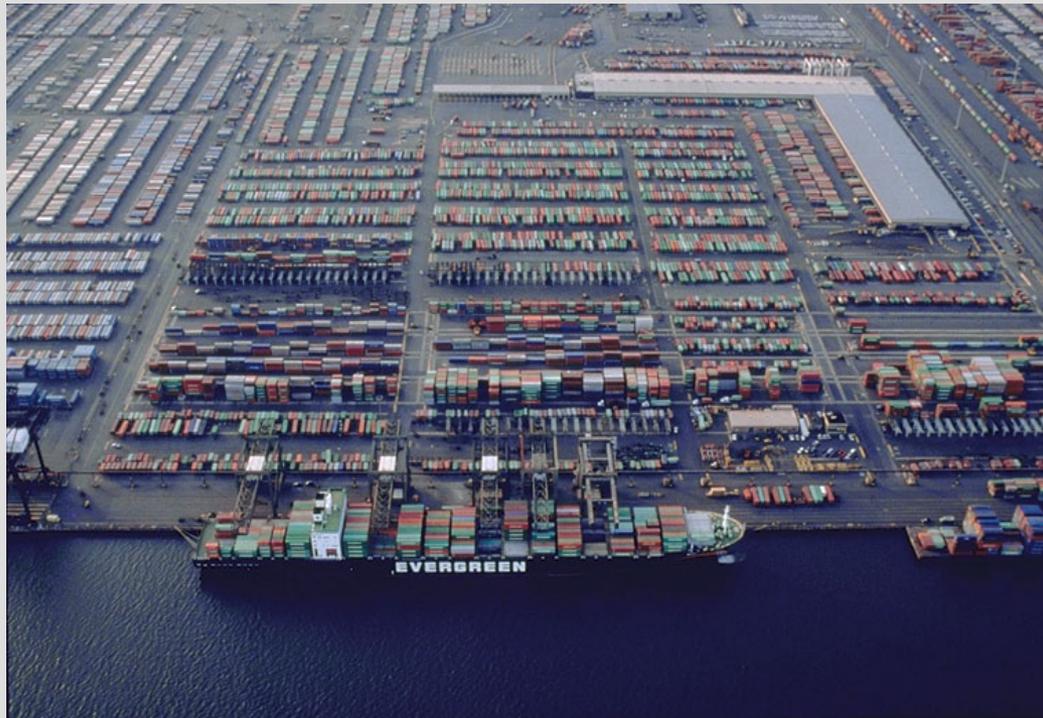




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Port Reform, Privatization, and Regulation

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Primer on Port Terminology

- Panamax vessel – the maximum size vessel that can transit the Panama Canal; capacity = about 4,300 TEUs
- Post-Panamax vessel – vessels larger than those that can transit the Panama Canal – the third generation post-Panamax vessel is about 12,500-TEU capacity
- TEUs – 20-foot equivalent unit denoting marine container size, port or terminal capacity, or vessel capacity
- Terminal – the area inside a port normally consisting of a berth (for handling the vessel), backup area (for storing the cargo, also referred to as storage area, and a gate (for entering and exiting the terminal)
- Ship-to-shore gantry or mobile harbor cranes – equipment used for handling movements between the berth and the vessel
- Yard cranes – equipment used for placing or removing containers in or from the storage area
- Ships' gear – vessel cranes used to move cargoes to/from the vessel

What are the logistics nodes of a port?



Why port performance is important

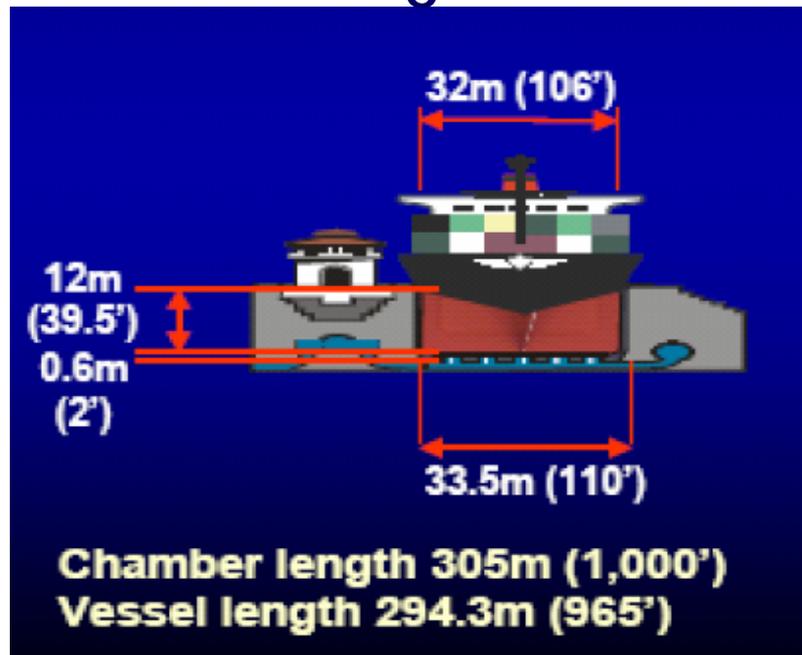
- Clark, Dollar, Micco (2001) – port inefficiency increases distance by 60%
- Hummels (2001) – inventory costs due to transport delays are equivalent to 0.8 %/day of delay of the value of the goods being delivered
- Wilson, Mann, Otsuki (2003) – port efficiency more important than Customs and e-business
- Kent, Fox (2004) – assess impact of port inefficiency on welfare – port inefficiency, when mitigated, induces GDP growth by 0.47 percent
- Djankov, Freund, and Pham (2006) -- each additional day required for a shipment imposes “extra” economic distance of 70 km per day

