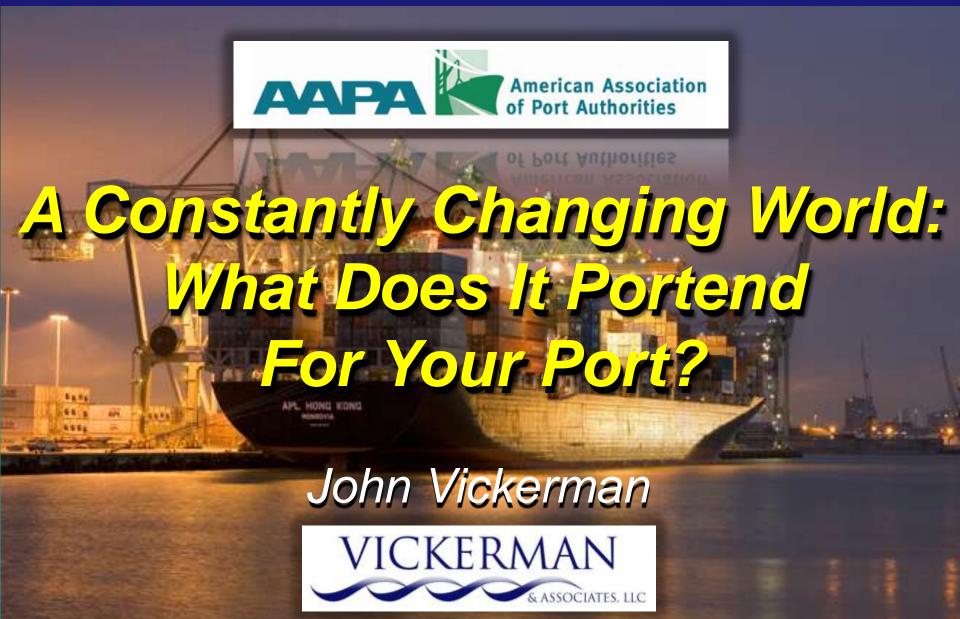
2010 AAPA Commissioners Seminar

Hilton San Diego Bayfront, San Diego, CA

June 22, 2010



Plaquemines Parish Port Master Plan





the Agenda







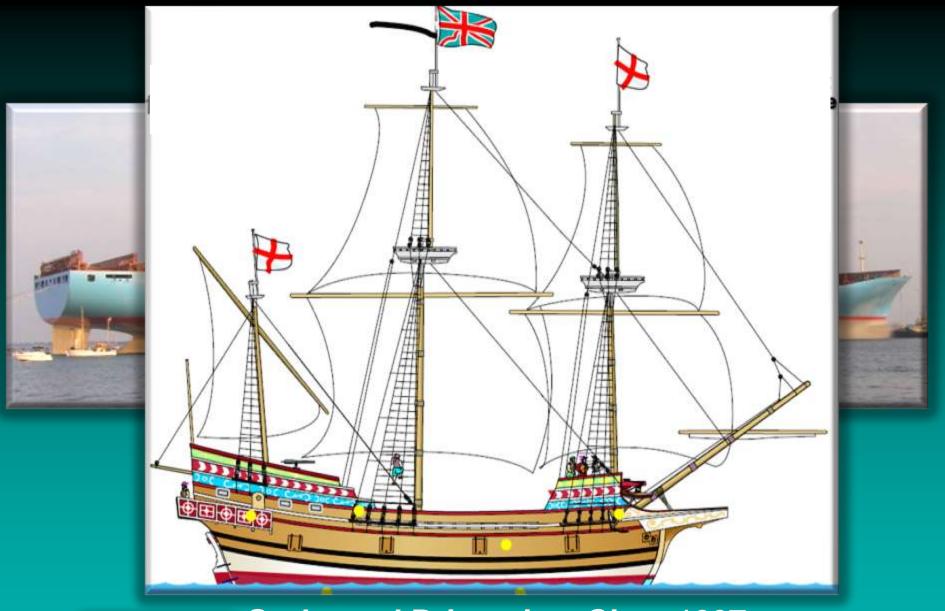
400 Years Ago A Voyage of Three Vessels Created the First Permanent English Port in Jamestown, VA





13 Years Before the Pilgrims Landed at Plymouth, Three Brigantine Vessels of the Virginia Company of London Landed in Jamestown, Virginia







Godspeed Brigantine, Circa 1607

Deadweight Tonnage: 40 tons

LOA: 88 feet; Crew: 13





American Association of Port Authorities

International Port External Industry Pressures Driving Today's Logistics













Global Trade: Current Course & Direction?







Near Term Growing Global Financial Meltdown



- Retail Demand Down –
 Carrier Pullbacks
- Collapsing Box Ship Orders
- World Growth Rates At WW II Level

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 US Growth Rate In Recession



Long Term Global Trends & Conditions:

- Increasing Asian & Brazilian Trade Growth
- Ships Getting Bigger
- US Port, Rail and Road Congestion Continues
- Panama Canal Transhipment Boom











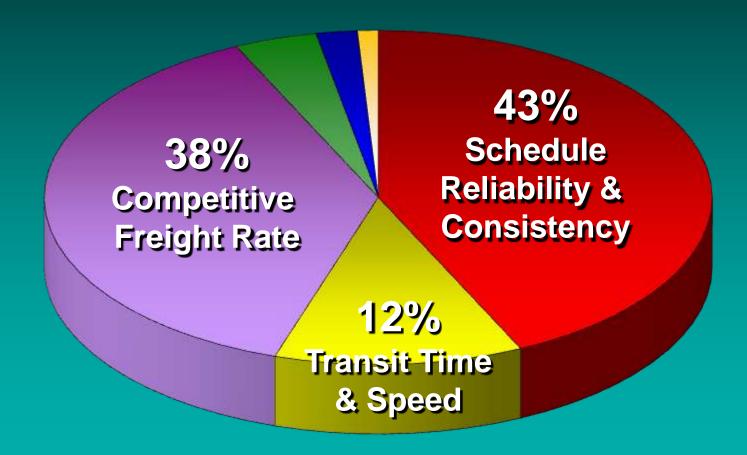
At <u>Current Productivity</u> and <u>Growth Levels</u> by 2020

North American Ports & Their Associated Intermodal Systems Will Be Severely Congested.





Poll of the Top 1000 "Blue Chip" Multinational Shipper Priorities



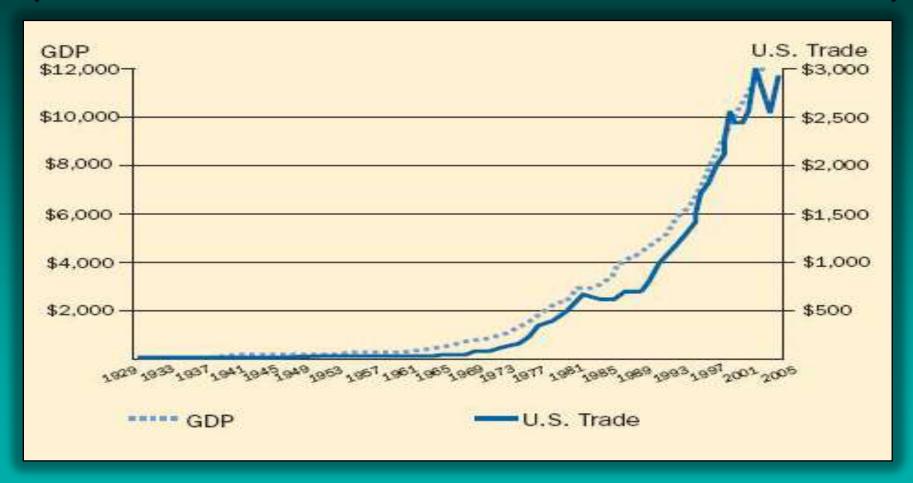


Today's Logistics Truth: "The customer wants more and is willing to pay less for it."



