

# SEA FREIGHT

LATEST DEVELOPMENTS AND MARKET TRENDS

NEPTUNE EXCLUSIVE WHITEPAPER



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MARK MILLAR

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**This industry paper looks at the Sea Freight sector, first reviewing the market size and scope, and then examining the latest industry developments and market trends.**

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Sea freight accounts for the vast majority of cargo movements around the world, with over 90% of world trade being transported on the water, wherein three quarters of all sea freight is containerised.

The global container fleet comprised some 5,992 active ships with total capacity of 21,115,603 TEU (Twenty foot Equivalent Units) as at August 2017, according to Alphaliner.

The latest container shipping volume forecast from Drewry predicts that the full year global port throughput growth is expected to reach a healthy 4.6% in 2017.



## 1. SEA FREIGHT FORWARDING

Sea Freight Forwarding is a B2B Major-Account Services sector with global annual revenues in excess of 67 million US dollars, which embraces four primary stakeholder groups – Shipping Lines, Container Ports, Freight Forwarders and Shippers – the cargo owners.

### a) Sea Freight Forwarding – Market Overview

According to their latest market research report 'Global Freight Forwarding 2017', leading industry analysts Ti (Transport Intelligence) estimate global sea freight forwarding to have grown by almost nineteen billion dollars since 2009, to become a USD 67.5 billion market in 2016.

This represents year-on-year growth of 2.8% during 2016, a modest increase over the 2.2% growth in 2015.

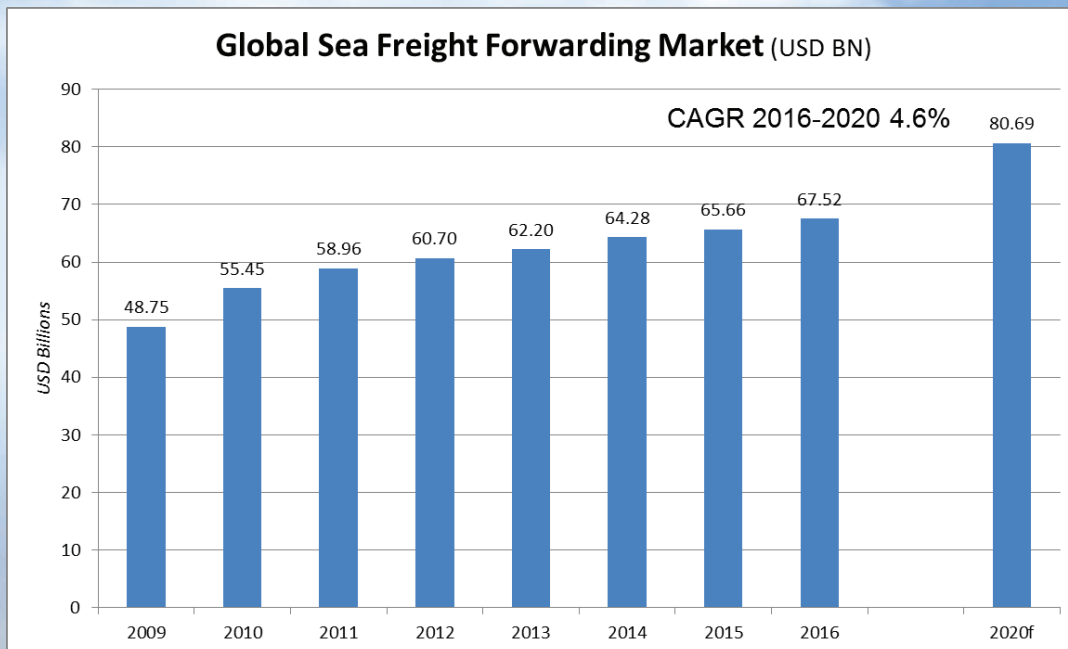


Figure 1 - Global Sea Freight Forwarding Market (Source: Ti)

Over the medium term, Ti expects sea freight forwarding to grow more robustly and are forecasting CAGR (Compound Annual Growth Rate) of 4.6% for the period 2016-2020.

However, they identify some potential threats to sea freight growth prospects, including concerns around the state of global trade, political uncertainty in the US and Europe, and the continuing economic slowdown in China.

## b) Sea Freight Forwarding – by Geographic Region

Looking at the market size by geography, the three major regions dominate sea freight forwarding, accounting for over 85% of the total global market - with proportional shares remaining largely the same during the period 2016-2020.

In the 2020 forecast, Europe remains the largest region at 38.3%, trailed by Asia Pacific and North America representing 27.1% and 21.3% market share respectively.

