A View From The Perspective Of
THE MARINE TERMINAL OPERATOR/STEVEDORE

• Shifting Trade Patterns: What’s Trending
• Infrastructure Needs & Investment Plans: Who’s Spending What & Where
• National Freight Infrastructure Policies OR Lack Thereof
• Takeaways

January 29, 2015 • Tampa, Florida

A Presentation By
Bruce E. Cashon
CCO & Senior Vice President
NYK PORTS LLC

NYK Ports
Integrity, Innovation & Integrity
The world economy will grow by 2.9% in 2015, according to the Economist Intelligence Unit (EIU), our sister company. In 2014, world GDP was estimated to have increased by 2.5%. Global growth will be boosted by lower oil prices: a 10% fall is thought to add 0.2 percentage points to the World GDP. America will be the best-performing rich-world economy in 2015, with growth forecast at 3.3%. But the world economy will be held back by weakness in the euro area and Japan, and by slower growth in emerging markets. China will see expansion slow to 7% in 2015.
SHIFTING TRADE PATTERNS: WHAT IS TRENDING?

CASCADING WELL IN PLAY GLOBALLY; VESSELS ARE LARGER IN MOST EVERY TRADE & TREND WILL CONTINUE

- Alphaliner: New Container Ship Deliveries to Drive Record Capacity in 2014
- Expanding capacity, bigger ships to test European ports this year ... *JOC, January 2015*
- Top 30 Ocean Carriers: Profits at last?... *Logistics Management, October 2014*
SHIFTING TRADE PATTERNS: WHAT IS TRENDING?

ORDERBOOKS FOR TOP 20 CONTAINER CARRIERS

TEUS (in thousands)

Maersk
MSC
CMA CGM
Evergreen
COSCO
Hapag-Lloyd
APL
Hanjin Shipping
China Shipping
MOL
OOCL
NYK Line
Hamburg Sud
Yang Ming
PIL
K Line
HMM
ZIM
UASC
CSAV

0 100000 200000 300000 400000 500000
Drewry warns that late ship deliveries will add to 2015 overcapacity ... *Drewry, January 2015*

A different recovery for box carriers; a continued reduction of unit costs, rather than the matching of supply and demand at the individual trade route level ... *Drewry, October 2014*

Drewry forecasts that freight rates will decline in 2015 by as much as 3-4% year-on-year ... *Drewry, October 2014*
SHIFTING TRADE PATTERNS: THE SO-CALLED “MEGA SHIPS” ARE ALREADY HERE

MORE ARE COMING IN MULTIPLE TRADE LANES. FOR THE STEVEDORE/Terminal Operator, IT’S ALL ABOUT THE SHIP!

### Newbuilding Delivery Projections - Cellular Fleet

<table>
<thead>
<tr>
<th>Nominal TEU</th>
<th>2010 Deliveries</th>
<th>2011 Deliveries</th>
<th>2012 Deliveries</th>
<th>2013 Deliveries</th>
<th>2014 Deliveries</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>TEU</td>
<td>No.</td>
<td>TEU</td>
<td>No.</td>
</tr>
<tr>
<td>10,000-18,000</td>
<td>31</td>
<td>406,330</td>
<td>47</td>
<td>597,142</td>
<td>55</td>
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<tr>
<td>7,500-9,999</td>
<td>32</td>
<td>275,295</td>
<td>25</td>
<td>218,717</td>
<td>27</td>
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</table>

### Cellular Fleet Projections

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal TEU</td>
<td>No.</td>
<td>TEU</td>
<td>No.</td>
<td>TEU</td>
<td>No.</td>
</tr>
<tr>
<td>10,000-18,000</td>
<td>71</td>
<td>887,598</td>
<td>118</td>
<td>1,484,740</td>
<td>173</td>
</tr>
<tr>
<td>7,500-9,999</td>
<td>264</td>
<td>2,262,471</td>
<td>289</td>
<td>2,488,540</td>
<td>316</td>
</tr>
</tbody>
</table>

### Global Capacity Deployment Breakdown By Trade (As At 1 Nov. 2011)

<table>
<thead>
<tr>
<th>By Vessel Count</th>
<th>Trade</th>
<th>Size Range</th>
<th>Total Cellular Units</th>
<th>Non-Cellular Units</th>
<th>Total Liner Units</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Europe-N. America</td>
<td>0</td>
<td>9</td>
<td>38</td>
<td>27</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>Far East-N. America</td>
<td>0</td>
<td>10</td>
<td>25</td>
<td>12</td>
<td>198</td>
</tr>
<tr>
<td></td>
<td>Europe-Far East</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>9</td>
<td>33</td>
</tr>
</tbody>
</table>
# Shifting Trade Patterns: What’s Trending?

