AAPA Shifting Trade Patterns

Ocean Carrier Issues and Perspectives

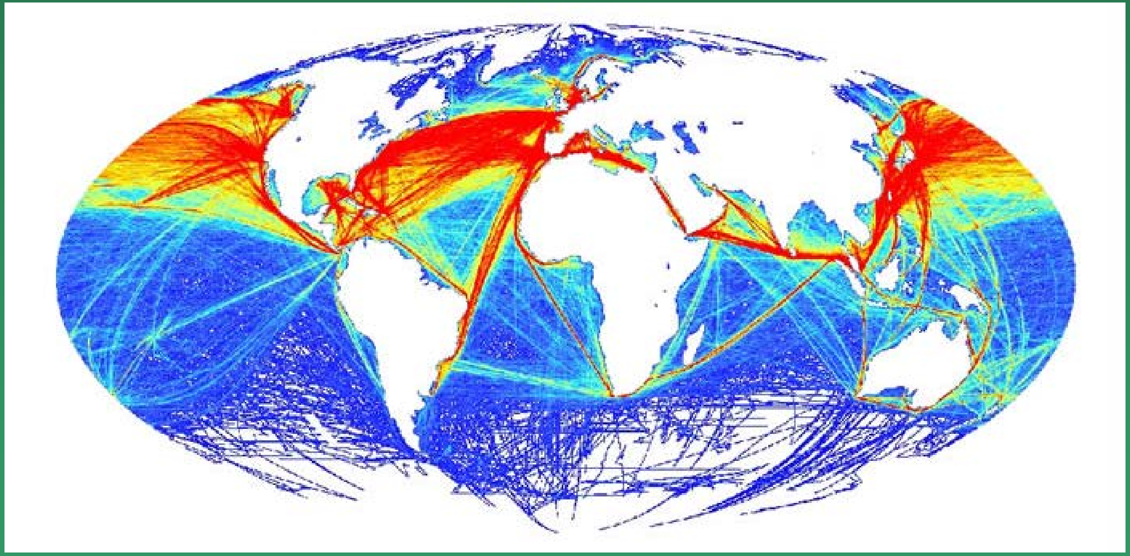
Norbridge

January 2014

AAPA American Association of Port Authorities

The Global Container Shipping Industry

- Over 400 companies
- Operating 4,974 ships (fully cellular) & 17.3M TEUs of capacity
- Top 20 continue to dominate the industry
- Profitability remains an elusive opportunity



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Source: Alphaliner; nceas.edu; Norbridge Analysis

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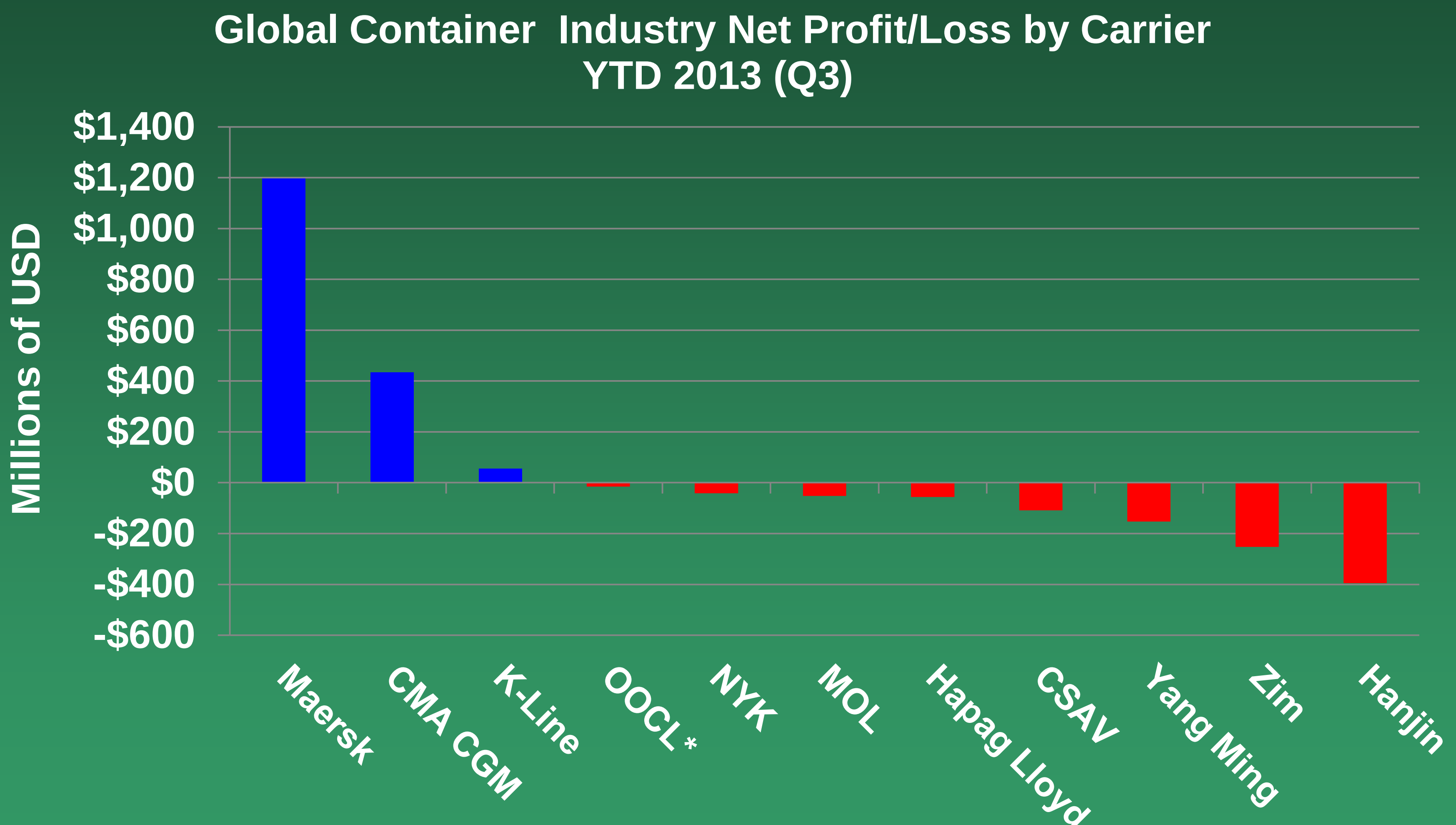
Few carriers were able to achieve net profits during the first three quarters of 2013…..



