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INFRASTRUCTURE, SAFETY,
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Transportation, Freight Mobility and Ports in Megacities

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Logistics

- **Logistics is the art and science of managing and controlling the flow of goods, energy, information and other resources like products, services, and people, from the source of production to the marketplace.**
- **It involves the integration of information, transportation, inventory, warehousing, material handling, and packaging.**
- **Logistics is the geographical repositioning of raw materials, work in process, and finished inventories where required at the lowest cost possible.**

Historically

- **The ability to move people & goods efficiently has been associated with economic and political success**
 - **Ancient Sparta**
 - **Colonial US – Canals and later Railroads**
- **Development in countries of Asia**
- **Globalization has roles for private sector and government, which regulates and builds infrastructure**

Logistics Revolution in a Nutshell

- **Containerization**
- **Internet**
- **Physical Capacity Expansion in Rail, Highways, and Sea Shipping**

In combination, these lowered the cost of transportation as a factor in economic activity & made globalization a reality

Logistics Revolution

- We required warehouses to store all the ingredients for items to be manufactured or assembled
- We needed warehouses to store finished goods until they were shipped
- Ordered items came out of inventory at every stage of the process, or we waited



Advances in Logistics have

- **Reduced costs of shipping goods**
- **Reduced time to receive needed goods and services**
- **Increased the reliability of deliveries**
- **Resulting in**
 - **“Just in time delivery” instead of storage**
 - **Computer control to make products to order**
 - **Growth in demand as prices and costs decline**

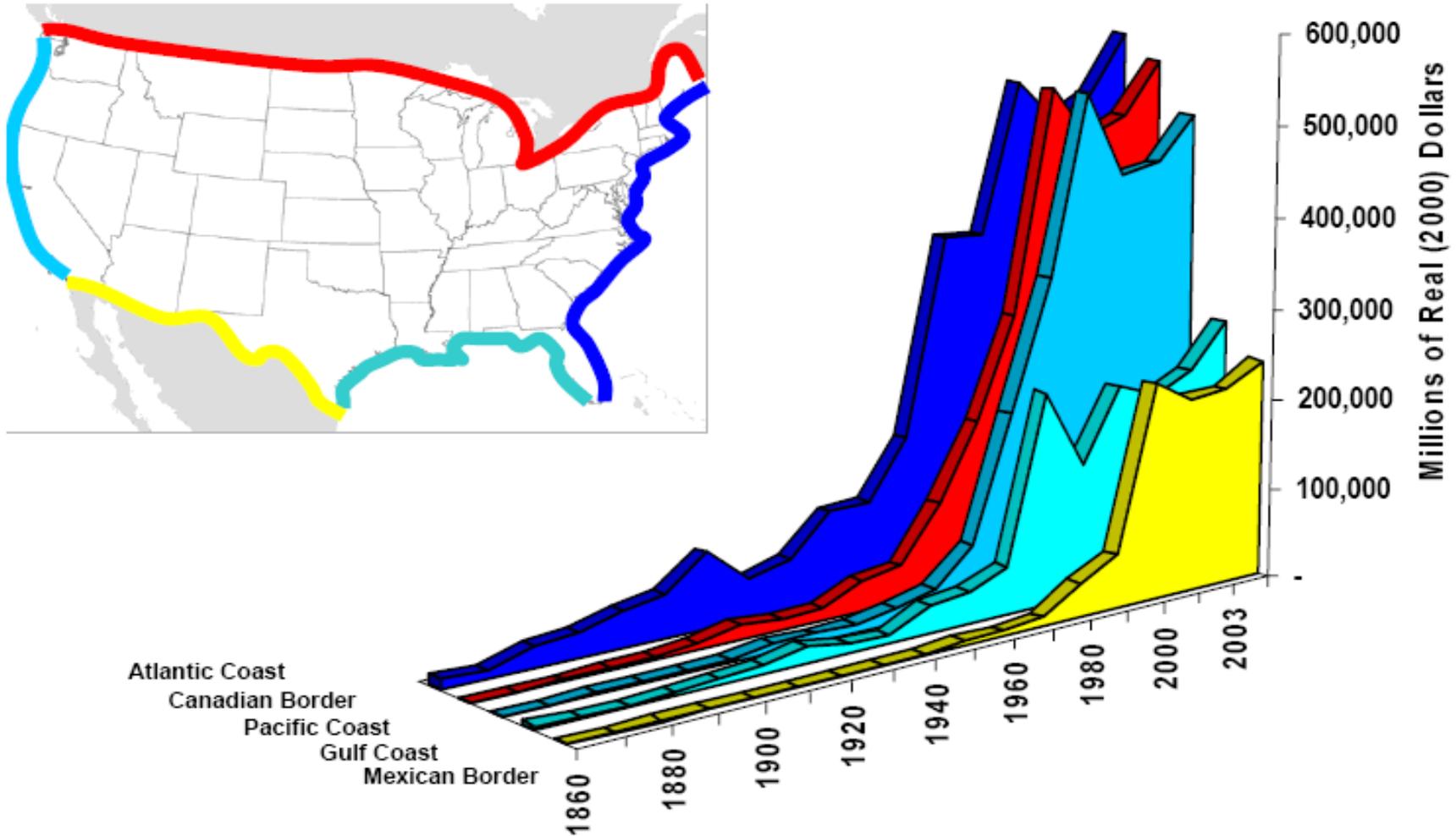
Logistics Revolution has made Megacities Possible and Created Enormous Opportunities and Challenges

