

**Maritime transport** remains the backbone of globalized trade and manufacturing supply chain, as more than four fifths of world merchandise trade by volume is carried by sea. Developing countries have been the main exporting economies for world trade, with nearly two-thirds originating in their territories.

A country's position in the global container shipping network is an important determinant of its trade costs and competitiveness. This can be improved by establishing efficient maritime connectivity and integrated supply chain and logistics.

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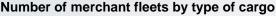
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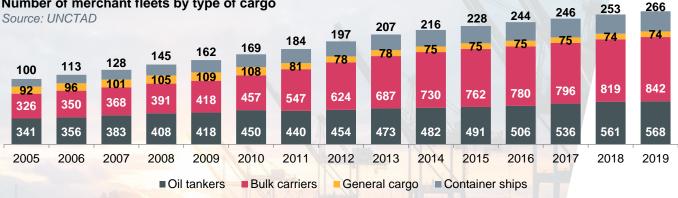
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International maritime trade lost its momentum in the vears 2018 and 2019. Heightened trade tensions between China and the USA, and weaker developments in market segments largely impacted economic and trade growth in many countries. The impact of this economic slowdown was also felt in container trade globally.

Global maritime trade slowdown was further worsened by the implementation of IMO 2020 regulation on use of low-sulphur fuels, and COVID-19 outbreak, which resulted in partial or full shut down of industries across major parts of the globe. Owing to this, shipping lines are increasingly realigning their operation plans to avoid large cost impacts.





Tanker trade shipments (oil, gas, and chemicals), accounted for 29% of total maritime trade volume in 2019, is down from 55% nearly five decades earlier, reflecting the constrained petroleum consumption in main consumer countries. Over the same period, major bulks, including iron ore, grain, and coal, increased by more than half.

Containerized cargo expanded at the fastest rate, with volumes rising at an annual average rate of 8% between 2000 and 2019. The compositional shift in world maritime trade was further emphasized by the development of pipeline trade and the rise of manufactures trade, propelled by fragmentised global production processes.

### **Containerized trade**

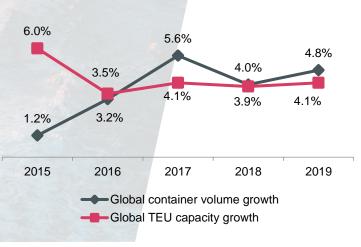
As per the World Trade Organization (WTO), world merchandise trade volumes decreased by 1.1% in the year 2019, owing to its decline to weaker trade and the US-China trade war.

Container volumes, as measured in 20-feet equivalent units (TEUs), increased at 4.8% in 2019, y-o-y growth rate down from 5.6% in 2017, bringing the total to 160 million TEUs. In 2019, 802 MTEU were handled in container ports worldwide, reflecting an additional 9 MTEUs over 2018,

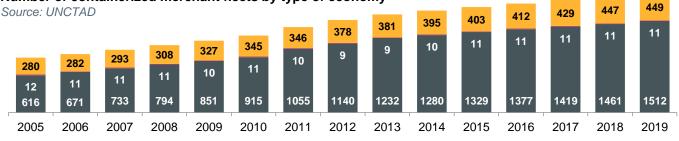
This growth rate is very less compared with the double-digit growth rates witnessed in the 2000s. Immediate attention needs to be given to improve declining growth rate of containerized trade.

### Y-o-y growth in global container volumes handled by shipping lines versus capacity

Source: Alphaliner



# Number of containerized merchant fleets by type of economy



Developing economies

Transition economies

Developed economies

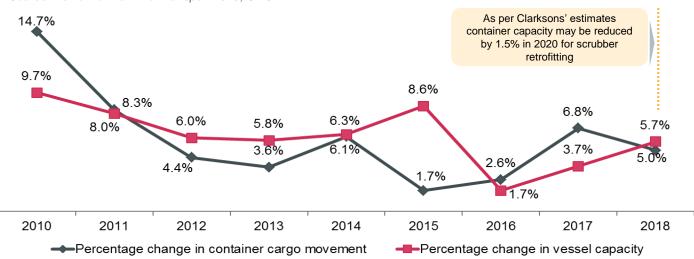


**Lower demand** for container shipping has translated into less activity in container ports. Some shippards are already slashing prices to preserve their order book. Similar price reductions during the post-2008 financial crisis had contributed to a race to build mega-vessels.

