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HOW GLOBAL TRADE AND TRANSPORTATION TRENDS IMPACT AMERICA'S TRANSPORTATION INFRASTRUCTURE: CAN SHIPPERS COPE?

It is more than likely that we have all bought a product that has been manufactured outside of the United States. The inbound flow of lower-priced products manufactured overseas into the US market has grown tremendously and will continue to do so. As a result, the US transportation infrastructure at ports, on the rails, in the air, and on highways is being challenged.

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EXECUTIVE SUMMARY

It is more than likely that we have all bought a product that has been manufactured outside of the United States. The inbound flow of lower-priced products manufactured overseas into the US market has grown tremendously and will continue to do so. As a result, the US transportation infrastructure at ports, on the rails, in the air, and on highways is being challenged.

We have all experienced increased security at airports as a result of September 11, 2001. Additional security procedures are being followed, enacted, or proposed in regard to cargo coming into the United States. The increase of inbound product to the US, added security measures, and increased traffic on the nation's roads due to normal economic growth have forced businesses and governments to take a new look at how to plan for the future.

This issue of *CSCMP Explores…* starts with the larger, macro picture to discuss the trends and issues in global trade, then moves to trends in global transportation, and then covers US transportation trends and issues and how they are directly affected by the global trends. Issues of significance to the US infrastructure, including maintenance and funding, will also be addressed.

Next, this publication will address what three of the major stakeholder groups in the US (government, logistics service providers, and shippers) are doing or can do to mitigate any negative effects resulting from transportation infrastructure challenges and trade trends—and how stakeholders might leverage some opportunities. Our goal is to provide you, as participants in a global supply chain, the tools and information necessary to enable you to better plan for and operate in the new climate of increased trade.

All predictions are that global trade will continue to increase at a fast pace; therefore, it will benefit all businesses which currently participate in global supply chains or plan on participating, to get involved in helping frame the environment in which they participate. It is up to us—the participants in the global business community—to educate our legislators, business leaders, and the general public on how to best leverage the opportunities in global trade by ensuring the strength and vitality of the US transportation infrastructure, while also addressing stakeholders' other interests (particularly security and environmental concerns).

ISSUES AND TRENDS IN GLOBAL TRADE

Global Trade Growth

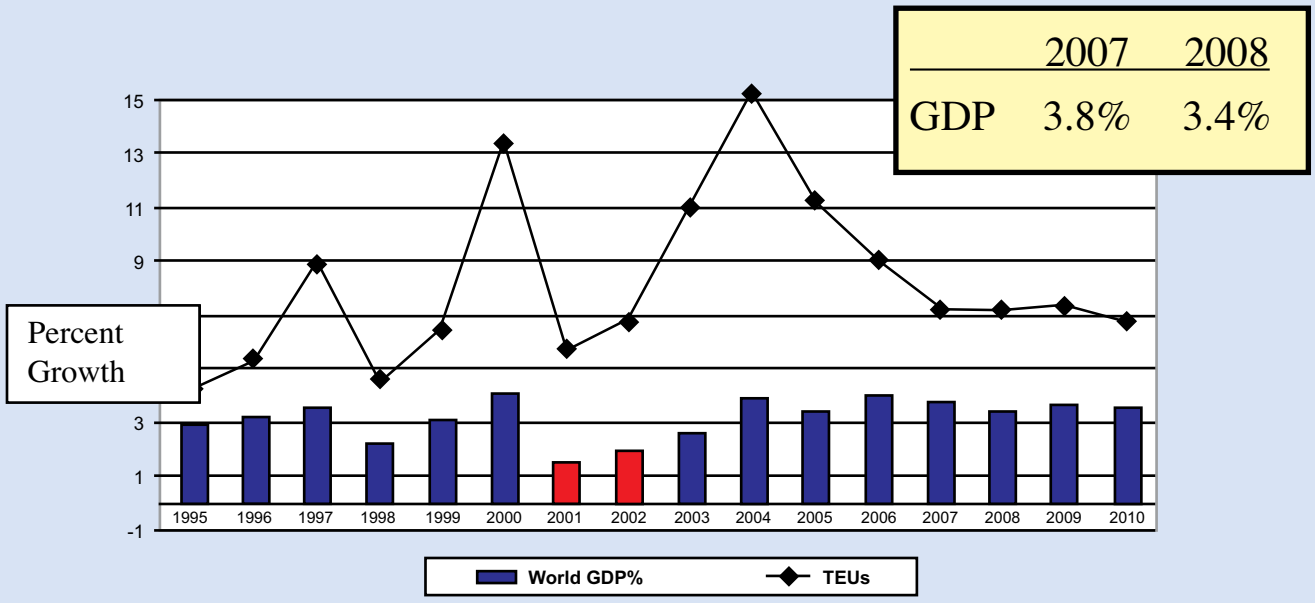
The shrinking of the globe via technology and transportation has changed how business is conducted globally. Significant economic growth extends across the global economy in general. The output of the global economy is expected to rise from $35 trillion in 2005 to $72 trillion (at constant market exchange rates and prices) in 2030, an average annual increase of 3%.[1]

Trade growth has been aided by the sourcing of products and materials from the lowest cost producers, resulting in significantly increased imports and exports across all continents. In addition, the growth of developing economies and the resulting desire of consumers and businesses in these countries for new products and innovations has added to the volume of products shipped.

There is strong growth in global Gross Domestic Product (GDP) with container trade growth projected to be even bigger as international trade grows even faster (see Figure 1). Thus, while global GDP increased 4.0% in 2006 and 3.5% in 2007,[2] container trade grew 9.6% in 2006 and 8.9% in 2007. Ocean container volume is expected to double from 60 million twenty-foot equivalent units (TEUs) in 2000 to almost 120 million TEUs in 2010 and increase to approximately 200 million in 2020.[3]

As a result of increased trade, the transportation infrastructure across the globe, and particularly in the US, is already being tested and will be further challenged in the years to come.

Figure 1: World Container Growth (Twenty-Foot Equivalent Units or TEUs) Versus World Gross Domestic Product (GDP) Growth



Source: Global Insight, 2008

Containerized trade movements are expected to increase at a 6.7% compound annual growth rate (CAGR) from 2008 to 2015.[4] The authors will cover how these increases in economic growth and global trade will likely impact transportation strategy, service, and cost. One of the impacts of this significant increase in trade is that, globally, in a recent quarter, only 46% of container vessels arrived at ports on time—the lowest level on record.[5] Therefore, service for shippers is worse and lead times are now longer.

Major Global Growth Economies

Trade growth is more rapid in developing countries and regions than in developed countries, although absolute levels of exports and imports are still dominated by developed countries, with the exception of China.

Asia

One-third of total world container trade is now intra-Asian, and it has the highest compound annual growth rate (CAGR) among all regions. Estimates for 2008 container trade are 29.3 million TEUs to be shipped in the intra-Asia trade as compared with 24.6 in the Transpacific, 22.3 in the Asia-Europe trade, and 9.9 million in the Transatlantic.[6] China is the dominant player with respect to recent increases in global commerce, driving much of the resulting transportation capacity stress and influencing other global infrastructure issues. In the intra-Asia trade, China is the biggest consumer of raw materials as well as the largest exporter of finished goods.