What are the emerging trends that affect logistics performance?

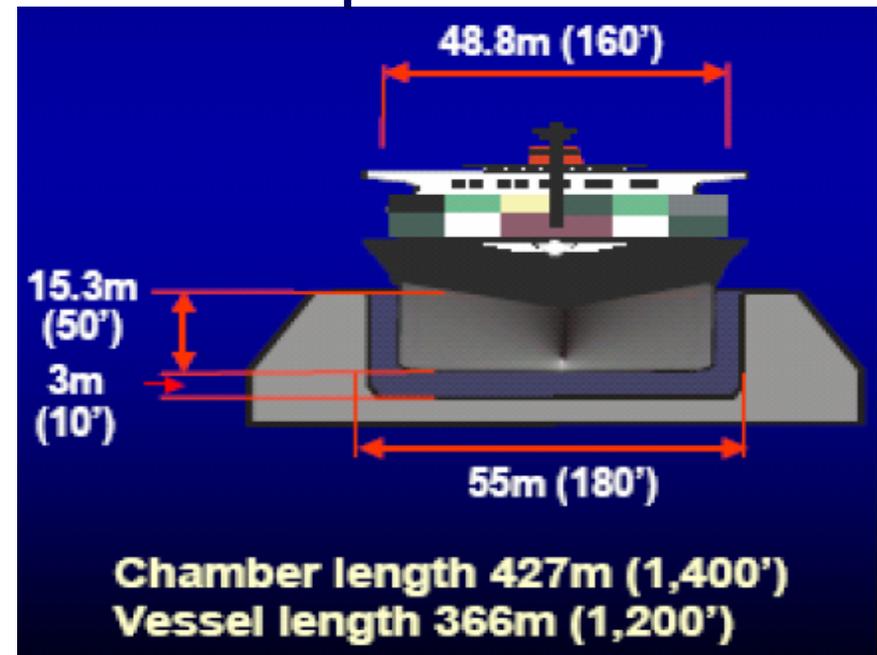
- Port operations performance being constrained by factors outside port gate
- Inter-port competition has evolved to inter-corridor competition
- Direct calls becoming more competitive with minimum handling volume of 500 moves/call
- Fuel prices negating labor cost advantages – aka the China factor
- Larger vessels being introduced by carriers in response to Panama Canal Expansion
- Introduction of regional security protocols
- Port expansion being constrained by urban development
- Countries generally are not mindful of the potential for monopolistic or oligopolistic abuses by terminal operators

