Challenges of Developing a Logistics Hub

Dr. H. Donald Ratliff
Regents Professor of Logistics
Executive Director – Supply Chain & Logistics Institute

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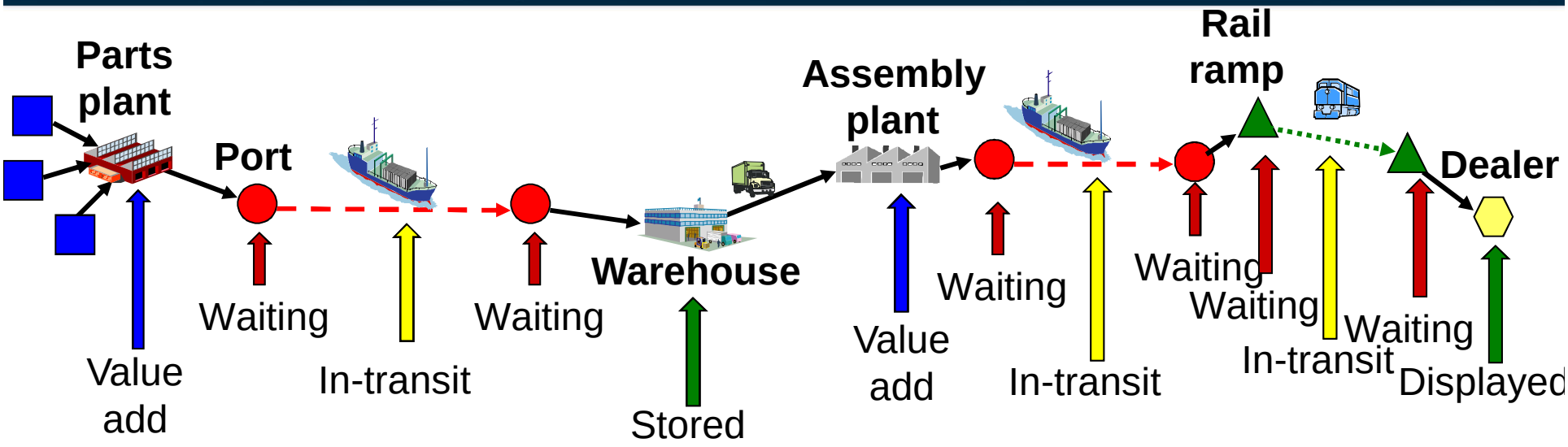
Global Supply Chains



- **Supply chains are not well understood or documented**
- **Base manufacturing, assembly and sales are often in different countries**
- **Competition among countries to be included in the chain is increasing**
- **Complexity and lack of standards make integration difficult**
- **Increasing fuel cost and lack of capital encourage shorter trade routes**
- **Shippers are increasingly relying on a "total landed cost" approach to making supply chain decisions**

Latin American Logistics and Trade

- **Poor logistics performance is a major impediment to trade growth in most of Latin America**
- **Each potential trade route must compete based on its cost, transit time and dependability**
- **Trade routes generally involve a combination of land and sea components or land and air components, serve multiple customers and products**
- **Countries have generally taken a "siloed" approach to investment and regulation that considers the components, customers and products independently**
- **Countries must base their policies and investments on a "supply chain" view of the network with a focus on assuring performance of the entire chain in order to increase trade**
- **Logistics hubs are a critical component of trade networks but not every location can be hub**
- **There is a need for methodologies and analytical tools to assess where countries should invest in their logistics networks**

Trade Network Performance Drivers

- **Geography**
- **Infrastructure**
- **Connectivity**
- **Transportation costs and time**
- **Trade movement requirements**
- **Shipping dependability**
- **Transport and trade regulations**

