



CILTHK Seminar

**Topic: Integration between Railway and
Maritime Transport**

Ir Matthew Tsang

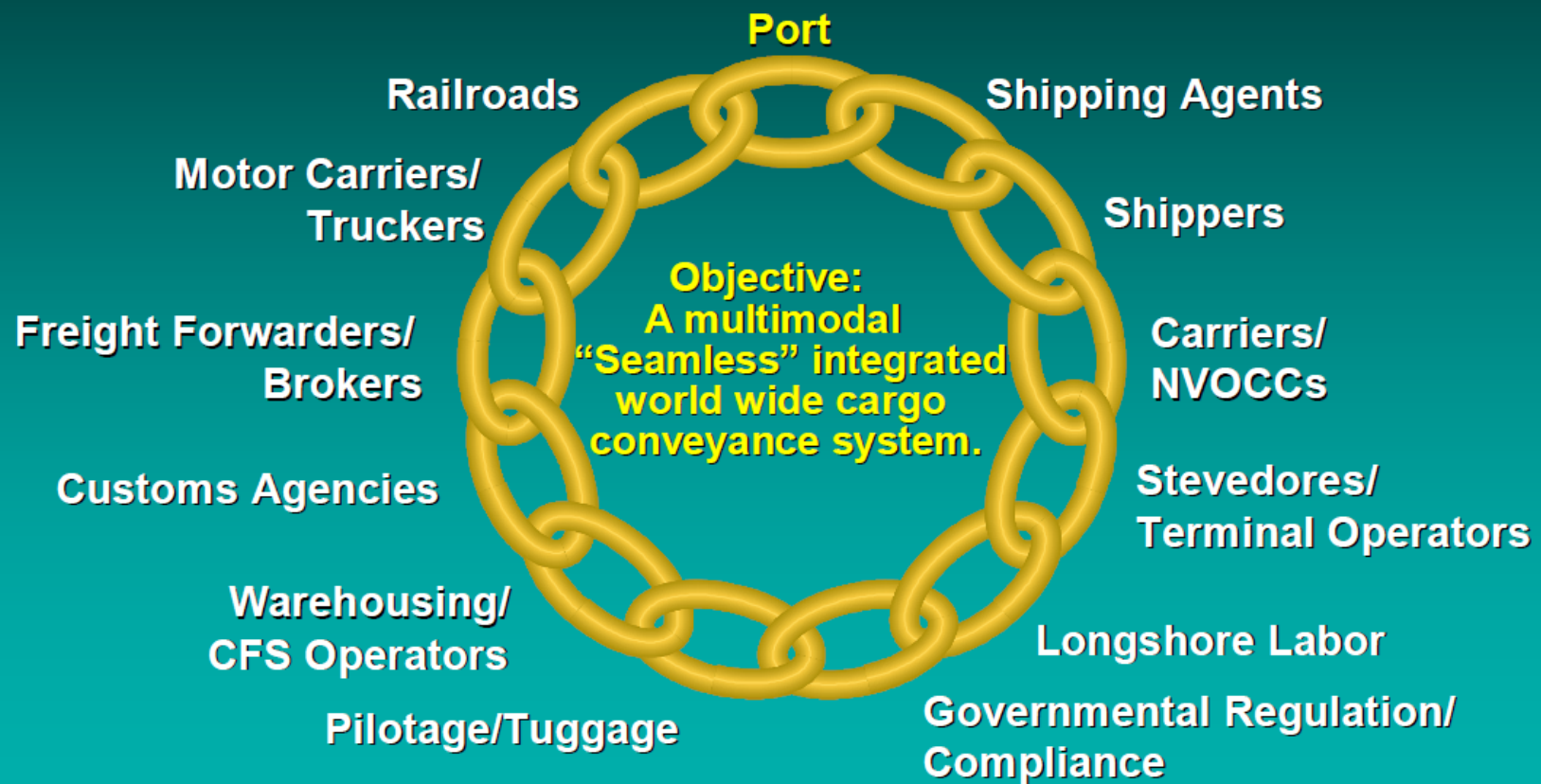
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Subsidiary of MTR Corporation

The “Port”

One of the Many Diverse Constituencies in the Cargo Transportation Logistics Chain