Panama Canal Expansion Program

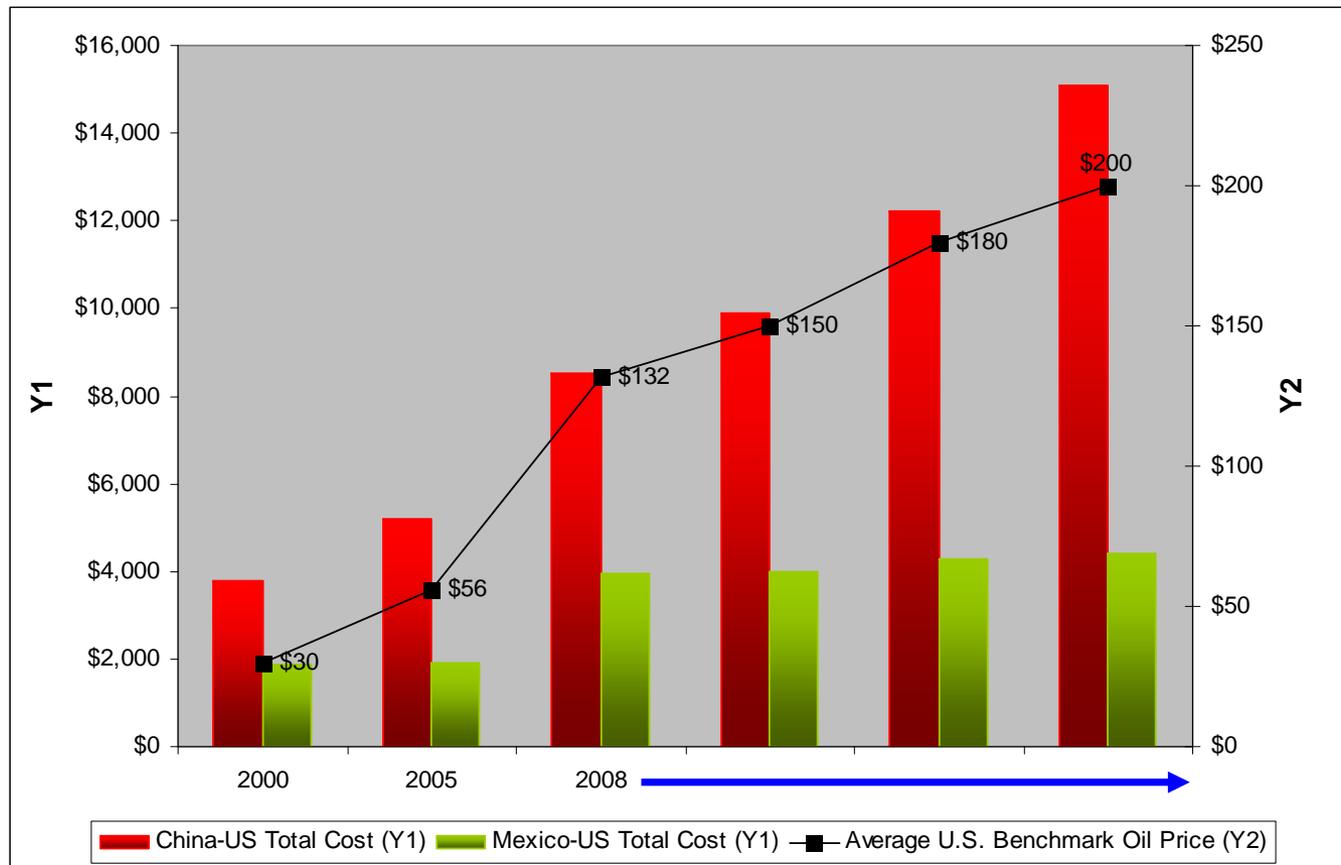
Existing Locks



Post-Expansion Locks



How are fuel costs affecting competitiveness?



Source: U.S. Crude Benchmark Prices, U.S. Department of Energy; Shipping Costs – estimated averages from sample data from shipper manifests/carriers and phone quotes from freightforwarders; projected costs calculated by Nathan Associates Inc.

Logistics costs and fuel prices

- Soaring transport costs, not tariff barriers, pose the greatest challenge to trade today
- Using GTAP model, early results indicate:
 - At \$20/barrel, transport costs equivalent to 3% tariff rate
 - At \$80/barrel, transport costs equivalent to tariff rate of 9%
 - At \$150/barrel, transport costs equivalent to tariff rate of 11% (same as tariff rates in 1970)
- Long-distance routes especially vulnerable
 - Every 10% increase in distance = 4.5% increase in total transport cost

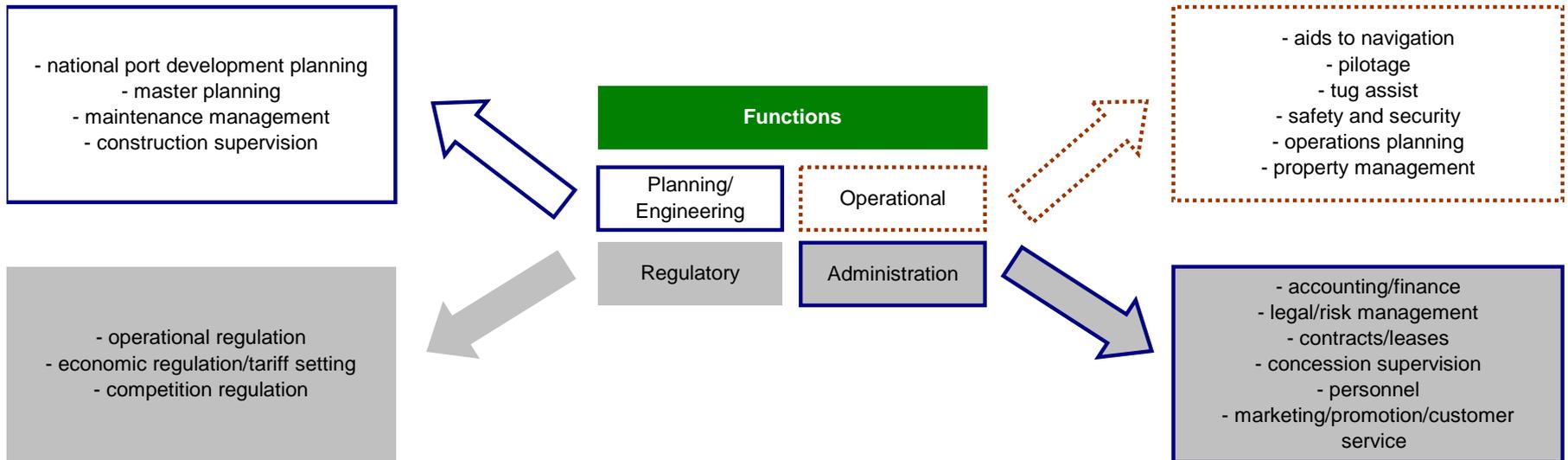
What are the solutions to counter fuel cost disadvantages?

