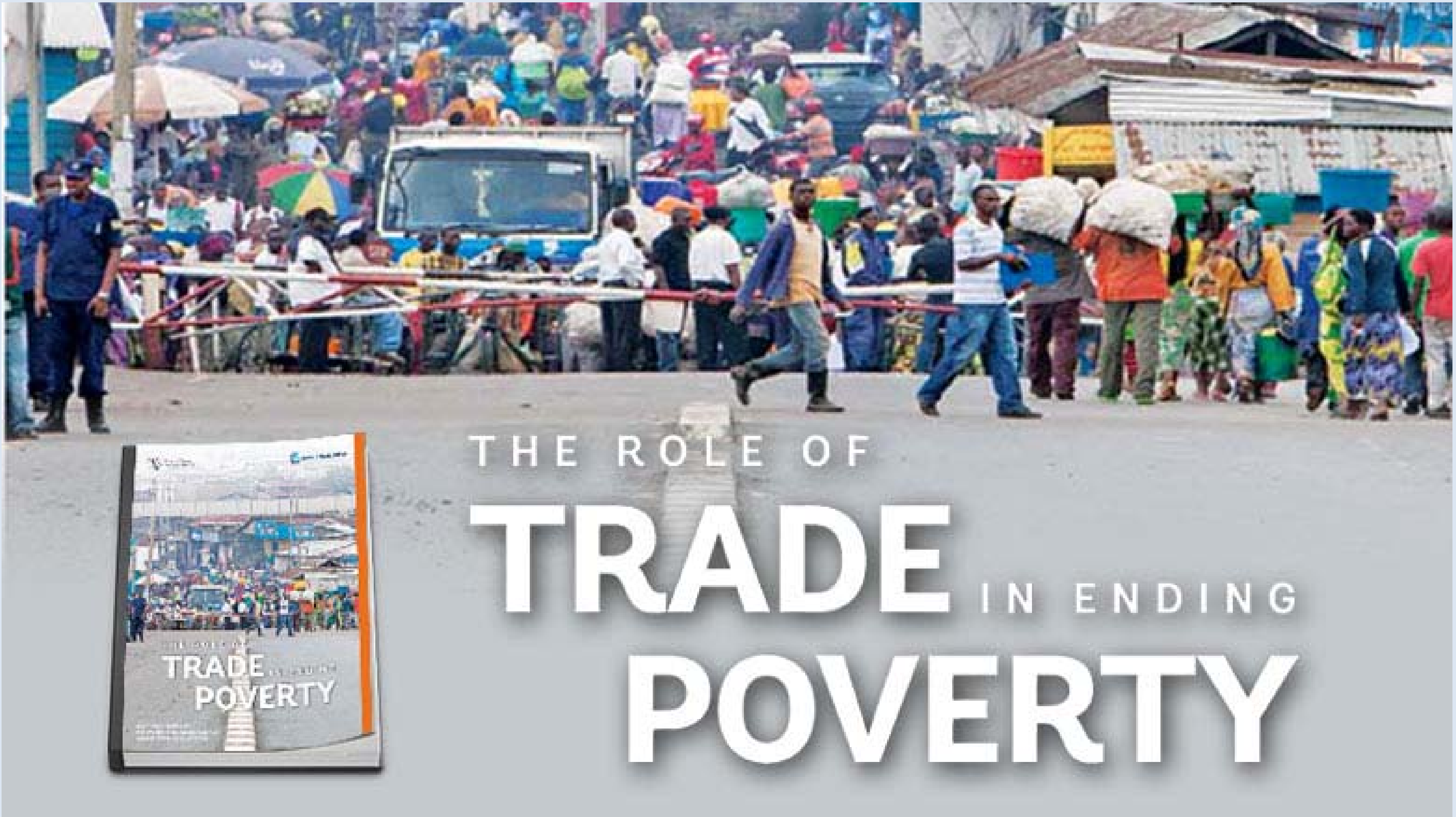
Trade

Trade



Trump

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US to quit TPP trade deal, says Trump

President-elect Donald Trump says the US will quit the Trans-Pacific Partnership trade deal on his first day in office.

1 hour ago | US & Canada

Disbelief and sadness in Asia

Trump reveals new pledges

What is the TPP?

'Please don't ditch TPP'

Trump takes office - full report

and others...

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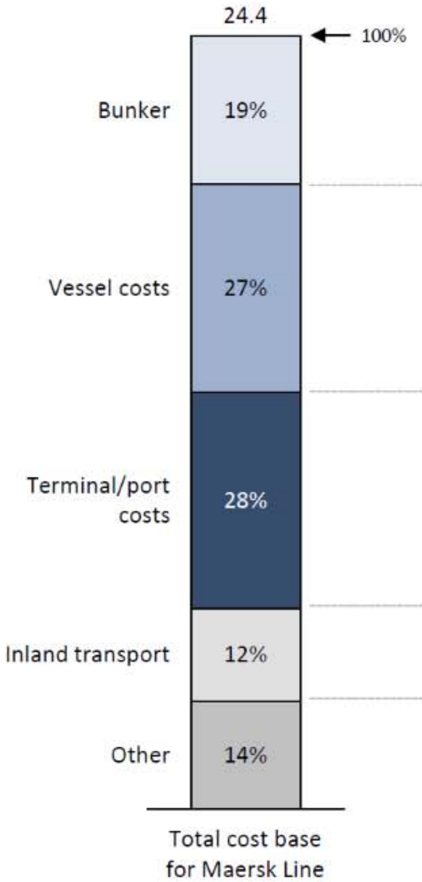
Technology and reshoring

	Top 10 Re-shoring Reasons	Mentions
1	Delivery time improvement	34%
2	Total Cost of ownership	29%
3	Quality improvement	28%
4	Freight Cost improvement	27%
5	Wage Cost improvement	25%
6	Customer Responsiveness improvement	25%
7	Image / Brand (prefer US)	17%
8	Higher productivity	13%
9	Innovation/ Differentiation/ Improvement	12%
10	Inventory improvement	12%

Network implications of transhipment

2014 Cost Breakdown for Maersk Line
US$ billions



Network-based measures to reduce cost by cost category

- Minimize sailing distance
- Minimize sailing speed
- Reduce port time through port-side productivity improvements

- Right-size asset deployment
- Reduce idle/waiting time
- Minimize port calls
- Balance and complement long-haul network with feeder spokes