Over the past decade, carriers mitigated excess capacity by lowering ship speeds, scrapping older vessels and canceling orders for new ships. Government support for the maritime sector would likely keep local shipbuilding industries in business.

# Year-on-year percentage changes in supply and demand of container cargo

Source: Review of Maritime Transport 2019, UNCTAD



## Containerized trade by type of economy

# Merchant fleet registration (in million DWT) and global share (in %) by group of economies

Source: UNCTAD

Developed economies		
2014	395	23.4%
2019	449	22.7%

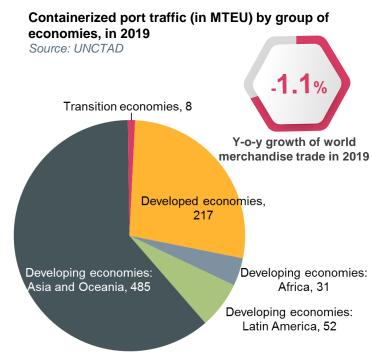
Transition economies			
2014	10	0.6%	
2019	11	0.6%	

Developing economies		
2014	1,280	75.8%
2019	1,512	76.5%

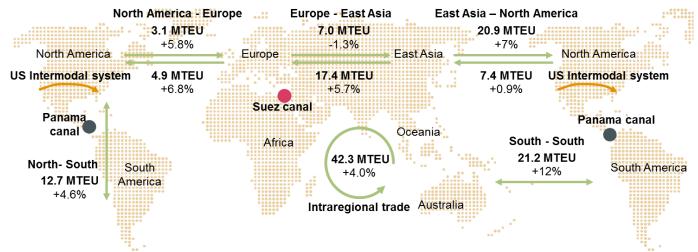
**Growth** in international maritime trade declined in 2019, owing to weaker economic indicators amid heightened uncertainty caused by the US-China trade war, the implications of IMO 2020, and uncertainty due to the COVID-19 pandemic. Volumes increased at 2.7% in 2018, below the historical y-o-y average of 3.0% from 1970–2017 and 4.1% in 2017. This reflects weakness in the maritime trade across many regions.

Since 2000, the share of developing countries to maritime trade has shifted, reflecting their growing role as major exporters and importers. Participation in containerized trade, however, has been concentrated in Asia, notably in China and it's neighbourhood, reflecting varying degrees of integration into global value chains and manufacturing networks.

In 2019, developing countries continued to account for most global maritime trade flows. Asia and Oceania region alone handled 61% of container traffic, accounting for 485 MTEU. In contrast, developed countries' share of traffic declined over time, handling 27.4% of container traffic in 2019.







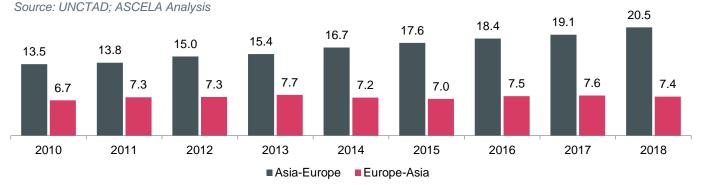
### Traffic along major trade routes (in MTEU) and percentage growth as in 2019

Source: Review of Maritime Transport 2019, UNCTAD; ASCELA analysis

Around 40% of global containerised trade continues to be carried across the major East-West containerized trade arteries, namely Asia-Europe, the Trans-Pacific, and the Transatlantic. With 60% of global containerised trade occurring on non-mainline routes, these routes involving developing countries' trade is being increasingly used.