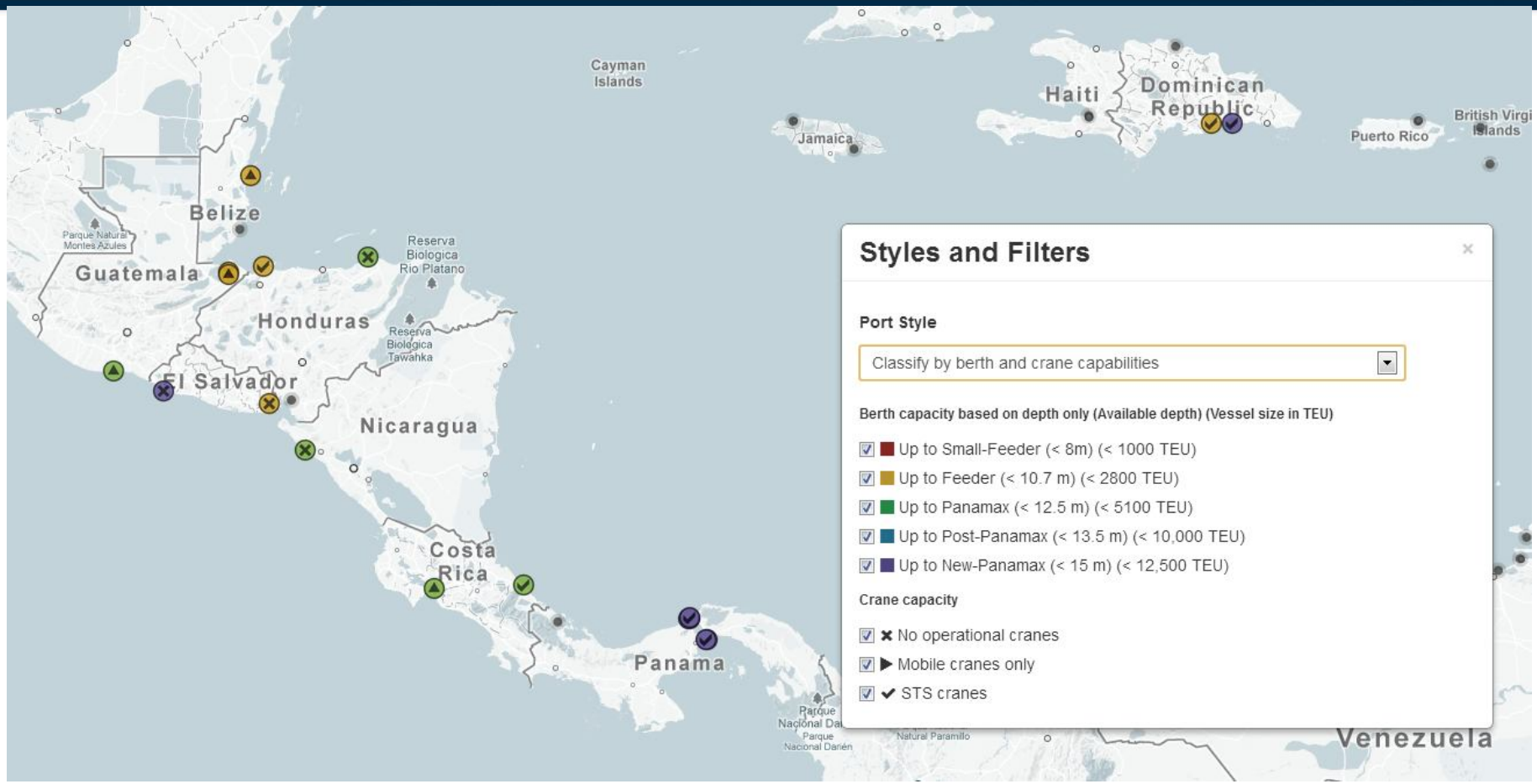
Geography

- **External geography**
  - Positioning of a country with regards to other countries
  - Locations of a country's points of connectivity such a ports and border crossings
  - Tendency for countries to trade more if they have good external geography
  - Changing external geography either impossible or very expensive (e.g., Panama Canal)
- **Internal geography**
  - Positioning of the points of generation and consumption of goods within a country relative to each other
  - Positioning of the points of generation and consumption of goods within a country relative to other countries
  - More flexibility in changing transportation times than distances