- Select lowest-cost ports and terminals
- Reduce transshipment handling volumes

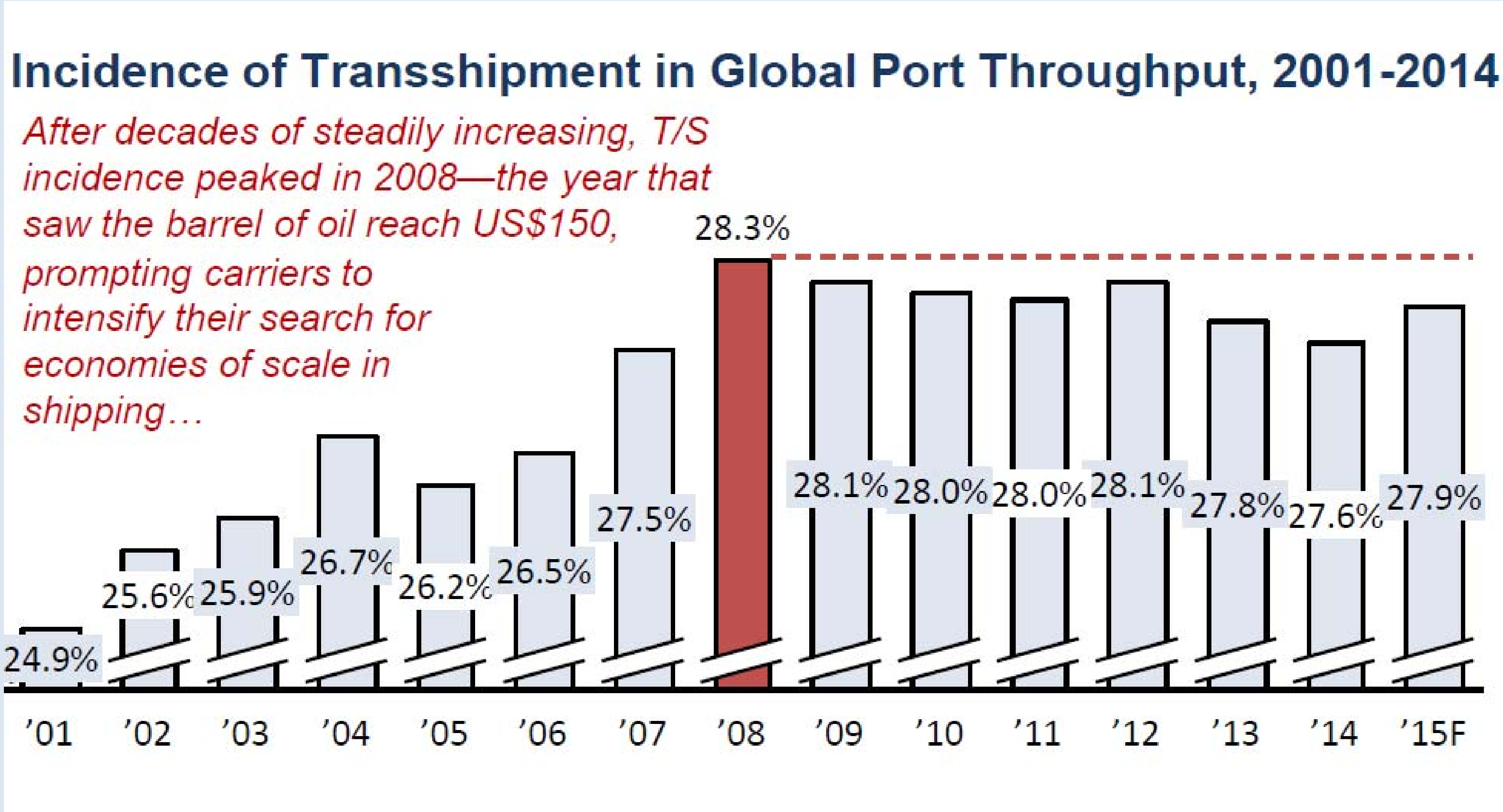
- Only relevant for gateway ports and in those instances where carrier haulage is used; in Malaysia, this component is not a major cost consideration for liners

Key points

- Vessel network can influence as much as three-quarters of a typical deep-sea line's annual spend
- In achieving the "optimum" network a number of tradeoffs can be made, including:
  - ✓ Reducing the number of port calls vs. reducing the incidence of transshipment
  - ✓ Direct calls versus hub-and-spoke pattern
  - ✓ Pursuing terminal cost savings vs. attaining terminal productivity enhancements
- In other words, network design ultimately comes down primarily to the option that generates the **lowest overall cost**, with the major cost elements being:
  - ✓ Vessel costs
  - ✓ Bunker costs
  - ✓ **Port and terminal expenses**

Source: Maersk Line, World Bank analysis.

