

## ***Enhancing Connectivity***

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A ninety trillion-dollar global economy, project to be doubled in a few decades with a population of nine billion people by the year 2050 will indeed need enhanced sustainable connectivity to optimise resources. Modern day connectivity can be defined by two key factors, which is remote connectivity (people to people/services) and physical connectivity (merchandise/raw material/ commodities). Remote connectivity is based on telecommunications, linked through satellites and undersea cables whilst the physical linkages will be through the four main modes of transport which are rail, road, waterways, and air. Basic principals of economics such as competitive and comparative advantages in international trade in production will be continued to be the way forward enhanced by new technology. The post Covid 19 environment will have an impact on global value chains and supply chains on production which will have some gradual shifts to enhance supply chain security to diversify sourcing. It is expected that some correction on trade flows will take place and concepts such as nearshoring, in shoring and offshoring may change the landscape of trading due to political and economic reasons, but the overall distribution of logistics services will continue to grow in the world where the populations are thick and economic growth will continue to flourish. Therefore Asian & African continents and the Indian ocean which is in a such geography linked to the Pacific and the Atlantic oceans, will play a significant role in global trade movements in the coming decades. This paper will focus on the global maritime trends specifically to the growing container industry and port development in the Indian ocean for crucial connectivity for merchandise trade.

Twentieth century saw the world witness a massive cross-border trade flow and growth as more and more nations joined the free market and the concept of a global village that produced, processed and shipped commodities and merchandise under bilateral and multilateral trading arrangements under GATT /WTO agreements, where production centres and markets connect for the need of raw material, finished goods and semi-finished merchandise. All these are linked today through modern supply chain solutions as we entered the twenty first century with the birth of the fourth industrial revolution making the consumer a global customer creating changes to the patterns of trading across borders. We are now in the era of accelerated e-commerce and Covid 19 has pushed the international community to revolutionize the way we do trading and has fast forwarded the technological revolution in many folds. Today retail businesses are being challenged by new concepts such as business to customer (B2C) models. However, one thing has not changed, long-distance highways and railways as well as international ports and airports are needed to move products and people around in a connected world.

### **Ocean shipping will dominate international transport industry**

Transportation industry is dominated by four major modes of transport which are, ocean (waterways), air, road & rail (land). However, the cheapest mode of transportation that gives connectivity across continents is none other than the ocean shipping industry. As a result, nearly ninety percent (90%) of global trade, connects through a merchant shipping fleet which now consists of over 55,000 ocean vessels. These ships carry bulk cargo, break bulk cargo, liquid cargo, gas and of course containerised cargo as commodities and finished and semi-finished cargo. The merchant shipping fleet is therefore structured into different types of ships to service the demand of the global trade. ( figure 1)

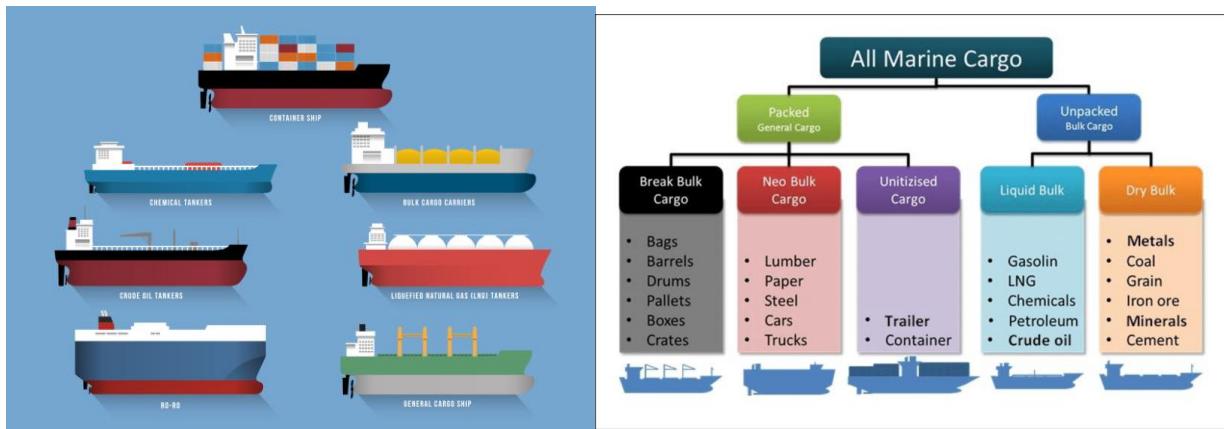


Figure 1: Types of ships <https://safety4sea.com/> Credit: Shutterstock/ google

The shipping industry itself is a very capital-intensive business. It is not an easy task for all countries to own and operate major shipping fleets with scalable output and profit. As a result, there are about 10 major shipping lines today, that operate through alliances controlling eighty percent (80%) of the global merchandise trade transportation in containerised cargo. There are also feeder services operating smaller vessels to facilitate global transportation hubs to connect to major shipping trade routes which creates the global network of maritime transportation.