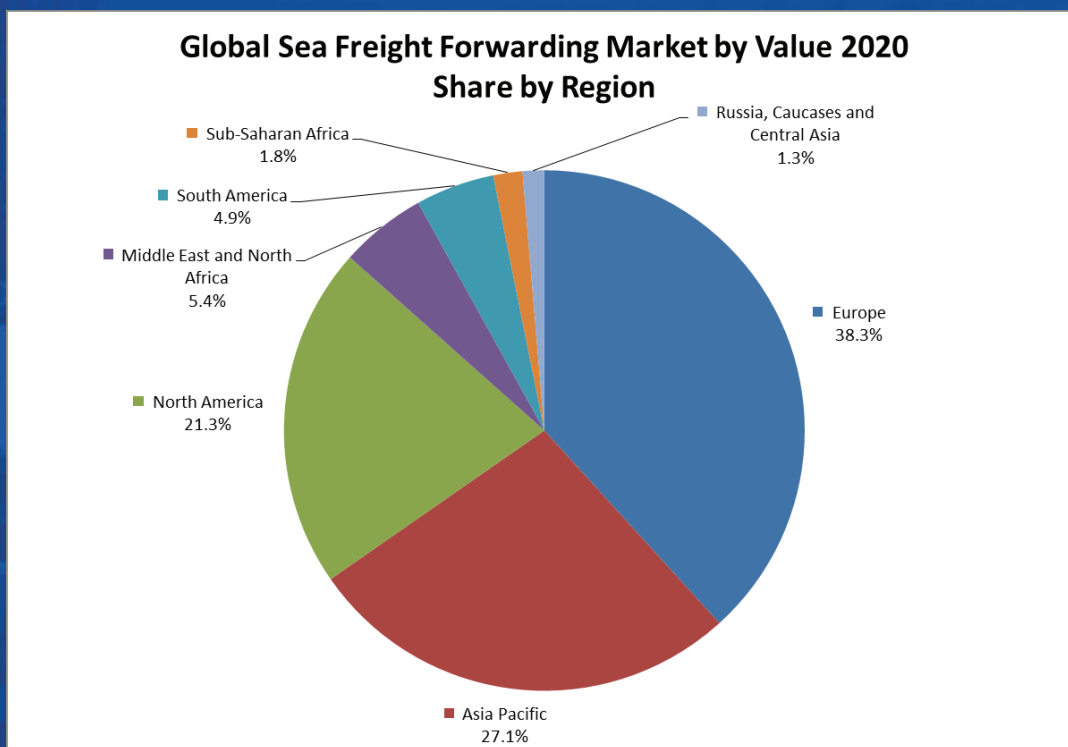


Figure 2 - Global Sea Freight Forwarding 2020 Share of Value by Region (Source: Ti)

## c) Sea Freight Forwarding – Market Share

The top 20 multi-national service providers control just over 60% of the total market, dominated by global players Kuehne + Nagel, DHL Global Forwarding and DB Schenker (combined share of almost 20%), with Sinotrans' domestic river-trade volumes boosting its market share results.

Almost forty per cent of the total market is serviced by the many thousands of small and medium freight forwarders, representing a market segment of over 22 billion USD dollars.