- Squeeze more efficiencies out of the logistics chain
- Establish regional distribution centers
- Build intelligent logistics thinking into the transport system

Port Administration Models

- Virtually all ports are governed by port authorities
- Two port administration models
 - Operating Port (also called public service port) – port authority provides assets and conducts cargo and vessel handling
 - Landlord Port – port authority provides assets and engages private sector participation in the form of leases, concessions, operating agreements, or management contracts
 - Vast majority of maritime countries worldwide have adopted landlord model

Port Functions in a Landlord/Post-Privatization Environment



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Port Privatization

- Port privatization refers to who provides the service, and not necessarily who owns the asset
- Port privatization can occur via:
 - Concessions (usually implying long-term agreements and substantial private sector investment)
 - Leases and Operating Agreements (normally shorter term, with no substantial investment requirements)
 - Management contracts (private sector is paid to provide the service)
 - Licensing (licenses awarded to provide stevedoring services)

Where privatized services (in red letters) are provided in the port logistics chain

- 12 areas of activity occurring

1. Pilotage

2. Line handling

3. On-board inspections

4. Gangs (workers) mobilized for vessel handling

5. Seal inspected

6. Container moved from berth to storage or for evacuation or Customs processing

7. Container is stored

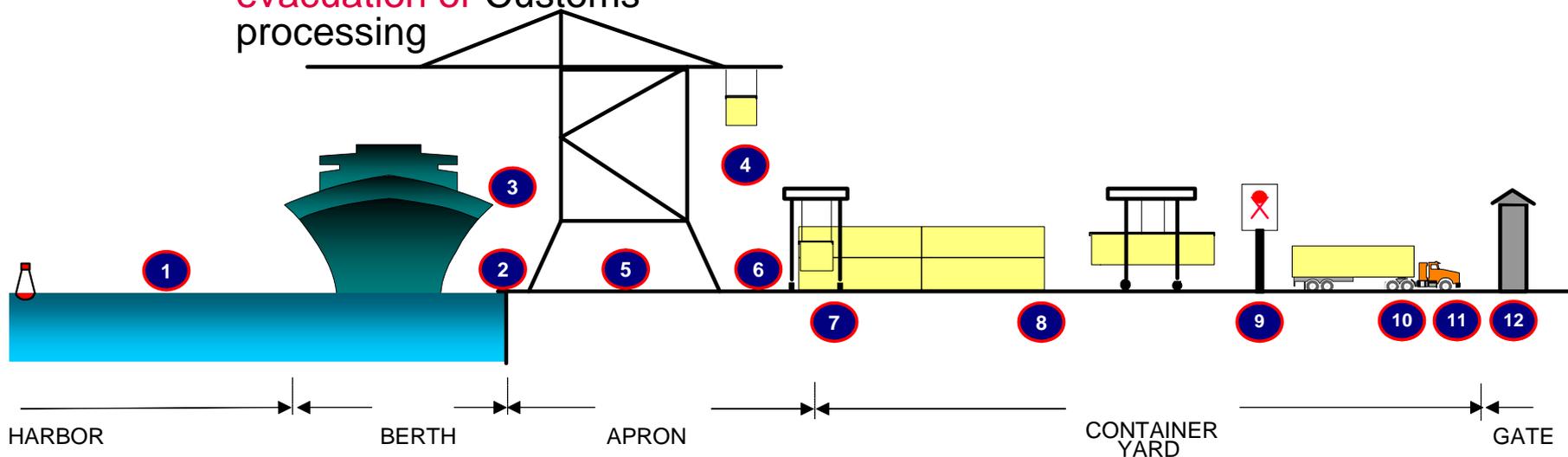
8. Container is placed on chassis

9. Truck/container is scanned

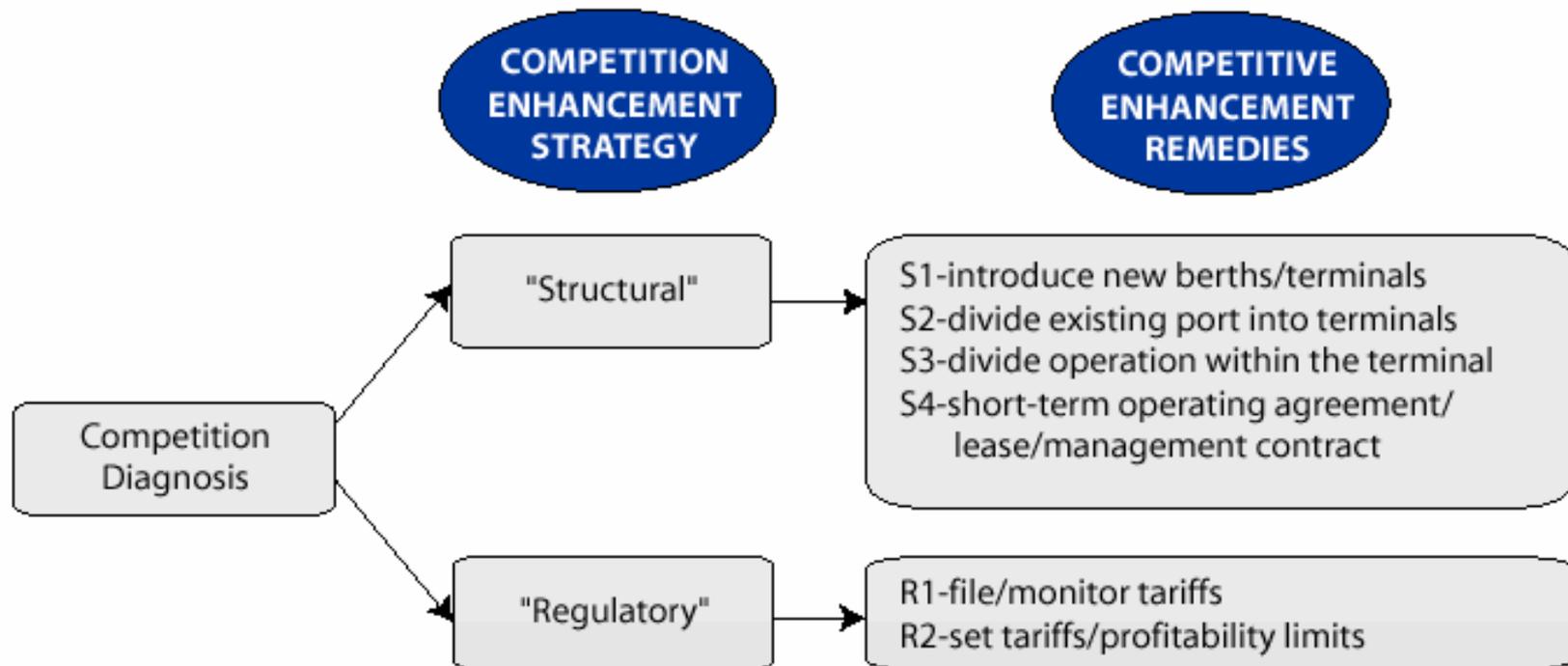
10. Truck/container is weighed

11. Gate processing

12. Truck leaves terminal



Privatization and Inducing Competition



Source: Kent, Paul E. and Richard Blankfeld, *Port Reform Toolkit*, World Bank/Nathan Associates Inc., 2001.

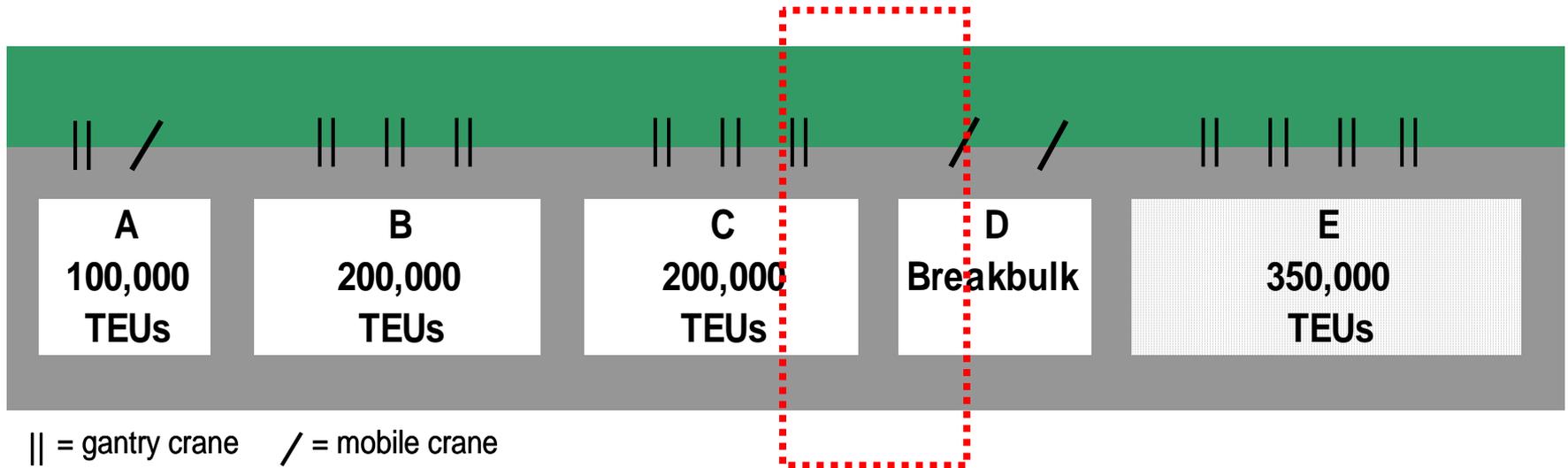
Structural Strategies

- Introduce competitive pressures
- Competition reduces the level of regulation needed
- Balance sought between
 - efficiency gains from economies of scope
 - cost reductions from competitive pressures