## Origins of major Shipping trade routes & Ports

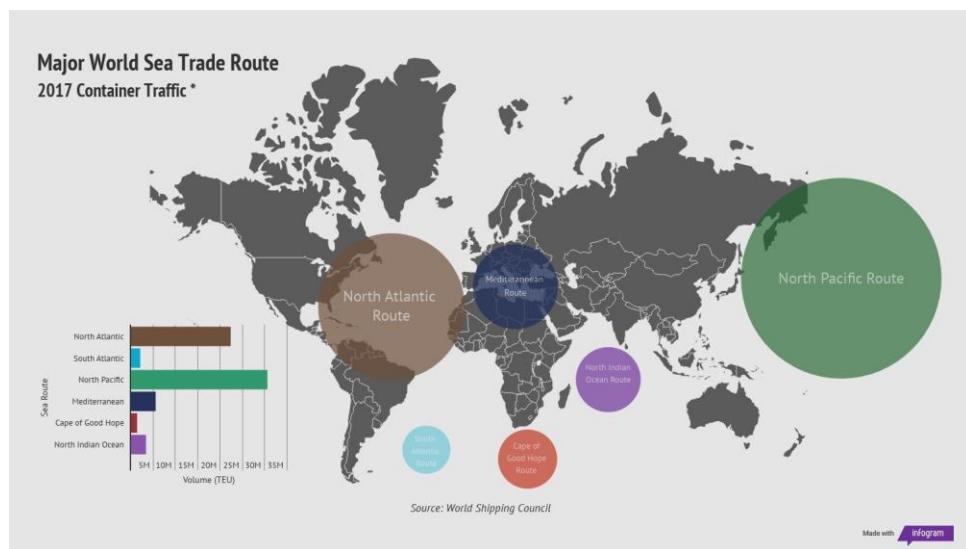


Figure 2: IMAGE DATA: Major World Trade Routes- 2017 Container Traffic/  
<https://www.worldtradia.com/global-sea-trade-routes/>

North Atlantic Route – 22,322,000/South Atlantic – 2,054,000/North Pacific – 30,550,000  
Mediterranean – 5,504,000/Cape of Good Hope – 1,344,000/North Indian Ocean – 3,340,000

Data Source: *World Shipping Council*

When tracking global shipping traffic, major trunk lanes can be identified as well as sub routes throughout the oceans of the world along with a port network. It is the market size first that determines the global maritime traffic allocations. Bigger economies such as, The USA, Europe, China, Japan for obvious economic reasons carries through large volumes of maritime cargo through number of mega ports to connect large number of populations to facilitate global supply chains. Today global supply chains are highly advanced and competitive in carrying production from manufacturers to consumers across the world. The buying power of consumers have increased and as a result trade volume too have increased with emerging new markets. (figure 2)

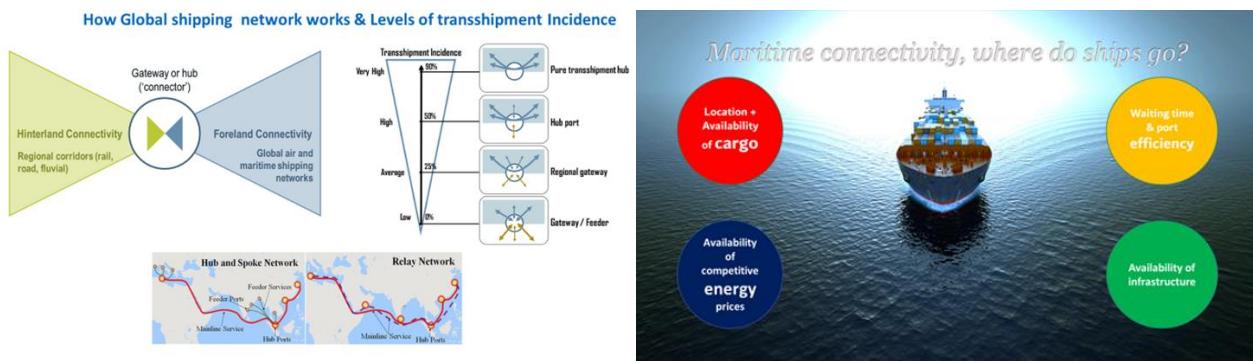


Figure 3: The nature of container shipping business & ports selection: R & D Shippers Academy Colombo