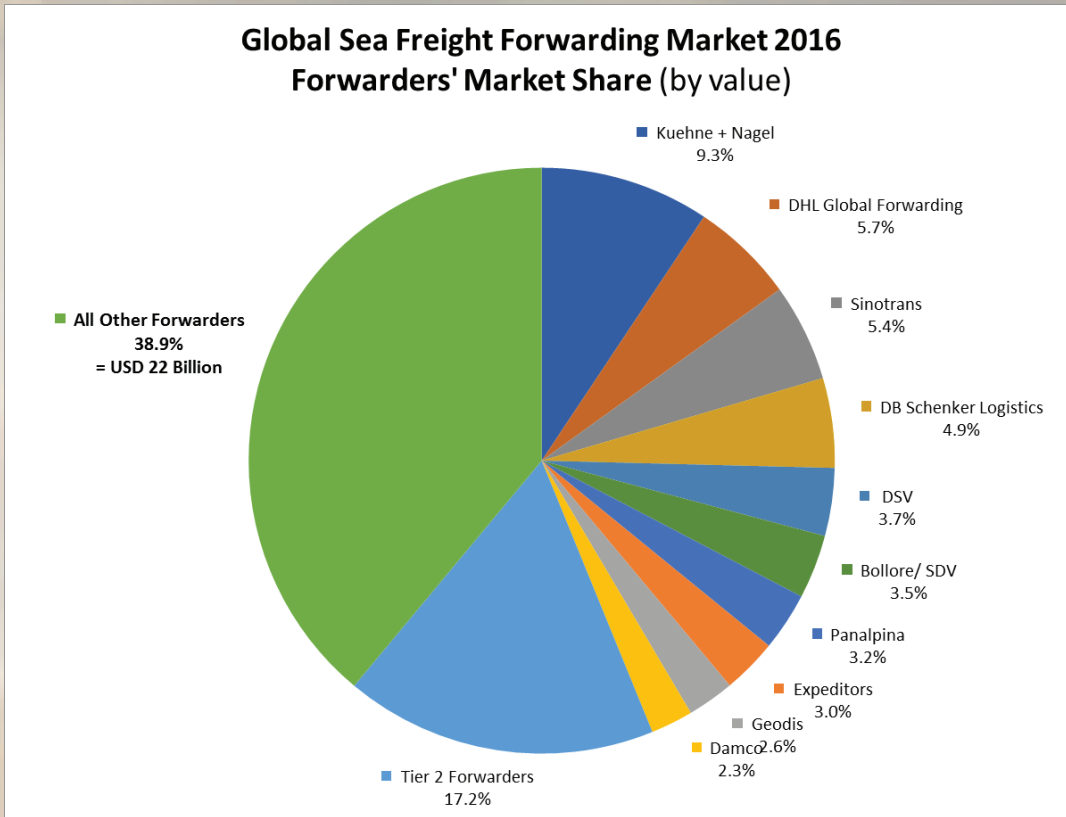


Figure 3 - Global Sea Freight Forwarding - Forwarders' Market Share (Source: Ti)

#### d) Sea Freight Forwarding – Outlook

Freight forwarders, 3PLs, shippers and ocean carriers all participated in Ti's June 2017 online survey, which asked respondents to rank the three global trade lanes they consider to offer the best prospects for volume growth over the next five years.

Asia-related trade lanes dominated the results for sea freight - offering by far the best opportunities for increases in business volumes:



## Which three sea trade lanes do you believe offer the best prospects for volume growth in terms of Sea Freight TEU over the next five years?

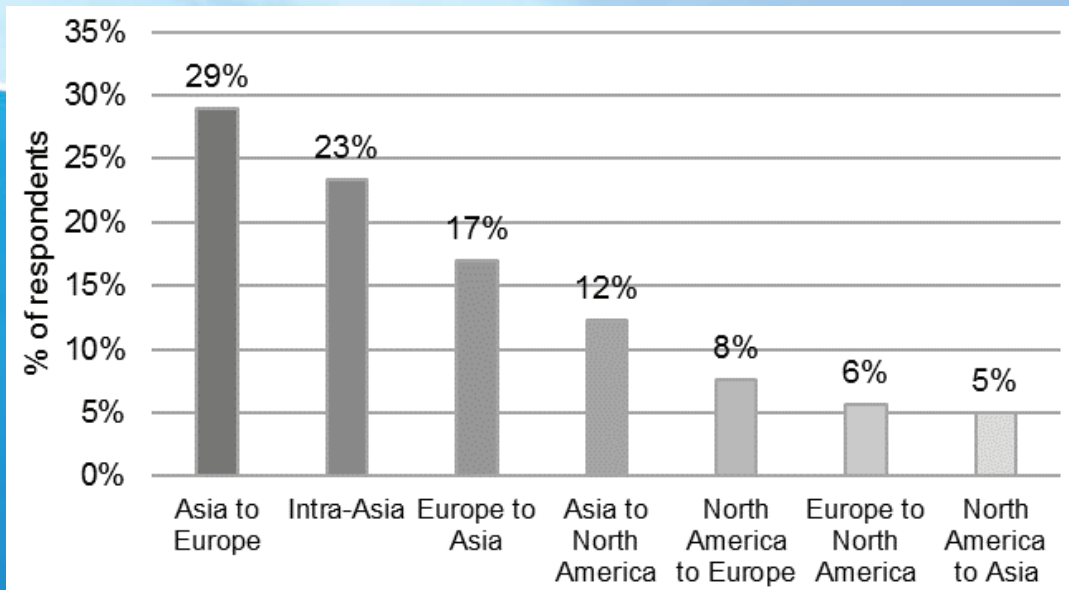


Figure 4 – Trade lanes offering best prospects for Sea Freight volume growth (Source: Ti)



## 2. SEA FREIGHT TRENDS FOR LINES AND PORTS

### – THE KEY PROTAGONISTS

The frantic merger and acquisition activity in recent years, plus the bankruptcy of Hanjin, have constituted a fundamental structural shift in the carrier base and the competitive forces in container shipping – according to Drewry, “this will give carriers much more control than they have had in the past”.