Infrastructure

- **Seaports and roads make up the main infrastructure for intermodal sea network**
- **Seaports are limited by depth, berth space, storage space and equipment**
- **Roads are limited by traffic**

Infrastructure



- **Of these ports only Panama and DR can handle new-panamax ships**

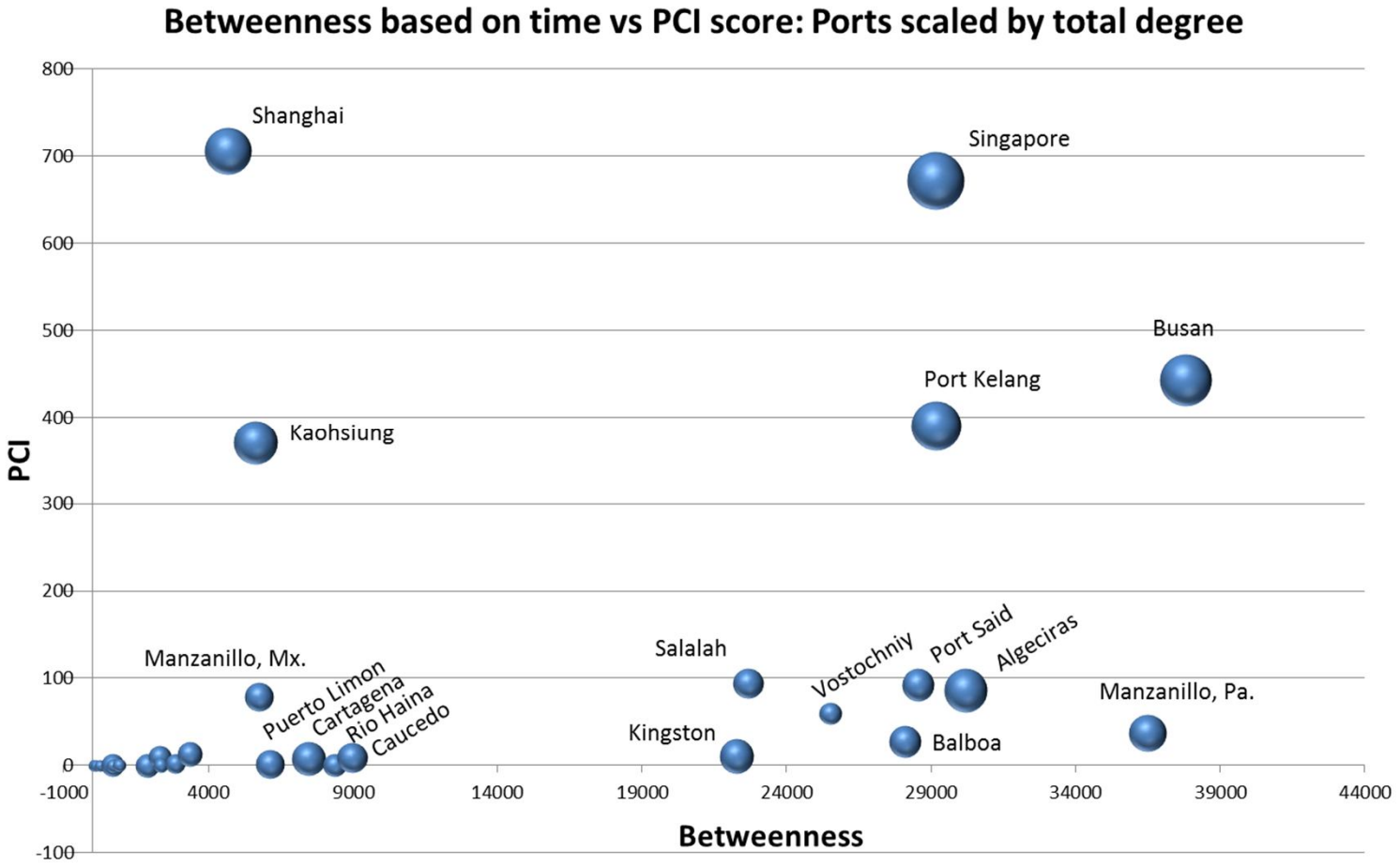
Connectivity

- **In order for infrastructure to provide value, shipping lines must actually use the infrastructure to provide transport services**
- **The "connectivity" of a port is the capability actually provided by shipping lines to move containers between the port and other ports in the world**