*Note: 2Q results for OOCL
Source: Alphaliner Newsletters

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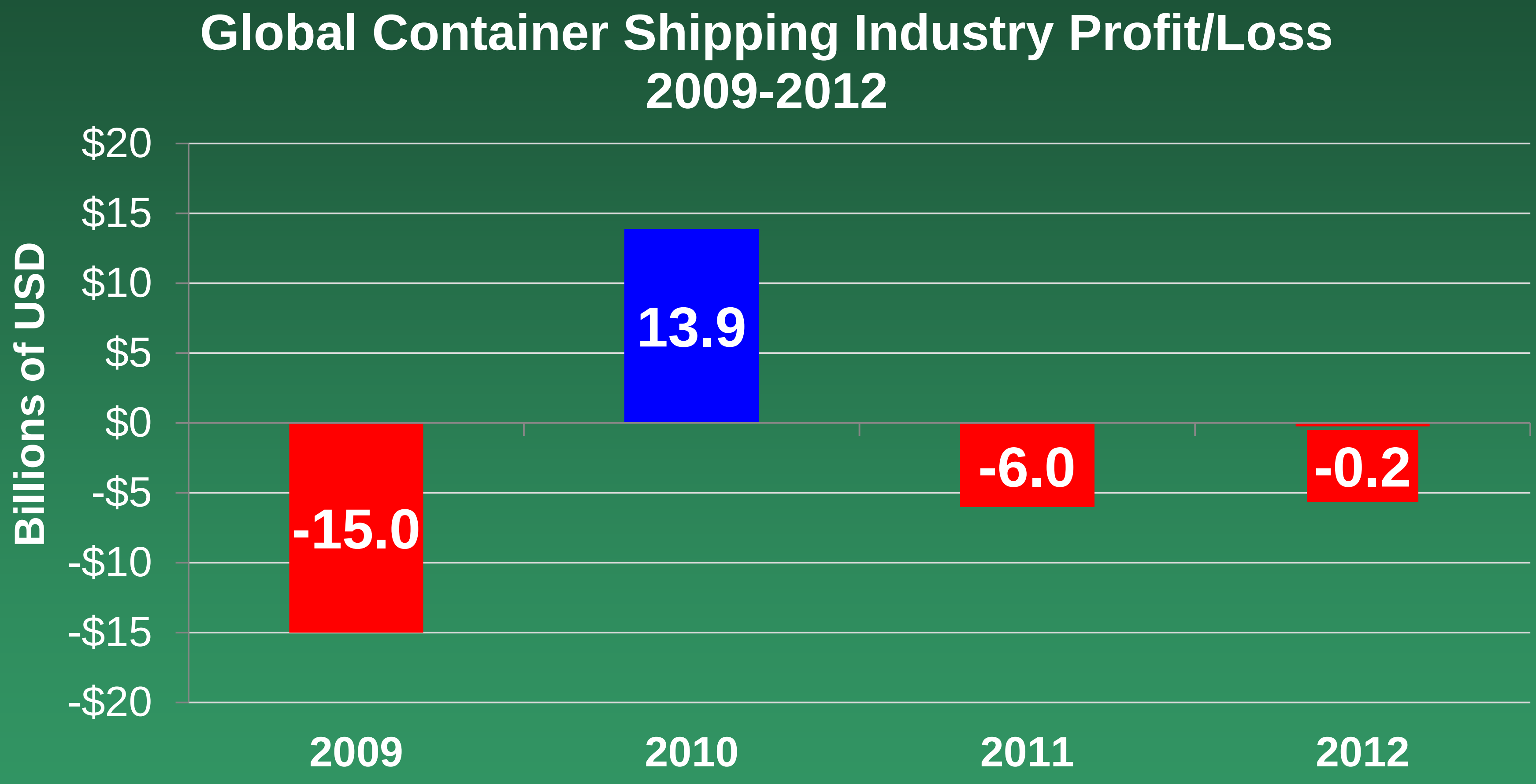
The industry has incurred an estimated $7.3 billion in operating losses since 2009



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Note: 2012 Based on Alphaliner survey of operating results for 21 of the Top 30 carriers
Source: Alphaliner

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The global container industry: the profitability equation