India is also a major factor in global growth. Its GDP grew 8% with only a 1.5% increase in population. In addition, its TEU trade growth is projected at 8% per year through 2010.[7] Though the export machines of Asian countries such as India and Vietnam are becoming more robust, their growth is still outdistanced by China's for a variety of reasons, which include constrained transportation infrastructure and the need for government and private sector approval for expansion. The export volume disparity between China and other Asian countries and many other regions around the world is even more dramatic.

North America

The US, Canada, and Mexico are significant players in world trade, with the US having the largest GDP of any country in the world.[8] However, real GDP growth in these three North American Free Trade Agreement (NAFTA) countries is predicted to hover around 2% until 2009. In general, the developed economies are growing at about 1/3 the pace of developing regions.[9]

The opportunity for improvement in transportation infrastructure is significant in Mexico and, as a result, the country is trying to upgrade its capabilities. Improved infrastructure will enable a greater capacity for trade growth. As neighbors to the country with the largest GDP, Mexico and Canada will continue to be significant players. US trade with Mexico is stronger than trade between the US and other Latin American countries.[10]

Latin America and the Caribbean

Imports from Latin America to the US declined in recent years after posting double-digit growth for several years. The weak US dollar contributed to a moderate increase in exports from the US to Latin America, and this trend should continue as Latin American economies strengthen. The dollar is predicted to weaken through mid-2008 which should continue to drive an increase in total US exports to this and other regions.[11] Some commodity sectors continue to be strong including refrigerated produce from Chile and Brazil. The tradelane between the US and Latin America/the Caribbean continues to be imbalanced, with the northbound route being the dominant headhaul for ocean carriers, since imports from Latin America still outnumber US exports by two to one. Experts remain bullish about the growth in trade between the US and Latin America and predict that the annual growth rate of Latin American economies will increase four to six percent in the next few years, even though the growth across countries will be inconsistent.[12]

Europe

The economies of the European countries, as a whole, are relatively slow-growing but still very large. So while economic growth in the European Union (EU) has slowed in the last couple of years, EU demand for goods will continue to be strong. Trade between the US and Europe is robust. Between 2000 and 2005, over half of the US foreign direct investment went to Europe and 75% of direct investment in the US was made by European companies.[13]

Africa

Africa has significant potential for growth in the future. However, there are several obstacles to the continent playing a larger role in global commerce and shipping, including difficulties in intra-African trade. These internal barriers have to first be overcome in order to allow inter-African trade to grow.[14]

Production Outsourcing

Production outsourcing is here to stay. The voracious appetite of countries around the world for inexpensive consumer goods requires fast and efficient supply chains. Companies are continually in search of the lowest cost producers for their materials and goods. In addition, comparatively high production costs in the US and other, more developed countries ensure import volume will continue to increase in these countries—though year-to-year growth levels will vary. In light of recent product safety issues, costs might increase for improved safety precautions.

In addition, production costs in China and other developing countries will increase over time but the current differential in labor costs between China and fully-developed countries is still significant. Furthermore, with some of the constraints and issues in global and US transportation that will be discussed in the coming sections, transportation and inventory costs and risks associated with offshore production have been increasing. Companies need to consider all of these costs when making their outsourcing decisions.

ISSUES AND TRENDS IN GLOBAL TRANSPORTATION

Larger Vessels

The size of container vessels continues to increase because ship operators are highly motivated to take advantage of the lowest possible per-slot operating costs. Only a few years ago, an 8,000 TEU vessel was considered very large. Today, many ocean carriers have introduced post-Panamax ships (greater than 4,500 TEUs that cannot traverse the Panama Canal) in the 10,000 to 12,000 TEU range into their vessel rotations, particularly in the Asia-Europe trade.

There are only a few North American ports with drafts deep enough to cater to these megaships including Long Beach and Los Angeles in California, Tacoma in Washington State, and Vancouver and Prince Rupert (British Columbia) in Canada. Amazingly enough, vessels in the 16,000 TEU range are being designed. The World Shipping Council estimates that by 2011, over 50% of the global containership fleet will consist of ships larger than 5,000 TEUs.[15]

Though megaships are economical for vessel operators when fully-laddened, they do present challenges to ports, terminal operators, the highway system, and railroads because they discharge so many containers during their three to four day berthing time compared with smaller ships. Normal processing and unloading times can lengthen—particularly during the summer and fall peak season—thereby increasing the lead times for the goods being moved.

Ocean Carrier Consolidation

In the past few years, acquisitions and mergers in the ocean carrier industry have been a regular occurrence. These mergers and acquisitions have led to a temporary decline in ocean carrier earnings, as combining operations has been more difficult than expected.[16] An end result might be higher rates; however, higher rates might not result with fewer providers because carriers set rate levels based on multiple factors including trade capacity, supply, demand, and their interest in buying market share.

Fuel Price Changes

As we are acutely aware, the price of fuel has escalated dramatically for all modes of transport. In fact, it has tripled in the last seven years.[17] Experts do not forecast a return to moderate price levels in the foreseeable future. Yet despite higher prices, the global demand for fuel is increasing due to rapid economic growth in large, developing economies such as China and India. This is particularly fed by the proliferation of increased manufacturing in China, the commerce and transportation which results, and the growth of personal automobiles in countries with emerging consumer populations (such as China and India).

Highway usage in developed countries will also continue to increase. Global population growth and the increase in international trade will contribute to higher demand for all types of fuel to feed the multimodal global transportation system. Additionally, with the growth in trade and population, traffic congestion has worsened, thereby further increasing fuel usage.

Panama Canal Constraints

The Panama Canal is quickly approaching full capacity. Vessel operators require service regularity to meet their published transit schedules. With the increased number of vessels transiting the canal, the Panama Canal Authority is less able to grant many of the transit bookings requested.[18] When canal slots are not available, vessels must wait and overall voyage transit time is increased, thus increasing vessel operation costs.

The Panamanian citizens overwhelmingly approved a referendum in late 2006 to expand the locks to double their current size at the projected cost of $5.25 billion. Once the project is finished, the Panama Canal will be poised to handle ships much larger than those handled today. Whereas the existing locks will accommodate ships that are 965 feet long with a beam of 106 feet drawing 39.5 feet of water, the new locks will accommodate ships that are 1,200 feet long with a beam of 160 feet drawing 50 feet of water. The largest containerships transiting the canal today carry around 4,500 TEUs. The new locks and channels will allow containerships carrying about 12,000 TEUs to make the crossing.[19]

But relief for ship operators and shippers will be slow in coming as this project is not expected to be completed until around 2015, even though construction began in 2007. To finance construction, in 2006 the Panama Canal Authority began raising the tolls it charges ship operators and announced substantial, future, periodic toll increases.[20] These costs may be passed on to shippers, potentially resulting in higher consumer prices. In summary, the increased capacity of the Panama Canal will allow more all-water service from Asia to the eastern US, requiring capacity expansion at US East Coast ports.

Airfreight Issues

Worldwide demand for airfreight continues to be strong as more fashionable and fast-moving consumer goods become perishable in nature. Cargo space in passenger aircraft is limited and dedicated freighter aircraft are fully utilized, particularly during peak season—despite the high rates.