The containerised shipping industry has developed its own model to optimise cargo collection through selective models across the global cargo catchment areas. Over the decades, the container shipping industry has evolved into mega ships to mega ports and have adapted the hub and spoke models and the relay models to link global hubs with regional ports. The above (figure3) elastration shows the categorization of ports according to shipping services provided by the liner shipping companies. The ports of call are designed to optimise scale and capacity.

Depending on four critical factors, shipping lines would do route planning, fleet allocation and port selection. The factors are as follows:

#### 1. Availability of commercial cargo in volumes

Cargo volumes/ tonnage is an vital element that a shipping company would look when deploying a fleet of vessels to a region of the world to operate, among many factors this is one of the key decisions that would decide port calls

#### 2. Availability of infrastructure

The availability of suitable infrastructure and capacity of each ports and its location would be another key factor to allocate vessels to call international ports

#### 3. Efficiency and technology to handle modern ships:

This includes factors such as turnaround time, congestion & diversion time from major maritime corridors.

#### 4. Availability of ship's main cost factor, which is bunker at reasonable price:

On average when operating a ship. 40% of its running cost would be energy based and those ports that could provide ships bunker at competitive prices would also attract more services thereby creating more connectivity/capacity option for such ports and trade.

The combination of above factors, will decide on what kind of a fleet is allocated to a country, depending on its geography and the proximity to major shipping lanes. The current logical shipping transportation model in the Indian ocean region for containerised cargo is based on coastal shipping services linking to regional gateway ports and connecting feeder services to international shipping hubs. Therefore, the investments on ports of the Indian ocean littoral should be very strategically planned to support the connectivity enhancement of the shipping companies related to the four factors mentioned above.

Spatial planners of ports should not invest thinking that they could attract mega ships into every port and build infrastructure that could lead to no business and reflect as white elephants in the long run. Instead what should be focused is, on developing suitable infrastructure that is required by ship operators depending on the fleet allocation. For example, the coastal port connectivity network will have container ships ranging from 250 TEUs to 2000 TEUs, whereas a regional port needs to develop capacity for ships

carrying between 2000 TEUs to 6000 TEUs to accommodate modern feeder ships. Such port authorities will have to upscale technology, increase turnaround times and to remove congestion to be competitive to attract better connectivity and services as a priority. On the other hand, ports that would want to have 6000 to 13000 TEU direct callers will continue to need to invest on new infrastructure and expand port basins to facilitate trade as well as ship owners to consider connectivity. Transshipment ports will have to provide 10,000 TEU to 25000 TEU vessel handling capacity to compete with other transshipment hubs. It's all based on economies of scale.

### The increasing importance of the Indian ocean for global supply chains

Due to two key factors global trade flows have been increasingly moving towards Asia and Africa. The first being the economic growth led by Japan, China, ASEAN and now increasingly expanding towards India and Africa. Secondly, the Indian ocean rim nations connecting Africa, Middle East, Indian subcontinent and Australasia has the world's biggest population and coastal communities with increased GDP growth creating demand for merchandise, raw materials and energy.( figure 4)