Scale economies

+ Increased Efficiency

+ Higher Utilization

= Improved profitability

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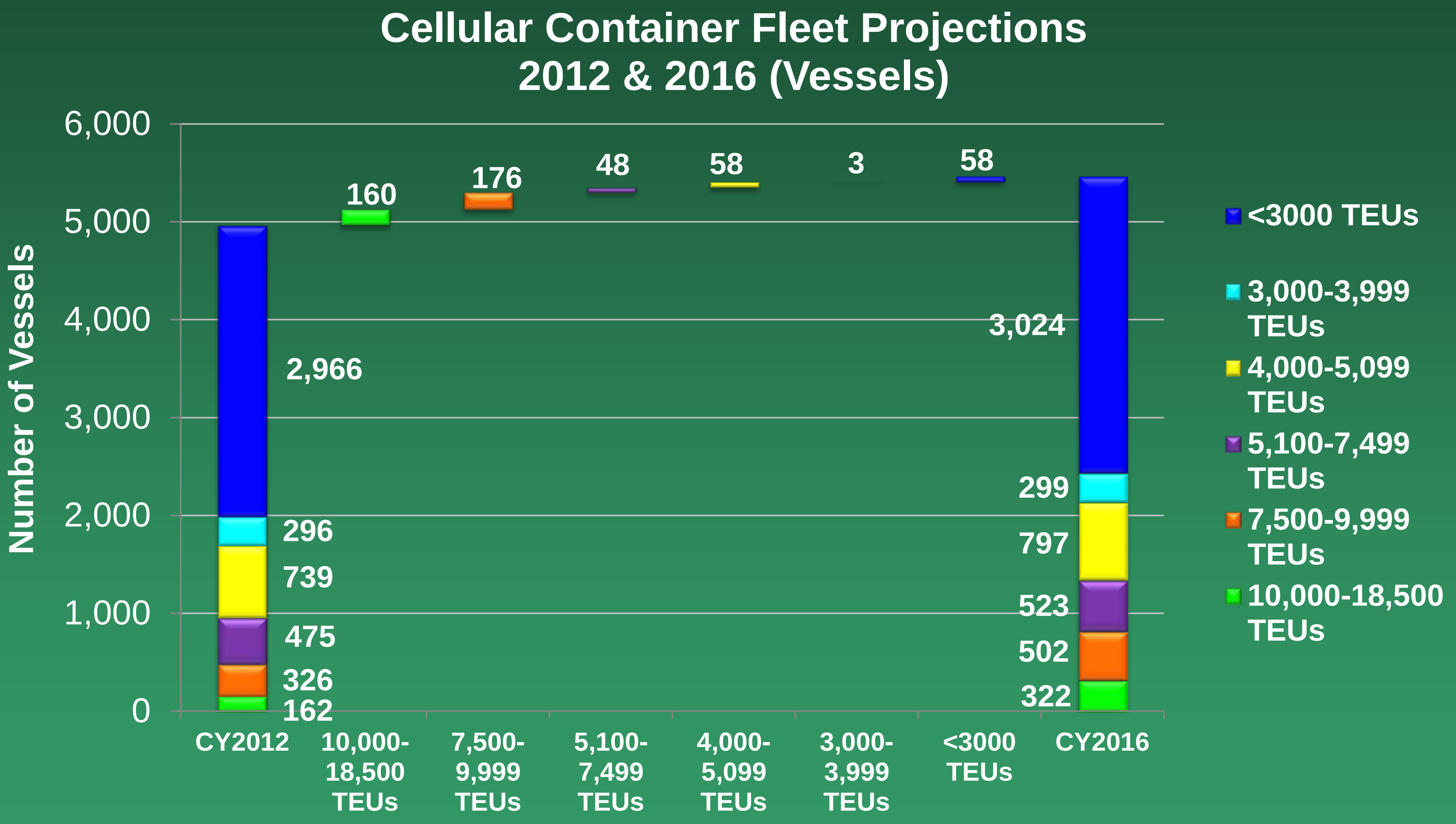
Container ships of 7,500 TEUs and greater represent two thirds of the vessels to be delivered between 2012 and 2016…



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Source: Alphaliner; Norbridge Analysis

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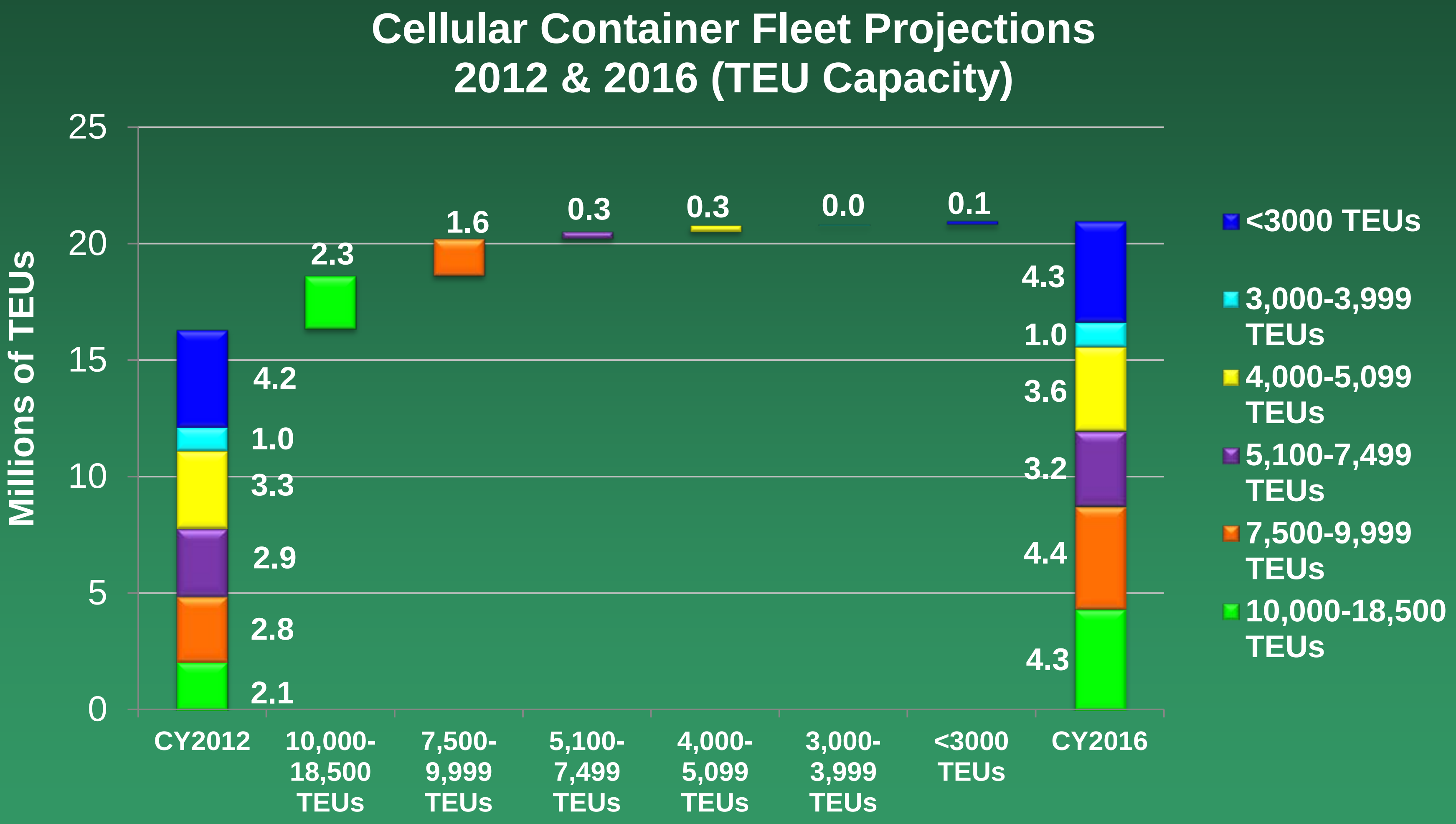
…and 84 percent of on-order TEU capacity