Of these non-mainline routes, intraregional flows dominated by intra-Asian movements, accounting for the largest proportion of 27%, followed by East–West trade routes including the Eastern Asia–South Asia–Western Asia routes, accounting for 13% trade. South–South and North–South trade routes contributed 12% and 8%, respectively.

### Year-wise trend of trade between Asia and North America (in MTEU)



Along major East-West trade route, Asia is the largest contributor of trade, of which North America and Europe are the major trade partners. Trade between Asia and North America dominates with average year-on-year growth in volume at 5% from Asia to North America, and 1% from North America to Asia, from 2010 to 2018.

Total trade between Asia and North America was registered to be 29.7 MTEU. On the other hand, trade between Asia and Europe was witnessed to be 23.2 MTEU. Trade between Asia and Europe grew with average year-on-year growth in volume at 2% from Asia to Europe, and 4% from Europe to Asia, from 2010 to 2018.

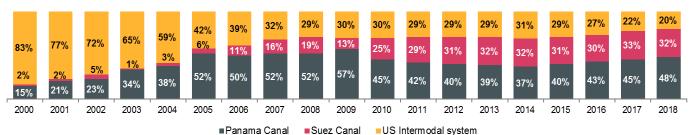
# Year-wise trend of trade between Asia and Europe (in MTEU)



# Impact on major trade routes

### Share of traffic along major trade routes

Source: Panama canal website



Panama Canal and Suez Canal are well known as the most crucial trading connections for maritime traffic in the world. Expansion of the Panama Canal in 2016 and the Suez Canal in 2015 has contributed to transit time reduction and accommodation of larger vessels.

# Cost analysis for the alternative routes between Hong Kong and New York (in USD million) for vessel size 13,000 TEU

Source: HMM Shipping lines

Route	Port cost	Bunker cost	Capital cost
Panama canal	1.99	2.25	3.15
Suez canal	1.57	2.46	3.47
Intermodal system	0.19	1.73	2.21

The table above identifies cost differences over different routes between Hong Kong and New York.

Transit time between Hong Kong and New York is almost the same through the Panama Canal and the Suez Canal. However, shipping lines operating larger vessels are inclining to use Suez Canal after severe drought conditions at Panama Canal in 2019. Many stakeholders are also looking for alternatives along with US-West coast ports and multi-modal logistics networks.

International North-South Trade Corridor

Source: UNESCAP

		St. Petersburg	RUSSIA
UK	5	Moscow	
Fran	Germany EURO	PE C	
Spain	Italy	Turkey	
Morocco	Tunisia	Iraq Saudi	Chabahar port
	AFRICA	Arabia	JNPT

### International North-South Trade Corridor

Integrated with the upcoming Chabahar port, and a possible partnership with Eurasian Economic Union, INSTC adds to its potential to be a high-density transport corridor between Asia and Europe. The table below highlights cost differences over the standard route and INSTC between India and Moscow.

# Cost analysis of INSTC compared to standard route

Source: UNESCAP

JNPT to Moscow route	Distance	USD/ TEU	Transit duration
via St. Petersburg	8,700 nm	3,100	45 days
via Chabahar port	750 nm + 4,605 km	2,100	16 days

The shipping industry is looking forward to exploring alternative intermodal routes to avoid high costs at Panama and Suez. Below are some of the preferred alternative routes.

- Panama Canal Railway is now experiencing notable growth with an increase in transhipment container traffic
- Lake Nicaragua route is also being developed as an alternative to the Panama Canal. The Government of Nicaragua signed a 50-year concession with a Hong Kong based firm to develop the canal in order to handle ships with high capacity.
- Several land-bridges, including Central American landbridge and Colombian land-bridge is also being increasingly used.
- 4. The International North-South Trade Corridor (INSTC) is a 7,200 km (4,474 mi) multi-modal network of rail, road and sea routes would likely speed up the transportation of cargo between South Asia and Russia and the Baltic Sea area. Once fully developed, the route is expected to cut cargo delivery time on similar distances in half.