China's New Economic Belt and Maritime Highway

A continuation of old Silk Road

Routes of the China-proposed Belt and Road Initiative



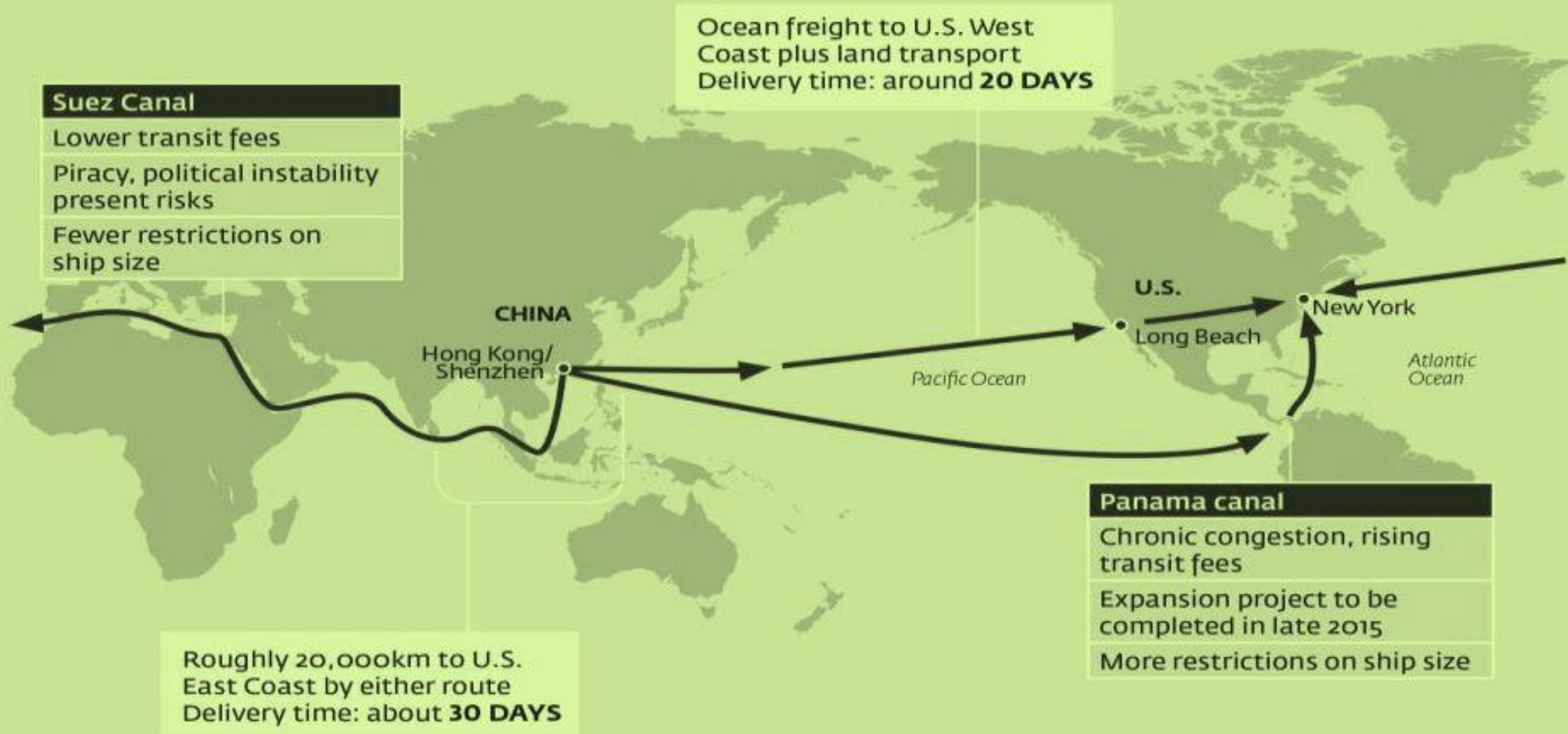
The Transport Modes will be different

600 - 2010



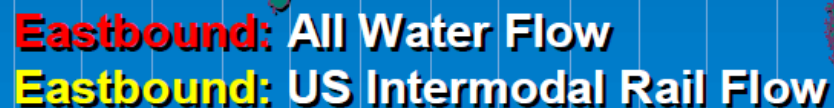
Sea Routes – East Bound, West

Growing competition among canals



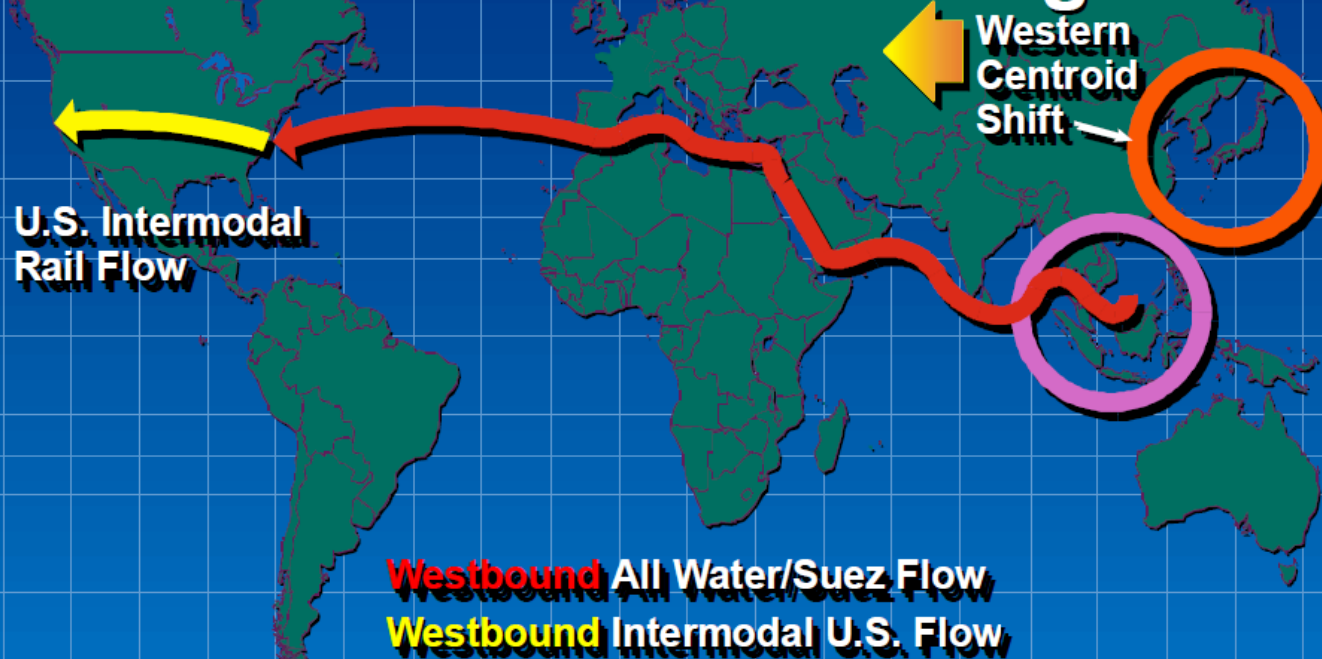


Current Inbound U.S. Cargo Flow



Southeast Asian Manufacturing Centroid Shift

Current Inbound U.S. Cargo Flow



China-US: Twin Engines of the World

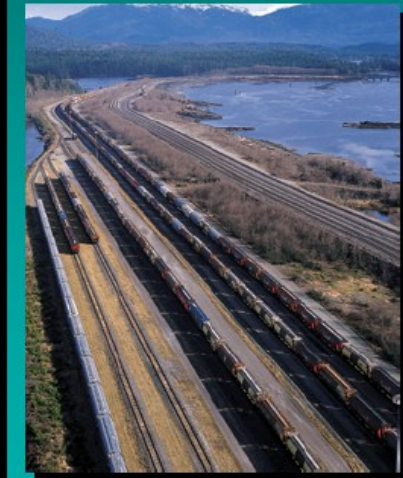
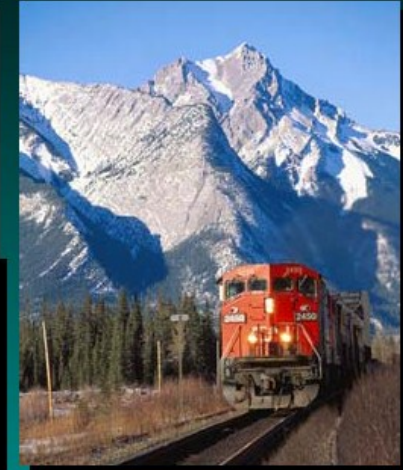


Population:
US: 298 million
China: 1,307 million
(1/5 World)

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

New North American Container Gateway

Prince Rupert Port Authority
the new world port
opening a new world of opportunity



RAISING the BAR

Building taller bridges and cranes, digging deeper waterways

New Bridge Clearance 205 feet

Old Bridge Clearance 155 feet

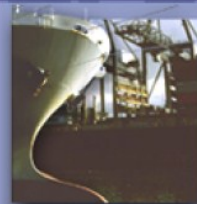
Future
Ship Sizes

BIG TRAINS COMING

The length of trains is doubling to two miles.