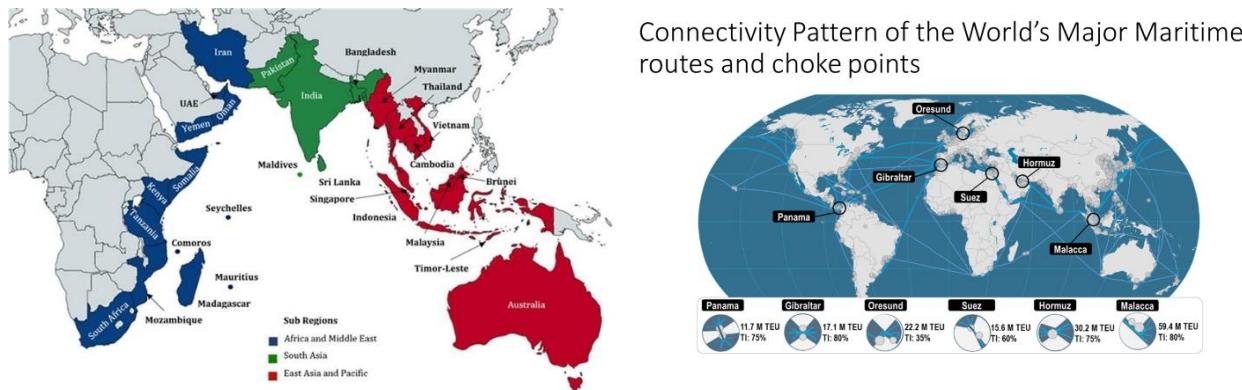


Figure 4: lki.lk & world maritime choke points

### Indian ocean and Sri Lanka's role in connectivity enhancement

The Indian ocean has well over one hundred major and minor ports falling into different categories of ports. However, from the choke points of Malacca and Hormuz and the Sues Canal, there are only six major transshipment locations that services the Indian ocean. Namely Singapore, Malaysia, Sri Lanka, UAE, Oman & South Africa. Interestingly the major east west maritime trunk network that connects the Atlantic ocean and the Pacific ocean and the Mediterranean regions moves through the Indian ocean carrying nearly fifty percent of global trade. Crude oil to refined petro chemicals, commodities and finished merchandise to consumer markets pass through this important strategic ocean to reach millions of consumers carrying billions of tones of tradeable goods throughout the year. In addition to developing the ports in the Indian ocean region for ocean shipping, other transport corridors such as air, inland waterways, road, and rail links will have to be up graded to provide the increasing demand for multi modal transport depending the geography itself to enhance connectivity.

Interestingly Sri Lanka is in the heart of the Indian ocean, advantageously sitting between the Arabian sea and the Andaman sea, adjacent to the east west shipping corridor of the Indian ocean. Linking major ports and transshipment hubs of the far east, Indian subcontinent, middle east and Africa, the island has an enviable maritime location that can bring in many efficiencies to the global trade and logistics cost management. It boasts of three major deep draught seaports, namely Trincomalee, Colombo and Hambantota, which is ideal to service different types of ships and commodities. Indeed, Sri Lanka is a gateway nation to many continents that gives attractive connectivity options. Improving transport connectivity help reduce trading cost, manufacturing cost and is crucial to connect developing countries and help them to boost trade, growth, and regional integration.

## **The maritime landscape of Sri Lanka-Ports of Colombo, Hambantota and Trincomalee**

The port of Colombo has been among the top ranks of the world in terms of container volume handling and in connectivity indices and is a well-established deep draught port on South Asia. The regional hub (ranked 22<sup>nd</sup> - 2018) in the world is the main transshipment port of the Indian subcontinent and provides world class services and connectivity to international liner shipping industry. The ambition of the adjacent port city is to create a world class financial centre in the middle of the Indian sub-continent. Shipping and shipping related services will be a key factor to succeed this goal. The port of Hambantota, another deep draught port has the potential to attract non containerised cargo (at this stage) and be a key energy port in the Indian ocean, whilst Trincomalee is a natural deep draught port which can service the Bay of Bengal littorals for numerous maritime services and act as a distribution centre for energy and bulk services for the east coast of India.

### **Conclusion**

The maritime domain of the Indian ocean remains vibrant and important for the future trade growth and trade shifts and for world sea born transportation. The shipping, logistics and trade activity will continue to increase in the Indian ocean and it is paramount that the region remains secured and free of international dominance over sea routs, where maritime security will be a key for stability and growth and to ensure smooth global supply chains.

However, if Sri Lanka needs to attract the global shipping industry for greater commercial activities and move beyond a transshipment hub to a maritime state, it needs massive policy reforms and re-structuring of laws and regulations and its international relations to avoid risk of political fallout. The country must ensure a level playing field for its international partners and be a neutral maritime nation that embraces and facilitate global trade flows for its own economic prosperity.

*Note: The contents of this paper were collected by references from multiple sources via the internet and presentations done at the Colombo International Maritime Conference (CIMC) in 2015 & 2016 and author presentations done at numerous think tanks during the period 2015-2019.*

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*Photo credit: Shippers academy Colombo/internet*