Stretching from Indian ports to northern Europe and passing through the Caspian region, the INSTC route, with the operational capacity of 30 MTPA is expected to be cheaper and shorter alternative to the 16,000 km long Suez Canal.

# **Industry stakeholders**

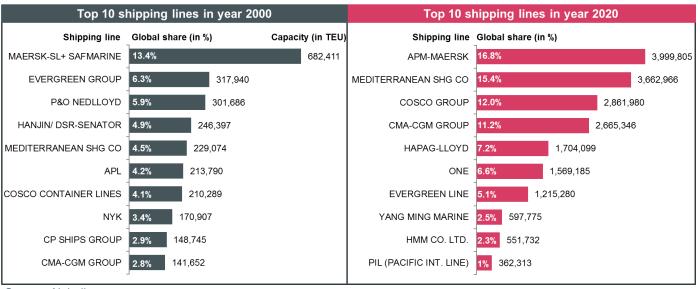
Competitiveness of shipping industry depends on efficiency, especially in terms of logistics practices, port functions and activities, and integration with other stakeholders in the industry. Integrated Supply Chain Management (SCM) is now broadly adopted is many parts of the world.

Despite the well articulated integration of shipping lines, ports and terminals, inland logistics integration still remains scattered. Many shipping lines have now begun their own inland logistics services to provide better supply chain, which is more efficient and effective in terms of time and cost.

### **Major shipping lines**

In the year 2000, out of the top 100 container lines, the largest 10 had a mere 52% market share, which increased to 81% by 2020. This drastic change can be attributed mainly to the mergers and acquisitions that have taken place in the shipping industry in this decade.

One of the key reasons for shipping lines creating alliances or vessel sharing agreements is to cut variable costs and the most effective way of doing this is the usage of common resources such as vessels, port terminals, and trade networks.



Source: Alphaliner

# Mergers

- Hapag Lloyd's merger with CSAV & UASC in 2017, the 16<sup>th</sup> 17<sup>th</sup> and 22<sup>nd</sup> largest container operators, respectively in 2000, made them collectively the 5<sup>th</sup> largest container operator in the world in 2020.
- Cosco Shipping Lines Co Ltd, leapfrogged from its position of the 7<sup>th</sup> largest container operator in the world in 2000 to position of the 3<sup>rd</sup> largest container operator in the world in 2020 with its merger with China Shipping and its take over of OOCL in 2016.
- Three container shipping lines K-Line, MOL, and NYK Line merged into ONE (Ocean Network Express) in year 2017, making them the 6<sup>th</sup> largest container operator in the world in the year 2020.

### **Alliances**

- Alliance of 2M in 2015, consisting of Maersk (ranking 1), MSC (ranking 2), ZIM (ranking 11), accounts for 33% share in the Top 100 container shipping lines.
- Ocean Alliance (2017), consisting of CMA-CGM (ranking 4), Cosco (ranking 3), Evergreen (ranking 7) accounts for 28% share in the top 100 container shipping lines.
- THE Alliance (2019) consisting of Hapag-Lloyd (ranking 5), ONE (ranking 6), Yang Marine (YML) (ranking 8) accounts for 17% share in the top 100 container shipping lines.
- These 3 alliances together total 78% of the top 100 container shipping lines in the world, leaving about 22% of those lines not part of any alliances.

### **Acquisitions**

- Maersk's acquisition of Hamburg Sud in 2017, the 20<sup>th</sup> largest container operator in 2000 added to its strong position in the list as the largest container operator in the world.
- CMA-CGM's take over of NOL in 2016 which included APL (6<sup>th</sup> largest container operator in 2000), made them the 4<sup>th</sup> largest container operator in the world in 2020.

#### **Demise**

 Hanjin Shipping, the 4<sup>th</sup> largest container operator in 2000, was declared bankrupt and shut down in 2016. Hanjin was the 7<sup>th</sup> largest container shipping line at the time of its demise.