#### a) Industry consolidation – increases stability, reduces choice

Largely fuelled by pressing needs to address profitability challenges and reduce excess capacity, the latest super-cycle of carrier consolidation involved an unprecedented frenzy of activity during 2016, as summarised by JOC:

- o China’s two biggest shipping lines, **Cosco** Container Lines and **China Shipping** Container Lines, merged;
- o **CMA CGM** acquired NOL and its container shipping unit **APL**;
- o **Hapag-Lloyd** merged with UASC (United Arab Shipping Company);
- o **Hanjin** Shipping collapsed;
- o The three Japanese carriers — **NYK Line**, **‘K’ Line** and **MOL** — announced they would be merging their container shipping divisions into one joint venture from 2018;
- o **Maersk** Line acquired **Hamburg Süd**.

According to McKinsey, as at February 2017 the top five lines controlled 63% of the market, whilst the top ten account for 84% - almost twice the levels of industry concentration twenty years ago.

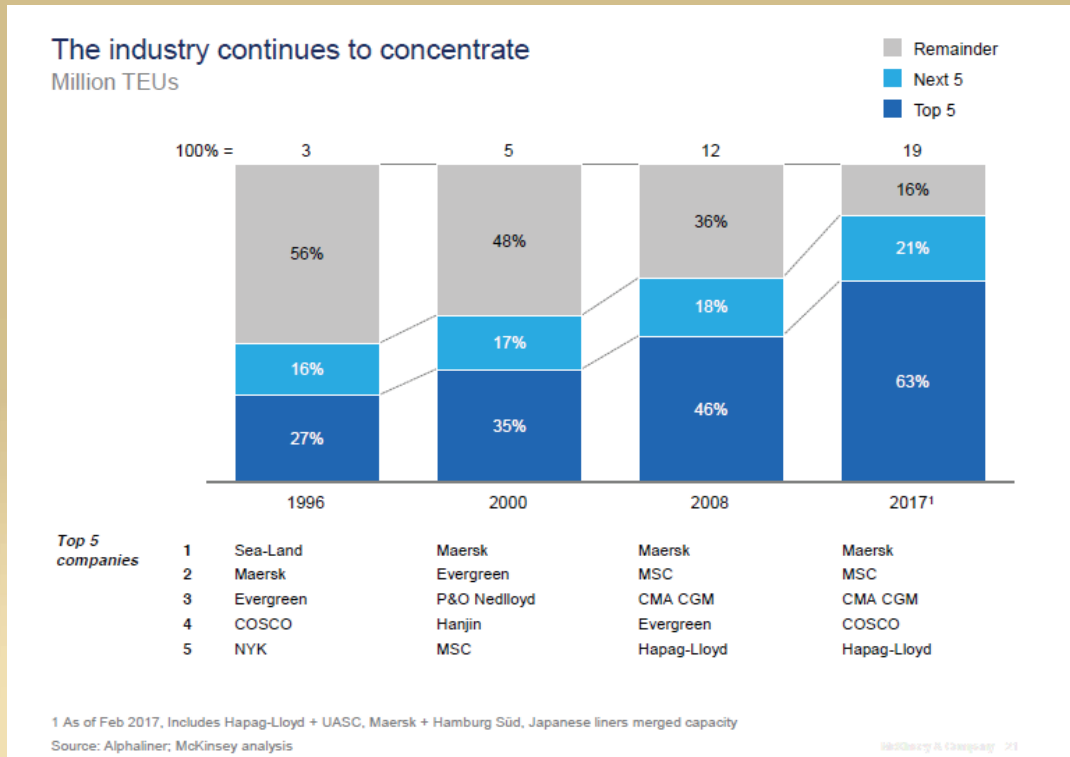


Figure 5 – Container Shipping Lines Industry Consolidation 1996-2017 (Source: McKinsey)

Most recently, China’s Cosco agreed in July 2017 to buy Hong Kong based OOCL (Orient Overseas Container Line) in a deal valued around USD 6 billion, which will result in Cosco becoming the world’s third-biggest container carrier.

These mergers and acquisitions – together with a record 660,000 TEU being scrapped during 2016 – are gradually reducing excess capacity, whilst there is also a steady but modest increase in container volumes, resulting in the market finally heading towards some equilibrium in the supply and demand equation.

This strengthens the position of the shipping lines, providing a pathway for many to return to profitability over the medium term – and empowering them to exercise more courage and discipline on pricing.