Relationship Between US Trade and US Prosperity

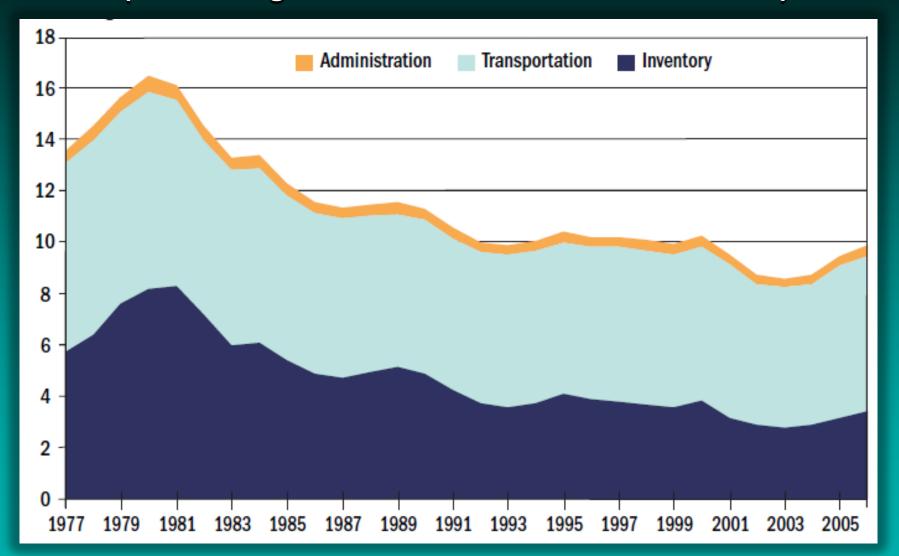
(US Trade & Gross Domestic Product - \$ Billions)





Total US Logistics Costs as a % of GDP

(Percentage of US Gross Domestic Product)





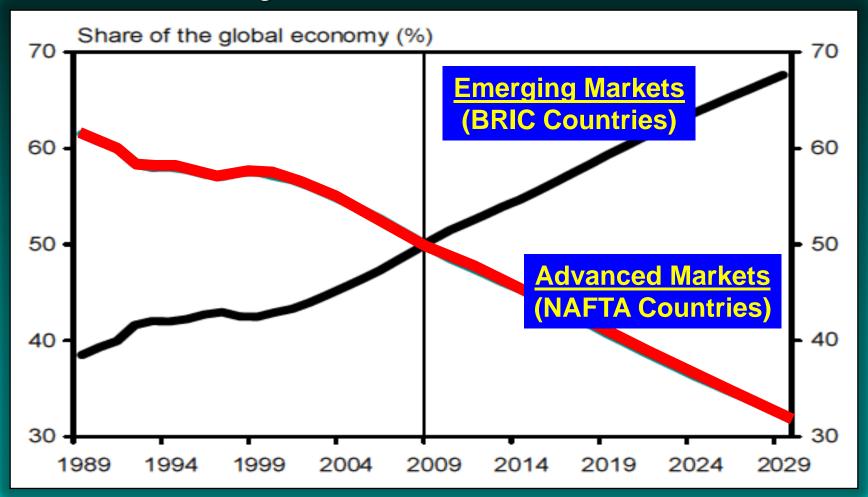
rican Association

International Maritime Cargo Demand Trends



A Turning Point in Global Economic History

The Advanced Economies Will Decline From 2/3 share of the Global Economy to a 1/3 Global Share. The Global Economy Will See Higher Average Pace of Growth in the Future...

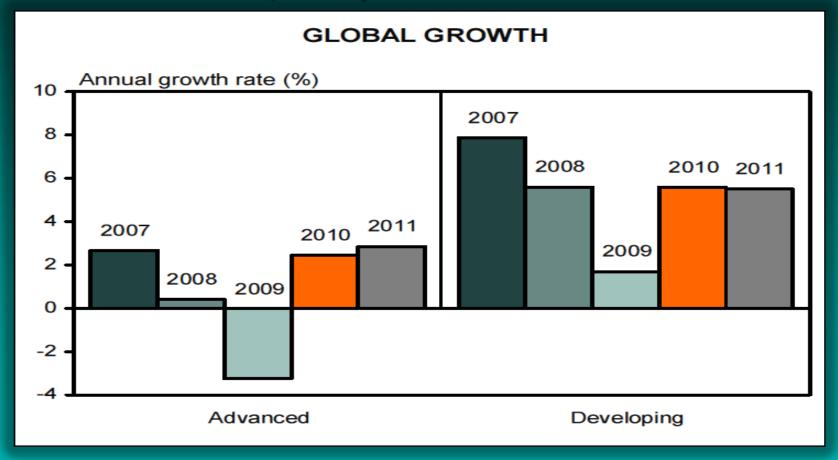


Advancing vs. Developing Countries Global Growth Rates

The "Great Recession" Appears to Have Ended at the End of 2009.

Initial Indicators Point to a World Economy Expected to

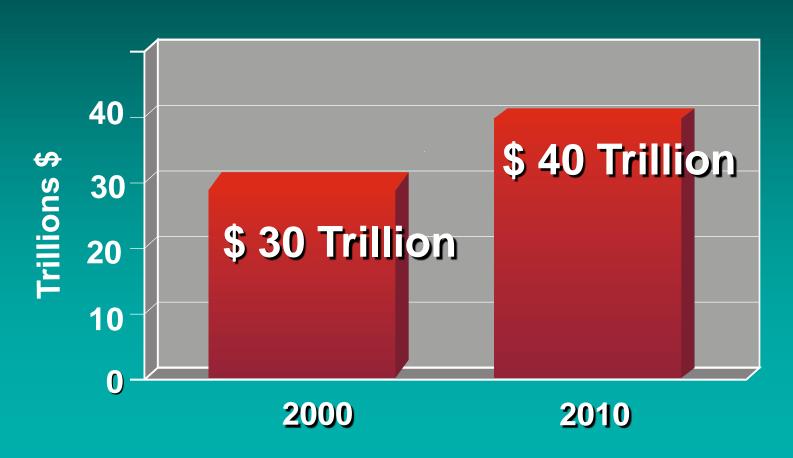
Expand by 3.8% in 2010/2011





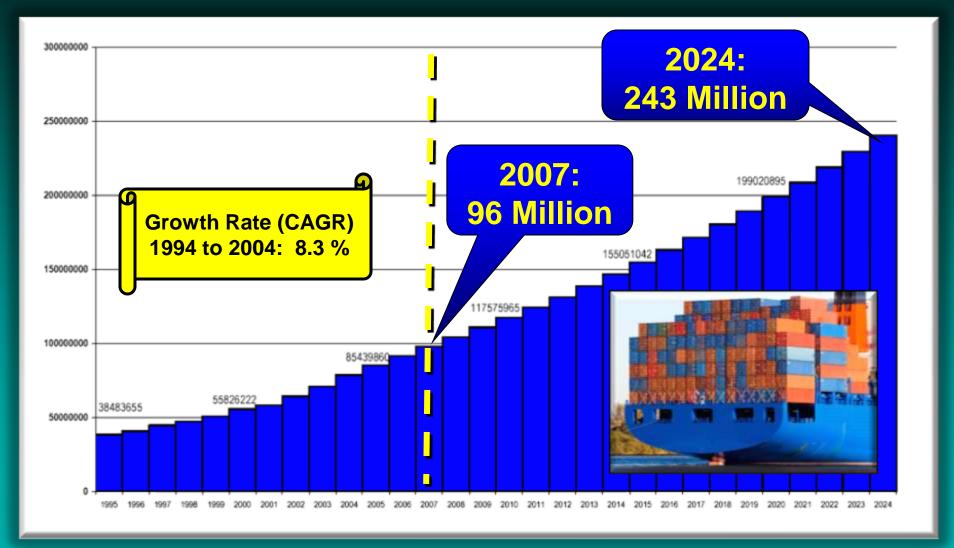
World Bank's 2010 "Global Economic Prospects"