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Source: Alphaliner; Norbridge Analysis

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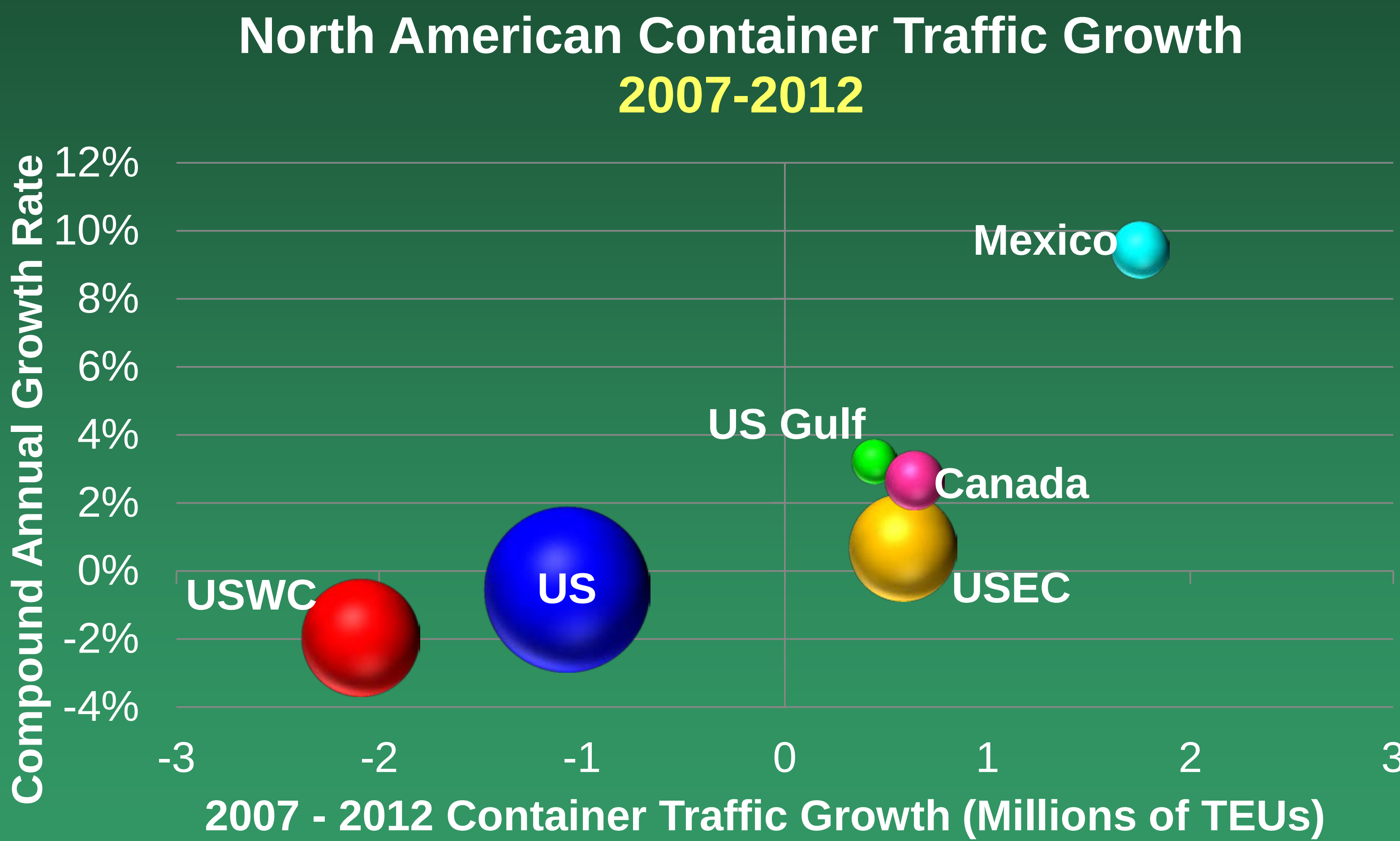
The largest vessel strings calling the Atlantic and Pacific coasts have increased significantly between 2010 and 2014

Largest Average Vessels Deployed on Container Services Calling North America
January 2010 vs. January 2014