The good news for forwarders and shippers is that industry consolidation will reduce market volatility and enable a more stable environment for orchestrating ocean freight supply chains.



Rank	Carrier	TEU	% TEU	Ships
1	APM-Maersk	3,521,857	16.7%	656
2	Mediterranean Shipping Co	3,071,304	14.5%	506
3	CMA CGM Group	2,467,695	11.7%	486
4	COSCO Shipping Co	1,806,050	8.6%	326
5	Hapag-Lloyd	1,510,284	7.2%	216
6	Evergreen	1,045,713	5.0%	193
7	OOCL	660,787	3.1%	101
8	Yang Ming	585,078	2.8%	96
9	Hamburg Sud	549,218	2.6%	102
10	NYK Line	538,052	2.5%	95
<b>Top 10 Carriers</b>		<b>15,756,038</b>	<b>74.6%</b>	<b>2,777</b>
11	MOL	521,510	2.5%	76
12	PIL (Pacific Int Line)	372,226	1.8%	139
13	Zim	362,886	1.7%	75
14	Hyundai MM	354,863	1.7%	61
15	K Line	341,746	1.6%	58
16	Wan Hai Lines	234,064	1.1%	89
17	X-Press Feeders	152,764	0.7%	99
18	KMTC	122,908	0.6%	60
19	SITC	98,485	0.5%	74
20	IRISL Group	94,387	0.4%	44
<b>Top 20 Carriers</b>		<b>18,411,877</b>	<b>87.2%</b>	<b>3,552</b>
<b>Global Fleet</b>		<b>21,115,603</b>	<b>100.0%</b>	<b>5,992</b>

Figure 6 – Top 20 Operated Fleets as per August 2017 (Source: Alphaliner)

## b) Mega Vessels – approaching 100 in circulation

The appetite for ultra-large container vessels (ULCVs) continues unabated, despite the financial benefits not yet bearing fruit in practice – largely due to economic models based on optimistically high utilisation levels coupled with oil supply at USD 100+ per barrel, together with the challenges of filling these monstrous vessels in times of diminished demand.

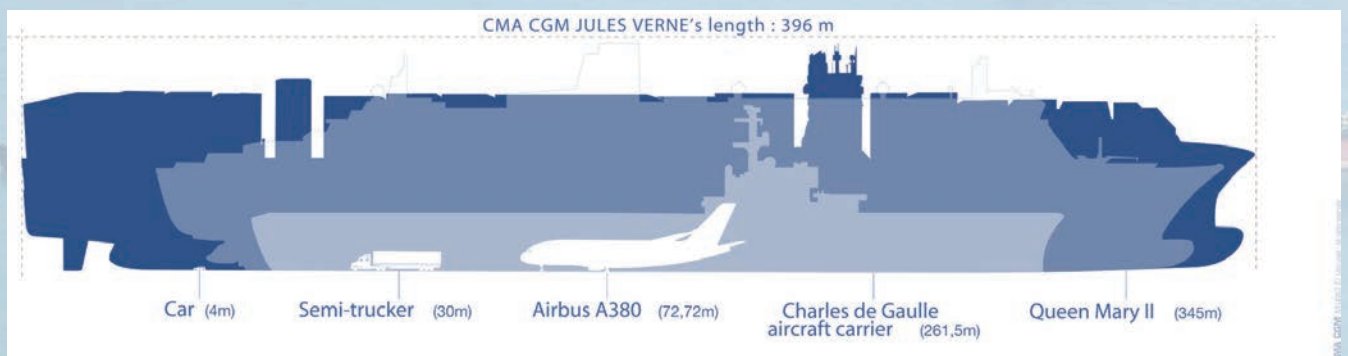


Figure 7 –Relative size of containership, the 16,000 TEU Jules Verne (Source: CMA CGM)

However, with greater stability in the market, container lines will be seeking to improve their revenue levels and the industry will therefore experience structural change with the 'new normal' becoming a marketplace of increased rates and reduced choice.

With the sale of OOCL, this latest super-cycle of consolidation is pretty much complete, with not many other major takeover candidates in sight. There may be some minor acquisitions on a regional basis but, according to Drewry, any further consolidation within the premier league of container shipping lines is unlikely, because the scale of the top seven carriers is such that any merger within that group would find it difficult to pass regulatory approval.