Structural Remedies

- Introduce new berths/terminals: requires suitable site for expansion and sufficient volumes
- Divide existing port into competing terminals (terminalization): via dedicated terminals or “overlapping” activity
- Divide port operations within the terminal by
 - Privatizing the vessel stevedoring operation and
 - port authority operates the yard area
 - assignment of yard areas to stevedoring companies
 - allowing stevedoring companies to provide both vessel stevedoring and yard/storage services without any assigned areas
- Short-term operating agreement/lease/management contract

“Overlapping” Competition Concept



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- Different levels of service
- Not all ships require same level of service

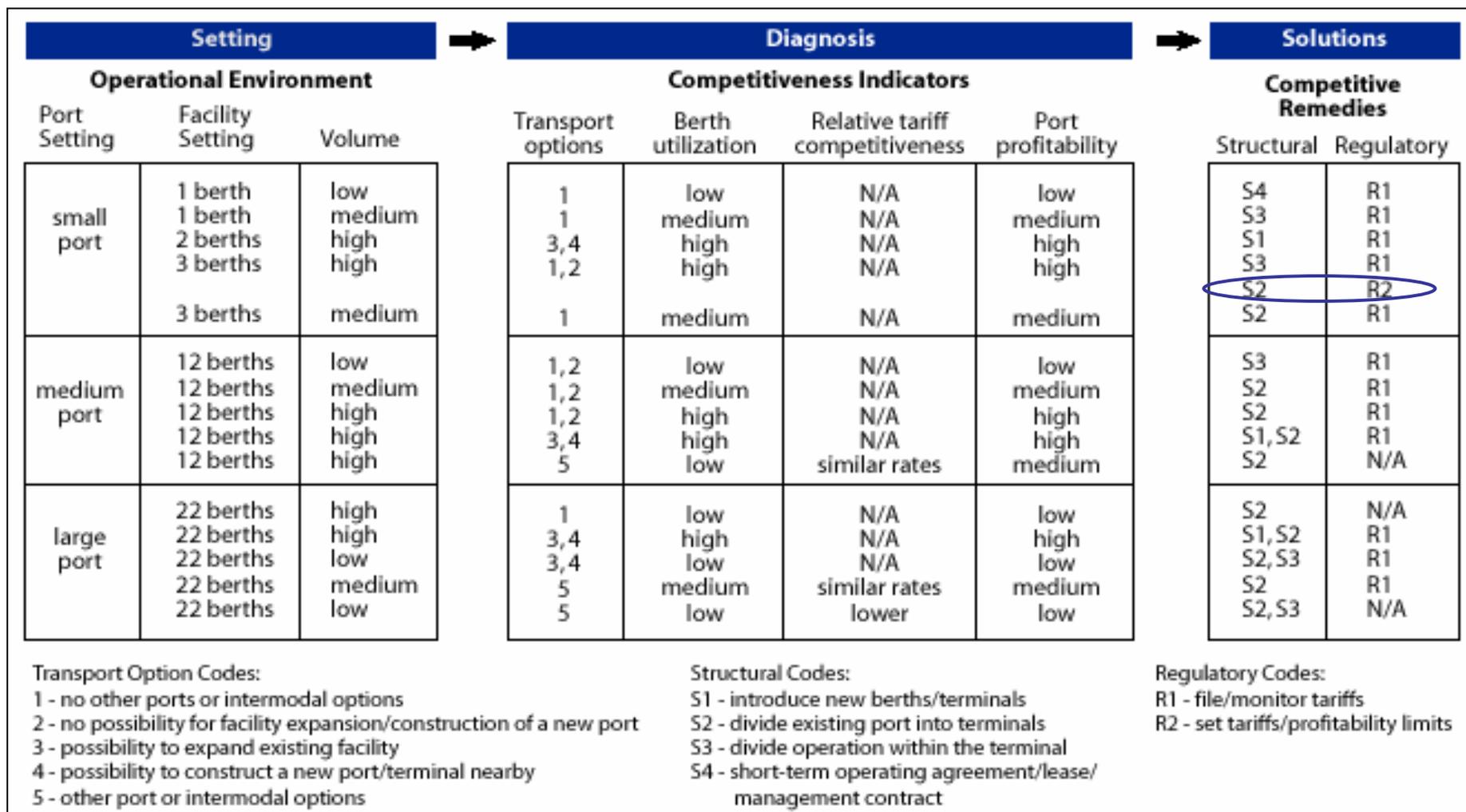
Structural Remedies: Additional Principals

- Avoid participation of carriers in terminal operations: risk of conflict of interest
 - preferential berthage to their own ships
 - discounts in berth handling charges to their own ships
 - access to proprietary data of competitors

Regulatory Strategies

- Tariff filing to monitor for and discourage anti-competitive behavior
- Setting of tariffs to prevent monopolistic behavior
- Encourage communication between port planners and regulators to determine if structural remedies are available