Coast	Year	Service Name	Vessel Count	Avg. TEU Capacity
Atlantic	2010	MSC/CMA CGM - S Atlantic, MX & Gulf/Victory Bridge	7	6,237
	2014	**MSC - Golden Gate Service**	**7**	**8,580**
Pacific	2010	Maersk Line/Safmarine - TP6/AE 6	14	9,556
	2014	**MSC/CMA CGM -- ANL/Delmas/Maersk Line/US Lines - Pearl River Express**	**7**	**12,416**
Gulf	2010	MSC/CMA CGM - S Atlantic, MX & Gulf/Victory Bridge	7	6,237
	2014	**MSC - S Atlantic/Mexico/Gulf**	**4**	**6,306**

Source: Blue Water Data; Norbridge Analysis

As of 2012, the United States had not returned to 2007 peak historical total container volumes



Source: JOC PIERS Data; Norbridge Analysis

Eight of the top 10 global carriers participate in alliances

- **P3 Alliance**

MÆRSK #1 · MSC Mediterranean Shipping Company #2 · CMA CGM #3

- **G6 Alliance**

MOL #10 · NYK Line #11 · OOCL #12 · HMM Hyundai Merchant Marine Co., Ltd. #17 · APL #7 · Hapag-Lloyd #6

- **CKYH Alliance**

Yang Ming #15 · COSCO #5 · "K" Line #16 · Hanjin #8

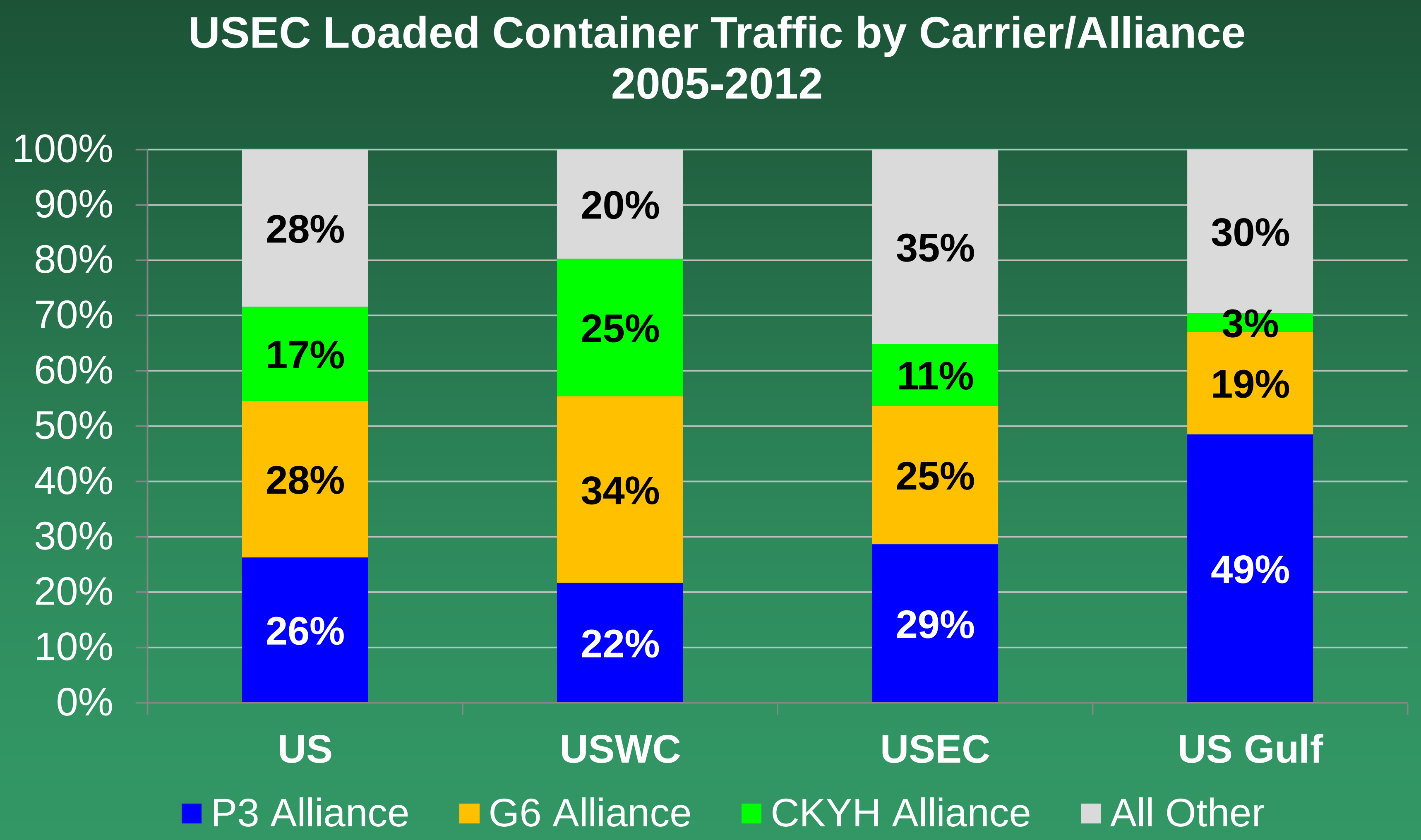
- **All Other**

ZIM #18 · UASC #19 · Evergreen #4 · CSAV #20 · China Shipping #9 · PIL #14 · Hamburg Süd #13

Note 1: Ranking based on total current and on-order capacity

Source: Alphaliner

Collectively, the three emerging global shipping alliances carried an estimated 70 percent of total U.S. loaded container traffic between 2005 & 2012