10,000 TEU Vessel Carrying Capacity



1
10,000 TEU
Container
Ship



18
8,000 Foot
Double-Stack
Trains
(27 Miles)
(50 Acres)



5,800
Trucks
(60 Miles)
(95 Acres)

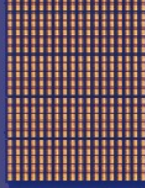


570
Boeing 747
Cargo Liners

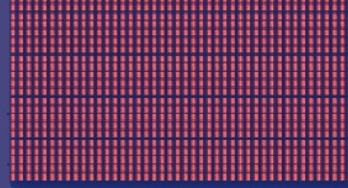
DISCHARGE OR LOAD ONLY !



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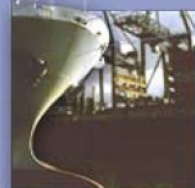


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Impact of Large Vessels - Port Traffic - West Coast

10,000 TEU Vessel
85% Discharge / 85% Load
50% Local / 50% Intermodal



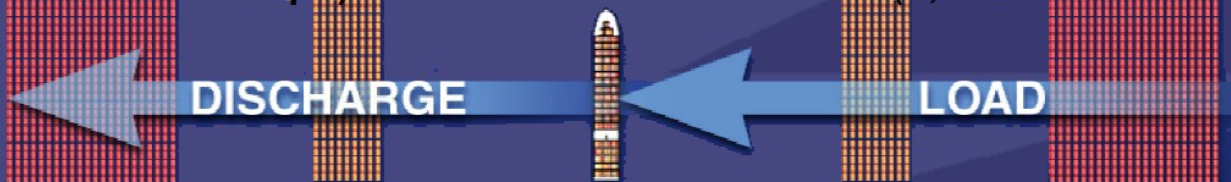
**8 - 8,000 Foot
Double-Stack
Trains**

**8 - 8,000 Foot
Double-Stack
Trains**

**2,500 Truck Loads
(4,000 Local Truck Trips)**

**Total Traffic Generated;
16, 8,000 Foot Trains
8,000 Local Truck Trips**

**2,500 Truck Loads
(4,000 Local Truck Trips)**

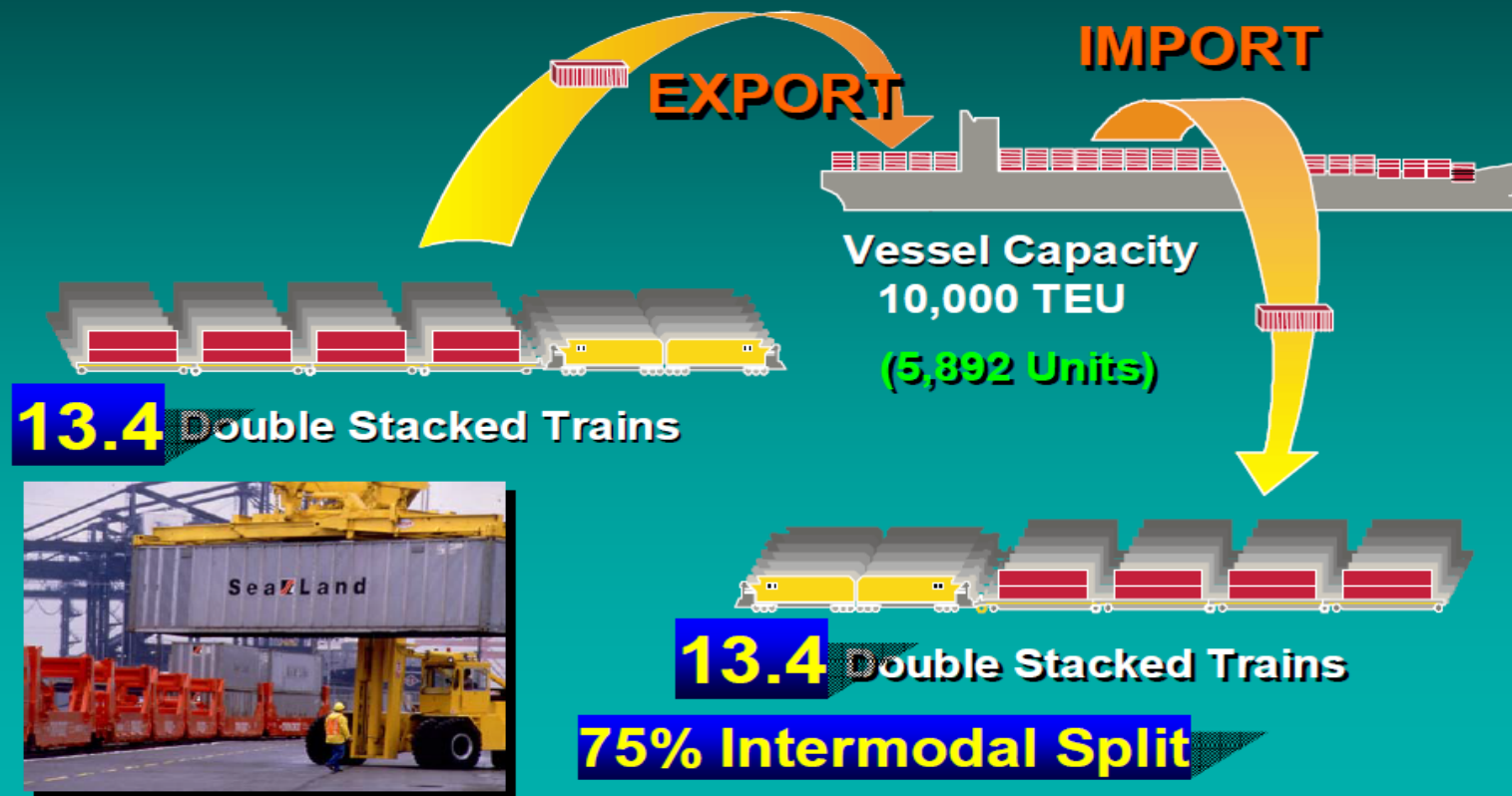


U.S. Double-Stacked Train System



East-West 10,000 ft Train Bypass

A 10,000 TEU Mega-Container Vessel Can Produce High Intermodal Rail Volumes (One Weekly Vessel Call)



WHAT IS HAPPENING AT THE PORT/TERMINAL ?