Transhipment



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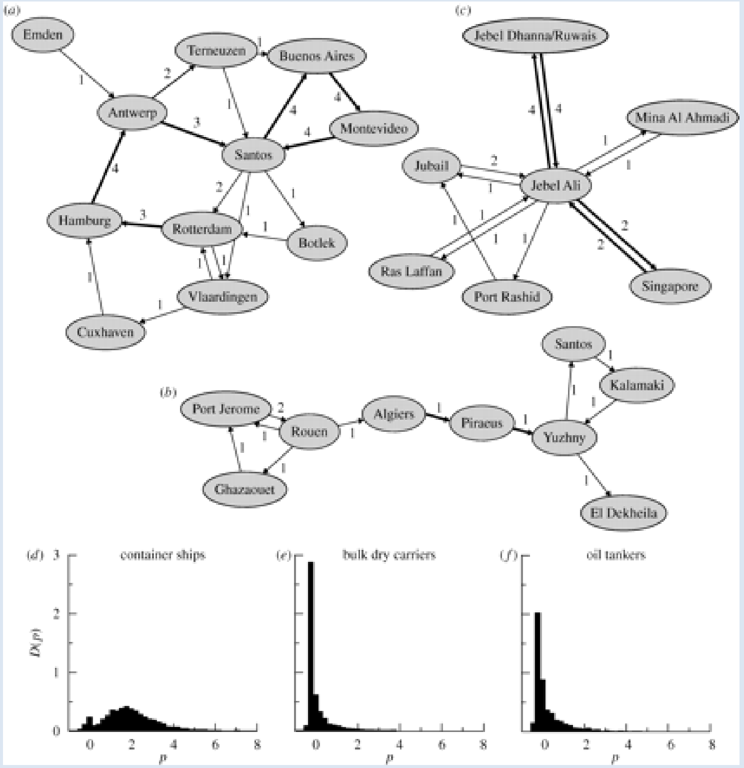
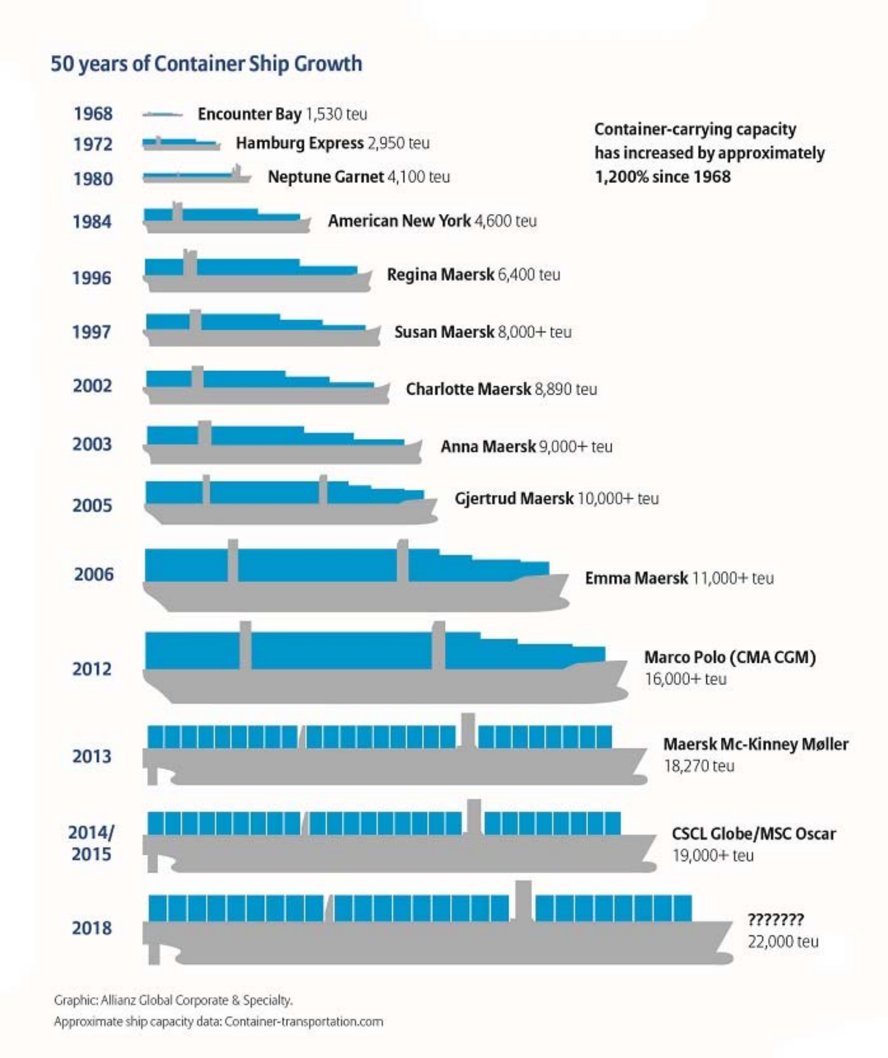
More technology…

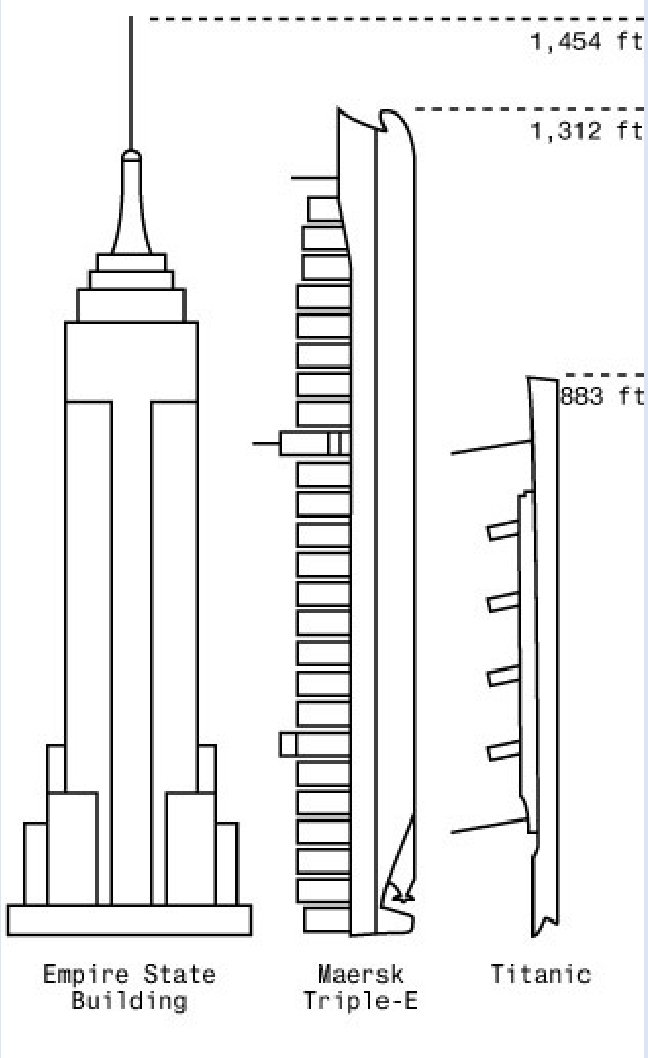
- Network modelling…
  - Route optimisation, triangulation, minimising empty contain carriage
  - Equipment sharing and transfers