## Containership Calls at U.S. Ports by Vessel Size & Number of Vessels: 2006-2011

<table>
<thead>
<tr>
<th>Vessel Size (TEUs)</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Calls</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 2,000</td>
<td>(R) 4,143</td>
<td>(R) 3,900</td>
<td>(R) 3,492</td>
<td>(R) 3,287</td>
<td>(R) 3,707</td>
<td>4,563</td>
</tr>
<tr>
<td>2,000-2,999</td>
<td>(R) 3,985</td>
<td>4,099</td>
<td>(R) 3,344</td>
<td>(R) 2,676</td>
<td>(R) 2,760</td>
<td>2,878</td>
</tr>
<tr>
<td>3,000-3,999</td>
<td>3,333</td>
<td>2,866</td>
<td>2,460</td>
<td>(R) 2,499</td>
<td>(R) 2,052</td>
<td>2,363</td>
</tr>
<tr>
<td>4,000-4,999</td>
<td>4,782</td>
<td>5,033</td>
<td>(R) 5,120</td>
<td>(R) 5,303</td>
<td>(R) 5,876</td>
<td>6,421</td>
</tr>
<tr>
<td>&gt; 4,999</td>
<td>3,344</td>
<td>3,961</td>
<td>(R) 4,313</td>
<td>4,434</td>
<td>5,126</td>
<td>5,997</td>
</tr>
<tr>
<td><strong>Total Calls</strong></td>
<td>(R) 19,587</td>
<td>(R) 19,859</td>
<td>(R) 18,729</td>
<td>(R) 18,199</td>
<td>(R) 19,521</td>
<td>22,222</td>
</tr>
<tr>
<td><strong>Vessels</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 2,000</td>
<td>212</td>
<td>195</td>
<td>196</td>
<td>179</td>
<td>178</td>
<td>182</td>
</tr>
<tr>
<td>2,000-2,999</td>
<td>257</td>
<td>230</td>
<td>219</td>
<td>220</td>
<td>206</td>
<td>184</td>
</tr>
<tr>
<td>3,000-3,999</td>
<td>177</td>
<td>166</td>
<td>141</td>
<td>147</td>
<td>130</td>
<td>131</td>
</tr>
<tr>
<td>4,000-4,999</td>
<td>258</td>
<td>271</td>
<td>284</td>
<td>306</td>
<td>315</td>
<td>307</td>
</tr>
<tr>
<td>&gt; 4,999</td>
<td>260</td>
<td>277</td>
<td>326</td>
<td>366</td>
<td>396</td>
<td>418</td>
</tr>
<tr>
<td><strong>Total Vessels</strong></td>
<td>1,164</td>
<td>1,140</td>
<td>1,166</td>
<td>1,218</td>
<td>1,225</td>
<td>1,222</td>
</tr>
</tbody>
</table>

Key: TEU = twenty-foot equivalent unit; R = revised
SHIFTING TRADE PATTERNS: WHAT’S TRENDING?

INFRASTRUCTURE DEMAND INCREASING IN ALL SECTORS

- Mega-Ships Drive Investment in U.S. West Coast Infrastructure ... *JOC, October 2013*
- Mega-Ships put strain on Canada’s Transportation Infrastructure ... *JOC, October 2013*
- Access: channel/harbor draft requirements, waterways: maintenance, security, safety
- Dispatch: terminal design/upgrades, equipment/labor availability (3 Gangs, 2 Days; Now 5 Gangs, 5 Days, 2 Shifts)
- Velocity: Gate facilities/systems, truck, rail capacity and turn times
The results of the AAPA’s Port Infrastructure Spending Survey indicated that U.S. Ports and their private sector marine terminal partners are planning to spend at least a combined $46 billion in port-related improvements through 2016.

The 2012 survey found that U.S. Port Authorities are planning on investing $18,334,777,057 through 2016 on marine terminal-related infrastructure improvements, while their private sector terminal partners plan on spending $27,635,700,008, for a combined total of nearly $46 billion.
### Infrastructure Needs & Investment Plans: Who is Spending What & Where?

**Ports & Private Sector Tenants**

This total works out to be over $9 billion dollars average per year, of which, approximately 1/3 is spending by Port Authorities and 2/3 by their private sector partners.