Source: JOC PIERS Data; Norbridge Analysis

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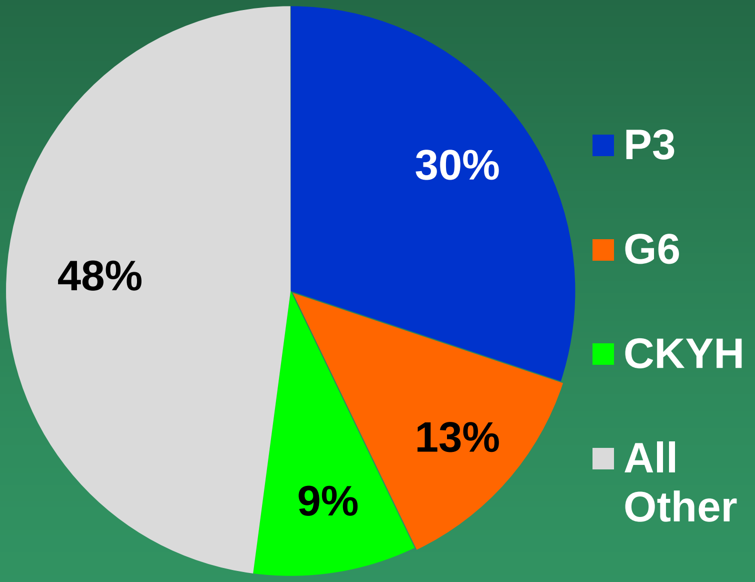
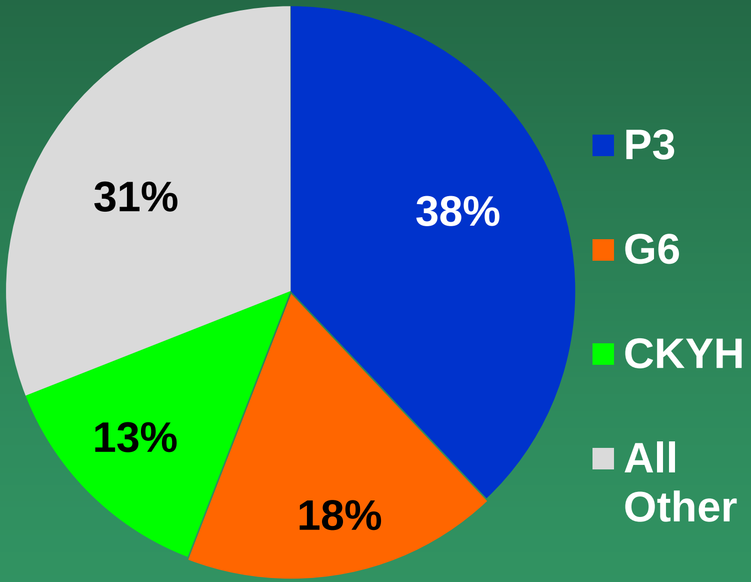
The three largest alliances account for 52 percent of the projected world fleet and 69 percent (operational & on order) of its projected capacity

Current and On-Order Container Vessels (Ships) – Q4 2013



Total Vessels: 5,221

Current and On-Order Container Vessel Capacity (TEUs) – Q4 2013



Total TEU Capacity: 19.5M

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Source: Alphaliner Top 100 Data; Norbridge Analysis

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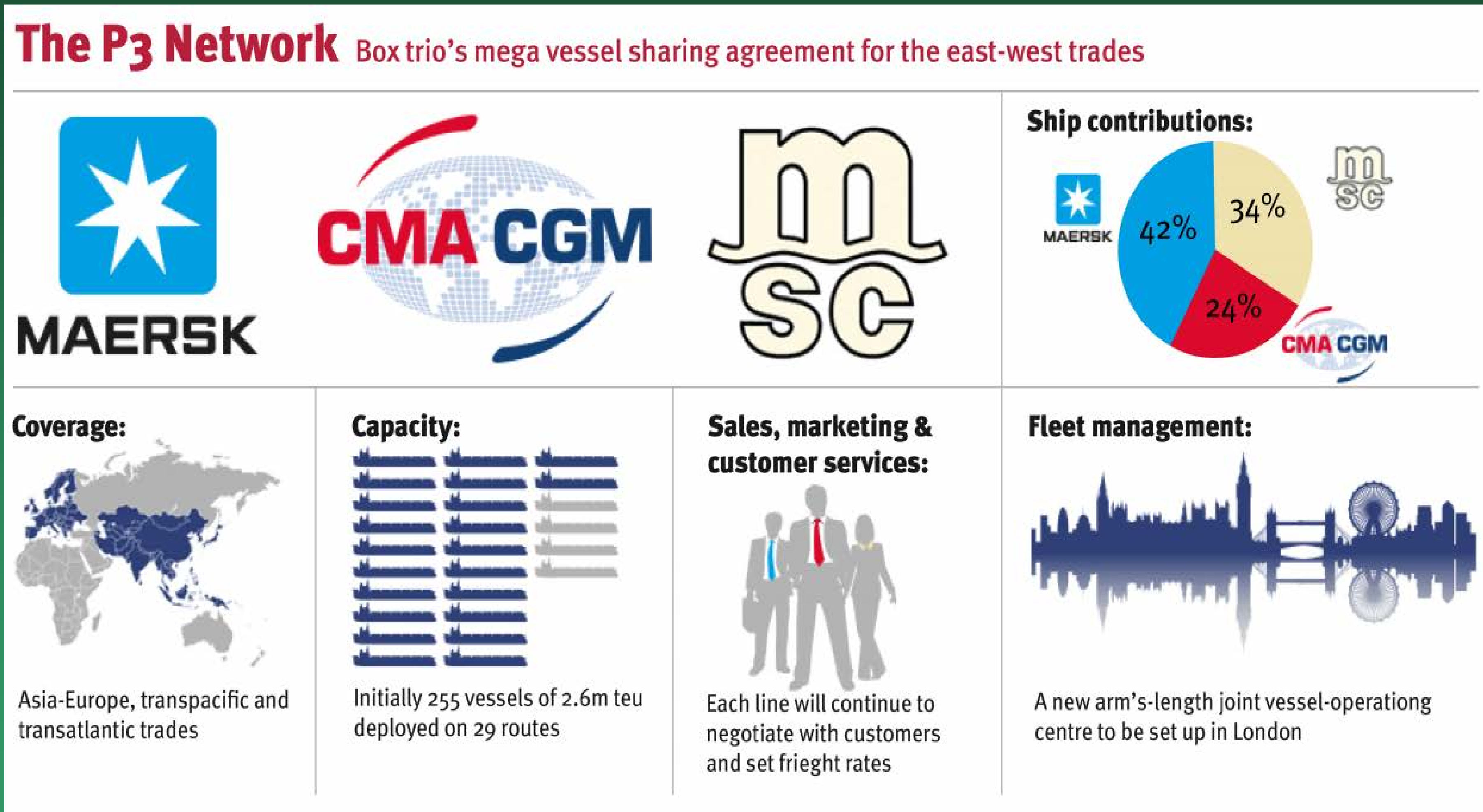
P3 Alliance Overview