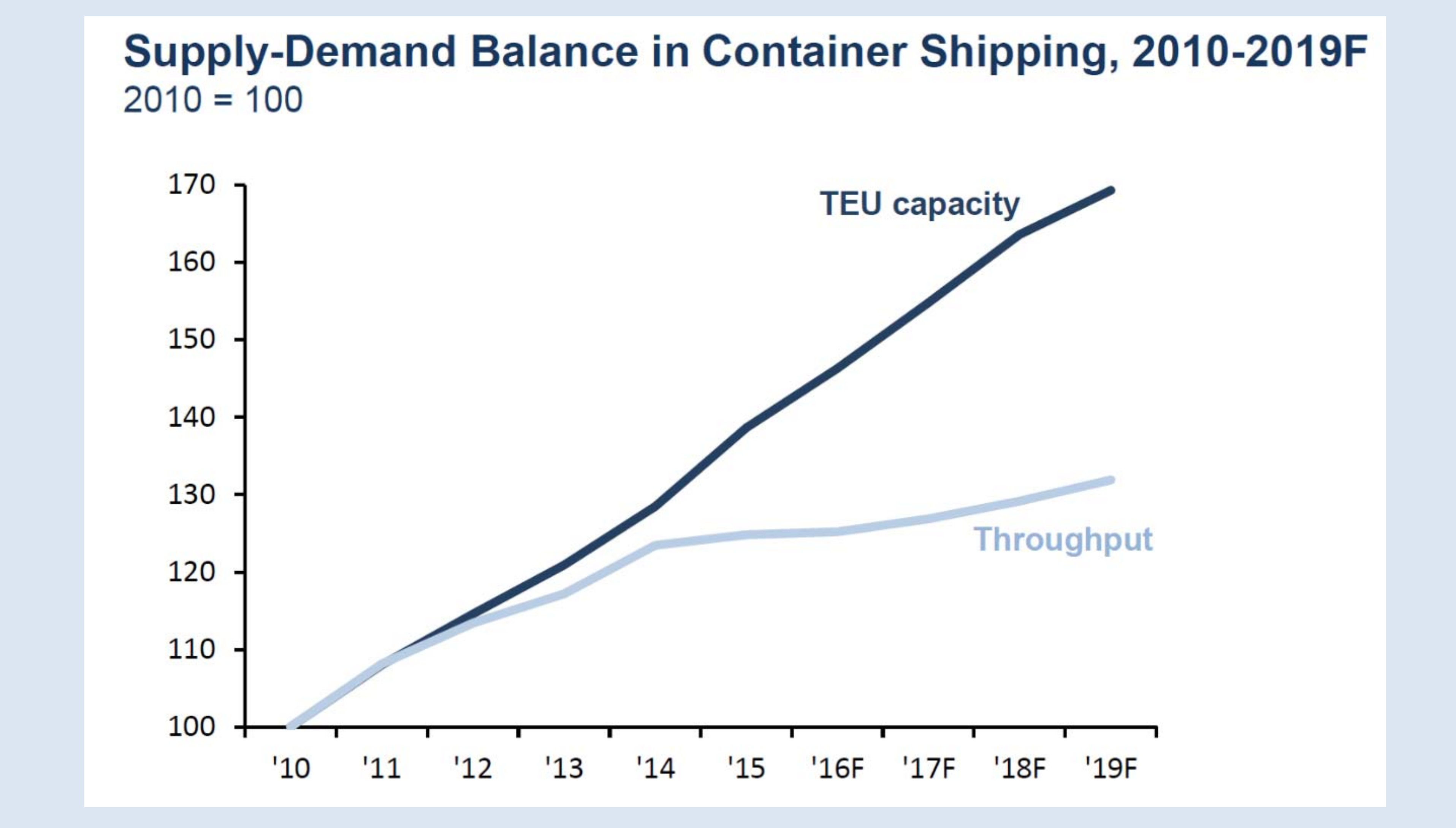
Container Shipping

Ever larger ships...

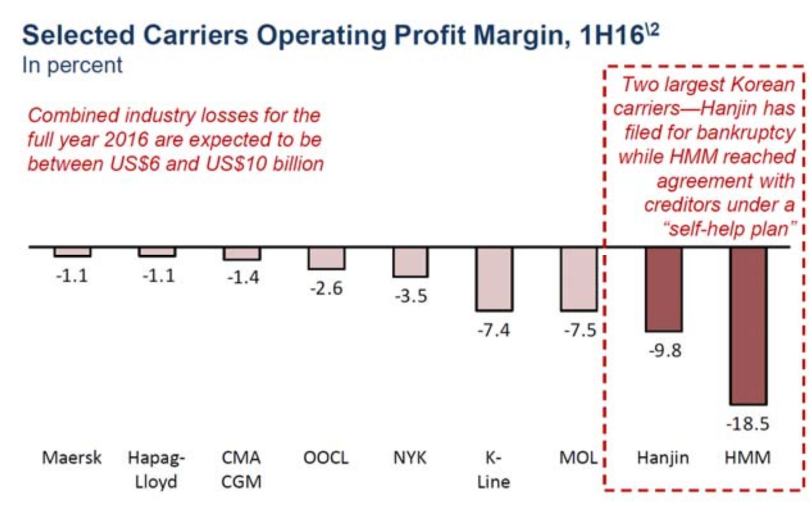


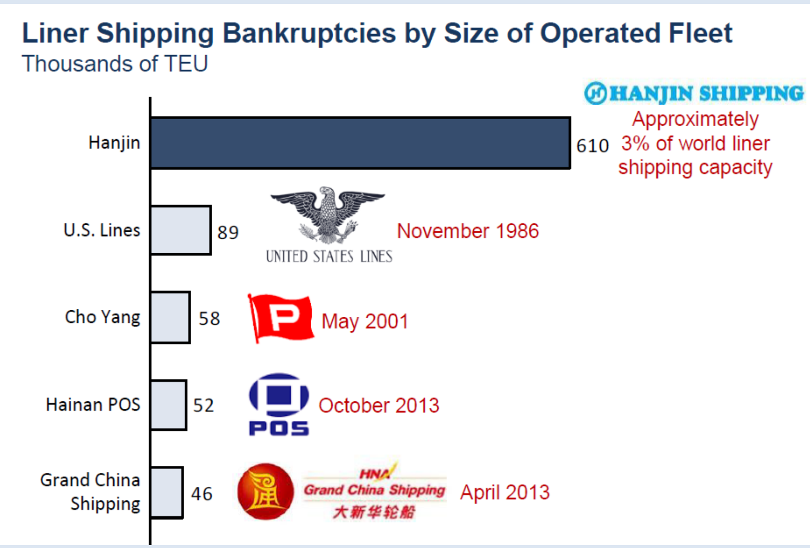


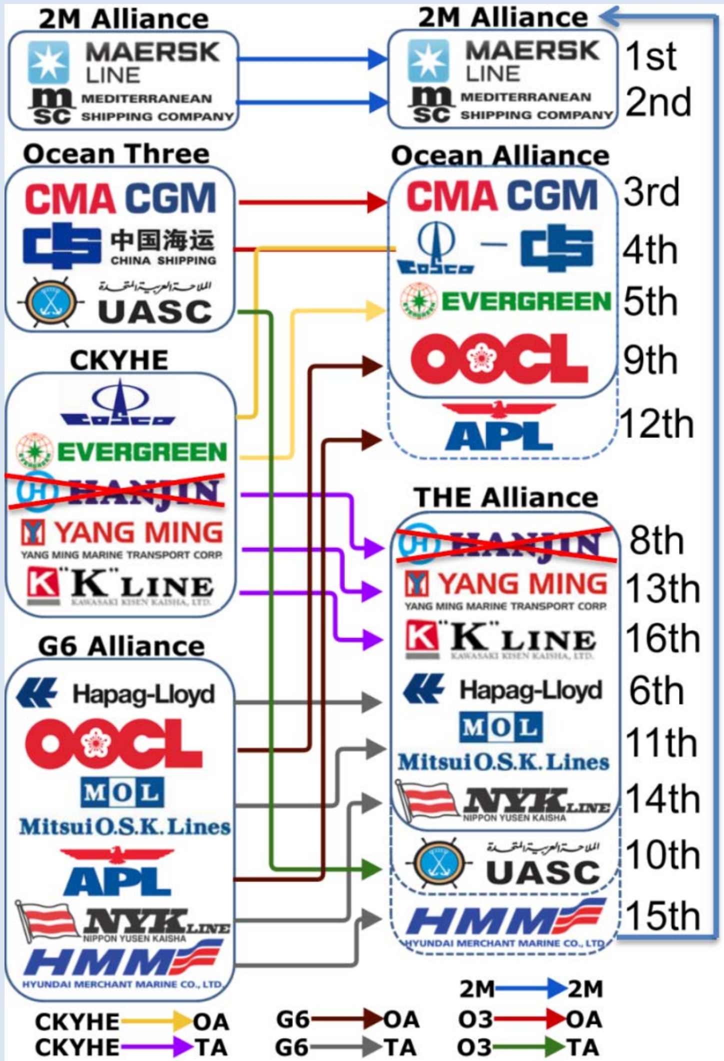
Shipping is in crisis…and will remain there