- **Two ports can be connected either directly or via transshipment**
- **Transshipment requires the cost of unloading and reloading the container**
- **Both seaports and airports are largely at the mercy of the carriers regarding connectivity**
- **Different levels of connectivity**

How does transshipment in Panama impact inventory?

- Potential
  - Fewer multi-stop routes
  - More frequency
  - Less in-transit time
- Particular opportunity for “big” ships

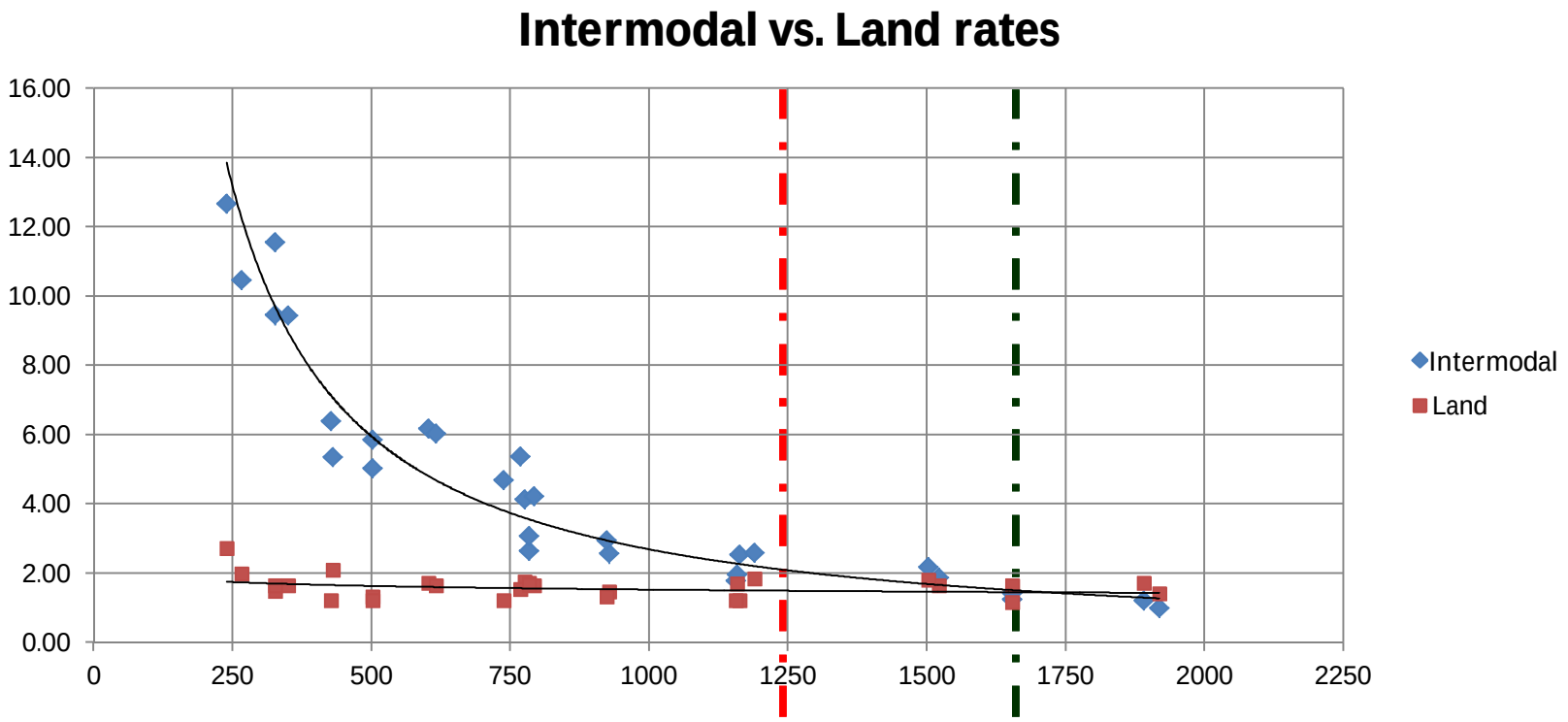
Measuring Connectivity Potential for Transshipment