Agents &
Port Community



Traffic
Management



Pilot Scheduling



Tug Scheduling



Port Services
Planning



Cargo &
Dangerous
Goods



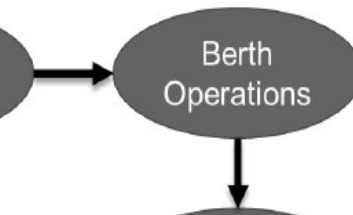
Warehouse
Management



Billing &
Accounting



Vessel
Operations



Berth
Operations



Apron to
Storage



Storage



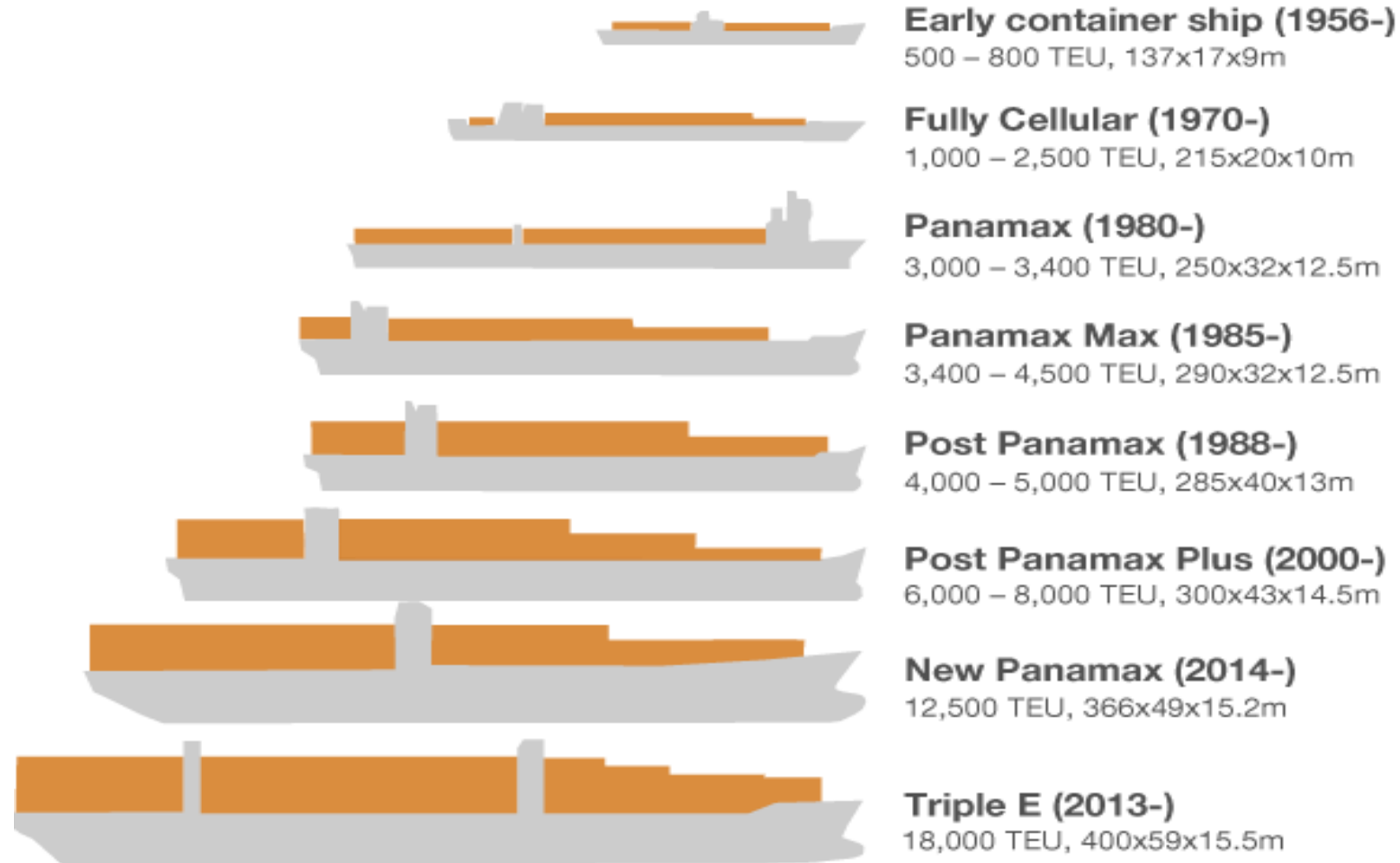
Gate
Processing



Intermodal
Transfer

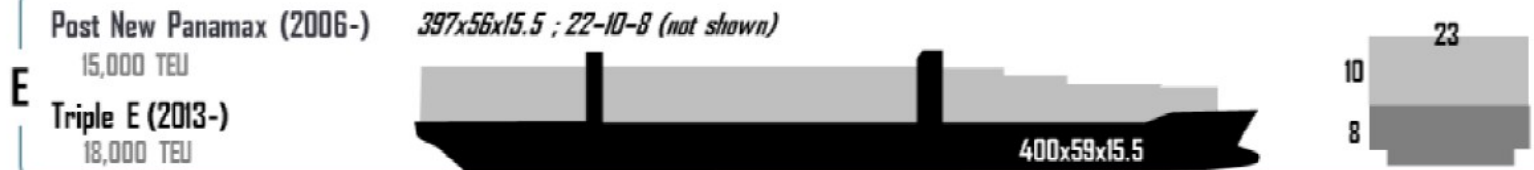
Evolution of container ships

TEU: twenty-foot equivalent units,
length x width x depth below water in metres



Adapted with permission from The Geography of Transport Systems, Jean-Paul Rodrigue

Larger Vessels: Maersk Triple E



Too big for the expanded Canal.