It is a chaotic crisis…







Four weddings and a funeral

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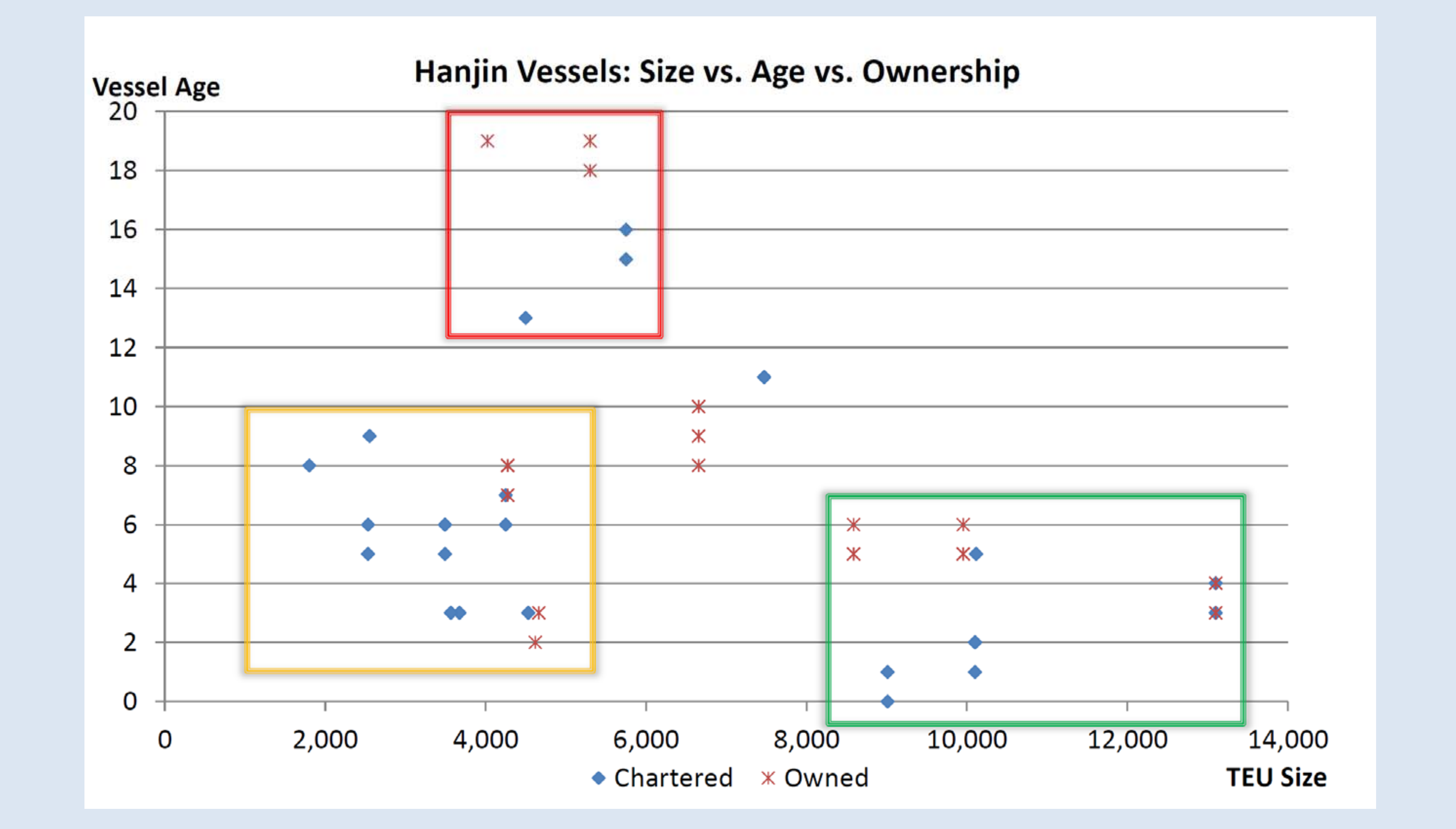
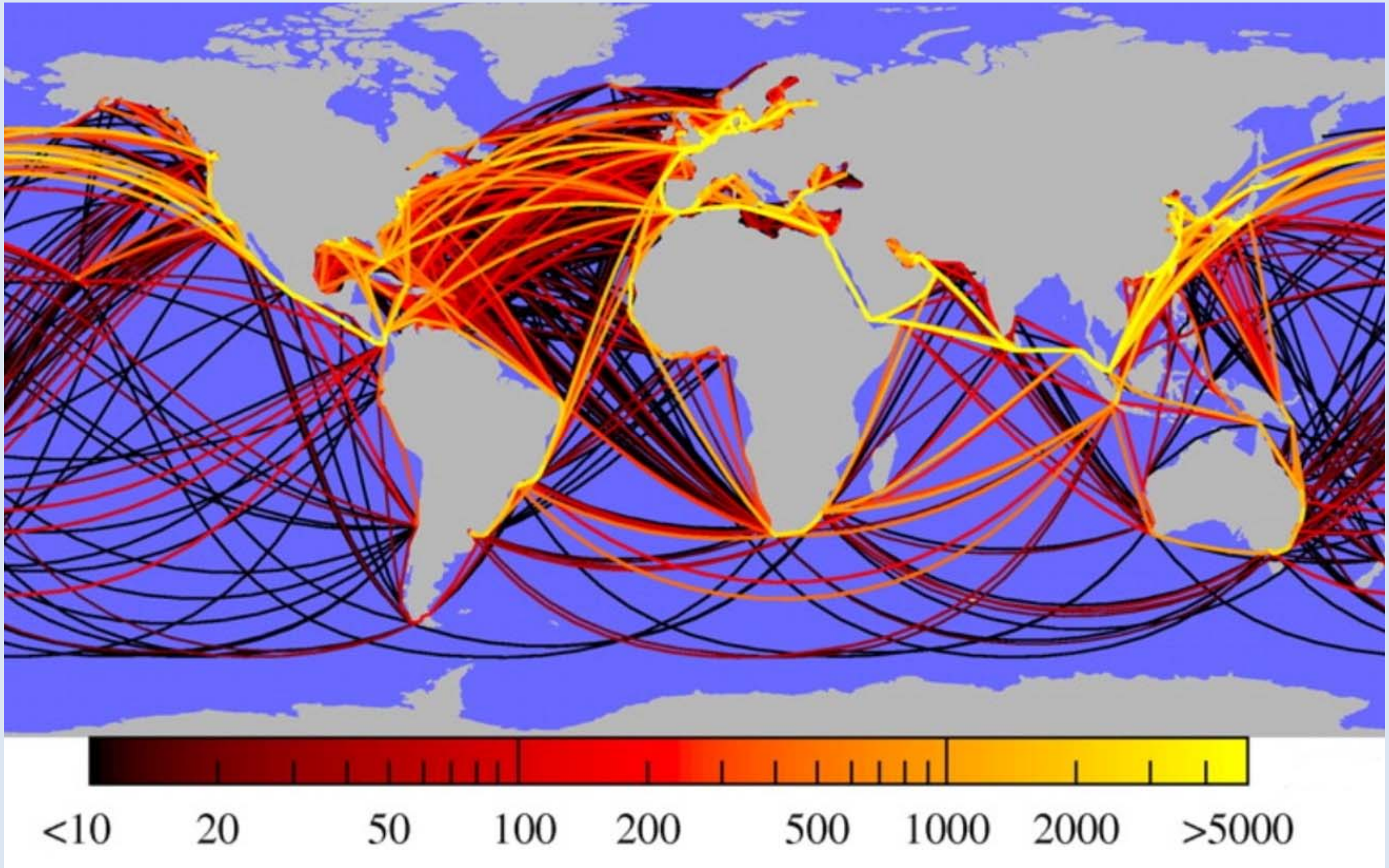
Where do the ships go?