World Output will Increase 33% in 10 years

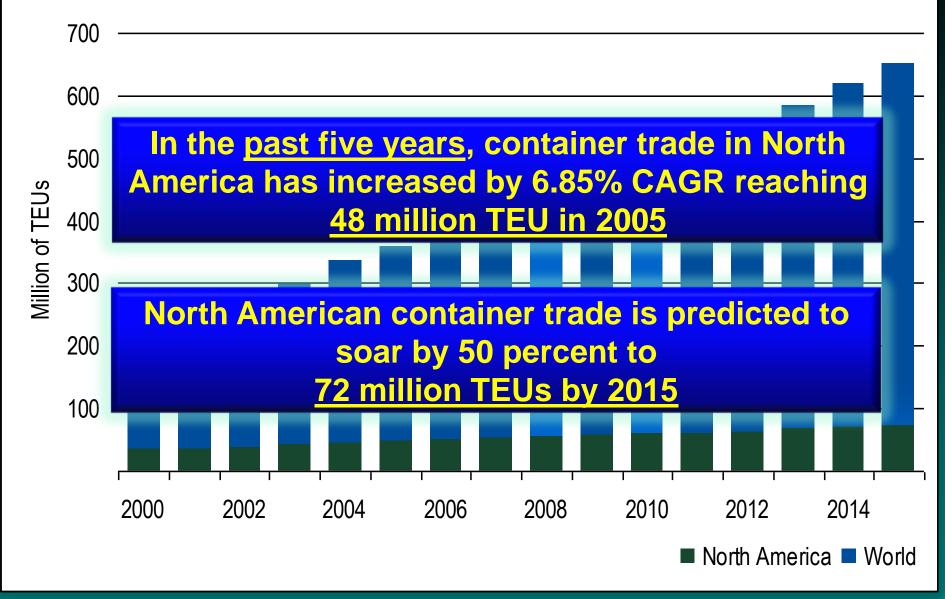




World Container Forecast to 2024 in TEUs (186% Increase in Next 20 Years)

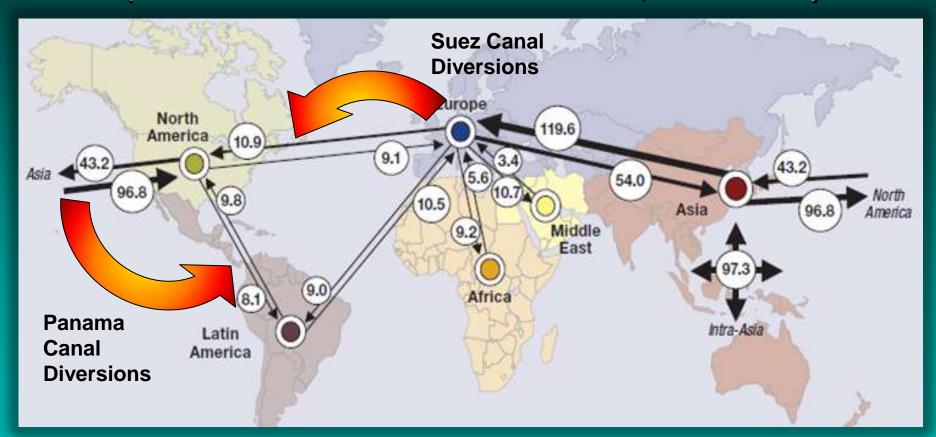


Global Growth in Containerized Trade



Primary Global Containerized Ocean Freight Flows

(Billions of Laden FEU-Kilometers, 497 Flows)

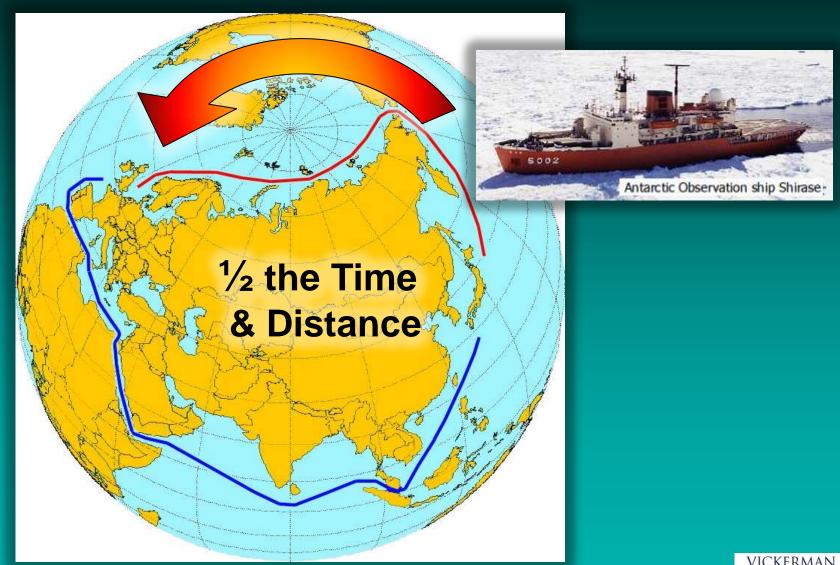


One FEU-Kilometer = a 40 foot container transported one Kilometer

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Shorter –Faster Arctic Ocean Route

2+ Months A Year Using Convoys



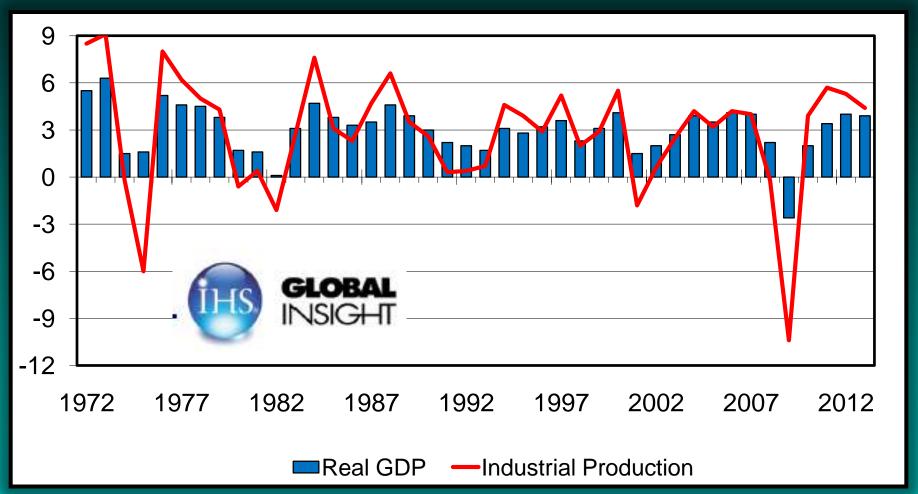


Global Financial & Trade Growth Recovery: A 2011-2012 Reversal?