In regard to capacity, the US hasn't added much airline infrastructure capacity. Denver International Airport was the last new major airport built, and few airports have the space to expand or add runways. Many airports such as Chicago O'Hare and the New York area airports operate at capacity or near-capacity—and weather issues and other factors often wreak havoc on schedules. While airfreight is an important part of global and US trade, the volumes are only a small percentage of the import volumes arriving into the country.

Non-US Port Infrastructure Expansion

There is sustained economic growth around the world, but several regions/countries are dominating the growth. This growth of global capacity and increased trade (both imports and exports) will impact the infrastructure of the US as it continues to do business with these countries. Better transportation enables more trade.

Asia

Countries around the world are trying to capitalize on the growth in international trade and gain revenue to boost their economies, using port expansion to help fuel the growth. China is far and away the leader in this quest for market share, having built or expanded numerous ports and terminals in the past ten years. According to the Xinhua News Agency, China is aiming to increase its port capacity by 80% by 2010.[21]

Hong Kong has for years been the mighty Asian engine, always neck-and-neck with Singapore for the top spot in the global port rankings. Today, other ports in China are hot on Hong Kong's heels, which now ranks fourth in the world.[22] The pace of expansion is not expected to slacken. China does not have the land use issues or environmental concerns to the extent found in the US and many other developed economies. Economic development in China continues to trump such issues leading to continued, rapid infrastructure expansion. However, there is growing recognition from the Chinese government that, in the future, environmental issues will need to be addressed.

India and Vietnam are also making haste to improve their outdated port and landside infrastructure. Both countries are in the midst of aggressive expansion plans, which are sorely needed to keep pace with the anticipated rapid growth in exports. Foreign direct investment in both countries is increasing.

Ocean carriers are adding vessel calls at Indian ports at a healthy pace. It has been predicted that by 2012, India's container terminal handling capacity will more than double, rising from an estimated 6 million TEUs in 2004 to 15.2 million TEUs in 2012.[23]

Since Vietnam's accession to the World Trade Organization (WTO) in late 2006, the Vietnamese government has been busy making deals with foreign marine terminal operators. In addition, the government is planning to build or expand eight ports to handle containers, tankers, and bulk products.[24]

Mexico

Mexico has the capability to possibly alleviate some of the US port capacity issue. The Mexican government announced it would invest $7 billion to build four new ports and upgrade and expand 22 port facilities as part of President Felipe Calderon's $250 billion national infrastructure development plan for 2007-2012.[25]

Europe

Europe has 471 ports across all countries, dominated by the top three in Rotterdam, Antwerp, and Hamburg.[26] Ron Widdows, CEO of Singapore-based APL, says that Europe in particular, must find a means for rail transport to play a larger role as economies continue to grow. Trucks in the EU continue to be the primary mode for inland transportation in an area where congestion is already an issue.[27]

With the global aspects of trade and transportation as background, it's now important to focus on particular issues of note in US transportation.

ISSUES AND TRENDS IN US TRANSPORTATION

Projected US Import Growth

Experts have been predicting that imports to the US will double by 2020, if not sooner. As mentioned, the trend towards outsourcing to foreign countries (particularly China) has fueled the dramatic rise in imports during the past ten years. China has become the world's manufacturer. Imports from China are projected to grow from one-third of total US imports in 2000 to one-half in 2014.[28] Americans have been trained to expect wide product choices at low prices—what is also called the Wal-Mart effect.[29]

World and US shippers must continue to ensure that the price/quality/service tradeoffs are still worth the potential risks of sourcing from China. This includes longer lead times, shipping capacity issues, and safety concerns. Most companies already source from multiple countries providing redundancy and alternatives in their supply chains.

Congestion

Growth in international trade and continued US GDP growth, coupled with a lack of expansion of US transportation capacities, has resulted in significant congestion particularly around big cities. In the last twenty years, the average number of hours lost by drivers stuck in traffic per year in the 85 largest US cities has increased from 16 to 47 hours.[30] Los Angeles has the worst congestion with the average commuter being delayed 72 hours per year.[31] Therefore, on average over a full work week per year per person is wasted stuck in traffic. The estimated cost for this inefficiency is in the $200 billion per year range. In the ten most congested cities, each driver pays a "congestion tax" of between $850 and $1,600 per year in lost time and fuel.[32]

Congestion, infrastructure maintenance, and security issues have resulted in and will continue to spawn new laws in particular geographic areas. As an example, due to commuter congestion, the city of Atlanta doesn't allow freight trucks to drive through the city center unless there is a drop-off or pick-up within the city limits. Other US cities, including New York City, have imposed or are considering imposing restrictions on deliveries to help reduce congestion.

Supply Chain Security

Federal Regulation

Federal government regulation has a significant and growing impact on US businesses and the transportation industry. Obviously, the federal government has dramatically intensified its scrutiny of supply chains since 9/11. Recent laws and initiatives relating to supply chain security that have impacted shippers include:

- **Container Security Initiative (CSI) [2002]**
  Customs and Border Protection (CBP) established the CSI, a program designed to increase security for containerized cargo shipped to the US. CBP has evaluated and accepted fifty-eight ports around the world as CSI members, and has positioned CBP inspectors in those ports to work alongside the foreign customs agents. These inspectors and agents work together to screen shipments in advance and inspect high-risk containers and cargo prior to loading on vessels. CBP intends to cap the CSI program soon, since already close to 90% of the cargo imported into the US is exported through CSI participating ports.[33]

- **Customs—Trade Partnership Against Terrorism (C-TPAT) [2002]**

  A key element in CBP's layered defense strategy, C-TPAT was established as a voluntary program to move America's borders outwards. It works by enlisting the support of importers willing to work internally and with their supply chain partners to increase the security of their supply chains. In exchange for their efforts, CBP extends certain benefits to importers, including reduced cargo inspections. The initiative was subsequently extended to ocean carriers, non-vessel owning common carriers (NVOCCs), freight forwarders, transportation intermediaries, ports and terminal operators, airfreight forwarders, rail operators, customs brokers, trucking companies engaged in cross-border transportation, and a limited number of foreign manufacturers in Mexico and Canada. There are currently over 7,400 C-TPAT members, and membership continues to grow.

- **24-Hour Rule [2003]**

  CBP established the 24-Hour Rule, which requires ocean carriers and NVOCCs to electronically provide CBP with detailed descriptions of the contents of ocean containers bound for the US at least 24 hours before a container is loaded on board a vessel in a foreign port. This enables CBP officers to analyze the cargo information and identify potential terrorist threats before the US-bound container is loaded at the foreign port. CBP worked with the Commercial Operations Advisory Committee (COAC) to develop a list of ten additional advance cargo data elements from importers and two data elements from ocean carriers (commonly known as 10+2), that CBP wants prior to cargo loading at origin port to better assist in the risk assessment process. These data elements are purchase-order related in nature (e.g., name and address of the overseas manufacturer, seller's name and address, consignee and country of origin) and are expected to be adopted by the end of 2007.[34] Rules similar to the 24-Hour Rule are also in place for airfreight and cargo entering the US by truck and rail.