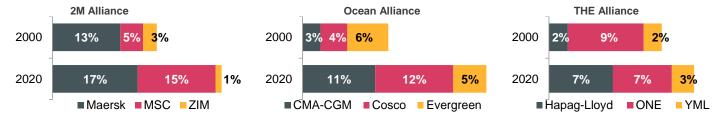
### Impact of alliances

Alliances have become a dominant feature of container shipping over the last few years. It has allowed carriers to acquire and operate mega-ships, reducing unit costs, without which certain carriers would not have been able to acquire mega-ships. Alliances have also made maritime transport offer more uniform services. It has contributed to more reliability, reduced cost, and time effective operations in handling containers in the entire supply chain.

However, some alliances have proved to be inherently unstable. When all major carriers are in alliances, changes in one alliance can have an impact on the whole sector. This would likely lower the rates of return on investment for the port industry, resulting in the decline of smaller container ports and the disappearance of smaller independent terminal operators, and other small groups providing inland facilities and services.

# Pre and post alliance snapshots (market share in terms of container capacity)

Source: Alphaliner



### Major port operators

While consolidation among major shipping lines remains a key theme in the sector, there are also signs that carriers are considering vertical integration by taking greater control of ports and terminals, aiming to provide integrated service offerings and generate more value.

APM Terminals, facilitated by Maersk shipping lines, and COSCO shipping ports, facilitated by the COSCO group, are the most favorable examples. These integrated services are performing concomitantly, expanding their reach to inland services, and have managed to remain in the top 5 port operators, serving across the world.

### Major freight forwarders

The integration of freight forwarders and port operators is very evident in the current scenario. Two of the largest terminal operators, DP World, and PSA International, have been actively working on developing their own logistics platforms. DP World, in 2019, made two logistics company acquisitions, in India and Peru. Similarly, PSA is building on technology investment to expand supply chain solutions in its key locations around the world. Damco, an in-house unit of Maersk Line is expanding its supply chain networks.

Similarly, CMA CGM, Mediterranean Shipping Company, and COSCO group are also pursuing integration strategies at varying levels.

### Major port operators in 2019, and container traffic handled in MTEU Source: World shipping organization PSA International 60.3 **Hutchison Port Holdings** 46.7 COSCO Shipping Ports 46.1 DP World 44.2 APM Terminals 42.8 China Merchant Ports 35.1 Terminal Investment Limited 26.5 ICTSI 8.9 Evergreen 8.5 SSA Marine 8.1 Major freight forwarders in 2019, and container traffic handled in MTEU Source: World shipping organization Kuehne + Nagel 4.9 Sinotrans Ltd. DHL Global Forwarding DB Schenker USA DSV Panalpina A/S

1.1

1.0

1.0

0.9

Kerry Logistics Network

Expeditors International

C.H. Robinson Worldwide

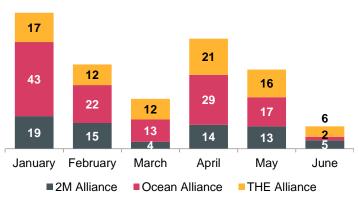
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Hellmann Worldwide Logistics



# **Industry scenario**

### Blank sailings



Blank sailings along transpacific trade route

Source: United World Freight Line

Container lines are continuing to take measures to improve supply chain and support freight rates as demand for container shipping services fell dramatically due to the effects of US-China Trade War, followed by coronavirus pandemic. Its impact is evidently observed in various segments around the world. In response to declining trade, carriers across all major alliances have announced a staggering number of blank sailings. Empty and near-empty sailings due to lack of demand are causing ocean carriers to pull vessels out of rotation to avoid substantial operational losses.

Major alliances including 2M, Ocean and THE Alliance witnessed 148 blank sailings in Quarter-1 of year 2020, and 130 in Quarter-2, along trans-pacific trade route. This trend is likely to continue in Quarter-3.