- **Megacities of tens of millions of people require material flows made possible by logistics revolution: cheap, reliable, steady**
- **Logistics revolution created points of growth like the ports of LA and LB that are economic opportunities and environmental and social challenges**
- **Logistics revolution encourages the creation of megacities around the globe & brings rural migrants to logistics hubs in pursuit of economic opportunity**

US Shipping and Logistics

- **\$1.6 trillion dollar industry**
- **About 10% of all American industry and growing**
- **Connected to every other sector of the economy**
- **Productivity still growing rapidly**
 - **Ton miles of freight shipped per dollar of GDP declined by 35.3% from 1970 to 2002**
 - **Volumes of shipments expected to grow by 70% from 2000 to 2020**

Growth of US Trade by Border Region

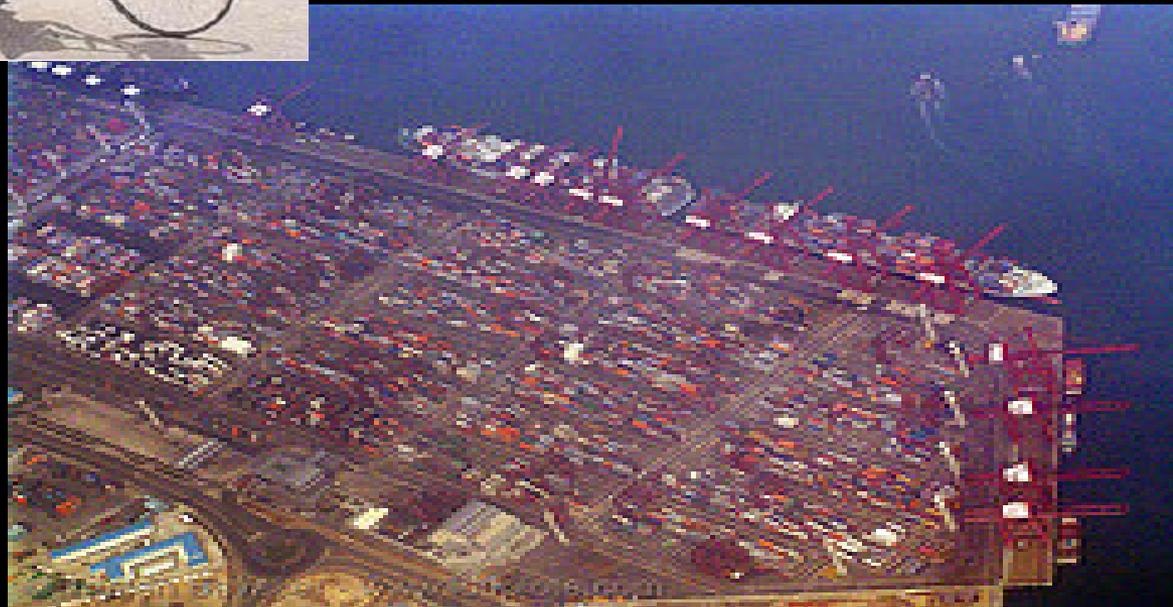


Growth More Dramatic in Rapidly Growing Economies

- **China investing \$45 billion per year in infrastructure**
 - **168 miles of freeways in 1989**
 - **18,500 miles by 2003**
 - **51,000 miles by 2008**

Growth is worldwide; and still accelerating most rapidly in Asia

Developing Countries are “Leapfrogging”



Looking at Los Angeles Region

- **Port of LA/LB imports 45-50% of all US imported containers**
 - **77% leave the state; half by train and half by truck**
 - **23% bound for Southern CA**
- **Growth rate in 2006 was 11%; one year's growth in LA/Long Beach port volume was equal to 75% of entire volume of Port of Oakland**



What does this mean for the future?

- **A huge demand for trained, qualified personnel; shortages anticipated**
- **One of the fastest growing sectors for employment at all skill levels**
- **Huge demand for land for logistics operations**
 - **Manufacturers**
 - **Shippers**
 - **Shipping Lines, Railroads, Trucking Companies**
 - **Terminal Operators**
 - **Manufacturers of Equipment**

Megacities Present Enormous Challenges

- **Manuel Castells: Conflicts between “spaces of flows” and “spaces of places.” Cities are both & these roles are in constant tension**
- **Great dependence upon nodes of intense economic activity like ports and airports that spin off environmental and social costs to nearby local communities.**
- **Economic power of the global economy is hard to resist in favor of more local oriented planning for livable and healthful communities**

Trends in National Transportation Policy

- **Growing congestion; capacity needs due in part to internationalization of travel and logistics**