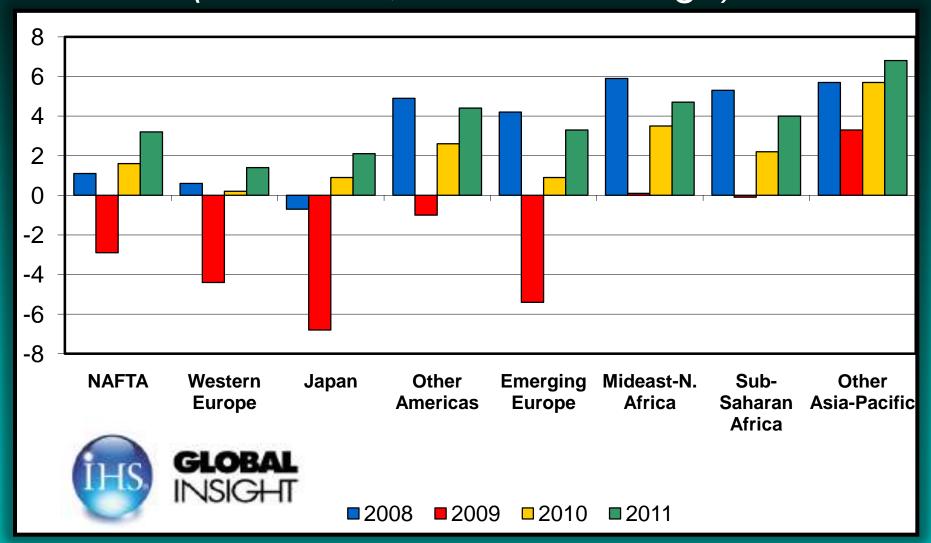
The World Economy Has Suffered the Worst Recession of the Postwar Era

(Percent Change)





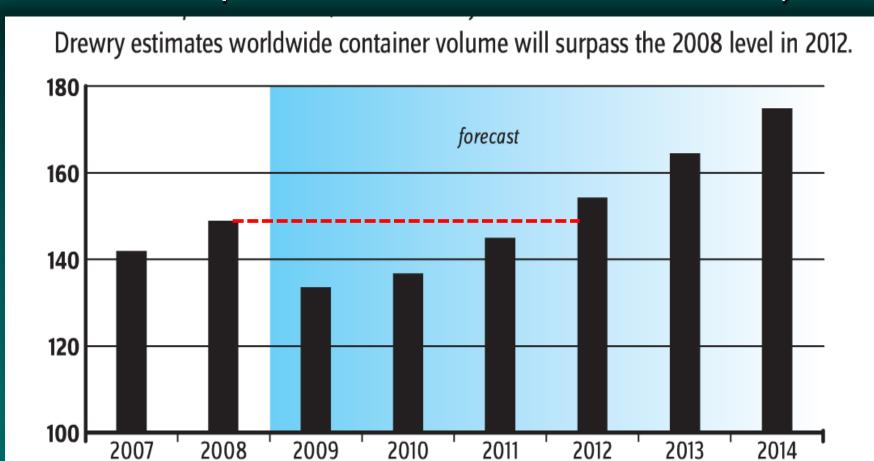
Economic Performance Varies by Region (Real GDP, Percent Change)





World Container Growth Forecast

(Including full & Empty Containers, Port to Port, and Transshipment Volume in Millions of TEUs)







San Pedro Bay (POLA +POLB) Container Volume Forecast



45 40

344% Increase by 2035

March 2010 Update:

POLA's imports grew 29.8% - exports went up 32.6% year on year.

POLB reported a 39.5% export increase and 32.8% rise in imports.

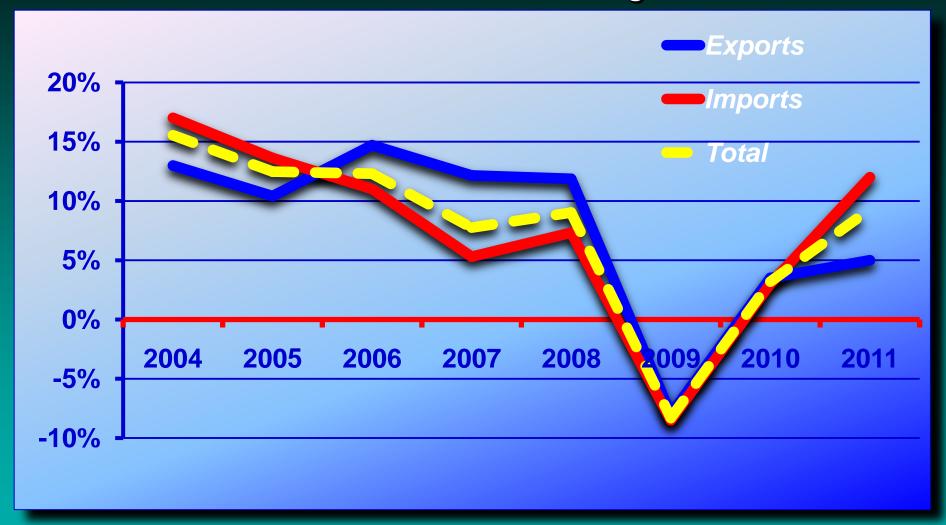
■ Actual ■ Projected

Annual Growth Rate in Recovery Averages Around Five Percent



Total US Trade - 2011 Forecast

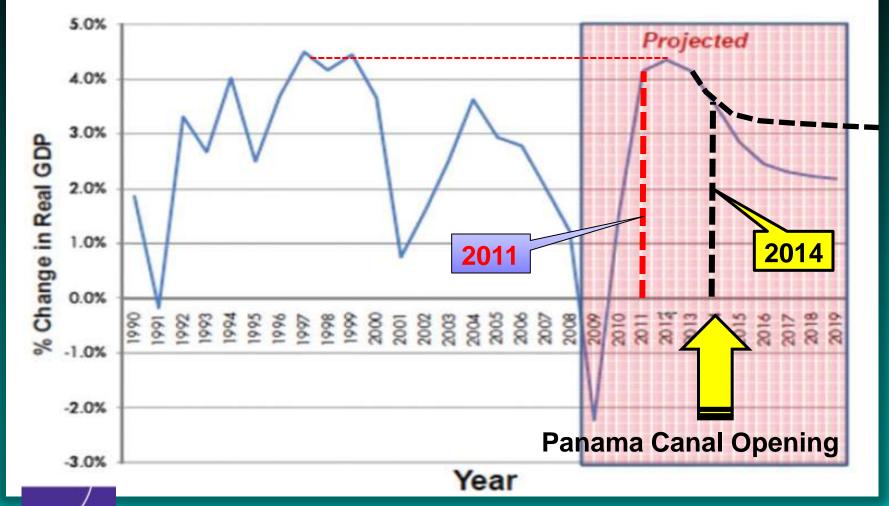
Annual Rate of Change



Source: US Census, Scotiabank, TD Economics, RBC, E-economics



Congressional Budget Office (CBO) Forecast Percent Change in Real GDP – June 2009

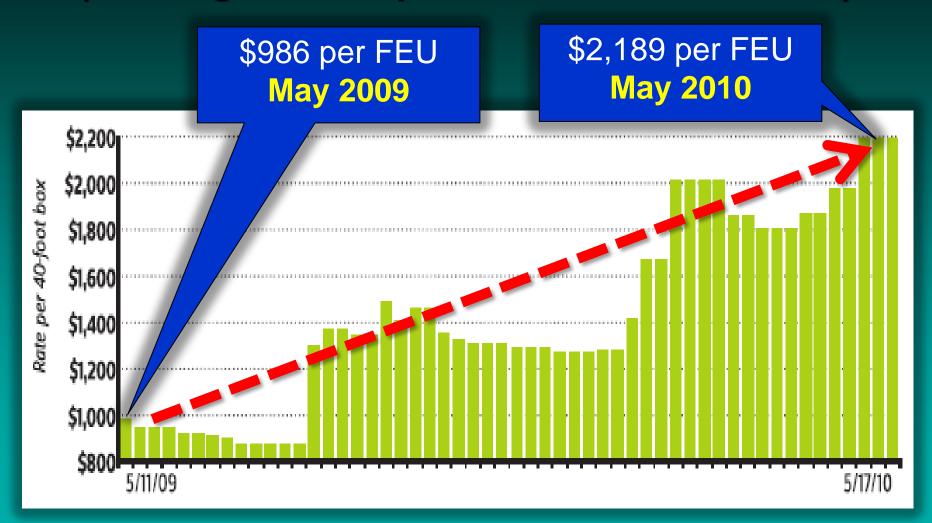




Source: Rand Corp. Fast Forward – Key Issues in Modernizing the US Freight Transportation Systems

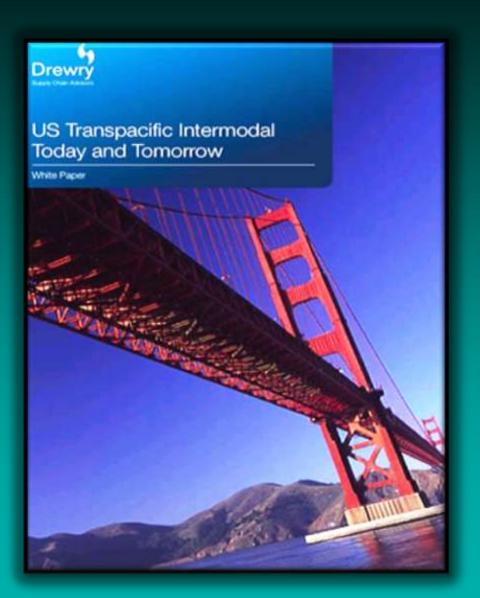


2009 - 2010 Container Rate Benchmark (Average FEU Spot Rate in US Dollars)





New Market Shift For North American Ports



After Years of **Dominating North** American Maritime Trades, US West Ports are Threatened... Converging Economic Forces Now Favor Growth of the Gulf and East Coast Ports for Asian Trade via the Midwest!