### CMA CGM Jules Verne container ship - did you know?

- Longer than 4 football pitches or 5.5 Airbus A380 aircraft
- Longer than the Empire State Building is high (381m) and the Eiffel Tower (324m)
- Engine as powerful as 1,100 x 100hp cars (Renault Megane)
- A 21-knot thrust equivalent to that of jet engines in 10 Airbus 380s (3,000kN)
- Power production for a town of 16,000 inhabitants, equivalent to a dozen wind turbines (14MW)
- 16,000 TEU capacity, or 97km of containers end to end

Nevertheless, by 2018 there will be over one hundred 18,000+ TEU mega vessels in the global container fleet. According to Dynaliner, Maersk Line will lead the ULCV league table with 31 vessels of 18,000+ TEU, followed by the newly-merged China lines with 22 and MSC in third spot with 20 vessels.

SeaIntel believes that by the end of 2018, these mega vessels will account for 61% of capacity on the Asia-Europe trade, with consequences for port and terminal operators. These mega-ships can only approach profitability if they are handled very speedily and efficiently within a port, which in turn puts pressure on the return on investment for port operators.

The related increase in massive bursts of containers needing to be processed from a single mega vessel – arriving and departing all at once, rather than being spread across a week – will pose major challenges for the ports and terminals, and also have implications further downstream for ground transportation access to and from the hinterland.

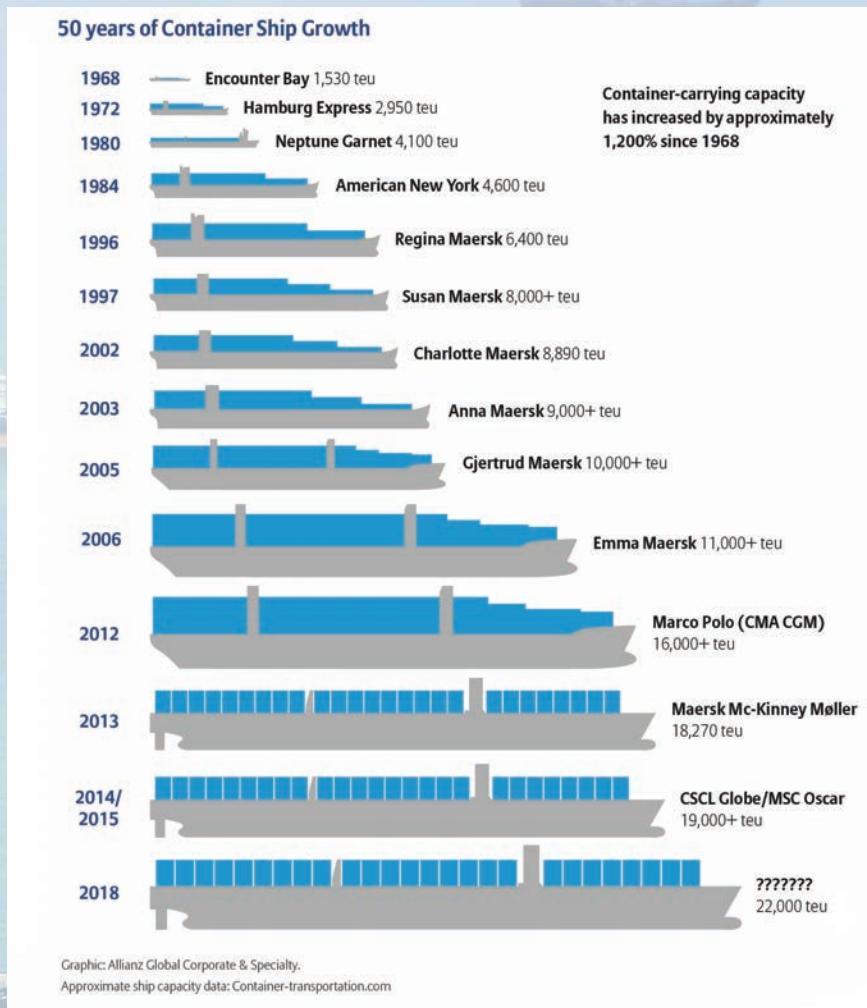


Figure 8 - 50 years of Container Ship Growth (Source: World Shipping Council 2017)

**c) Carrier Alliances – code-sharing for sea freight is here to stay** 

Like the mega-vessels and slow-steaming, carrier alliances are also here to stay.

Responding to various industry crises over the years, shipping lines have been forming – and re-forming – strategic alliances as a means of sharing capacity and expertise.

The latest configuration came into effect during 2017, with three alliances that embrace all the major shipping lines and between them control over 90% of trans-Pacific trade and 96% of Asia-Europe trade:

1. The Transport High Efficiency (THE) Alliance: K-Line, Hapag-Lloyd (including UASC), NYK, MOL, and Yang Ming
2. The Ocean Alliance: CMA CGM (including APL), Evergreen, and Cosco (including China Shipping and Orient Overseas Container Line)
3. The 2M Alliance: Maersk (including Hamburg Sud) and Mediterranean Shipping Co, plus a partnership with Hyundai Merchant Line (HMM).