- **Security and Accountability for Every Port Act (SAFE) [2006]**

  Signed by President Bush on October 27, 2006, SAFE calls for minimum security standards for containers—including container security device specifications—which Congress will allow the Department of Homeland Security (DHS) to determine. Deadlines for container security rules, the Transportation Worker Identification Credential (TWIC) program, and installation of radiation

detectors at the 22 largest US ports were set for the end of 2007. TWIC (full implementation by April 2009) requires personnel at ports to be credentialed. This requires a background check and a license fee for each worker.[35]

DHS is required to establish protocols for resuming trade in the event of a terrorist attack, with preference given to cargo and vessels linked to the C-TPAT and CSI programs.[36] DHS is required to issue regulations within one year to collect shipping data—including entry-type data—in advance of vessel loading at origin. Moreover, CBP is instructed to establish a pilot program to use third-party validators to validate certified C-TPAT members. The act establishes the Office of Cargo Security Policy to coordinate policy, procedures, and regulations within DHS and its agencies. The act establishes a Joint Operations Center to coordinate regional responses to a terrorist incident, high threat level, or natural disaster. Congress instructed DHS to go forward with pilot projects to test the real world capability of inspecting 100% of containers arriving via truck at three foreign ports using integrated radiation detection and imaging machines at entry gates.

- **Improving America's Security Act [2007]**

  Despite criticism by foreign governments and intense lobbying against the bill by American businesses, associations, and even the Department of Homeland Security (DHS) and Customs and Border Protection (CBP), the US Congress approved the Act and the President signed it on August 3, 2007.[37] This legislation codified some of the recommendations of the 9/11 Commission, but went even further by mandating scanning of 100% of imported containers by nonintrusive imaging equipment and radiation detection equipment at the foreign port by July 1, 2012. Foreign governments are pushing back on this due to the space, resource needs, and costs on their end. In addition, some countries feel their sovereignty is being challenged by this Act's forced compliance requirement.

  Extensions can be granted in two-year increments by the DHS Secretary for a variety of reasons, including if the scanning systems are not available or have high rates of false alarms. However, DHS and CBP officials have publicly questioned the feasibility and value of 100% scanning because they are already using a risk-based methodology that has been successful to date.[38] This Act also requires the DHS to implement cargo screening on passenger planes within three years. Furthermore, railroads must collect detailed information of hazardous materials routes and storage areas, analyze the safety and security risks along those routes, and identify alternative routes. Some hazardous materials will be required to be rerouted away from major cities.

Regional/Local Regulation

Security also impacts localities. Some areas including Washington D.C. are considering making it illegal to haul hazardous materials within city limits and the railroads are fighting this vociferously. The balance of security versus transportation efficiency is continually being weighed.

Paying for Infrastructure Improvement

Lawmakers, particularly in California and Washington, are proposing legislation that would tax imported containers to fund infrastructure improvement and air quality mitigation projects. So far, none of these legislative efforts have come to fruition, but legislators continue to press for this type of funding mechanism. Shipper groups have stated they will likely mount legal challenges, based upon a view that these taxes are unconstitutional because states don't have the authority to tax interstate commerce.

Instead, shippers recommend user fees such as tolls for particular highways, bridges, and rail corridors—similar to Los Angeles' Alameda Corridor fee—which directly charge the likely users of infrastructure improvements. While shippers would naturally push back on increased costs if the revenues are not used for collected purposes, they are more willing to accept them if they are used to create infrastructure improvements.

Shippers and industry organizations such as the Waterfront Coalition and the Coalition for Responsible Transportation generally support non-legislative ways of reducing truck diesel emissions and congestion like Pier Pass, which assesses a fee for daytime drayage (local hauling of cargo) of containers at the ports of Los Angeles and Long Beach, to fund extended terminal gate hours. Such business process changes address freight congestion and reduce freight's environmental footprint. Note that while there are important environmental issues to be addressed that may have an impact on the solutions, they are beyond the scope of this *CSCMP Explores*.... It is likely that the increased costs shippers will directly or indirectly pay to fund infrastructure improvements will largely be passed on to consumers.

Some states are considering imposing tolls on existing and new highways and bridges to support facility maintenance and new construction projects. For example, the Pennsylvania State Legislature included a provision in its budget presented in July of 2007 to put tolls on a 311-mile stretch of Interstate 80; however, this hasn't been approved. Opponents in the Legislature believe the federal government will deem the proposed toll illegal because it typically bans tolling facilities constructed with federal funds—which I-80 was.[39]

The General State of the US Transportation Network

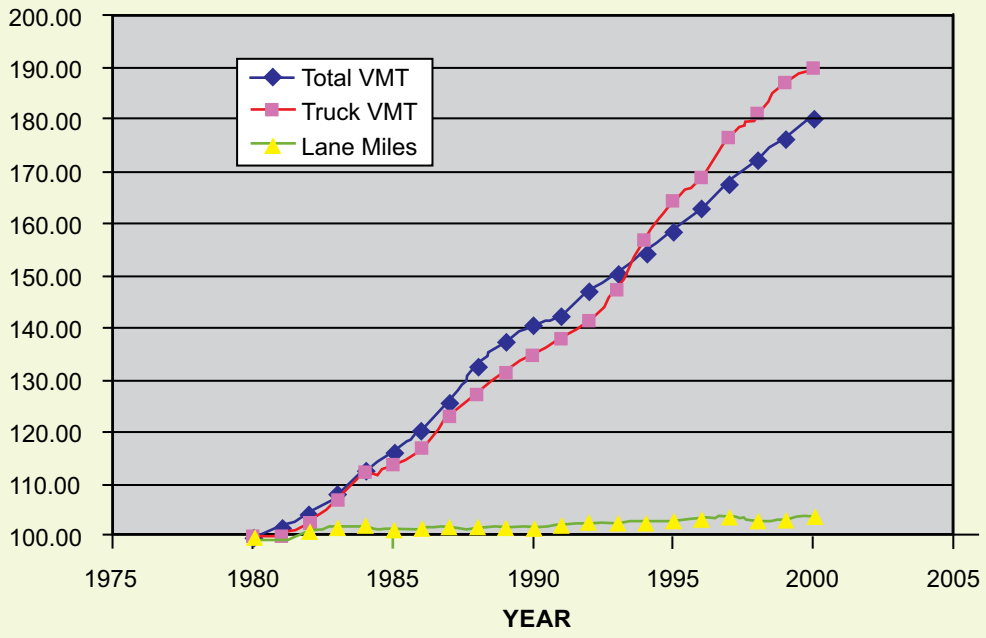
The swell of imports has impacted the US multi-modal transportation system and infrastructure dramatically. Ports, highways, and railroads have been challenged to process and transport cargo in a timely manner, particularly in Southern California and other gateways and key urban areas such as Chicago. According to the Merge-Global Forecast Team in 2007: port and inland congestion will get worse over the next five years.[40]

Supply chain bottlenecks have begun to affect the performance of companies, and hidden costs of longer supply chains abound. Thomas Donohue, President of the US Chamber of Commerce said "Transportation and congestion [have] moved up to the executive suite," explaining that top management now sees congestion as something that could harm productivity and economic growth. Infrastructure is among the high-priority items on which his group focused during 2007. Donohue said "we're getting to the point where we're running out of capacity. We are 20 years behind. The hole is getting deeper, and the ladder is getting shorter."[41] In fact, the balance of the Highway Trust Fund, which is the primary source for US infrastructure investments, is projected to go negative in 2009 according to Secretary of Transportation Mary Peters. The primary monies for the fund come from the 18.4 cent per gallon federal gas tax, which hasn't changed since 1993.[42]

Shippers value transit reliability and consistency over sheer speed. The value added in supply chains comes from speed to market, transit reliability, and reduced costs. Congestion reduces velocity and introduces unpredictability into supply chains. Longer supply chains encounter more fluctuations, which makes it harder for importers to accurately match customer demand with fulfillment. This forces importers to hold more safety stock inventory, resulting in higher operating costs and consumer prices, inventory discounting to cover forecasting errors, and lower margins. Moreover, an inefficient transportation system creates delays and increases costs and pollution—the same, negative effects that our society wants to avoid.