North American Emerging Mega-Regions

Future US Growth Areas







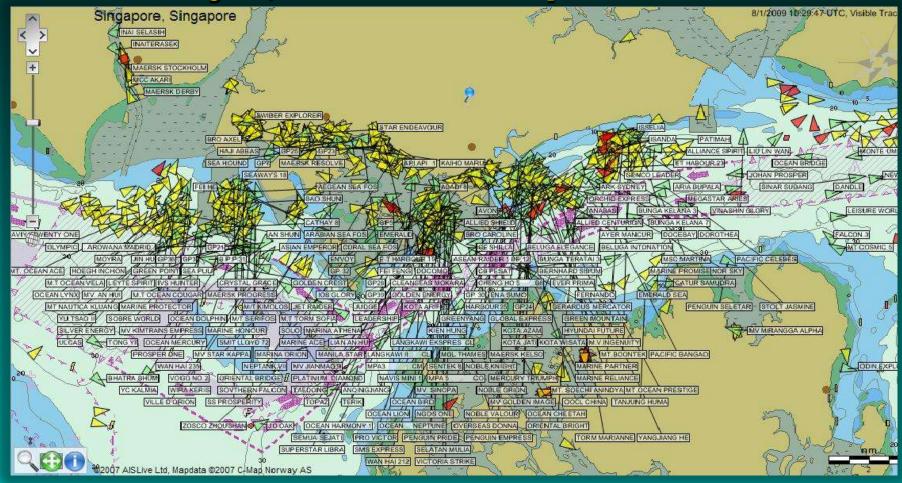
Last Year... Moody's Revised Its Outlook for the US Port Industry From Stable to NEGATIVE!

Moody's noted that for "ports serving significant levels of discretionary cargo to Midwest Markets, competition has few geographic barriers as intermodal flexibility, rail rates, and volatile bunker fuel prices play into the relative cost structure."

Moody's Investors Service



Essence of World Economic Crisis Empty Idle Ships in Singapore Harbor January 9, 2009 AIS Ship Position Plot



Essence of World Economic Crisis Empty Idle Ships in Singapore Harbor 10% of the World Fleet





Essence of World Economic Recovery

Increased Global Container Manufacturing

China International Marine Containers (CMIC) Container Construction Soars:



The world's largest manufacturer of maritime containers, <u>has already</u> exceeded its total production for 2009 in only 3 months.

CMIC reports that 102,900TEU have been produced in the January thru March 2010 period compared with just 60,400TEU for the whole of 2009.

Source: April 2010 JOC





American Association of Port Authorities

The Growing Asian Import Trade Challenge



Global Market Economic Shifts (Country GDP Rank)



Source: HIS Global Insight



China-US: Twin Engines of the World



Population:

US: 298 million

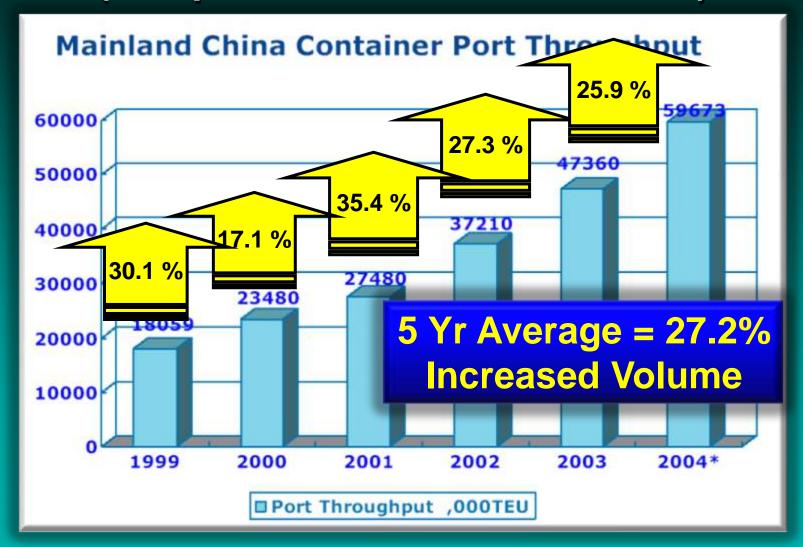
China: 1,307 million

(1/5 World)

The number of Chinese children in elementary school is equivalent to the total US population.

Mainland China Container Port Growth

(Compound Annual Growth Rates)





2010 Asia-Europe Westbound Container Traffic

10th Consecutive Year-Over-Year Monthly Gain Trade volume for All Trade Lane Container Carriers



Shanghai International Shipping Center Yangshan Deep Port & Logistics Park





Shanghai International Shipping Center Yangshan Deep Port - 20 Mile Bridge Access







U.S. Intermodal Rail Flow

Expanded Asian Panama Canal 2014 Flows

Eastbound: All Water Flow

Eastbound: US Intermodal Rail Flow

Western Centroid St



Southeast Asian Manufacturing Centroid Shift



With Manufacturing Centroid Shifts Into Vietnam and/or India, The North American East Coast will **See Dramatically More Westbound Suez Traffic**



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2010 Westbound Suez Canal Container Vessel Traffic