Of the three groupings, the Ocean Alliance is expected to dominate, with combined capacity share of 35% on Asia-Europe trades and 40% on Trans-Pacific routes.

**Shipping Line Alliances, Focus is Cost Reduction, not Service or Speed**

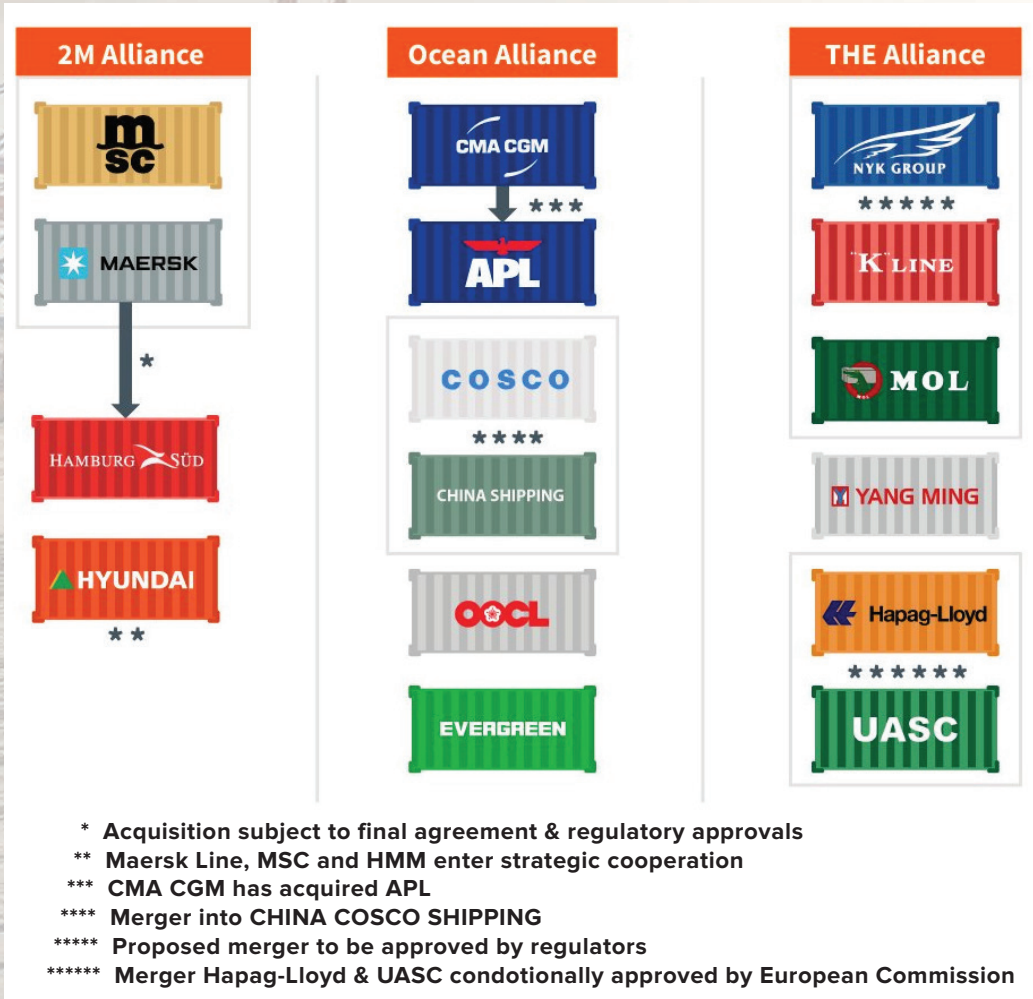


Figure 9 – Container Shipping Line Alliances - 2017 Configuration (Source:TEU Booker, WSJ)

The use of vessel-sharing agreements within these alliances is fundamentally changing the industry dynamics, introducing changes in vessel rotations as well as terminal locations, resulting in another dimension of less choice for shippers. “The three alliances have fewer port-to-port connections, there has been a clear reduction on the major lanes” said Olaf Merk, the ports and shipping expert of the International Transport Forum at the OECD.

Furthermore, the combination of larger ships plus carrier alliances inevitably concentrates more cargo at certain destinations, piling more pressure on the most fixed of all the fixed assets in this capital intensive business of container shipping – the ports.

