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**Towards \_\_\_\_\_  
Smart Green Blue  
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# The Future of Ports: To be more efficient, smart and resilient



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# 1. Port Volume: Growth slowdown

- In 2020, the epidemic disrupted the logistics supply chain and there were dramatic fluctuations in port production.
- Global container port throughput is growing at a consistent rate of **3.9%** from 2011-2019.
- According to Drewry's forecast, global container throughput in 2023 will be around 863.7 million TEU, increased **0.3%** year-on-year.
- The average growth rate for 2020-2023 is only **1.69%**.

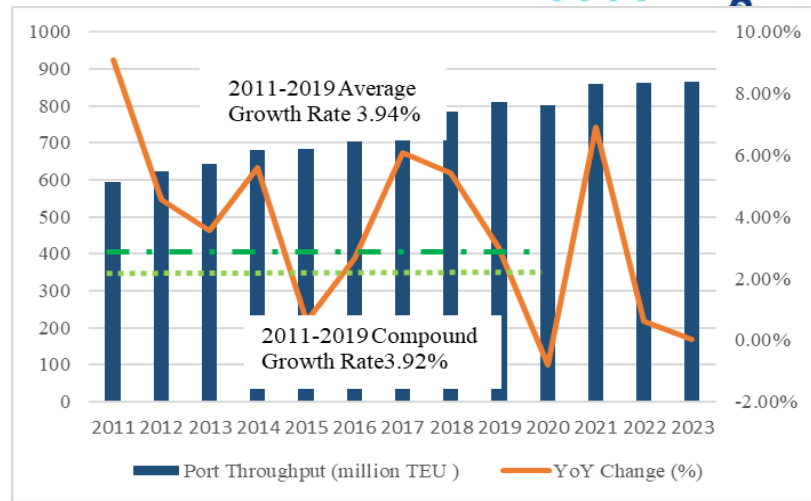


Figure 1 Global Container port throughput and growth rate

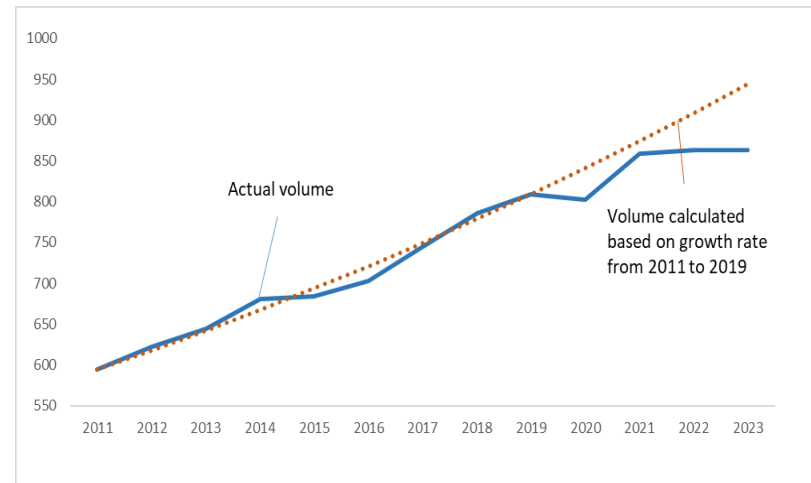


Figure 2 Comparison of actual throughput and calculated throughput

Data Source: Drewry



# 1. Port Volume: Growth slowdown

- The UNCTAD forecasts an average annual growth of **2.1 %** in global seaborne transport over the period 2023-2027, which is lower than the average growth rate of **3.3 %** over the previous three decades.
- Drewry forecasts global container throughput growth of **around 2.7%** from 2023-2027.

## ● Conclusion:

**Challenges:** low growth will be the challenges for the port. And it will impact on investment confidence in ports and further affect the supply of port infrastructure.

**Chances:** According to the decentralized layout of the global industry, in some special markets there is also potential for growth.