Maritime Vessel Technology Trends

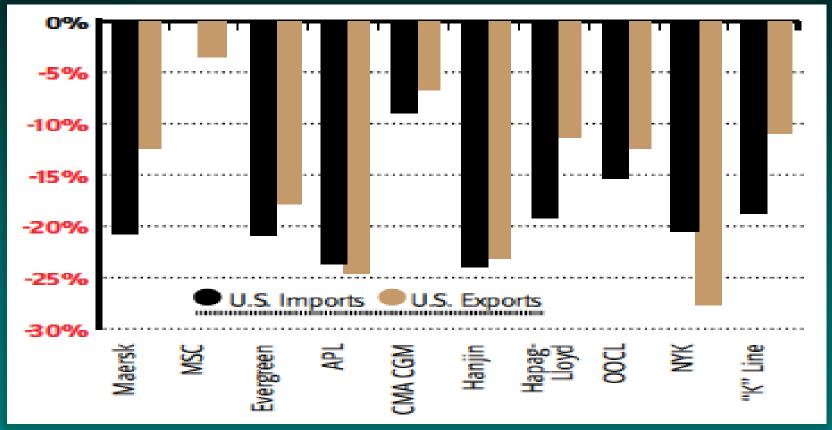






In 2009 the Ocean Carriers Lost \$10 Billion Every Six Months

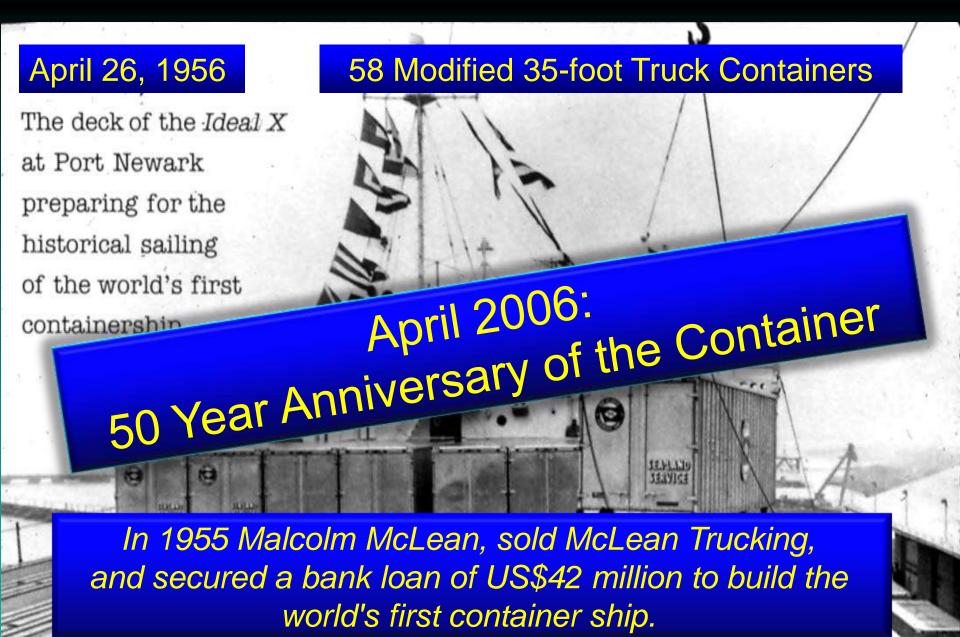
Jan-Sept 2009 vs 2008



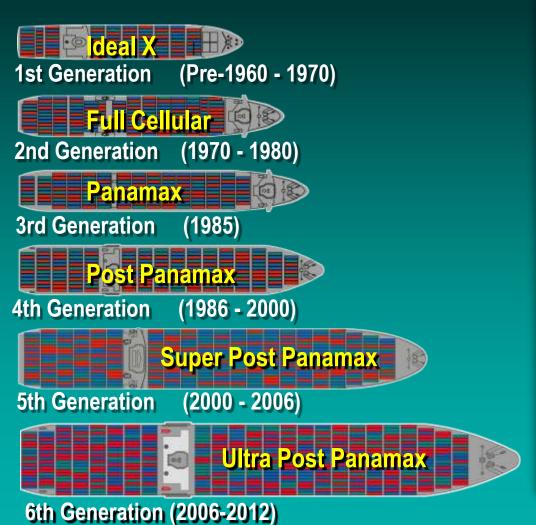
Note: MSC's US Import Volume was Flat Through the First Nine Months of 2009

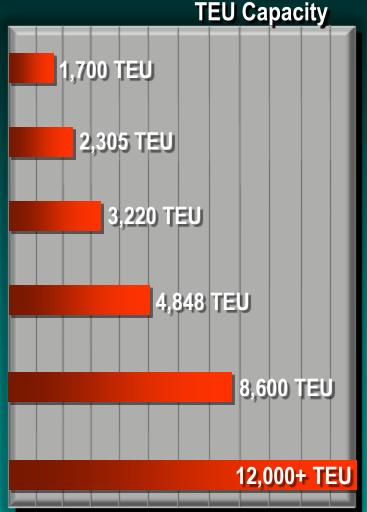
Source: JOC Top 40 Container Lines, PIERS Global Intelligence Solutions





World Container Ship Evolution









A.P. Moller-Maersk September 2006 Service Announcement for 14,000 TEU Vessel





The new-build known as "M/S Emma Maersk", was christened at the Odense-Lindo Shipyard in Denmark in August 2006.

The nominal capacity of the new vessel could be as high as 14,000 TEUs based on its reported LOA of 397 m, Beam of 56 m, Draft of 15.5 m, Gross Tonnage 170,974 gt, Speed 25.5 knots





A.P. Moller-Maersk L Class M/S Emma Maersk

(14,000 TEU Vessel - 22 Containers Wide)

Maersk Line's E-class Container Vessel: *Ebba Maersk*, set a world record for the number of slots when it carried 15,100 TEU



Length: 1,302 ft, Width: 207 ft, Net Cargo: 123,200 tons

Quay Cranes: 10, Engine: 14 in-line cylinders diesel engine (110,000 BHP)

Cruise Speed: 31 mi/h, Full Crew: 13, Construction cost - US \$145 M+

Source: Maritime World Logistics Inc. January 2007



MSC Daniela 15,000+ TEUs World's Largest Container Ship

Built by Samsung Shipbuilding & Heavy industries Co. Ltd in South Korea and delivered to Mediterranean Shipping Company in December 2009. She is the largest container ship ever built.



A Container Ship Capable of Fitting 22,000 TEUs - Designed by South Korea's STX Shipbuilding Co



Both one and two-propeller types with the ability to reach 24 to 26 knots. 460m in length, 60m wide and 30m high. They are capable of saving more than 40% on the unit transportation cost.





American Association of Port Authorities

2015 Panama Canal Expansion Impacts



Post 2015 Panama Canal Environment



What Does the Competitive Environment Look Like FIVE Years From Now?



Current Panama Canal Constraints

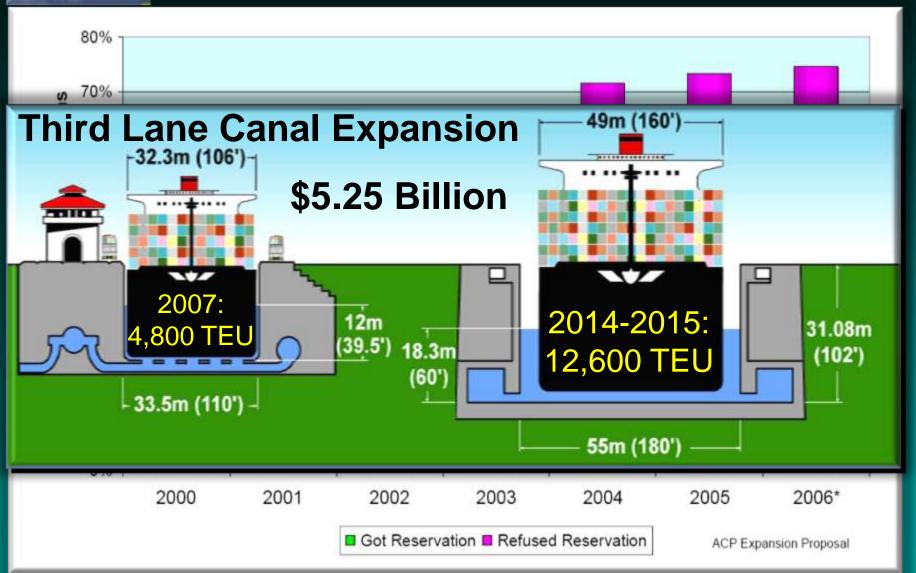
Madison Maersk (3,928 TEUs)

(Current Max Panamax Vessel = 4,800 TEUs)





Panama Canal Transit Reservation Demand



The Post Panamax Boom Favors All-Water Service Routes



US Southeast & US Gulf Coast Ports can directly benefit from the Panama Canal's new Lane Opening 2014/15



Benefits of the New Panama Canal New Lane Opening December 2014/15

- A Doubling of Capacity & Change in Shipping Patterns for Asian Cargo to North America
- By 2020, 64 % of the PCA will be containerships
- An Immediate Savings to Exporters of 30 %
- Movement of discretionary cargoes from west coast ports including Los Angeles and Seattle, and the Class I railways
- It costs as much as \$1,000 more per cargo container to use trains than ships – all water



The New Post Panamax Boom Favors All - Water Service Routes with the Following Vessel Characteristics:



- Vessel Capacity: 9,000 to 10,000 TEUs
- Vessel Draft: 46 to 50 feet (tropical fresh water)
- Required Port Channel Depths: 50 to 54 feet
- LOA: 1,000 to 1,200 feet
- Beam: 140 to 160 feet





The Container Ship Colombo Express (8750 TEU)