Example of P3 Service Changes
MSC North Europe – USEC / Gulf Service Profile

MSC North Europe – USEC/US Gulf Services

Service Name	Port Rotation	# Vessels and Avg. Vessel Size
Current MSC Services		
MSC - North Atlantic	Bremerhaven, Felixstowe, Rotterdam, Antwerp, Le Havre, NY, Boston, Philly, Baltimore, Norfolk, NY, Bremerhaven	**5 x 4,544**
MSC - South Atlantic/Mexico/Gulf	Antwerp, Rotterdam, Le Havre, Charleston, Freeport, Verazcruz, Altamira, Houston, NOLA, Mobile, Freeport, Savannah, Charleston-Antwerp	**4 x 6,306**
Proposed P3 Services		
P3-North Atlantic	Bremerhaven, Felixstowe, Rotterdam, Antwerp, Le Havre, NY, Baltimore, Norfolk, NY, Bremerhaven	**5 x 4,400**
P3 - South Atlantic/Mexico/Gulf	Antwerp, Rotterdam, Bremerhaven, Le Havre, Charleston, Freeport, Miami, Veracruz, Altamira, Miami, Savannah, Charleston, Antwerp	**6 x 8,400**
P3 - Atlantic/Gulf	Antwerp, Rotterdam, Felixstowe, Bremerhaven, Le Havre, NY, Charleston, Savannah, Houston, NOLA, Mobile, Freeport, Norfolk, Le Havre	**6 x 8,400**

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Source: BlueWater Data; Norbridge Analysis

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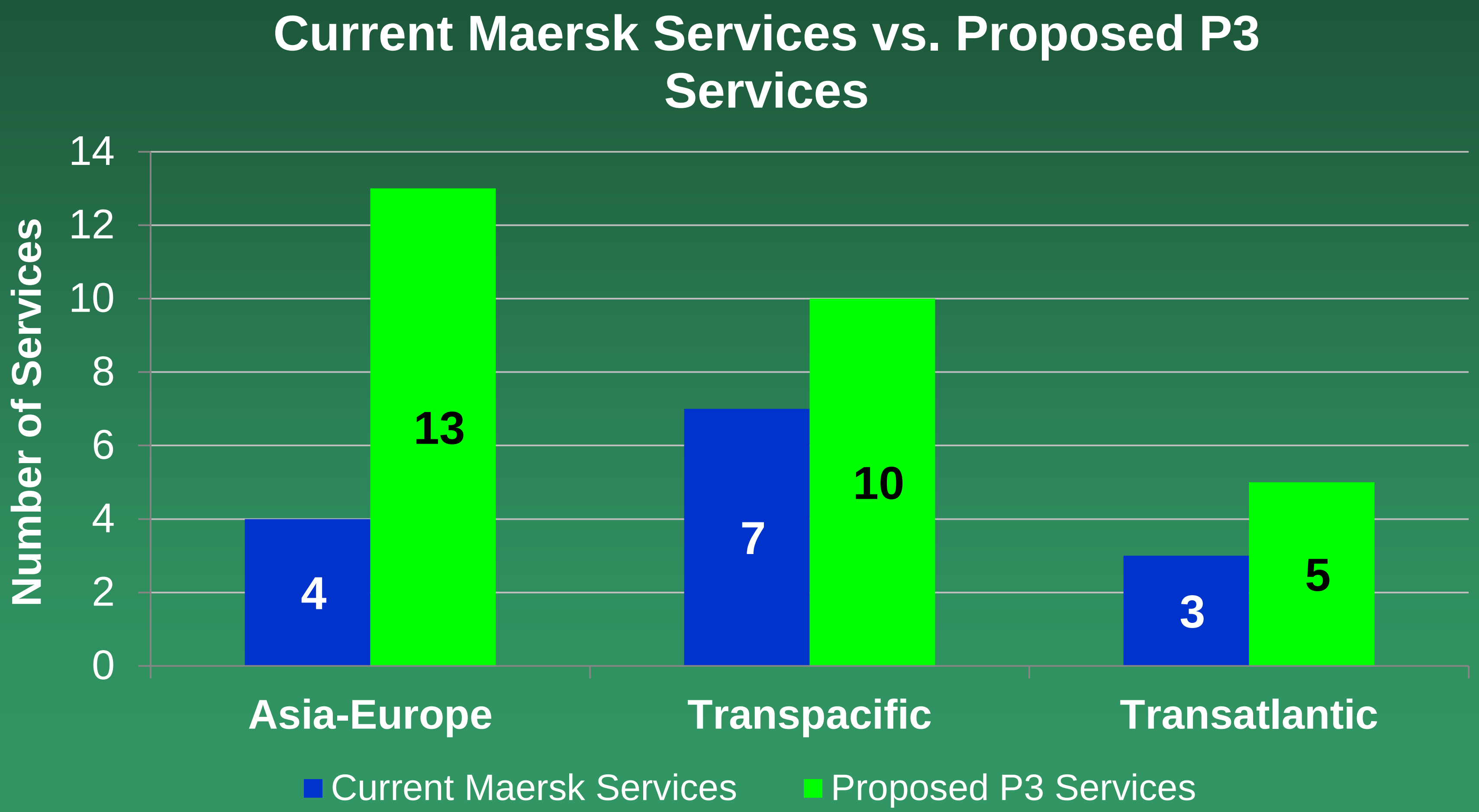
Example of P3 Service Changes
Maersk Service Profile