Figure Global GDP and seaborne trade growth  
Source: UNCTAD

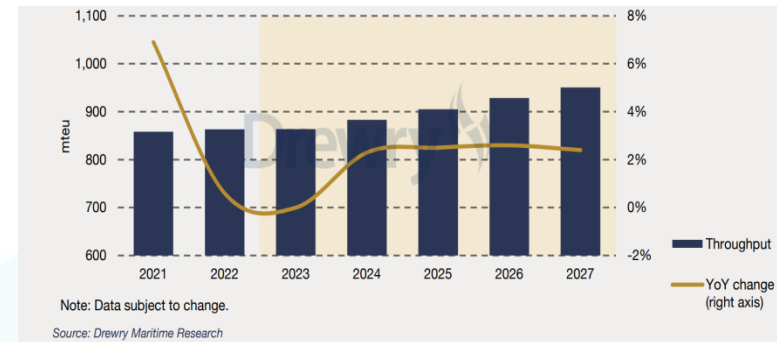


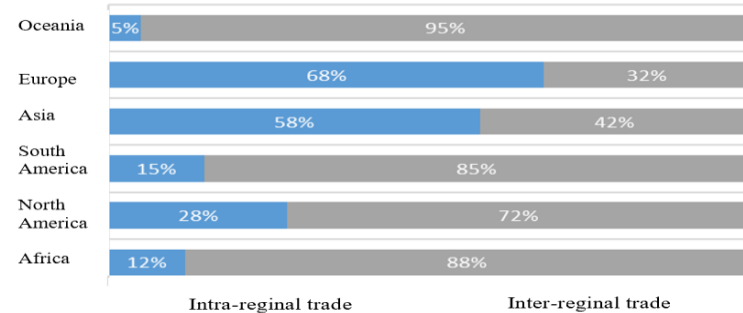
Figure Global Container port throughput forecast by Drewry  
Source: Drewry

## 2.Port Service: Efficiency improvement and Logistics supply chain



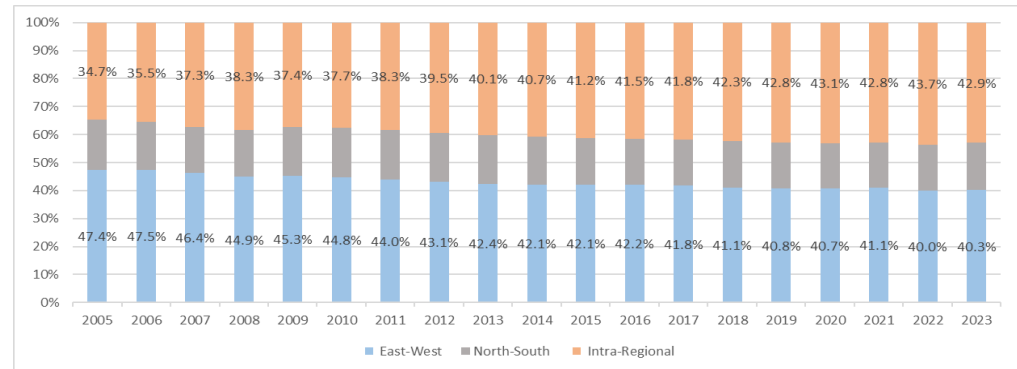
### Trends in the structure of global trade

- After the epidemic, the instability of the supply chain has made the industrial chain more focused on safety, and retaining redundancy.
- The supply chain tends to become closer neighbors and intra-regional trade will be developed quickly
- Intra-trade accounts for more than 50% of their international trade in Europe and Asia.
- The proportion of the regional shipping routes increased obviously from 2005 to 2022.
- The proportion of the regional shipping lines in 2023 is about 43%.



Data Source: UNCTAD

Figure 1 Trade structure by different



Data Source: Clarkson

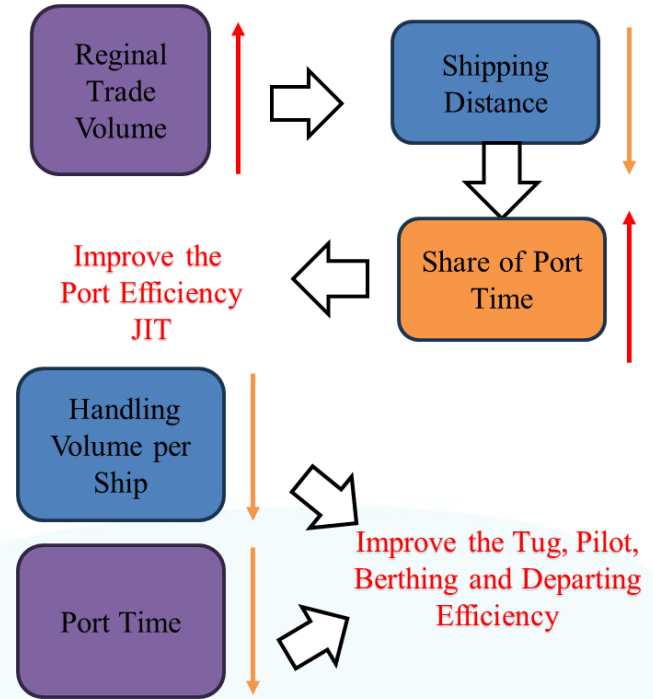
Figure 2 Changes in the structure of shipping routes



## 2.Port Service: Efficiency improvement and Logistics supply chain

### New requirements faced by ports under the trend of trade regionalization

- **Ships** for regional transportation will be **upsizing**
- **Distance** for regional sea trade is **shorter** than east-west routes.
- **shippers** engaged in intra-regional trade are much more **sensitive to time efficiency** than trade transported over long distances across oceans.
- **The time** ships spent at the port as a percentage of ships operation time is **increased** significantly.
- The efficiency requirements for ports in the maritime logistics supply chain will be further improved, and the demand for JIT on-time services will increase.
- The increase in the number of small and medium-sized ships serving ports has increased the efficiency requirements for the tugboat, pilotage, and berthing services at ports.