Southeast Louisiana Asian Routing Comparison – Shanghai to New Orleans







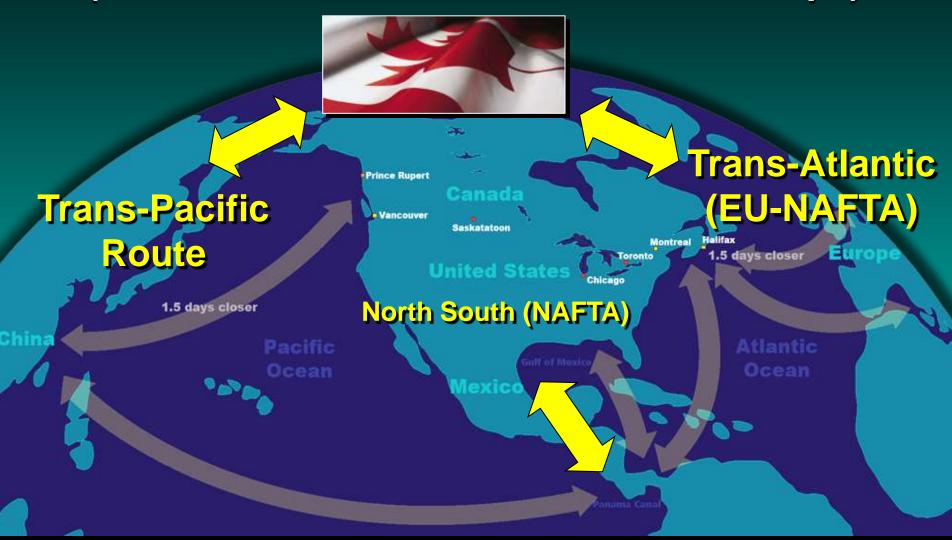
American Association of Port Authorities

Canada's Intermodal Land Bridge: Emerging Projects

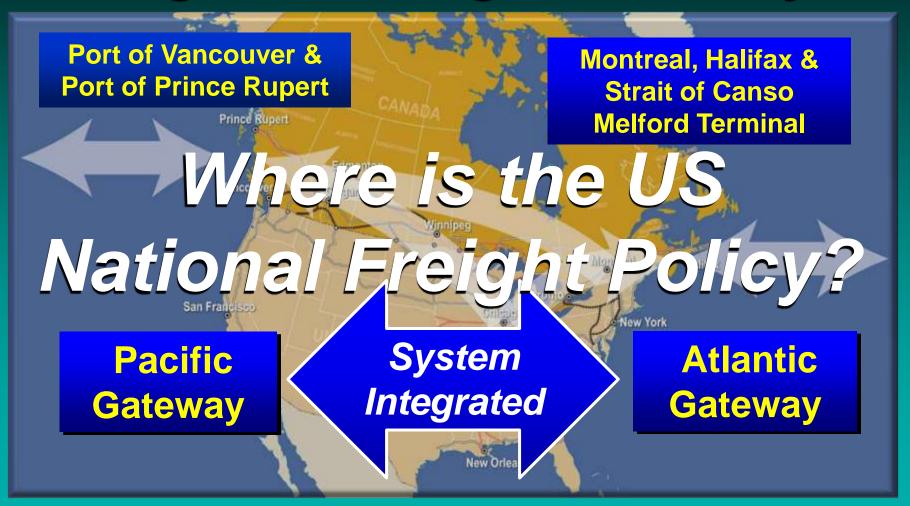


Canada's Strategic Global Location

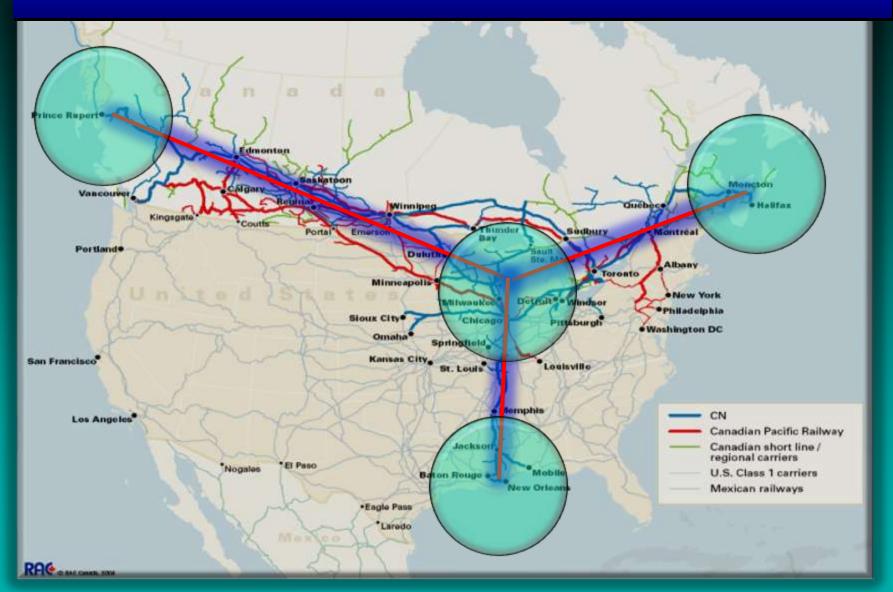
(Shortest Trade Routes to Asia and Europe)



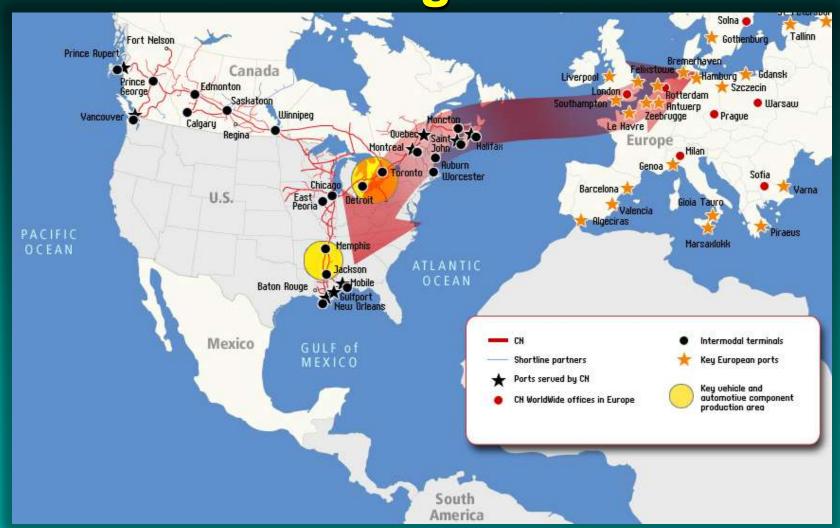
Canada's National Integrated Freight Gateways



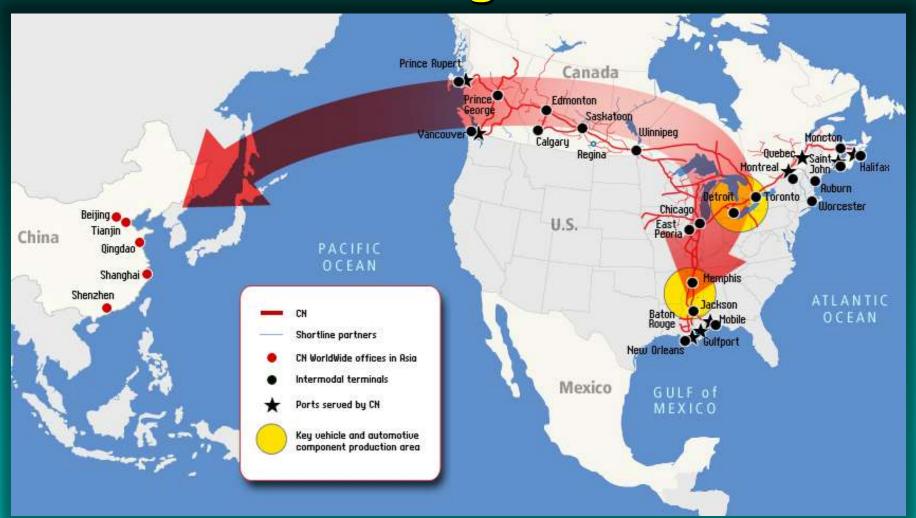
Canada's Intermodal Rail Network



The Emerging CN Transcontinental Land Bridge Focus



The Emerging CN Transcontinental Land Bridge Focus



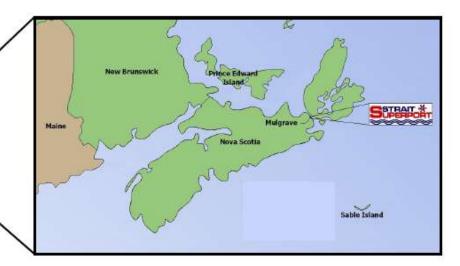
New Terminals Are Being Built on All Three Coasts to Support Asian & South American Trade Linkages