- **Fundamental relationship to national economic growth; yet there is devolution of responsibility for infrastructure to local level**
- **Local governments are cash starved and turn to international capital, further weakening local communities**
- **Environmental sustainability brings struggles by local communities; but they must in the end compromise for their economic survival**

Largest growth in travel in biggest cities

- **Related to trade, tourism, convention and business travel**
- **Heavily reliant on forms of transportation that differ from city residents: air travel; central city public transit; taxis**
- **In many cities the largest recent public works projects are airport expansions and rail extensions to airports**

Community Concerns Growing

- **More than 50% of regional air pollution comes from goods movement at port**
- **Recent findings that the highest incidence of cancers related to proximity to highways and rail lines; diesel emissions critical**
- **Pressure to increase port operations to 24/7 have created almost hysterical reactions on the part of nearby communities (lawsuits, vicious demonstrations)**
- **Port administrators are realistic since communities have votes and tenants do not; yet tenants are very demanding and threaten very economic wellbeing of the community by threatening to leave LA and take jobs with them**
- **Mayor becomes “agent” for foreign companies and seeks capital investment in LA while pacifying rather than serving local communities.**



Research Opportunities

- **Understanding leapfrog growth in cities that are developing rapidly; labor market, social, economic, environmental consequences**
- **Using new technology and capital investment to better integrate sea capacity, air capacity and ground transportation networks to enhance efficiency to allow passenger and goods movement in increasingly constrained urban spaces**
- **Infrastructure finance that reduces the burden on local governments & citizens without driving out international business opportunities**

Research Opportunities

- **Finding better ways to balance economic growth with environmental and social impacts of globalization, especially energy & greenhouse concerns**
- **Improving planning methods to adequately address goods movement and impacts of travel by non-residents who are an increasing share of those in our midst**
- **Methods that address volatility in economic conditions and uncertainty in demand and in energy scenarios. e.g. : robust decision making**

Get Busy: The Future is arriving now
THANK YOU!

**ITS TIME FOR YOUR QUESTIONS AND
COMMENTS**

