The Strategic Importance of Maritime Clusters in the Ocean Economy

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The Blue Economy in Perspective

Volume of World Trade (%)
- Seaborne: 89.8%
- Airborne: 13.0%
- Overland: 7.0%

Value of World Trade (%)
- Seaborne: 72.7%
- Airborne: 14.3%
- Overland: 7.0%
The Blue Chain

1. Building
   - Korea & China (72%)

2. Ownership
   - Greece, Japan & China (38%)
   - Panama, Liberia & Marshall Islands (42%)

3. Registration
   - Hong Kong, Netherlands, Singapore & UAE (44%)
   - Denmark & Switzerland (30%)
   - India, Bangladesh, China & Pakistan (92%)

4. Operations
   - UK & Scandinavia

5. Scrapping
   - Greece, Japan & China
   - Panama, Liberia & Marshall Islands
   - Denmark & Switzerland
   - India, Bangladesh, China & Pakistan

Financing and Insurance

Seafarers

Global Terminal Operators
Feeling the Blues…


- Seaborne Trade (billions of tons of goods loaded) - Left Axis
- Exports of Goods (trillions at current $US) - Left Axis
- Ratio Exports / Seaborne Trade - Right Axis
Blue Highways: Maritime Shipping

- **Amazon** (5%)
- **Suez Canal** (15%)
- **Strait of Malacca** (30%)
The Blue Pinch: Terminal Surface Controlled by the Main Global Terminal Operators

17,242 hectares (172.4 km²)
# The Big Blue: Evolution of Containerships

<table>
<thead>
<tr>
<th>Period</th>
<th>Category</th>
<th>Description</th>
<th>TEU Range</th>
<th>Containers per Deck</th>
</tr>
</thead>
<tbody>
<tr>
<td>1956 - 1960</td>
<td>Early Containerships</td>
<td>500 – 800 TEU</td>
<td>500 - 800</td>
<td>4</td>
</tr>
<tr>
<td>1970 - 1980</td>
<td>Fully Cellular</td>
<td>1,000 – 2,500 TEU</td>
<td>1,000 - 2,500</td>
<td>4</td>
</tr>
<tr>
<td>1980 - 1985</td>
<td>Panamax</td>
<td>3,000 – 3,400 TEU</td>
<td>3,000 - 3,400</td>
<td>4</td>
</tr>
<tr>
<td>1985 - 1990</td>
<td>Panamax Max</td>
<td>3,400 – 4,500 TEU</td>
<td>3,400 - 4,500</td>
<td>5</td>
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<tr>
<td>1988 - 2000</td>
<td>Post Panamax I</td>
<td>4,000 – 5,000 TEU</td>
<td>4,000 - 5,000</td>
<td>6</td>
</tr>
<tr>
<td>2000 - 2006</td>
<td>Post Panamax II</td>
<td>6,000 – 8,000 TEU</td>
<td>6,000 - 8,000</td>
<td>6</td>
</tr>
<tr>
<td>2014 - 2016</td>
<td>New-Panamax</td>
<td>12,500 TEU</td>
<td>12,500</td>
<td>10</td>
</tr>
<tr>
<td>2006 - 2018</td>
<td>Post Panamax III</td>
<td>15,000 TEU</td>
<td>15,000</td>
<td>10</td>
</tr>
<tr>
<td>2013 - 2018</td>
<td>Triple E</td>
<td>18,000 TEU</td>
<td>18,000</td>
<td>10</td>
</tr>
</tbody>
</table>

** Measurements:**
- LOA: Length Overall
- Beam: Beam Width
- Draft: Draft Depth

**Containers per Deck:**
- 4 containers across
- 4 containers high on deck
- 4 containers high below deck

**Triple E (2013-)**
- 400x59x15.5

**Post Panamax III (2006-)**
- 397x56x15.5; 22-10-8 (not shown)
World’s Major Container Ports, 2012
Transshipment Volume and Incidence by Major Ports, 2007-12

Transhipped TEU (2007-12)
- Less than 1 M
- 1 M to 2 M
- 2 M to 4 M
- 4 M to 6 M
- More than 6 M

Global Maritime Routes
- Circum-Equatorial
- North-South Connector
- Main Transshipment Market

Transshipment Incidence
- Low (Less than 25%)
- Average (25% to 50%)
- High (50% to 75%)
- Very High (More than 75%)
Emerging Structure of the Ocean Economy

[Map of global trade routes and ports with markers indicating TEU (2012) capacity.]

- Circum Equatorial Route
- North-South Connector
- Transoceanic Connector
- Main Transshipment Market
The Spatial Organization of the Ocean Economy: Maritime Clusters

**Port Clusters**

- Multiport Gateway
- Transshipment cluster

**Terminal Clusters**

- Port
- Container Terminal
- Port-Centric Logistics Zone

**Port / Logistics Clusters**

- Terminal operator A (Container)
- Terminal operator B (Container)
- Terminal operator C (Bulk)
- Port authority

- First Tier Logistics
- Second Tier Logistics
- Bulk
The Geographical Setting of Multi-port Gateways Regions

- **Pacific-Asia** (e.g. Pearl River Delta)
- **North American West Coast** (e.g. LA/Long Beach)
- **North Europe** (e.g. Rhine Scheldt Delta)

- **Container port / terminal**
- **Logistics zone / site**
- **Strongly developed corridor**
- **Poorly developed corridor**
- **Multi-port gateway region**

Landbridge
The East Asian Container Port System and its Multi-port Gateway Regions
The North-American Container Port System and its Multi-Port Gateway Regions

Multi-Port Gateway Regions
1. San Pedro Bay
2. Northeastern Seaboard
3. Southwestern Seaboard
4. Puget Sound
5. Southern Florida
6. Gulf Coast
7. Pacific Mexican Coast

TEU (2014)
- Less than 0.5 M
- 0.5 to 1.0 M
- 1.0 to 2.0 M
- 2.0 to 4.0 M
- More than 4.0 M
The European Container Port System and its Multi-port Gateway Regions
Inter-firm Relationships in the Main Container Ports of the Pearl River Delta, 2015
Inter-firm Relationships in the Three Main Container Ports of the Rhine-Scheldt Delta, 2015
The Massification and Clustering of Transportation in Inland Systems
International Inventory of Inland Ports and Port Centric Logistics Zones