The national transportation system is in crisis and infrastructure is deteriorating. The US hasn't invested significantly since the national highway system was completed in 1965. Increased use of the system with economic and global trade growth coupled with a lack of investment in maintenance has increased the safety risk. See Figure 2, which shows the lack of growth in highway lane miles compared to growth in vehicle miles traveled (VMT).

Figure 2: Growth in Vehicle Miles Traveled (VMT) Versus Growth in Highway Lane Miles



Source: Michael Meyers, Georgia Institute of Technology

Transportation infrastructure challenges will impact the nation's future prosperity. Shippers and logistics service providers have been creative in developing strategies to manage supply chain congestion in order to remain productive and mitigate the risk of business interruption—but they are running out of options. Not all shippers can use alternative gateways and routes, because there are capacity caps all around.

It is the belief of Stephen Flynn, a senior fellow at the Council on Foreign Relations, that the US trails behind global competitors in investments to upgrade and maintain transportation infrastructure, because "elsewhere people recognize infrastructure as an investment, whereas here we think of it as a cost."[43]

The federal government is not investing in freight-related highway infrastructure to the degree necessary to sustain growth and keep products safely moving at the current flow of commerce. Other than the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the federal government has designated limited funds to pay for freight infrastruc-

ture. SAFETEA-LU, the most recent US highway bill which finally passed in 2005, was two years late (slated originally for 2003) and estimated at almost $90-100 billion short of the $375 billion (US House of Representatives proposed figure) needed to keep US infrastructure from further deterioration.[44] Federal and state funding is failing to keep up with a rising demand for capacity and the need to invest in fixing the existing infrastructure.

The cash shortfall is only projected to get worse. Support for 90% of the Federal Highway Trust Fund is the gasoline tax that hasn't changed since 1993 or been indexed to inflation. In fact, due to the lack of inflation indexing of the gasoline tax, various estimates suggest the Highway Trust Fund has already lost approximately one-third of its purchasing power, yet Congress is not addressing this situation. According to the US Department of Treasury and the Congressional Budget Office, the Highway Account of the Federal Highway Trust Fund (HTF) will have a negative balance of $4 billion to $5 billion by the end of Federal Fiscal Year 2009 if no corrective actions are taken.[45]

Another key issue related to the funding is what the collected taxes are actually used for. Today, gasoline tax funds are often shifted to uses other than infrastructure needs. Unless the funds collected are used to improve the highway and bridge infrastructure, needed improvements will be underfunded. Few dollars are directed to freight infrastructure projects of national significance. The $285 billion, five-year SAFETEA-LU bill had 6,032 earmarks that provided money for projects in representatives' own congressional districts. This number was up from 10 earmarks in the 1982 transportation legislation—thereby showing how much more complex the budgeting has become.[46] Moreover, SAFETEA-LU does not contain any mandatory spending provisions for freight infrastructure projects.

Since the collapse of the I-35W Bridge in Minneapolis, Minnesota on August 2, 2007, several congressional members have called for funds to be allocated to repair bridges that have been deemed structurally deficient. Proposals are to raise the funds through an increase in the federal gas and diesel tax.

Furthermore, a large portion of federal and state funds are spent on maintaining existing infrastructure, leaving little for adding greatly needed capacity for the future. Due to limited resources, projects designed to fix or maintain existing infrastructure compete with capacity expansion projects, and, therefore, these critical expansion projects often languish on the drawing boards.

A study completed in December 2007 by the National Surface Transportation Policy and Revenue Study Commission entitled "Transportation for Tomorrow" is a comprehensive review of the current US infrastructure and poses options for future improvements, including a proposed increased Federal fuel tax of between 25 cents per gallon and 40 cents per gallon over the next five years.[47]

NORTH AMERICAN MARINE TRANSPORT AND PORT INFRASTRUCTURE ISSUES

US Port Infrastructure and Space Limitations

Most major US container ports are operating at near capacity and have little land on which to expand. But understanding the potential for increased market share with the projected continued growth in imports, many ports have announced or already have various expansion projects underway. However, a large number of planned projects at the ports of Los Angeles and Long Beach have been delayed for years due to public concerns over air quality and congestion issues. But knowing the criticality of the need for expansion, the ports are continuing to move forward through the environmental impact study process and legal challenges.

East Coast ports are also experiencing capacity issues from both increased flow among other US ports and trade with Europe. Increased trade through the Panama Canal is limited by its current size, which will be increased with the expansion. As a result, nearly all East Coast ports are gearing up to handle the anticipated increase in Asian-sourced cargo that the Panama Canal expansion will bring in the next decade.

Because the US transportation network is a multimodal system, constrained highway and rail infrastructure around ports impacts the ability of the ports to function efficiently as well limiting their expansion. The ports of Long Beach and Los Angeles have identified $8.1 billion in road and rail projects considered by port officials as critical to keeping the two ports growing.[48]

Projects include bridge replacement to enable more trucks to traverse them and larger vessels to pass under them, a number of on-dock rail projects, expansion of a short port-area freeway used for delivering containers to a near-dock port rail yard, rebuilding freeway connectors serving the Port of Los Angeles, and highway-rail grade separations in various parts of the Los Angeles basin and Inland Empire (a region in Southern California mainly located in the Riverside and San Bernardino Counties). Funds necessary to commence these projects have yet to be secured.

US Port Efficiency

In general, US ports, particularly those on the West Coast, are not as efficient as many foreign ports—particularly in Asia and Europe—in terms of throughput and crane productivity. This difference in efficiency is a result of labor issues, older equipment, and port design issues. Fortunately, these issues can be improved to increase efficiency, but not enough to meet the changes in growth.

In light of physical space constraints, US ports will find it increasingly difficult to handle the projected increase in imports unless greater efficiencies are found through such methods and solutions as more flexible longshore work rules, introduction of 24-hour/7 days a week operations, a shift from wheeled operations to container stacked operations, and higher stacking of containers.

Some ports are trying to increase productivity and container throughput by increasing efficiencies and adopting methods such as extended gate hours and truck appointments to reduce in-terminal time. Under PierPass, which was introduced at the ports of Los Angeles and Long Beach in 2006, fees are assessed to move containers during the day shift in order to fund night gates and provide an incentive for shippers to support nighttime drayage to reduce highway traffic and pollution.