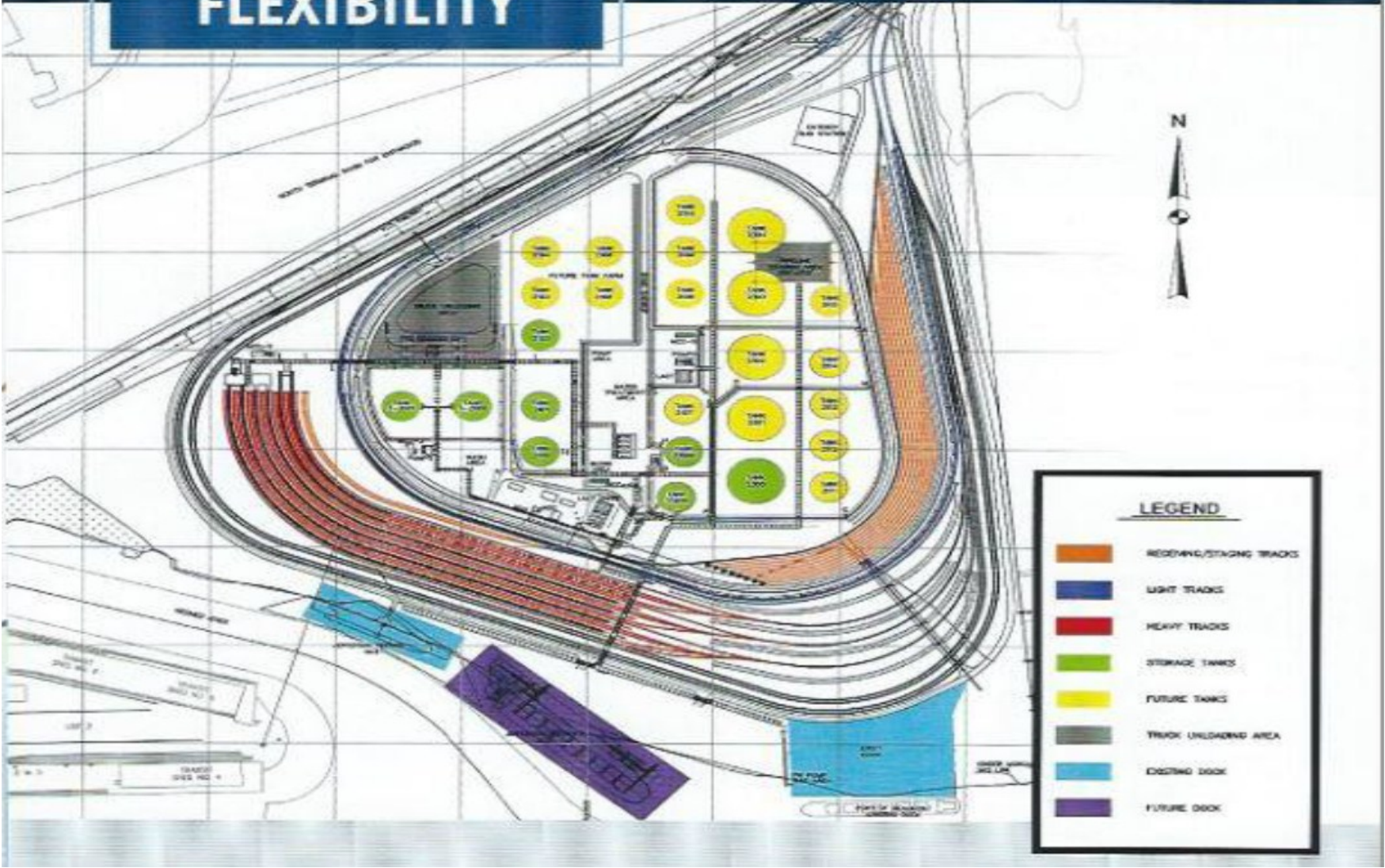
**AUTO PORT / PORT OF BEAUMONT
BEAUMONT, TEXAS**