Transportation Costs and Times

- **Direct cost of transportation and cost of inventory caused by transportation**
  - Transportation transit time causes in-transit inventory
  - Transit time variability causes safety inventory
- **Direct cost of sea versus land**
  - Sea is cheaper if the distance is sufficiently long
  - The cost of each container lift is about $200
  - Each sea shipment requires at least 2 container lifts
  - Transshipment requires 2 additional container lifts
  - Distance must be long enough to offset the lift cost

Intermodal vs. Land Cost for Central America Ports

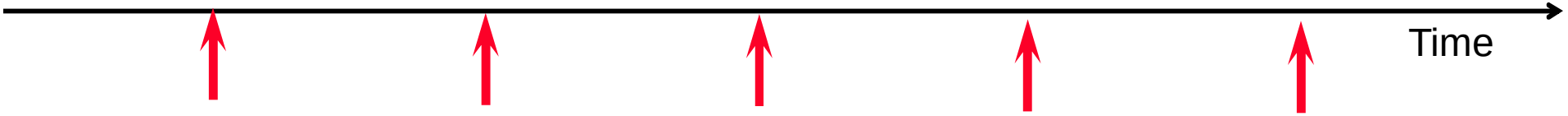


Inventory Cost

- **Value of a 40 ft container of product**
  - Typical Asia to US direct retail = $50,000
  - Furniture = $75,000
  - Small electronics = $300,000
  - Sport shoes = $1,500,000
- **Companies calculate inventory cost as a percent (8% - 20%) of inventory value**
  - A 40’ container of retail Asia/US direct = ($50,000*8%)/365 = $11/day
  - A 40’ container of sport shoes = ($1,500,000*8%)/365 = $329/day
- **Inventory requires capital**
  - Inventory appears on the balance sheet as a capital asset
  - When capital is hard to get companies are forced to reduce inventory

Impact of Frequency of Port Calls

- **Daily service Panama to New York transit time = 3 days**
- **Weekly service Panama to New York transit time = 3 days**
  - Max time = 10 days
  - Min time = 3 days
  - Ave time = 6.5 days
- **Weekly service adds 3.5 days average inventory**



Port call frequency

Trade Movement Requirements

- **What needs to be moved and when is critical to analysis of transportation networks**
- **Reasonably good data from customs regarding value and weight of trade between countries**
- **Generally not good data regarding container shipments between ports**
- **Generally not good data regarding shipments within countries**
- **InterAmerican Development Bank is developing "observatories" to address the data problem**
- **MesoAmerica observatory located in GT Panama Logistics Center**

Trade Movement Requirements using Montevideo?