<table>
<thead>
<tr>
<th>Port Region</th>
<th>Ports’ Projected Capital Expenditures For 2012-2016</th>
<th>Projected Private Sector Capital Expenditures For 2012-2016</th>
<th>TOTAL Projected Port &amp; Private Capital Expenditures For 2012-2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH ATLANTIC</td>
<td>2,122,375,000</td>
<td>1,206,500,000</td>
<td>3,328,875,000</td>
</tr>
<tr>
<td>SOUTH ATLANTIC</td>
<td>4,080,678,910</td>
<td>261,602,000</td>
<td>4,342,280,910</td>
</tr>
<tr>
<td>GULF</td>
<td>4,340,061,518</td>
<td>17,782,298,008</td>
<td>22,122,359,526</td>
</tr>
<tr>
<td>GREAT LAKES</td>
<td>224,650,000</td>
<td>135,000,000</td>
<td>359,650,000</td>
</tr>
<tr>
<td>NORTH PACIFIC</td>
<td>1,765,715,068</td>
<td>5,914,300,000</td>
<td>7,680,015,068</td>
</tr>
<tr>
<td>SOUTH PACIFIC</td>
<td>5,801,296,561</td>
<td>2,336,000,000</td>
<td>8,137,296,561</td>
</tr>
<tr>
<td><strong>TOTALS:</strong></td>
<td><strong>18,334,777,057</strong></td>
<td><strong>27,635,700,008</strong></td>
<td><strong>45,970,477,065</strong></td>
</tr>
</tbody>
</table>
HOW DOES THIS STACK UP FOR THE PORTS?

**PORTS**

<table>
<thead>
<tr>
<th>Number of Commercial U.S Seaports</th>
<th>360</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Spending</td>
<td>Approximately $850 Million Annually</td>
</tr>
<tr>
<td>Ideal Spending</td>
<td>Approximately $1.8 Billion Annually</td>
</tr>
</tbody>
</table>

(Kiplinger)
INFRASTRUCTURE NEEDS & INVESTMENT PLANS
WHO IS SPENDING WHAT & WHERE?

LA approves Pier 300 expansion environmental review
| American Shipper, June 8, 2012

The Port of NY-NJ’s PNCT moves into 'Path of Growth'
| JOC.com | June 16, 2014

Global Container Terminals unveils plan to open
a new chapter in development in NY
| AJOT | May 10, 2012

Alabama port buys land for expansion
| JOC.com | August 26, 2014

Long Beach Launches $3 Billion Port Expansion
| JOC.com | January 30, 2010

3 new cranes part of major expansion at Port Newark
| American Shipper | May 1, 2014

Plans for New Ship-To-Rail Facility and
Upgraded Cross-Hudson Barge Service
| AJOT | September 29, 2014

New York New Jersey Port approves
Greenville yard redevelopment
| AJOT | September 29, 2014

Port Everglades approved for $16.5 million in state funds
cargo berth and other expansion
| AJOT | October 4, 2013

Port Canaveral plans container expansion
| American Shipper | November 20, 2013

The Port Commission of the Port of Houston Authority
has approved a significant new redevelopment plan
for turning basin properties
| AJOT | January 31, 2012
From 1980 through 2014, freight railroads invested $575 billion. In 2014, privately owned freight railroads project to spend at least $26 billion to purchase new equipment, improve rail lines and facilities. (AAR)

**HEARTLAND CORRIDOR:** A public-private partnership among Norfolk Southern & federal and state agencies

**NATIONAL GATEWAY:** A partnership between CSX, six states & the District of Columbia

**TRANSCON CORRIDOR:** BNSF Railway’s Transcon Corridor connects the ports and markets in California and the Southwest to the Midwest, Texas and the Southeast

**SANTA TERESA:** Union Pacific Railroad (UP) and the State of New Mexico recently announced a partnership to construct a state-of-the-art rail facility in the southern part of the state.

**CRESCENT CORRIDOR:** A partnership between Norfolk Southern (NS) and 13 states, the Crescent Corridor is a 2,500 mile rail infrastructure project stretching from the Gulf Coast to the East Coast.
INFRASTRUCTURE NEEDS & INVESTMENT PLANS: WHO IS SPENDING WHAT & WHERE?