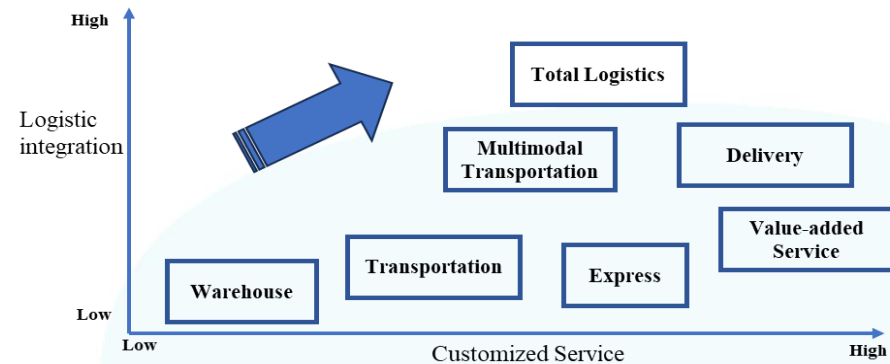
## 2. Port Service: Efficiency improvement and Logistics supply chain

### New requirements faced by ports under the trend of trade regionalization

- Need for a more efficient inland collection and distribution system, where goods can be quickly distributed to their destinations.
- There is a demand for integrated development between ports and express delivery.
- The demand for personalized and customized port logistics services will significantly increase.
- Upgrading port functions from a single node to a full logistics supply chain.



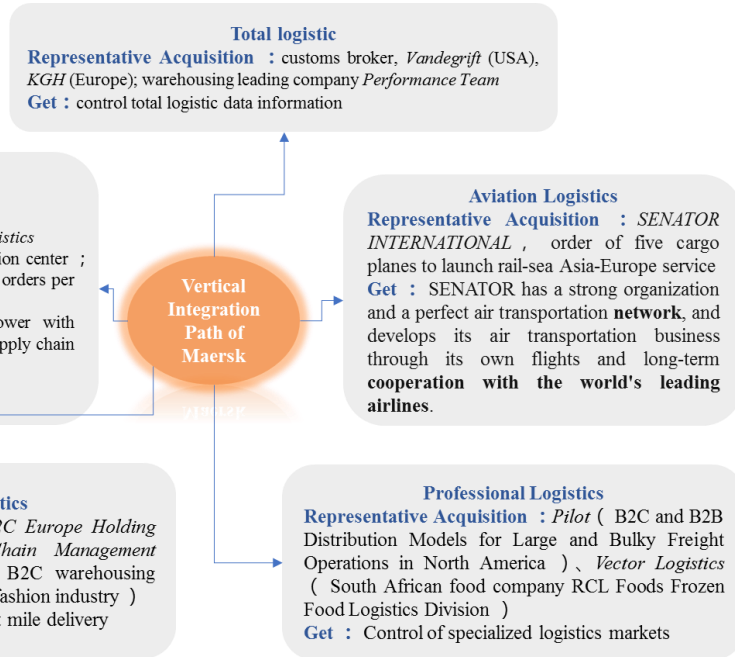
Figure ICT of Shanghai Port







## 2. Port Service: Efficiency improvement and Logistics supply chain



- **Client: From 2B to 2C**
- **Transportation: From Shipping to train, road, and air transport**
- **Logistics: Transportation, Forwarder, Warehouse, Supply chain**
- **Cargo: From Standardized cargo to Special Cargo**
- **Region: Global**
- **Trade: Offline to Online**
- **Path: Integration to cross-sell**

The boundary between port companies, shipping companies and logistic companies has become blurred. Shipping companies have control over cargo sources and international resources. But what port companies have?