FLEXIBILITY

PHASE 1 - 250 ACRE MAIN TERMINAL



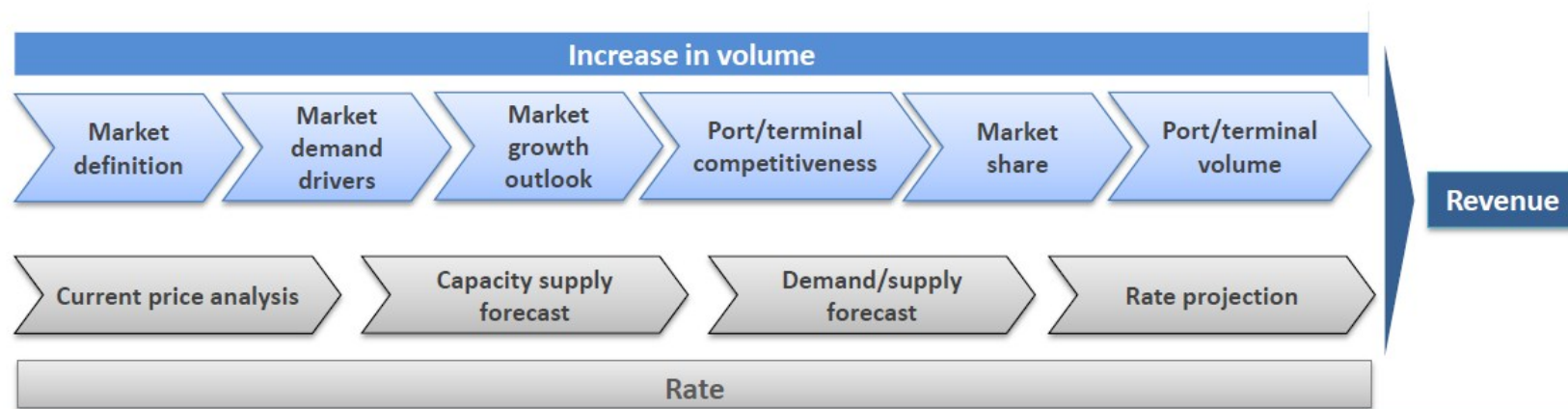
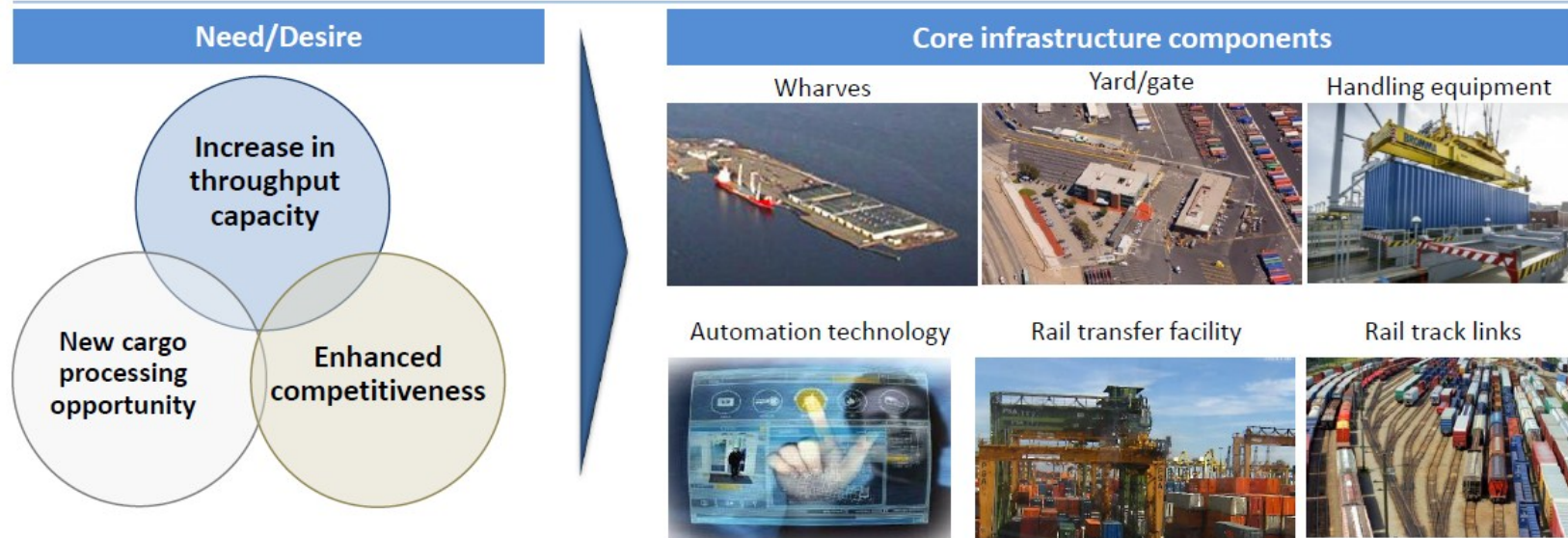


Rail Operation

Rail Operation



Commercial Driver for Port Infrastructure Improvements



Market Definition – the

Potential Starting Point

- The structure of the market demand analysis required to commercially justify a port infrastructure project will be driven by type(s) of cargo that the project is designed for:

Drybulk



(grains, minerals, ores)

Liquid bulk



(oil/petroleum, chemicals, LNG)

RoRo



(vehicles, machinery)

Breakbulk



(steel, forestry products)

Unitized



(container, trailers)

- For bulk target cargoes, analyses of specific industries will be more critical, whereas for unitized cargoes, macroeconomic performance will be of greater importance

- Compared to ships, trains and trucks are a silly way to move stuff;



**One Ship = 8,000+ TEU
\$0.10 per ton mile**

And the gap is widening!



**One Truck = 2 TEU
\$1.00-2.00 per ton
mile**



**One Train = 560 TEU
\$.50 per ton mile**

Q & A



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