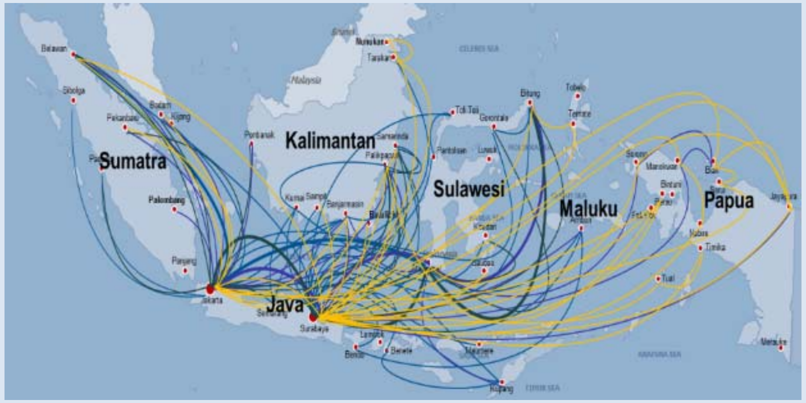


13,500 TEU ships and Australian loops

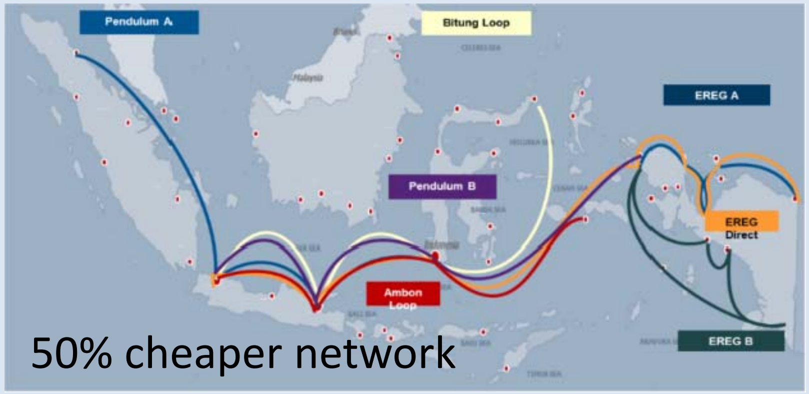


How do shipping lines reduce costs?

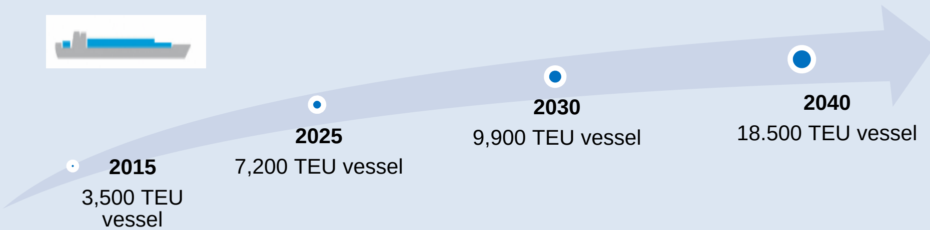
Current network (No reduction of logistics cost)



Proposed network (logistics cost reduced)



New and larger ships reduce costs



Source: Drewry Maritime Research

Not forgetting the importance of international connections

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Empty "back" haul causes high costs

Ship Size (TEU)	Unit Voyage Costs (US$ per Container)		
	750	**1,500**	**2,500**
Outbound 20' containers (90% Full)			
Charter Costs	50.6	46.8	42
Fuel	22.4	19.8	12.6
Loading Port Charges	47.4	47.4	47.4
Discharge Port Charges	40	40	40
Total	**160.4**	**154**	**142**
Inbound 20' containers (18% Full)			
Charter Costs	253	234	210
Fuel	112.2	98.8	63
Loading Port Charges	237	237	237
Discharge Port Charges	200	200	200
Total	**802**	**770**	**710**
Outbound 40' containers (90% Full)			
Charter Costs	82.8	68.6	56.6
Fuel	43	37.6	23.4
Loading Port Charges	48.8	48.8	48.6
Discharge Port Charges	40	40	40
Total	**215**	**195.2**	**168.6**
Inbound 40'containers (18% Full)			
Charter Costs	414	343	283
Fuel	215	188.4	116.6
Loading Port Charges	244	244	243
Discharge Port Charges	200	200	200
Total	**1,073**	**976**	**843**