#### **d) Pressure on Ports - lines sharing the pain with the terminals?**

As more mega vessels come into service, medium-sized vessels get cascaded down into smaller trade lanes – all having a huge impact on port capabilities and operations:

- **Bigger Vessels will make fewer calls at larger ports** – increased expectations of service levels and turnaround times to process thousands and thousands of containers on and off one vessel
- **Smaller Ports will have to accommodate bigger ships** – consequences for limited infrastructure – including quay length and strength - requiring additional capital expenditures, and revised operations

According to one of the leading port operators, the need for change in the port sector has been “more pronounced in the past two years than in the past twenty”.

With the latest vessels being 400 metres long, ports need longer and stronger quays; they also need deeper water in the channel and the harbour, and larger ship-to-shore cranes - all of which require substantial investment. With less frequent calls from larger ships, the port’s fixed assets are sometimes used intensively, but at other times are under-used – not the optimum model to generate consistent returns on capital employed.

Furthermore, the impact of the 30-50% surge in the volume of containers to be handled from one vessel leads to more peaks and troughs in operations, and results in considerably less flexibility for container terminals.

To handle these extra container volumes, the port terminal infrastructure needs more yard space, more handling equipment, larger gates and more manpower – all of which incur additional operational costs – but are the shipping lines prepared to pay more?

Shippers also feel the impact in terms of their supply chain velocity.

Cargo transit times are already extended due to slow-steaming, which is now the norm, because there is no fast-steaming option. Bottlenecks arising within port handling operations will result in longer lead times to get the container from the ship, further delaying clearance through the port onto the road or rail transport networks.

The concentration of container volumes being offloaded from a single vessel’s visit will also result in congestion outside of the port, restricting smooth access to multi-modal ground linkages into the hinterland.

Such overcrowding inside and outside the port will impede the onward journey of the cargo beyond the port, to its final destination in a warehouse, production line or retail store. This could add one or two additional days to the supply chain, with all the consequential impacts on lead times, inventory levels, working capital and customer satisfaction.



### 3. RAMIFICATIONS FOR SHIPPERS AND FORWARDERS

The new normal for sea freight is a world of mega-vessels, slow-steaming, carrier consolidation, and strategic alliances – all resulting in higher, but more stable freight rates, together with an expectation of more predictable service levels.

When it comes to pricing, expect more courage and discipline from the shipping lines. After all, container shipping is – and always has been - dealing with ‘derived demand’ – the price-per-box does not influence the total amount of boxes to be moved!

Market stability has to be an improvement over the volatility of the recent past, but with carrier consolidations and the alliance structures, there will, no doubt, be less choice and reduced service frequencies.

As OlafMerk commented, “Shippers could now find their cargo on one mega-ship, operated by one mega-alliance, calling at just a few mega-ports” – which he cautioned would be a very risky cocktail for shippers, with a delay – or at worst an accident – leading to ‘mega-consequences’.

However, these challenges for shippers should represent opportunities for forwarders – being close to the market, being flexible and responsive, and leveraging their knowledge and networks to identify the optimum sea freight solution for the shipper, whilst minimising supply chain risks.

Forwarders are also well positioned to help their customers with supply chain velocity. Being nimble, proactive and agile, they can actively monitor and manage the throughput of the customer’s cargoes – whether FCL or LCL – through the port, to ensure the containers are cleared expeditiously for onward transportation - managed or provided by the forwarder - to their final destinations.

The supply chain is only as strong as its weakest link. So, it is best to adopt a continuous improvement approach to identifying and strengthening the weakest link, in order to optimise the end-to-end supply chain for competitive advantage.



**MARK MILLAR**  
Bio Summary

**Mark Millar** is one of Asia’s foremost speakers and a renowned authority on supply chain and logistics.

He leverages over 30 years’ global business experience to provide value for clients with informed insights and independent perspectives on their supply chain and business development strategies in Asia. Whether as keynote speaker, trusted advisor, commissioned author or visiting lecturer, Mark delivers the knowledge that helps you make better-informed business decisions.

Clients have engaged Mark as Speaker, Moderator, MC or Conference Chairman at more than 450 corporate events, customer functions,

management briefings and industry conferences across 26 countries.

Mark’s book ‘Global Supply Chain Ecosystems’ – commissioned by leading business publisher Kogan Page of London – has been purchased in more than 45 countries around the world.

His commitment, passion and active industry contributions have earned many accolades, including Mark being recognised as one of “Asia’s Top 50 Influencers in Supply Chain & Logistics”, in the “China Supply Chain Top 20”, as “One of the most Progressive People in World Logistics” and in the USA Listing of “Top Pro’s to Know in Supply Chain”.

[www.markmillar.com](http://www.markmillar.com)

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