### Circular Shipping initiative

Circular economy is increasingly being recognized as a guiding principle for logistics business model innovation, but the potential role and opportunity space for shipping and logistics in the circular model are at very nascent stage. Many logistics companies are now engaged in researching new approaches in the sector.

#### > Navigating risks

Shipping industry has been burdened by surplus capacity and low freight rates for much of the past decade. It is primarily operated by small and medium-sized players, failing to consider potential of digitalization

### > Reintroducing profitability into the industry

It is about creating additional streams of revenue by serving customers across a range of different sectors. More digitally mature industries are reshaping the competitive environment.

# Vessel chartering

- Voyage charter is the hiring of a vessel for a voyage between a load port and a discharge port. The charterer pays the vessel owner on a per-ton or lump-sum basis. On the other hand, owner pays the port costs (excluding stevedoring), fuel costs and crew costs.
- Time charter is the hiring of a vessel for a specific period of time. The owner manages the vessel but the charterer selects the ports and directs the vessel where to go. Also, the charterer pays for fuel costs, port charges, and a daily 'hire' to the owner of the vessel.

Key enablers of circular shipping and logistics is analytics and digital technologies. Increased availability of data and tools for efficient and meaningful analysis will provide the necessary information and transparency on the flow of goods and resources. This will aid in setting sustainability targets in the industry.

#### > Circular business model

Digital ships would increasingly become integrated elements of the global supply chain, likely enabling the movement of cargo from origin to destination in optimized loops.

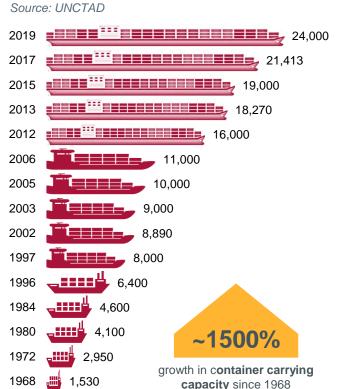
#### > New types of business models

Digitization of global supply chains will allow new markets to be identified and commercialized. By leveraging their domain, ship-owners would likely move towards value-adding services and new partnerships.

- Bareboat charter is an arrangement for the hiring of a vessel whereby no administration or technical maintenance is included as part of the agreement. The charterer pays for all operating expenses, including fuel, crew, port expenses, and hull insurance.
- **Demise charter** shifts the control and possession of the vessel. Charterer takes full control of the vessel along with the legal and financial responsibility for it.



### Growth in container carrying capacity (in TEU) over years



Container carrying capacity almost tripled in the last two decades. Larger vessels have led to cost savings for shipping lines, reduced sea transport costs, and facilitated global trade in the past. However, larger vessels require adjustments to port infrastructure, equipment and cause massive peaks in container traffic in ports.

2 Creation of shipping alliances has brought mega-ships and mega ports into the fore and such alliances allow better allocation of the shipping lines' resources, which reduces operational costs, allows the expansion of service coverage, optimizes port calls, and achieves economies of scale.

Mega-vessels needs to have utilization of at least 90% to achieve cost savings, which is very difficult to make even for high volume trade routes. To fill their mega-ships, carriers across the globe came up with two strategies: low freight rates that decrease profit per slot, and enhance hub-and-spoke connectivity.

Mega-vessels also lead to service and cargo concentration, reduced choice and more limited supply chain resilience, especially since bigger vessels have coincided with increased cooperation of the leading shipping lines in four alliances.

# Impact on shipping lines

The term "Mega-ship" came up in around 2013, with the Triple E series of ships of Maersk capable of moving 18,340 TEUs. The HMM Algeciras, currently, is the largest vessel ever built with a capacity of 23,964 TEU. These mega-ships are the product of high fuel costs and low-interest rates to achieve maximum economies of scale.