Cost differential inbound to outbound for 20' and 40' container 500%

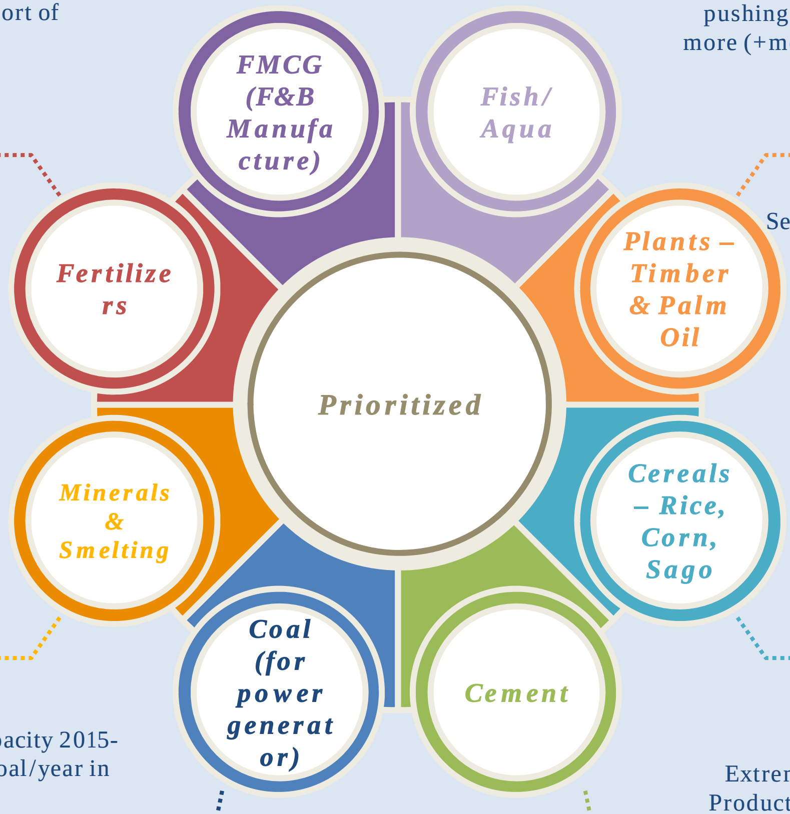
Finding ways to fill those containers

Hypothesis
Increased food production will open up potential for processing and export of containerized FMCGs.

Hypothesis
Huge untapped potential that The President is pushing to realize. Large supply, but need more (+more efficient) vessels + processing facilities + cold chain logistics.

Hypothesis
Fertilizer is an expensive import. In the long-run, Eastern Indonesia will produce fertilizers from natural gas resources.

Hypothesis
Several companies eyeing up expansion in Papua/ West Papua. NB: Environmental constraints.



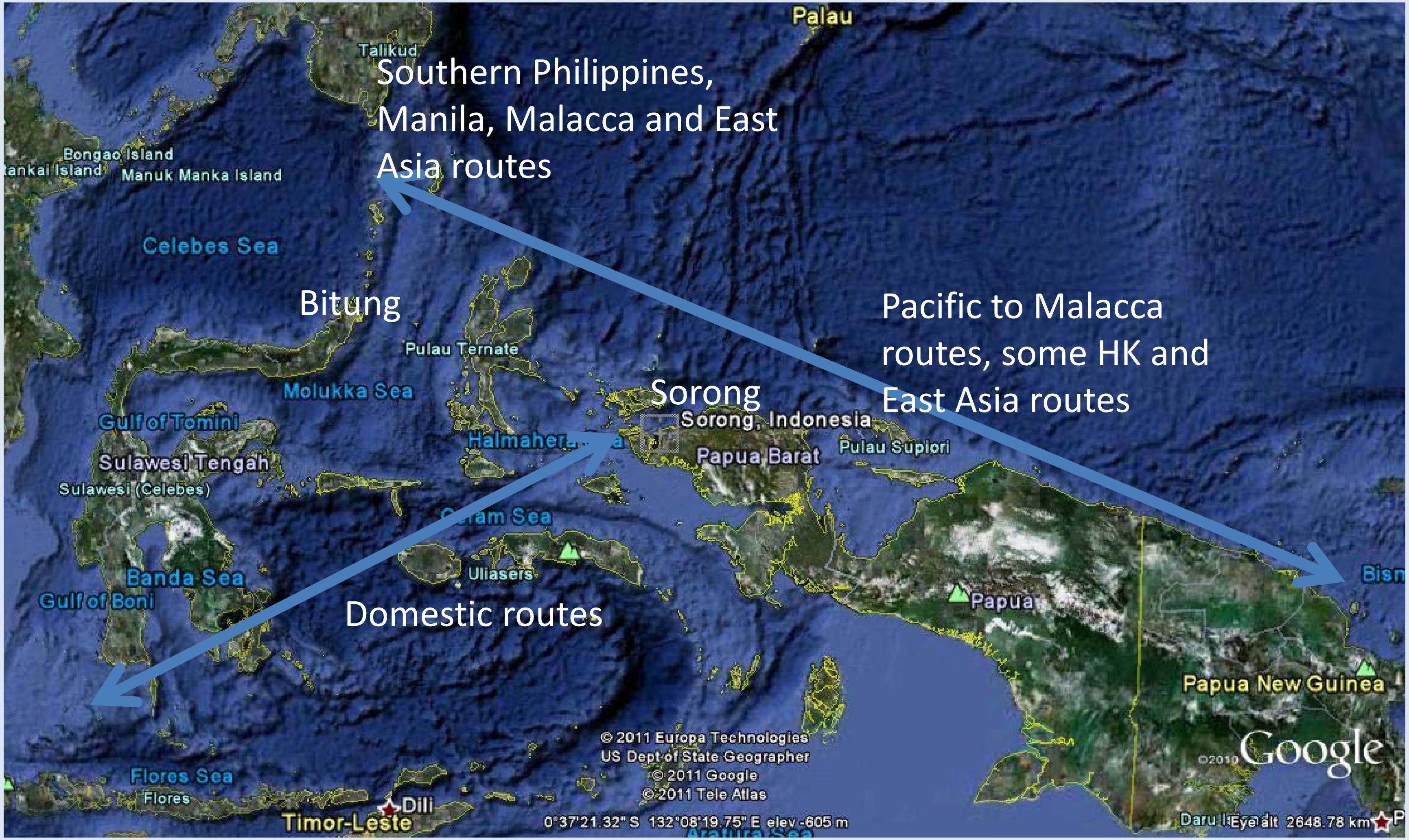
Hypothesis
Large number of exploration companies and planned smelters in Eastern Indonesia. Likely to come online before 2025.

Hypothesis
The President is driving an agenda of increased paddy hectares and yields in Eastern Indonesia. Tax breaks since 2015 for Sago.
Corn big theme in RPJMN.
.

Hypothesis
PLN building 172 MW extra capacity 2015-2025, requiring extra ~1.2 Mt coal/year in Papua/West Papua alone.

Hypothesis
Extremely expensive imported cement. Production in Eastern Indonesia likely to increase fast (and displace imports).

The international connection



Growth triangles…cargo aggregation

What do the shippers want?

Industrial users are the Beneficial Cargo Owners (BCOs) for both shipping lines and ports. BCOs have three main foci for their Key Performance Indicators:

- Reliability and frequency
- **Minimum cost**
- No damage

Reliability is critical. It changes direct and indirect costs. If a BCO can rely 100% on a delivery every 7 days inventory is half that for 14 days (inc. storage, financing etc.)