HIGHWAYS, TUNNELS, BRIDGES, INLAND WATERWAYS: NOT SO CLEAR

HIGHWAYS

- Number of highway miles in the U.S.: 47,013
- Current Spending: 42 billion annually
- Ideal Spending: $146 billion to $310 billion annually over a 15 to 50-year period

The top 10 highway interchange bottlenecks in the nation delay truck shipments by an average of 1.5 million hours a year. (Kiplinger)

BRIDGES

- Number of Bridges in the U.S.: 590,766
- Number of Deficient Bridges: 152,316
- Current Spending: $5.2 billion annually
- Ideal Spending: $19 billion annually over a 50-year period

The average age of bridges in America stands at 43. (Kiplinger)
MAP-21, the MOVING AHEAD FOR PROGRESS IN THE 21ST CENTURY ACT **does not include a stand-alone freight program or dedicated formula funding for freight** but introduces several new provisions to Federal Transportation Policy.

HTF short-term extension (May 2015) kicking the can down the road.

WRDA positive movement and real resource commitment defines needs on port development. Better focus on HMT utilization and continued grants but there is still **WORK TO BE DONE.**


But - still no commitment on funding source improvements
THE BEST WAY THAT THE PRIVATE STEVEDORE/Terminal Operator CAN PARTICIPATE TO MAXIMIZE INFRASTRUCTURE UTILITY?

**IMPROVE VELOCITY/DENSITY**

- Technology critical to improving operations
- Equipment enhancements maximize space utilization
- Gate/TOS: systems continue to evolve/improve
- Automate: one size does not fit all and likely will be gradual as U.S. terminals expected to tailor automation to individual needs (OOCL Middle Harbor, Trapac, APL LA, VIG NFK, Global NY)
- Off-Peak Terminal Operations, Pier Pass – Los Angeles/Long Beach
GREY CHASSIS POOLS
Improved asset utilization, reduce terminal space requirements

SATELLITE/INLAND TERMINALS
Accommodate inbound loads/mts

INTERMODAL/RAIL INFRASTRUCTURE INTERFACE
On/near dock rail improvements

GREY BOX POOLS
Unlikely near-term but perhaps now more momentum with recent shift to grey chassis concept
OPERATING PROFILE: THE MARKET

- Mega Vessels Are Here to Stay
  The future is here and will continue to test facility capabilities.

- Uber Alliances will increasingly be the staple of major trade lanes. These Alliances will financially and operationally challenge ports and terminal operators.

INFRASTRUCTURE & TERMINAL INVESTMENT

- Substantial Private/Public investment in play
- Focus remains fragmented by modal type
- Private sector highly focused on return on capital employed and meeting IRR
- Continued Public – Private approach
TAKEAWAYS FROM THE PRIVATE SECTOR
THE VIEW OF THE TERMINAL OPERATOR/STEVEDORE

Major North America Terminal Operators & Stevedores

Size/Scope Of Business
$600 mil plus annual revenue

Broad Geographic/Operating Scope
West Coast North America
East Coast North America
Gulf Coast North America
Marquee: High Demand Terminal Locations

Large Asset Base Readily Available
Equipment
Systems
Management

State-Of-The-Art, Well-Established and/or Proprietary Terminal Operating System/IT Systems

Project Development – Internal Resources Available
Research/Analysis Engineering
Finance: Management & Administration

Ready Access To Capital

Ability To Respond Quickly To Opportunities
TAKEAWAYS FROM THE PRIVATE SECTOR
THE VIEW OF THE
TERMINAL OPERATOR/STEVEDORE

IRRESPECTIVE OF NATIONAL FREIGHT INFRASTRUCTURE POLICY – PRIVATE SECTOR AND PORTS CANNOT SUPPORT ALL THAT IS NEEDED

- Throughput cost and handling cargo efficiently will determine success. Reliability on the dockside is essential.

- The proprietary container terminal operated for an individual shipping line is becoming an endangered species.

- There will likely be more consolidation within Terminal Operators & Stevedoring Companies.

- Formation of operating/equipment sharing agreements become more asset efficient.

- Push to automation sooner where possible.

- More joint ventures with carriers.

- New approaches to billing for stevedoring/terminal services for account of BCO? (Pier Pass, THC to include stevedoring)
National Freight Infrastructure Policy

- Heightened Focus On Dredging
- MP-21 Designates The Need For A National Freight Program
- The Private Sector Is Investing Carefully
- Sound Signs Of Public/Private Success
- National Network Funding Sources Remain Murky

THE SIGNS ARE PROMISING BUT BE CAREFUL WHAT YOU WISH FOR!
Thank You!
Enjoy Your Stay in Tampa.