Instability and volatility in the market

With the ongoing decline in trade, many carriers have begun updating their rates on a monthly basis instead of quarterly and the cost varies by distance, fuel price, and availability of fuel or technology being used. This has caused volatility in rates and has made it difficult for shippers to forecast costs over the next few months until the market stabilizes.

**Tighter Capacity** 

With IMO 2020 in effect, vessels would likely restrict cargo weight to balance cargo carried with fuel economy. There would also be a huge Increase in the scrapping of old vessels that can't be retrofitted with scrubbers, taking some capacity out of the market. Carriers are also dealing with lowered demand from the ongoing trade decline, which would continue blank sailings as a result.

As per OECD, a large share of the cost savings can be achieved by ship upsizing to 5,000 TEU, which more than halves the unit costs per TEU. But, increasing supply chain risks, caused by the economic slowdown, are creating reverse impact. Shipping lines are rendering heavy loss, owing to the blank sailings led by a decline in trade.

Longer routes most affected

Longer routes consume more fuel and require more time and cost, due to which freight transported over greater distances are witnessing the largest cost increases. Additionally, lack of available low sulfur fuel at some ports in Africa, South America and Southeast Asia could detour vessels and cause delays.

Increased risk of stranded assets

In the sight of the week trade growth shipping industry is likely to undergo profound changes in the coming years. This transformation calls for significant investments in technologies, fuel types, and standardized models. This would expose the shipping industry to the risk of stranded assets. Costs are likely to rise, but there is little to indicate that revenues will strengthen in the short term, which will largely impact many domestic and traditional players.



# Impact on ports



Large size vessels

1/3

Additional yard space at ports to avoid congestion

Over the years, strong demand for international trade has led to an increase in the size of shipping vessels, due to which ports around the world is facing increasingly bigger challenges. In order to serve larger vessels, ports not only need more space but also customized infrastructure, such as more reliable fenders and bollards with a greater capacity, adapted gantry cranes or dredgers that enable large vessels to pass through.

USD 2 bn

Additional per year cost as per HMM shipping lines

Shipping lines and ports are experiencing huge costs in preparing the infrastructure to meet the required standards of IMO 2020. Ports are enhancing their fuelling infrastructure, including bunkering terminals with pipeline hook-ups, barges, and storage facilities. This is to be governed by the availability of fuel in ports' hinterland and additional cost of development.

\*

**IMO 2020** 

Blank sailings globally by the end of April 2020

COVID-19 pandemic led to restricted operation at ports, due to which volumes have gone down globally by more than 15%. Shipping lines have had to resort to blank sailings and this number increased to 435 blank sailings globally by the end of April 2020. This indicates the lack of export cargo and not only would it impact the shipping, but also the ports, supply chain, and various industry stakeholders including exporters/importers.

COVID-19

Digitalization

USD 18 mn

Global investment in digital transformation of maritime industry in 2019

Shipping lines have formed their own digital alliances, like Maersk and IBM teaming up to create Trade lanes to offer customers digital freight solutions, an open and neutral industry platform underpinned by Blockchain technology, and is supported by major industry players including Maersk, Zim Lines, PIL, CMA CGM, MSC, Hapag Lloyd and ONE. These collaborations have also benefitted port operations.

### Ports' competitiveness

The competitiveness of the port is highly dependent on the supporting regions. The effectiveness of ports depends on how they are linked with the supply chain, their maritime and landside linkages, and their integration and alignment hinterland transportation. Ports like Rotterdam owe their success largely to vibrant economic clusters in the vicinity.

Many port cities around the globe are working examples of a symbiotic relationship between the port and its surrounding region. The continuing increase of vessel size will put more focus on the hinterland connectivity, whilst on-going tendencies of port concentration will make local goodwill more important to sustain port functions close to cities.