Damage matters as it impacts inventory needs and can disrupt operations or retail activity. It is a prerequisite as liner shipping companies have taken strong action.

2014	2015
1. Reliability of booking	1. Reliability of booking
2. Accurate documentation	2. Availability of cargo space
3. Availability of cargo space	3. Cost of service
4. Customer service quality	4. Accurate documentation
5. Delivery of information	5. Delivery of information
6. Cost of service	6. Customer service quality
7. Stability and transparency of rates	7. Quality of equipment
8. Accurate billing	8. Transit time
9. Transit time	9. Contract quality
10. Tracking and tracing	10. Accurate billing

Relevance to the Pacific islands?

Increasing ship size in container shipping has plunged the industry into crisis but these ultra large ships are not going away for many years and will push growth in ship size on smaller trades

The number of shipping lines is decreasing and niche players may become more important for smaller trades, these players also become more vunerable

The number of ports that large ships call will reduce not increase

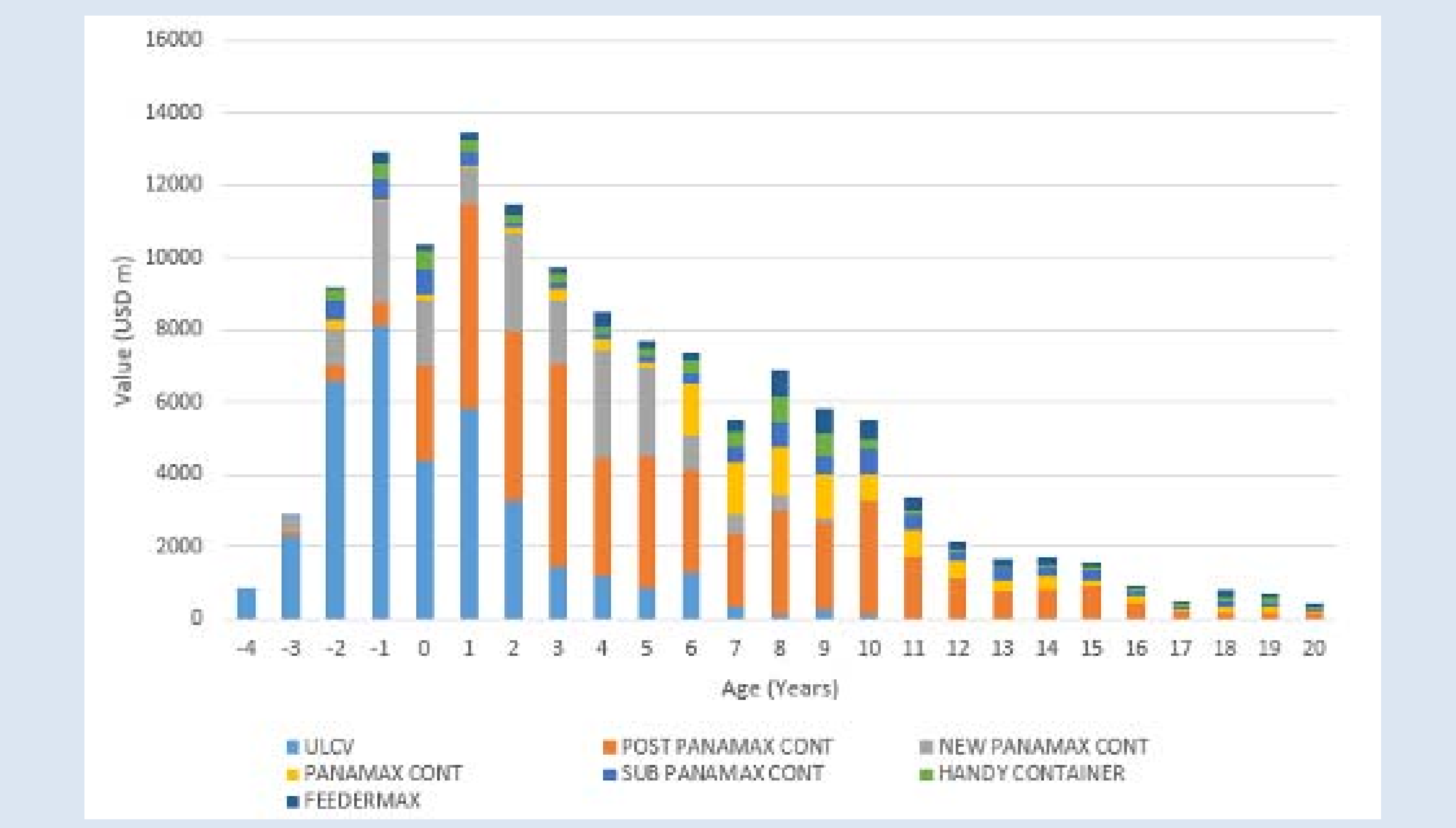
New terminals (particularly small terminals) will find it hard to find sufficient cargo to attract the large ship calls that provide low freight costs. This will accentuate cost problems related to transshipment

Few shipping lines want or can invest in terminals but worse the operators are also very wary of taking decisions so the private sector is less willing to invest

If you think this problem does not apply to smaller ports and the Pacific Islands in particular your are wrong because the cascade effect is already in progress; think of the age profile of the container ship fleet

Are ports and ready for Ultra Large Container Ships or at least two “generational” changes in ship size 3,500 to 6,400 TEU?

Container Ship age profile (May 2016)



Ports

Peaks

Bigger ships means more containers loaded per ship

More container need more storage

No one wishes to deliver too early so more people are trying to arrive about the same time

In numbers:

- Three 4,000 TEU ships may be replaced by a 12,000 TEU ship
- The exchange required should triple
- Meaning three time the number of people want to arrive in the same 2/3 day period that may have covered 5/9 days previously

Shippers are not happy because they have fewer choices, less frequent services and need to hold more inventory to allow for the peaks…

Pressure

To invest:

- Dredging and berth construction
- Bigger and more ship to shore cranes
- Larger yard capacity

To reduce the cost of handling:

- Lower tariffs (to improve shipping line profitability)
- Take higher payment risk

To support growing the cargo base

To permit less competition in the sector

Profitability

Is under threat from users and reductions in trade volumes

Will become more unstable/less easy to predict

The return on money already invested and that on new investment will go down

The cost of capital will increase

The risk of a vicious circle exists making funding ports in the private sector more and more difficult

BUT the investment taps are not turned of yet and there remains a strong case in many ports for the investment required to handle the bigger ships

Profitability is not the same as “economic benefit”, the economic benefit depends on stimulating trade…

Thank-you