Longshore labor's continued resistance to rapidly implementing technology (e.g., installing optical readers at terminal gates to speed verification of containers at gates) hinders productivity gains, but it is expected that port operators will continue to push for concessions on this issue.

Rail Infrastructure Issues

Longhaul rail capacity is currently constrained. Though the Class I railroads (the largest freight railroads) are double and triple-tracking certain key East-West corridors, particularly in the Southern half of the US, they are not investing enough money nationally to keep trains moving at the speed necessary to absorb the additional volume of imports moving intermodally and on carload trains.

The railroads have made some investment to improve capacity in areas like the Northeast by increasing tunnel heights to allow double stack trains to pass. Domestic carload and export shippers and, to a lesser degree, intermodal shippers, experience delays and erratic transit times due to bottlenecks in rail switching yards and along rail lines. In discussions with shippers, the authors have heard increased complaints about degraded rail service in the past two years.

Moreover, rates have been rising in both the intermodal and the carload sectors. These rates have increased due to the fuel, railroads' higher cost for maintenance of current infrastructure, investment in additional capacity (double and triple tracks in the Southwest), and demand for their services.

In 2007, many ocean carriers have seen their rail rates increase dramatically, forcing them to raise intermodal port-to-door and port-to-railramp rates to their shippers for inland point intermodal (IPI) and mini-landbridge service, where the ocean container is moved intact via rail to its final destination under the ocean carrier's bill of lading. One of the most dramatic results of rising rail rates was when Maersk discontinued offering port-to-door and port-to-railramp rates to its customers in approximately 60 inland points in June of 2007, due to the fact that those routes (tradelanes) had become too expensive for Maersk to service.[49]

Furthermore, the Class Is have changed their business models in recent years to reflect their desire to hook and haul unit trains of several hundred cars rather than pick up individual or small lots of cars along the way. They are also increasingly catering to the intermodal market at the expense of the carload market (i.e., coal, autos, chemicals, cotton, agricultural and bulk products, etc.). As a result, the carload market has suffered more than intermodal due to a more severe equipment capacity crunch, which has brought service levels into question.

Railroads have traditionally funded their own capital expansion projects, which are costly. More investment is required to meet projected future demand than the railroads and their shareholders have been willing to commit. The National Rail Freight Infrastructure Capacity and Investment study estimates that meeting the US Department of Transportation's projected 88% increase in demand for rail freight transportation in 2035 will require an investment in infrastructure of $148 billion (in 2007 dollars) over the next 28 years. The major freight (Class I) railroads' share is projected to be $135 billion, with $13 billion projected for short line and regional freight railroads.[50]

Where will this investment come from? The majority of the money invested by the Class I railroads goes towards maintaining existing infrastructure rather than expanding. One option would be an investment tax credit that helps the railroads fund infrastructure improvements.

Without making this investment, the study estimates that 30% of the rail corridors will have insufficient capacity by 2035. The result will be severe congestion and the possibility that even more of the freight burden will be put back on the highways.[51]

Trucking Issues

The federal government made drastic changes in August of 2005 to the hours-of-service rules, reducing the number of hours a driver can drive before stopping for a break, as well as the number of hours a driver can drive over the course of a work week. This caused disruption in the industry because carriers had to spend more time scheduling their routes and as a result, both the amount of drivers and driver productivity declined. The legislation was intended to improve safety by reducing the total hours driven by individual drivers at a given stretch and during a specific time period. Since then, current interim regulations with an 11-hour driving day and a work week restart after 34 hours were ruled to stand by the US Court of Appeals for the Washington D.C. Circuit on January 23, 2008, with a final ruling expected sometime in 2008.[52]

The driver shortage continues to be acute, with the driver population aging and younger drivers not being recruited in sufficient numbers to keep pace with the growth of domestic and international freight volume. Many trucking firms have increased compensation in order to attract more drivers. As a result, rates have gone up which means consumers may be paying more in the end.

Less-than-truckload and full truckload driver turnover is also at record levels. It is estimated that by 2010, there will be a shortage of 110,000 over-the-road drivers in the US. According to the American Trucking Association, turnover for large line haul carriers was at a 116% annualized rate for 2007, a drop of 11% from 2006.[53] Besides having to deal with congestion, driver productivity is also impacted by road and bridge weight limits, as well as freeway speed limits and truck length restrictions that vary by state.

In April of 2007, the ports of Los Angeles and Long Beach proposed the Clean Truck Program, which would grant port concessions and allow access to the ports only by drayage companies that are willing to invest in fleets of clean trucks and hire employee drivers. This plan is designed to reduce air pollution in the area and the ports are working to have the program in place by mid-2008. The ports propose to provide subsidies to trucking companies to finance the purchase of new trucks or retrofitting of slightly older trucks according to a formula, so that over time older polluting trucks will be phased out of operation.

Funding sources for these subsidies have not yet been formally secured. The two ports have proposed a tax on containers moving through the ports to fund the truck subsidies. Much opposition to this concept has been raised from a wide variety of stakeholders including shippers, industry associations, the California Trucking Association, and technical experts. The opposition is based on the high cost of the truck phase-out scheme and the perspective that the program is anti-competitive nature, since it will prevent independent drivers from entering the ports, leading to a high rate of driver turnover and support staff job losses.[54]

STAKEHOLDER SOLUTIONS TO TRANSPORTATION INFRASTRUCTURE CONSTRAINTS—GOVERNMENT

Now that you have a background on the major issues at hand, we will cover how three of the major constituency groups—the government, logistics service providers, and shippers—can address the global and domestic issues they currently face.

Congestion Pricing and Demand Management Strategies

In order to address the aforementioned issue of congestion and the costs to our economy, federal, state, and local governments are studying ways to decrease congestion through Transportation Demand Management (TDM) strategies. Options range from variably-priced lanes to increased tolls for the busier times of day. Modeled after programs in place in London and Singapore, New York Mayor Bloomberg proposed assessing a fee for autos and trucks to come into parts of the city of Manhattan during the day, in order to control traffic flow and reduce congestion and air pollution. Opposed by commuters and trucking companies, the proposal was voted down by the New York State Senate in July of 2007 and again in April of 2008, but it could be brought up again in the future.[55]

In California, congestion-based pricing has increased traffic flow on one of its toll roads by 40%. In this case, there is a printed schedule with times and prices that drivers can use to make their scheduling decisions. The US Department of Transportation awarded grants in August of 2007 to five cities (New York, San Francisco, Seattle, Minneapolis, and Miami) to help them fund a variety of programs to fight traffic congestion. Projects under these grants are required to have a user fee component to reduce demand.[56]

Infrastructure Privatization

Following the example of the United Kingdom and other countries, there has been increased interest in the US recently towards the privatization of roads and bridges. This is due to significant revenue shortfalls in many states as well as the decrease in federal funds available for highway infrastructure projects. States are investigating ways to pay for their badly-needed infrastructure projects causing privatization to come into vogue. The President, Congress, and US Department of Transportation are touting privatization as an alternative financing method in the face of scarce public financial resources. Infrastructure assets are attractive to investors because their toll structures allow for consistent revenue levels.