# **Growth opportunities**

- Maritime connectivity is essential for competitive ports as they determine the frequency of shipping services. Ports with more extensive maritime connections are more attractive to shippers as these ports can offer direct services and this faster movement of goods.
- 2 Strong hinterlands: Governance of port is increasingly influenced by the process of developing trade corridors. This can be established by integrating the port system in a multimodal transportation network to improve market access, the fluidity of trade and the integration in an industrial network.
- Port-led Industrialization: A number of export/import-dependent industry sectors prefer to be close to deep water ports to accommodate sea-going vessels when choosing their production sites. Proactive development of these industrial regions offers strategically significant benefits to the ports.
- Strategic network planning: Strategic planning of road and rail connectivity, inland waterway network, and logistics chain need to be optimized. Improved foreseeability, flexibility and cooperation within the network govern the criteria of social and economic competitiveness.



# ASCELA's viewpoint



Weak trade and ongoing COVID-19 pandemic have disrupted the entire logistics environment. As more mega-vessels are entering the service, the industry is rapidly approaching an even more critical stage. To bring about normalcy in the shipping industry and to ensure optimum benefit to the entire supply chain, shipping lines and ports need to work in a more coordinated manner. All stakeholders in the supply chain must recognize the need for dialogue and collaboration if further productivity improvements from the transport system are to be realized. Addressing the operational and cost effects at port facilities caused by challenging situations requires a cross-industry effort.

### Market imbalances and pressures on rates

The year 2019 witnessed a mixed performance in container freight rates. Weak trade growth and sustained delivery of mega container ships exerted pressure on freight rates. This was further worsened by US-China trade war, and potential application of higher tariffs by the US on Chinese imports. Challenges and additional costs of complying with the new 2020 regulation of the International Maritime Organization (IMO) on Sulphur fuel limits would likely have a large impact on market fundamentals.

### Port automation

Only 40 terminals (out of 1,200 terminals) globally are automated or semi-automated currently. The industry is shifting towards optimum efficiency, space utilization, and reduction of costs. Safety is also seen as a major concern. Users are vying for low energy usage and zero-emission ports. Also, the shortage and cost of trained and skilled labor are pushing terminals to automation.

# Consolidation at regional and port-level

As container shipping lines are increasingly consolidating, similarly countries, port authorities, and regulators can align at a strategic planning level. This would likely help strengthen the collective position of the landside supply chains. Regional or cross-port alignment and coordination on policy would help ensure port competitiveness and proper allocation of resources while protecting the interest of the supply chain users.

### Collaborations in terminal operations

In 2018 and 2019, several alliances and joint ventures were established between terminal operators, as well as between liner companies and terminal operators, to engage in the joint operation of berths. Vertical integration and the further expansion of shipping lines into terminal operations have affected competition and choices for shippers. Along the similar lines, Maersk announced integration with APMT to form Maersk Logistics Services.

### Integrated supply chain development

Carriers are increasingly eying growth prospects associated with a wider range of services, including landside operations. Ports and shipping interests are focusing attention on inland logistics with additional revenuegeneration potential.

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#### **About ASCELA**

ASCELA is a Management Consulting firm established to provide independent strategic insights to organizations and individuals in Infrastructure development space. We assist our clients in anticipating, innovating, and creating sustainable solutions.

ASCELA was established with a vision to provide independent strategic insights in Infrastructure and build environment. ASCELA's founder members have rich multi-sectorial experience, including skill sets in sectors comprising Infrastructure, transportation, management, economics, and design and build solutions. Our combined knowledge assists clients in providing a holistic perspective and comprehensive business solution.

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ASCELA's Infrastructure Advisory practice helps clients develop and leverage core competencies to deliver sustainable and tangible returns. We define strategies that help clients in gaining market share, enter new markets, regions, and products, improve bottom-line and reconfigure organizational/ operational structures. ASCELA is well placed to provide accurate and strategic inputs and analysis for assessing potential development opportunities in Infrastructure design and development space. Our in-depth knowledge of our focus transportation sectors, backed by intensive research and rigorous analysis into our clients' specific contexts, helps define superior strategies, framework, and implementable action plans. ASCELA formulates a strategy that is strategically structured to achieve the right project outcomes.

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