- **Uruguay imports and exports**
- **Argentina, Brazil, Paraguay and Chile imports and exports**
- **Generally difficult to get adequate data for analysis**
- **Country to country trade data is available**
- **Port to port data is mostly not available**
- **Interamerican Development Bank is developing "observatories"**
- **Panama Center will house Mesoamerica observatory**

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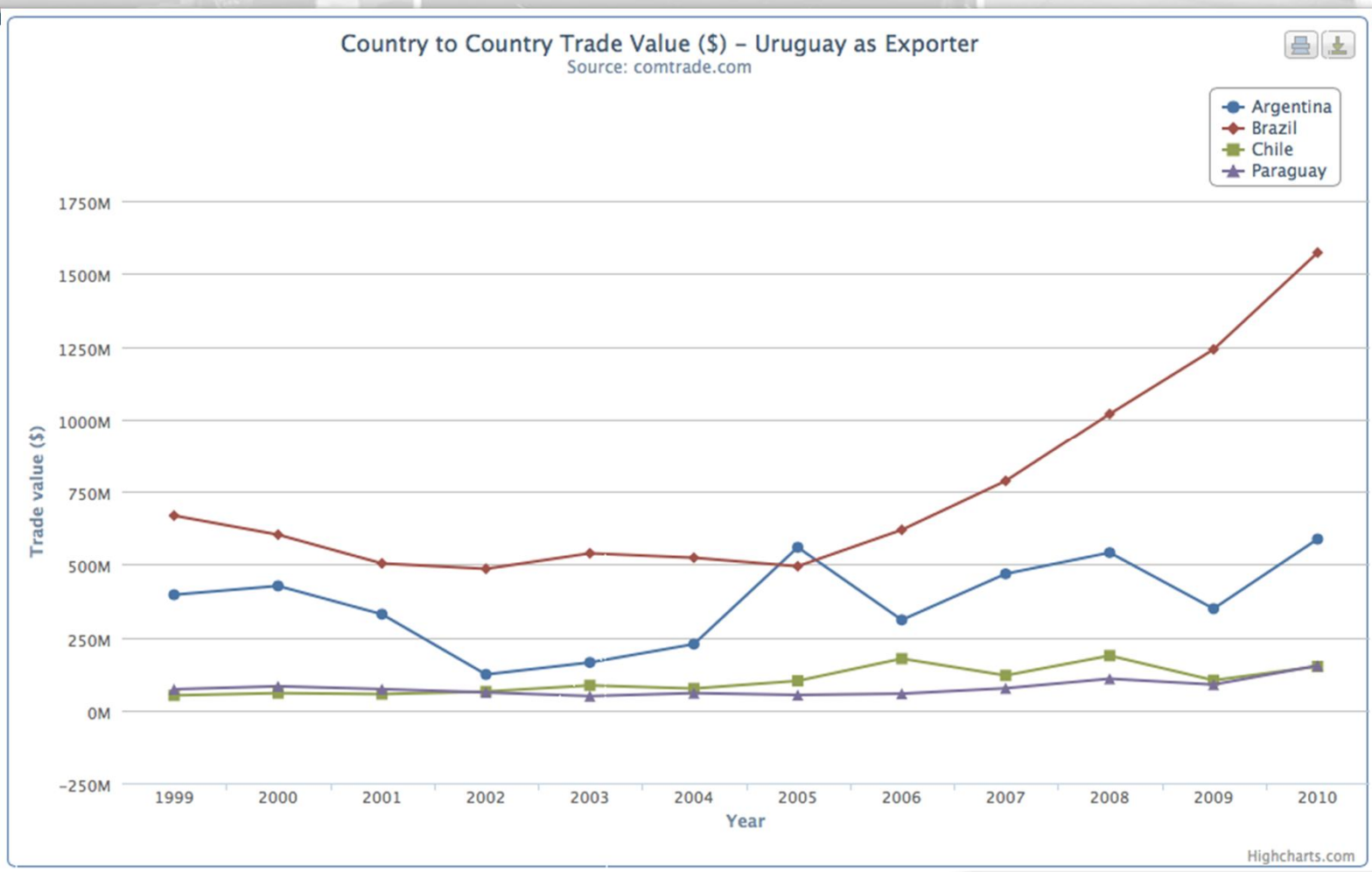
Uruguay Exports to Neighbors