To date, the Indiana Toll Road, the Chicago Skyway, the Dulles Greenway (in Virginia near Washington, D.C.), and the soon-to-open South Bay Expressway (in San Diego) have been privatized. Talks are ongoing with New Jersey, Ohio, and several other states regarding publicly-owned toll roads, bridges, and tunnels.[57] Some resistance is developing though. For example, Pennsylvania has been looking at privatizing the Pennsylvania Turnpike but a poll of Pennsylvania residents showed that two-thirds opposed the privatization of the turnpike.[58] As a result of the opposition, Pennsylvania state legislators have tabled discussions of the privatization option for now.[59]

One potential outcome of privatization is the probable increase in tolls for users. The toll for traveling the entire 178-mile Indiana turnpike increased from $4.50 before privatization to $19.00 after, illustrating one of the key concerns of citizens and businesspeople with regard to privatization. Estimates indicate that the buyers will break-even in year 15 of the 75-year lease in Indiana.[60]

As an indication of how large and lasting the privatization trend is, banks, private investment, and pension funds are beginning to market infrastructure to investors as a separate asset class. Estimates show that $500 billion could be raised worldwide for US asset purchases. Goldman Sachs, Morgan Stanley, the Carlyle Group, and Citigroup are already playing in this space.[61]

STAKEHOLDER SOLUTIONS TO TRANSPORTATION INFRASTRUCTURE CONSTRAINTS – LOGISTICS SERVICE PROVIDERS

Port Densification and Throughput

US ports recognize that increasing the container handling density or "densifying" (a term coined by the industry) of their scarce acreage will be an essential element of increasing container throughput in the years to come. Average TEU density in US ports ranges from about 5,000 TEUs per acre in the West Coast to about 3,000 TEUs in the East Coast.[62]

In contrast, Asian ports handle in excess of 16,000 TEUs per acre and European ports more than 6,000 TEUs per acre.[63] Increasing the handling density of terminal land will allow US ports to handle more cargo without expanding their physical footprints. Moving ports from wheeled operations, where all containers are on chassis, to a stacked operation, where containers are grounded, as well as increasing the height of empty and loaded container stacks would likely enable a substantial increase in throughput.

Moreover, terminals could become more efficient by operating on a 24-hour, 7-day-a-week basis, which would make better use of the highway system during non-peak hours. Ocean carriers could design their vessel itineraries so that vessels call at terminals throughout the week, rather than focusing around weekends. This would enable terminals to utilize scarce resources more effectively and even out workflow.

Port Technology

Terminal operators around the country have made a major push to increase the level of technology utilized, including gate scanning (as mentioned earlier) and barcode labels for containers in port terminals and yards. By negotiating terms in longshore contracts, the terminal operators have partnered with the unions to help modernize the way containers are handled at the gate, in the yard, and at quayside. Further potential for utilizing technology in this area remains untapped, so efforts and investment should continue and accelerate to keep pace with the rapid growth of imports.

Intermodal On-Dock Rail

Many ports around the country are investing in on-dock rail infrastructure, allowing them to more effectively build unit trains without having to dray containers across town to off-dock rail yards. Shippers and government officials support the expansion of on-dock rail service at ports to smooth handoffs between port terminals and Class I railroads, improve overall transit times, alleviate road congestion, and reduce air pollution.

Another successful example of an intermodal rail solution to congestion is the 20-mile Alameda Corridor in Los Angeles, which opened in 2002 and has seen its traffic double in the past five years. This facility connects the ports of Los Angeles and Long Beach with the transcontinental rail yard near downtown Los Angeles. Shippers currently pay

$18.04 per TEU when their containers are moved on the Alameda Corridor.[64] The Alameda Corridor has plenty of room for growth as it currently operates at only 35% of its designed capacity, moving 55 freight trains and an average of 13,600 TEUs daily.[65]

Short-Haul Rail Shuttles

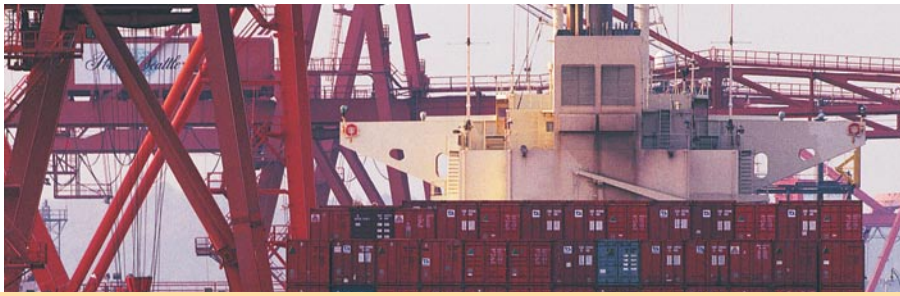
Talk has surfaced recently about the feasibility of short-haul rail service to ease highway congestion and reduce air pollution. Generally, Class I railroads prefer to transport freight over distances longer than 500 miles since it is more difficult to make money on shorter distance routes.

But as logistics parks are built in strategic locations and more private equity money enters the logistics industry, short-haul rail may find its place, with the market becoming sufficiently attractive to railroads or new players. A test case could be the new logistics park under construction in Victorville, California, 100 miles east of Los Angeles.[66] To date, however, two existing Class I railroads have not shown interest in offering short-haul rail service, a third party switching operator may be recruited to serve the route from the ports of Los Angeles and Long Beach to Victorville. This logistics park concept is similar to those that Burlington Northern Santa Fe (BNSF) and Union Pacific (UP) railways operate near Chicago and Dallas.[67]

Day-Definite Less-Than-Containerload (LCL) and Full Containerload Service

As an example of an alternative to airfreight, in 2006 APL and Con-way Freight launched OceanGuaranteed, a day-definite, ocean port-to-door LCL product from Asia to points anywhere in the US, within five days after the consolidated containers arrive at the Port of Los Angeles. This guaranteed service was developed in an attempt to appeal to shippers with slightly less time-sensitive shipments, but that still expect reliability. If the shipment is not delivered on time, the customer receives a 20% discount on the shipment.

Pricing is also simplified, with shipments rated on an all-in per kilo and US zone-based rate structure. In 2006, Matson and JB Hunt began offering Guaranteed Expedited Service (GRS), a full containerload service on a guaranteed day-definite basis from Shanghai and Ningbo to Los Angeles and other select US cities. Shippers receive an agreed-upon refund if the containers are delayed.[68] These two programs give shippers more options to deal with increasing port and infrastructure congestion without having to resort to higher-priced airfreight.



STAKEHOLDER SOLUTIONS TO TRANSPORTATION INFRASTRUCTURE CONSTRAINTS – SHIPPERS

Port Diversification

The peak seasons for US imports in 2006 and 2007 was lower in volume compared with previous years. Merge-Global predicts: "Even if the muted peak observed in 2006 becomes the norm, forecast market growth soon will cause volumes to bump up against port and inland capacity constraints, leading to rising congestion, delays, and costs. It will be more expensive to add capacity at the most congested ports. These costs will be passed on to shippers, one way or another. In response, shippers will look for less expensive alternatives—both alternative ports and alternative transport products (i.e., transloading rather than intact containers)."[69]

Sourcing patterns have favored US West Coast ports, with approximately 80% of Asian imports moving through these ports.[70] The ports of Long Beach and Los Angeles currently handle approximately 40% of the nation's imports and 70% of Chinese imports. Industry experts predict this trend will continue until about 2010 when terminal, highway, and rail congestion issues in Southern California create enough unpredictable delays in shippers' supply chains to compel shippers to divert a greater percentage of cargo to other port gateways. Due to this high demand for the use of the ports of Los Angeles and Long Beach and the resulting congestion, shippers have already begun looking at alternative ports.