Decision Framework for Selecting Remedies



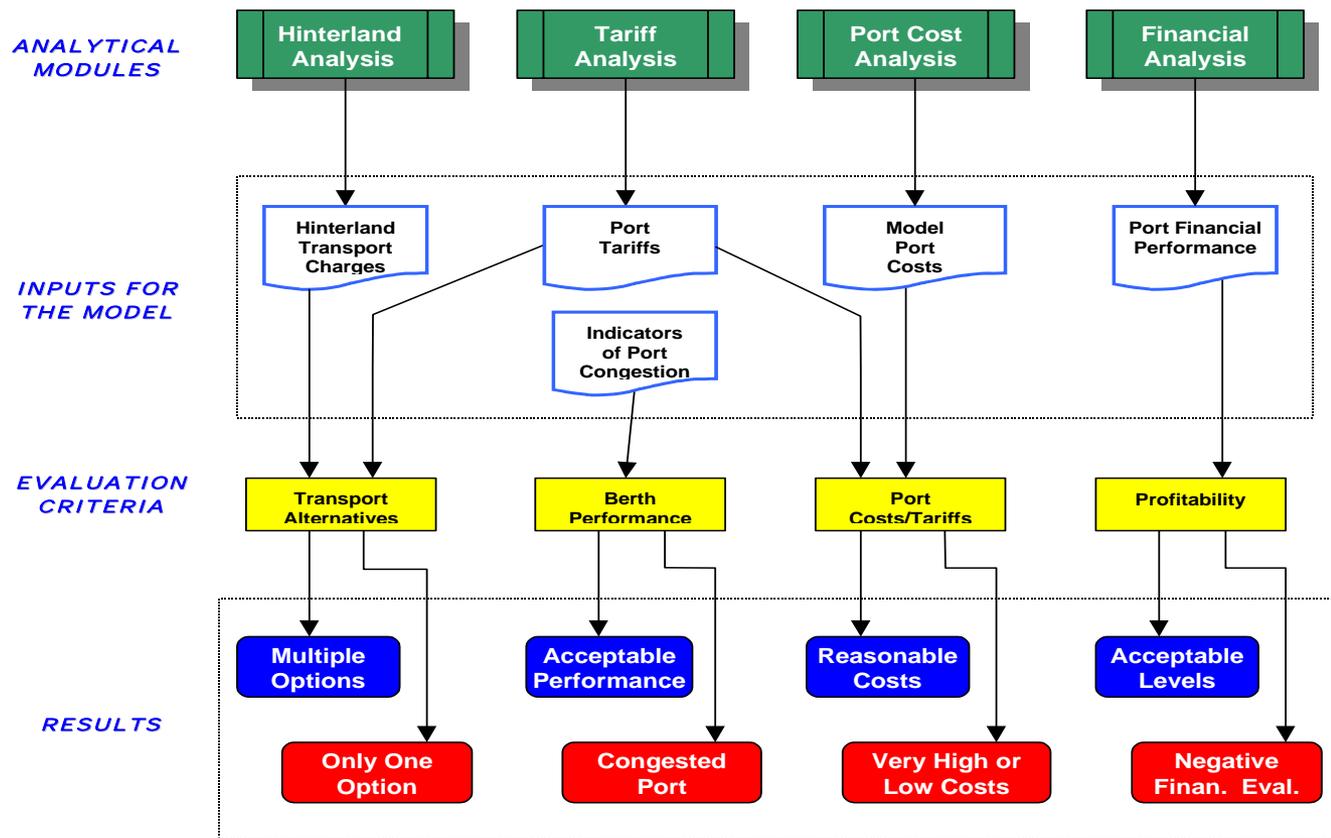
The Need for Competition Regulation

- In vast majority of cases, it is possible to induce competition
- Existence of competition suggests a “light-touch” regulatory approach – monitoring performance as opposed to setting tariffs

How do we regulate ports?

- Transport options : availability of other port-of-call options serving the same hinterlands
- Operational performance : ships waiting time, berth occupancy/utilization rates
- Tariff comparisons with historical rates, with rates at other ports in the same country and with theoretical rates based on “model port” costs
- Financial performance : financial profit should not be “abnormally” high. Return on equity and return on assets should be related to investment