- **Not sufficient for in-depth logistics analysis!**

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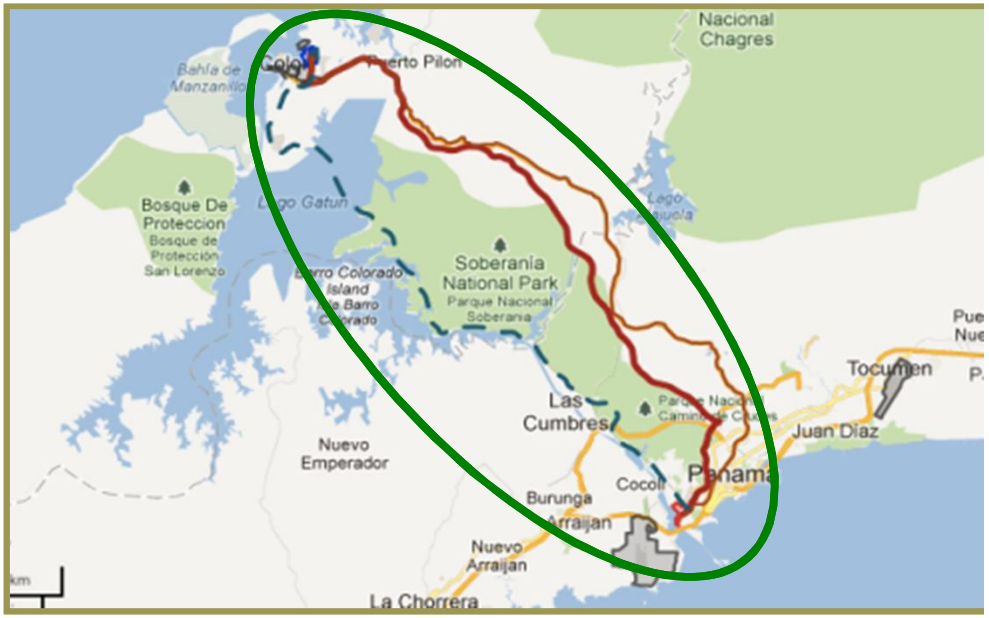
Shipping Dependability

- **Ideally a supply chain works like a conveyor belt**
- **Dependability of each node and link in the trade network is extremely important to shippers and carriers**
- **Variability in transit times requires shippers to carry inventory to protect against running out of product**
- **Whenever there is a disruption in the network, the impact cascades out from the point of disruption**
- **Transshipment points are particularly critical**

Example - Panama Disruption

- **Ideally Panama's ports function as a single port**
- **Port of Balboa is the largest container port in Latin America with about 2 million containers (3.2 million TEUs) handled in 2011**
- **About 93% of these containers are transshipped**
- **Balboa shut down for a few days in April 2012 due to labor problems**
- **On the worst day one carrier had more than 80,000 containers that had to be repositioned**
- **Effect cascaded**
- **Months to return to normal**



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Transport and Trade Regulations

- Customs
- Inspections
- Special economic zones

Keys to Successful Logistics Network Development

- **Analysis**
  - Geography
  - Infrastructure
  - Connectivity
  - Transportation costs and time
  - Trade movement requirements
  - Shipping dependability
  - Transport and trade regulations
- **Supply chain investment view**
  - All elements of the chain must perform well
- **Performance measures**
  - Transportation cost
  - Transit time
  - Dependability

Potential for Uruguay

- **Sea/land hub – Brazil, Argentina, Paraguay, Chile**
- **Other countries find Brazil and Argentina difficult to do business with**
- **Chile and Paraguay are transportation challenged**
- **Uruguay is an attractive location for expats**
- **Uruguay needs to be “supply chain” focused**
- **Uruguay needs to make an concrete value case for being a hub**

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