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S. ASSOCIATES, LIC

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- 315 Acre Terminal
- Intermodal Rail Terminal
- 1500 Acre Logistic Park

First Phase:

- 2 Berths
- 1.5 M TEU Capacity
- 250 Acre Logistic Park
- \$420 million USD









Louisiana International Deep Water Gulf Transfer Terminal: Deep Water Port Commission





Louisiana International Deep Water Gulf Transfer Terminal: "Gateway to the Americas"







e Vision for the LIGTT Concept:

ntegrated Hub & Spoke Distribution System





The Vision for the LIGTT Concept:

An Integrated Hub & Spoke Distribution System



Using the Mississippi River as a Strategic **Highway: Change US Midwest Supply Chain Distribution Logistics Networks...** Achieving Better Reliability, Lower Cost, and Greater Market Share







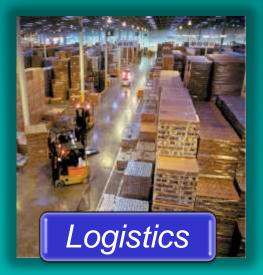
Inland Ports: Defined - A convergence of Logistic Trends



Inland Ports Defined A Convergence of Logistics Trends





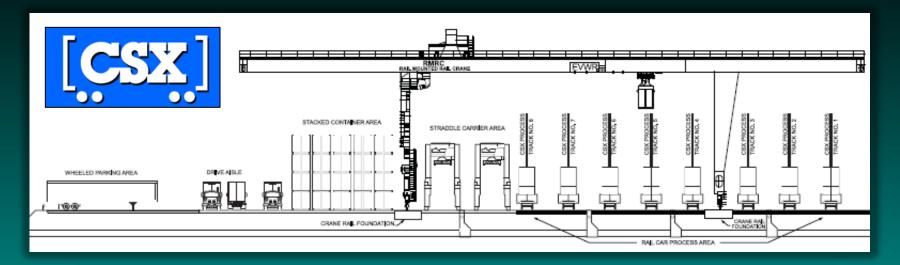




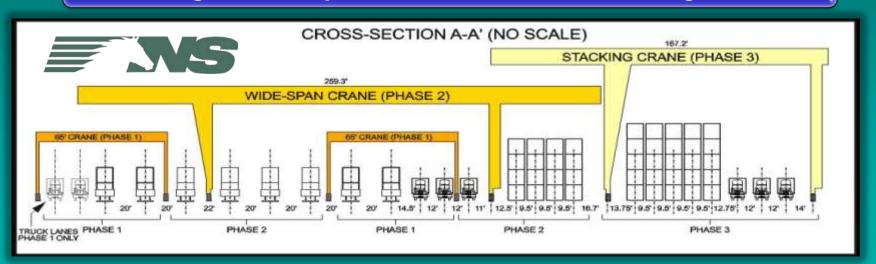




Emerging US Green Inland Port Technologies



CSX High Density Intermodal Crane Configuration



NS High Density Nested Crane Configuration





Automated Intermodal Rail Terminal Concepts - Europe



Automatic Stacking Cranes (ASC)

Automatic Guided
Vehicles (AGV)
VICKERN







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Inland Ports: Europe's Current Strategy Applications





Rotterdam World Gateway- EUROGATE Builds an Inland Container Port Network

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The Dutch Transport Ministry and Port of Rotterdam Authority (PoRA) signed a Founding Agreement on June 29, 2009

The Town of Alblasserdam, East of Rotterdam will get a Container Transferium (CT), a Inland Port Container Transfer Facility to be operated by Binnenlandse Container Terminals Nederland (BCTN).

"This is the <u>first time</u> the Port Authority has promoted such a partnership. PoRA to promote transport by rail and water and to shift containers from road to the other modes of transport in order to reduce the number of trucks in the road."

Dutch Transport Ministry Inland Port Container Transferium (CT) Strategy

(Noord River, Town of Alblasserdam €38 million, open by end-2012)



Dutch Transport Ministry Inland Port Container Transferium (CT) Strategy

(Noord River, Town of Alblasserdam €38 million, open by end-2012)









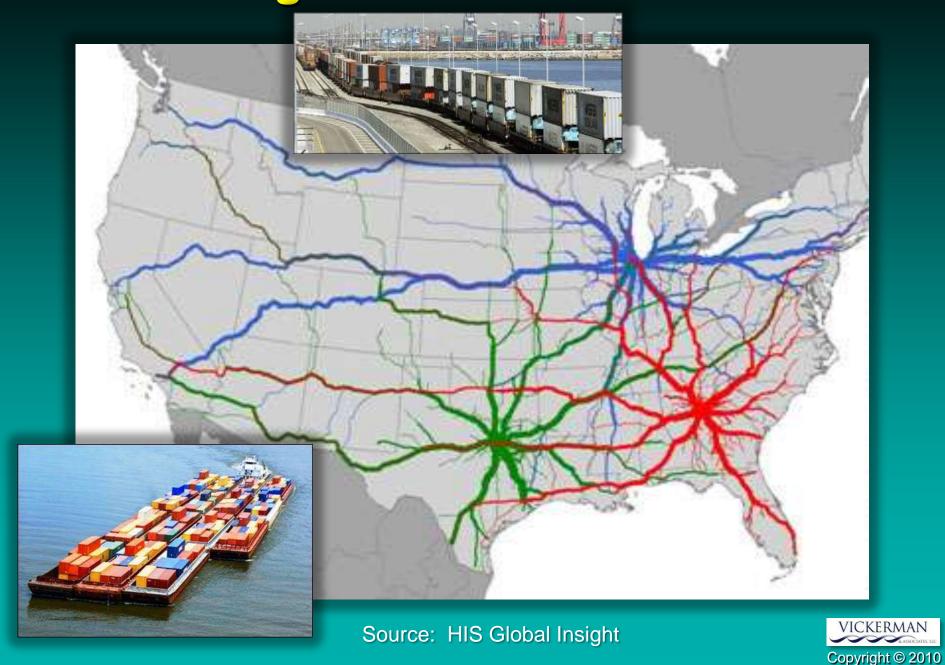
North American Inland Ports: Connected to Emerging Trade Corridors



Emerging New Trade Corridors



Current Largest US Distribution Markets



Emerging Major Inland Port Logistics Centers Throughput Capacities in Millions of TEUs



BNSF Logistics Park, Joliet. IL A New Model For Freight Logistics Centers

Wal-Mart's New 3.4 million SF (78 acres under roof) Import Distribution Center

The Cost of This Import Distribution Center was Paid for by the Savings in Truck Drayage Between the Warehouse & the Intermodal Rail Terminal





CenterPoint – KCS Intermodal Center Inland Port Solution

CARDENAS



- 1,348 Acre Logistics Park
- 970 Acre Industrial Park
- 7.4 M SF Building Area



CenterPoint – KCS Intermodal Center Kansas City, MO





American Association of Port Authorities

North American Emerging Trade & Transportation Trends in Port Strategic Planning

Thank You