Source: Maersk Website; Norbridge Analysis

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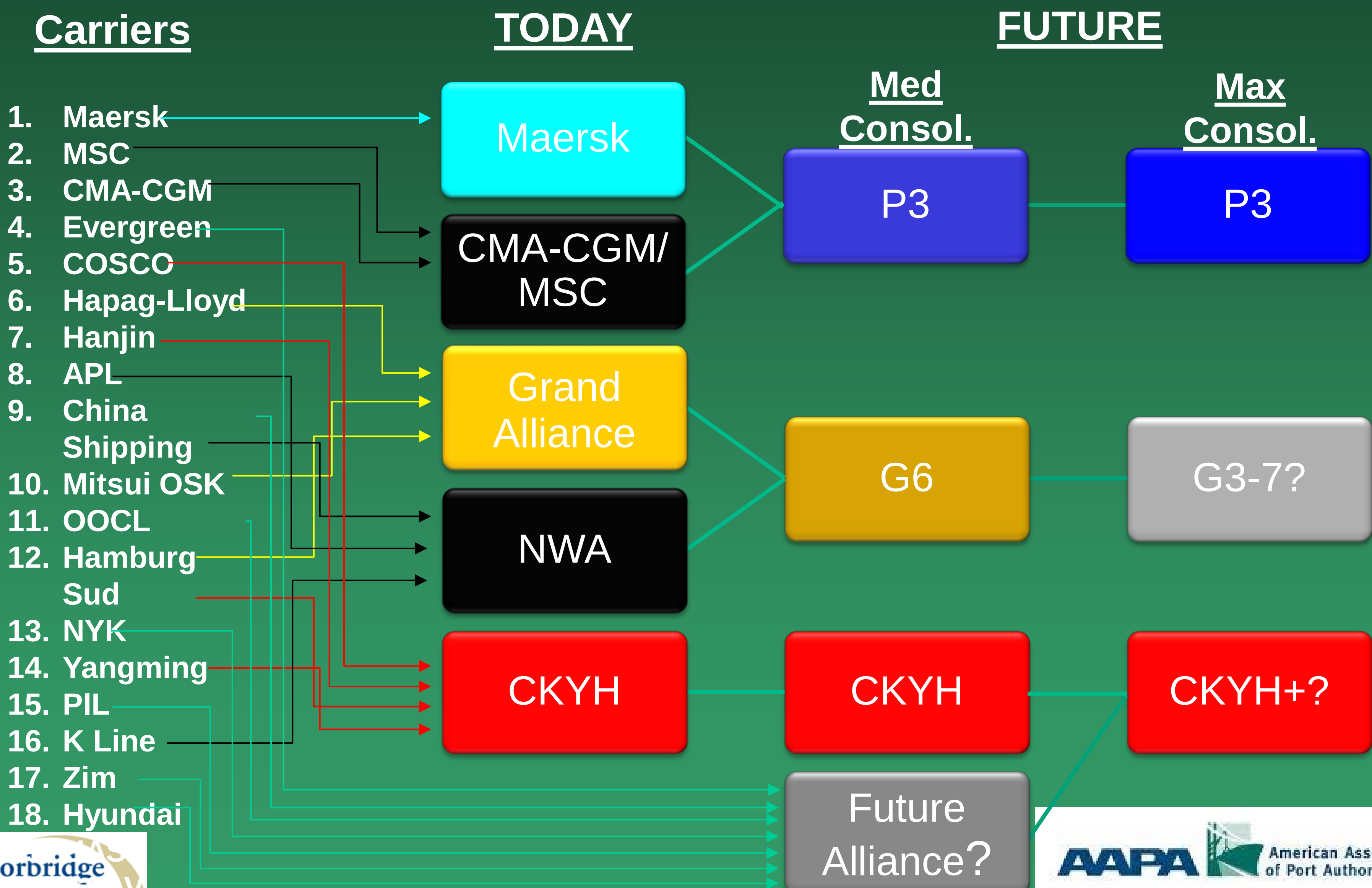
Evolving alliances structures *could* provide the path to significant consolidation



Shifting Trade Pattern Implications

Asia via Panama	Asia via Suez

• Fewer strings
• 6,500-7,500 vessels
• Expanded feeder networks
  – WCSA
  – NCSA
  – USG
  – US Atlantic
	• Incremental strings
	• 8,000-9,000 vessels
	• Significant interline
	  – NEA
	  – SEA
	  – ISC
	  – ME
	  – Med
	• Some Atlantic Coast deployment segmentation

Shifting Network Implications

- Port consolidation or expansion?
- Terminal rationalization-a vexing problem in many major gateway ports
- Inland operations
  - Intermodal rail
  - Inland CYs
  - Equipment

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