### 3. Port resilient: Cooperation and Digitalization

- **Horizontal Collaboration: Collaboration within Port Groups - Integration of Port Resources**
- **Vertical collaboration: collaboration between upstream and downstream of the industrial chain (Especially collaboration of data and information).**
- **Start to improve data exchange standards for port JIT systems (Singapore, Antwerp, London, Hamburg).**
- **Strengthen the digital collaboration of port rear freight (ports such as Los Angeles, Long Beach, and Rotterdam will gradually propose plans to strengthen the digital collaboration of port rear freight in 2022)**

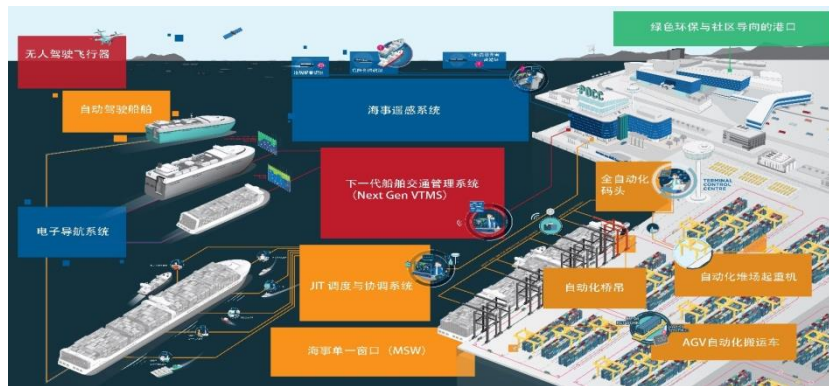


Figure Singapore Port JIT Service



Figure JIT Port Connected Electronic Information Exchange Standard Concept

## 4. Integration of urban, industry, and port

Port city relationship is gradually transitioning from synergy to closer integration

- The concept of "collaboration" still focuses on two systems, emphasizing coordination; 'Integration' emphasizes more on the city and the port is two parts of a whole.

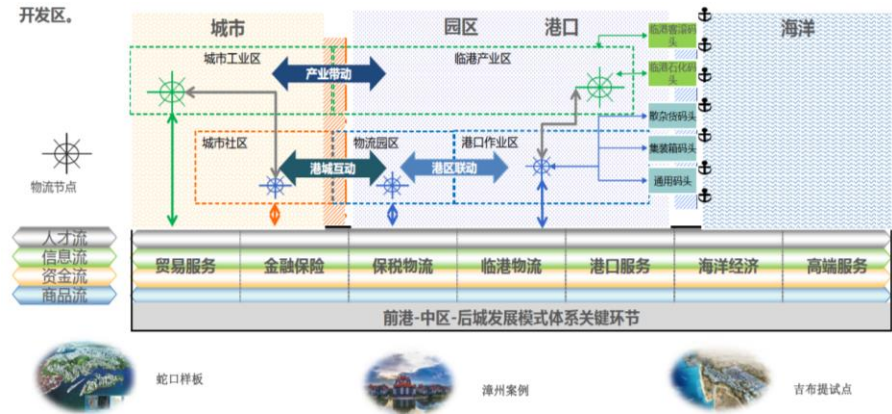


Figure China Merchants' Port-Industry-City Integration Development Model of Front Port-Middle District-Back City

- Port city integration emphasizes the systematic and integrated consideration of port development and urban development in terms of spatial layout, functional layout, functional positioning, development strategy, industrial structure, policy support, etc. It requires full integration of ports and urban environment. Cities provide bearing space and resource foundation for port development, and ports provide strong guarantees and effective driving force for urban development, thus achieving port A continuous upward development model between industry and urban life.

## 4. Integration of urban, industry, and port

### Green Port:

- 1) Minimize the negative impact of the port area on the local environment;
  - 2) Maximize the utilization of resources in port economic activities.
- Energy conservation and emission reduction (optimizing processes, reducing ineffective operations.)
  - Switching from using fuel to electricity (Promote the use of shore power)
  - New energy (wind energy, photovoltaic, natural gas, hydrogen...)
  - Carbon trade



- So far, 24 countries around the world have launched 21 green shipping corridor construction initiatives, with ports, shipping companies, and cargo owners participating.

Figure Global Green Shipping Corridor for Plan

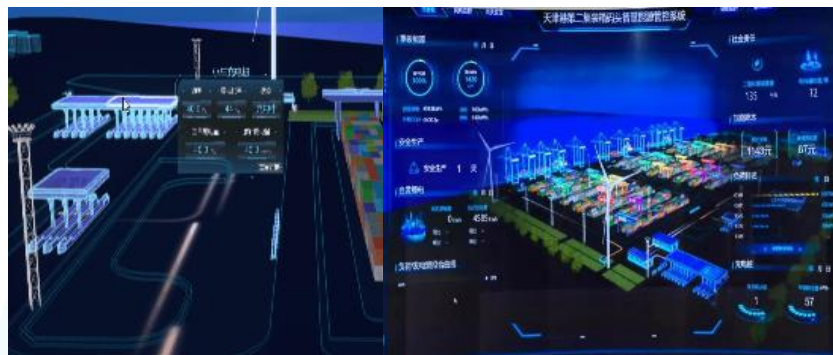


Figure Tianjin Port Zero Carbon Terminal



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# Global Port Development Report

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# Thank You !



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