Assessing extent of competition



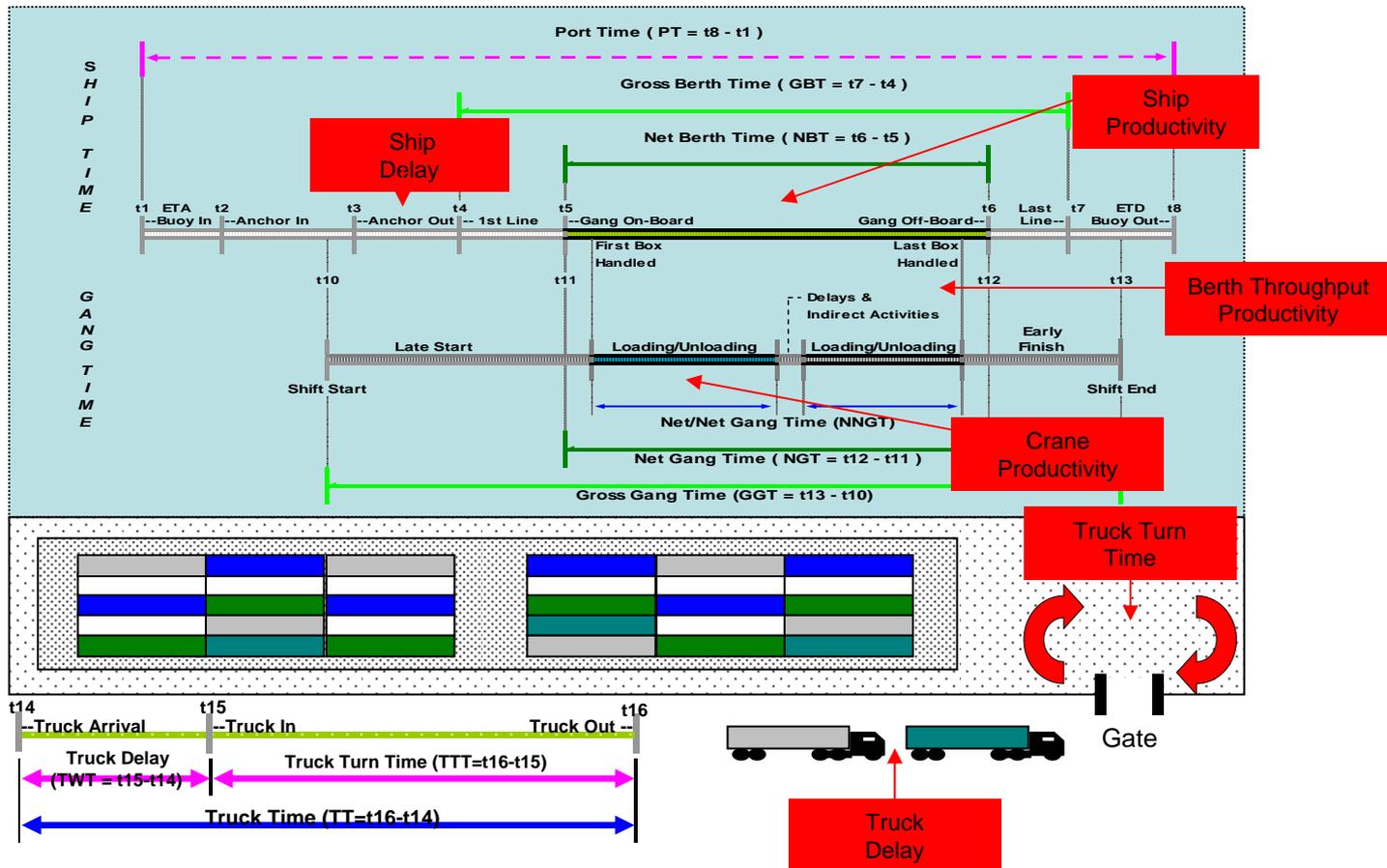
Source: Kent, Paul E. and Richard Blankfeld, *Port Reform Toolkit*, World Bank/Nathan Associates Inc., 2001 and Kent, Paul E., *Worldwide Port Privatization Experiences and the Development and Application of a Model to Monitor for Anticompetitive Behavior in Highly Concentrated Markets*, Doctoral Dissertation, Central Scientific Institute for Water Transport Economics and Operations, Moscow, Russia, 1999.

Relative importance of monitoring criteria

	Score Weight
◆ Transportation Options	60%
◆ weekly sailings	
◆ transport costs (land, port)	
◆ Operational Performance	10%
◆ berth utilization	
◆ ship's waiting	
◆ Tariff Comparison	20%
◆ port's historic rates	
◆ port cost differential	
◆ theoretical rates	
◆ Financial Performance	10%
◆ return on equity	
◆ return on assets	

Source: Kent, Paul E. and Richard Blankfeld, *Port Reform Toolkit*, World Bank/Nathan Associates Inc., 2001 and Kent, Paul E., *Worldwide Port Privatization Experiences and the Development and Application of a Model to Monitor for Anticompetitive Behavior in Highly Concentrated Markets*, Doctoral Dissertation, Central Scientific Institute for Water Transport Economics and Operations, Moscow, Russia, 1999.

Imposing performance criteria in concession contracts



How can USAID support efforts to improve port and logistics performance?

- Assist countries establish regulatory mechanisms to assure competitive behavior among port operators
- Assure that the ability to induce competition is adequately considered in the design of concession programs
- (Continue to) Promote development of corridor options
- Conduct diagnostics of logistics chains to assist countries and donors prioritize interventions and investments
- Train country planners and economists to conduct port and logistics analysis to establish benchmarks and monitor performance on periodic basis



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