The shift to other port gateways in the Puget Sound, East Coast, and Gulf Coast will become even more profound as a greater number of importers recognize the value of adopting port diversification strategies to mitigate the risk of business interruption from potential terrorist attacks, longshore labor disruptions, bad weather, natural disasters, and other uncontrollable events. This trend will continue even though ocean carriers are increasing mini-landbridge (first by ocean

and then by rail or road) and all-water rates to US inland and East and Gulf Coast points at a faster rate than port-to-port rates to the US West Coast. In short, shippers want more options.

At the beginning of this decade, shippers began adopting port diversification strategies as a way to hedge their bets against port and infrastructure congestion and delays in Southern California. A shift in the usage of alternate ports is evident and seems to be more than a passing trend. Volumes have also increased in the ports of Lazaro Cardenas and Manzanillo in the western part of Mexico, and Vancouver, British Columbia. In fact, in 2006, Vancouver vaulted to number one among ports in North America's Pacific Northwest, ahead of Tacoma and Seattle.[71]

Ocean carriers have added capacity to the routes through the Panama Canal to the US East Coast. The trade is even seeing a slight increase in the number of vessels transiting through the Suez Canal from the Indian Subcontinent, Thailand, Malaysia, and Vietnam to North American East Coast ports taking advantage of the export growth from that region. Capacity increased 100% between the spring of 2006 and spring of 2007.[72] These deliveries directly to East Coast ports using all-water routes have become popular with shippers particularly as transit times, though a little longer than mini-landbridge, have become more reliable.

"We believe that all-water will continue to outgrow mini-landbridge dramatically," said Vincent Clerc, Vice President of Area Line Management in North America for Maersk Line. "Infrastructure off the West Coast cannot continue to support the continued strong market growth. Already, we see the impact that this is having on reliability and cost increases."[73] However, it is less likely that the Suez Canal strings will be able to capitalize on the huge China and North Asia market due to the longer transit times compared with mini-landbridge or Panama Canal transits.

As a way to offer alternatives to shippers who have had to deal with congestion in US ports and capture a share of the growing import volume, three new ports in Canada and Mexico are either planned or are already under construction. Prince Rupert, British Columbia, 500 miles north of Vancouver—the first phase opened in October 2007—is designed to be a fully intermodal port gateway serving the US Midwest, with service offered by the Canadian National Railroad. The port is projected to be able to handle two million TEUs annually. Investors are planning to build a 1.5 million TEU facility in Melford, Nova Scotia, a few hours from the Port of Halifax. The first phase is scheduled to be finished by 2010.[74]

The port at Punta Colonet, Baja California del Norte, Mexico, and 150 miles south of San Diego, is scheduled to commence operations in 2012. It is a greenfield (undeveloped land) site, so rail and highway infrastructure must be built to accommodate the influx of cargo destined for the US Southwest. The Mexican government announced in June of 2007 that it will entertain bids for contracts to develop the mega-port starting in December 2007. Construction costs could reach $9 billion if the government proceeds with its plan to develop a port that would be the size of the ports of Los Angeles and Long Beach combined, though officials seem to be leaning more towards developing a five million TEU port at a cost of $5 to $6 billion.[75] It is likely these new ports in Canada and Mexico will be supported by American shippers in keeping with the port diversification strategy.

Transloading at US West Coast Ports

There is a trend for importers to make use of third party logistics (3PL) warehouses on the West Coast, and particularly in Southern California, to transload and immediately transfer product from inbound ocean containers to domestic 53-foot rail and truck containers for the remainder of the movement to US inland points. The economics are compelling as the cargo in ten 40-foot ocean containers can be transloaded into seven 53-foot domestic containers, thereby dramatically lowering the per-unit cost for inland transportation. Moreover, port-to-port rates from Asia to the West Coast are more competitive, comparatively speaking, than inland point intermodal (IPI) rates to US interior locations and mini-landbridge rates to East Coast points because West Coast rates have not risen as fast as IPI and all-water rates.

Transloading allows shippers to reassign the products to inland points once product has arrived in the US, rather than having to stay with initial allocations that may have changed since the product was ordered. The result should be lower inventory, less transshipping, and less obsolescence for companies which employ transloading. In addition, transloading allows the shipper to negotiate with trucking companies or intermodal marketing companies (IMC) for their own inland rates rather than the "now," more expensive ocean-to-inland through bill-of-lading rates. A new alternate strategy could be to develop inland hub and spoke import networks.

24/7 Operations

In order for ports to become more efficient and reduce daytime congestion, importers will need to support port terminals that operate night and weekend gates to reduce congestion at ports and on highways by pulling loads out and delivering empties during these non-peak hours. Maher Terminals at the Port of New York and New Jersey has operated a Saturday gate since early 2006, the only terminal at this port to do so. Yet shippers have not made use of this gate to the extent they could. During the week, Maher Terminals handles in excess of 4,500 per day, while the Saturday gate has ranged from 76 to 288 containers. Because of the disappointing results, Maher Terminals suspended the Saturday gate in early July 2007,

reinstated it temporarily due to public pressure but again discontinued as of September 3, 2007.[76] The use of non-peak hours remains a largely untapped opportunity for shippers.

To enable terminals to achieve the goals of improved operating efficiency, reduced port and highway congestion, and reduced air pollution through the operation of night and weekend gates, importers will need to keep their distribution centers open longer hours. They would also need to fairly compensate their drayage operators for moving containers during off-hours. Shippers can help alleviate congestion problems by taking the initiative to put a stronger emphasis on this option of varying times around peak.

Distribution Center Location and Operations Strategies

More companies are establishing regional distribution centers as opposed to having one or two national distribution centers, enabling the importer to delay the final delivery decision to direct cargo to the right stores to meet customer demand, since the regional facility is closer to the customer. Often importers will use a four-corner distribution center strategy, positioning a facility in the Pacific Northwest, Southern California, the Northeast, and Southeast.

Big-box retailers are increasingly moving towards an import/regional distribution center strategy, whereby cargo is moved from the gateway port to a nearby import distribution center or 3PL warehouse for transloading and then on to a regional distribution center before finally moving to a store. Additionally, merge-in-transit of international with domestically purchased merchandise can also be accomplished in import distribution centers or even 3PL transload centers.

Importers are starting to recognize the benefit of operating their distribution centers on a 24/7 basis so that containers can be delivered and empties picked up at night when the roads are less congested. More port terminals around the country are beginning to offer extended hours to facilitate this trend. Importers sometimes face the challenge that some municipalities discourage or actually prohibit such nighttime activity due to the noise and light.

Distribution Center Bypass Programs

Many companies have recognized the value of working with their customers to purchase in full container increments, so that the container can be shipped from the foreign port directly to the customer's distribution center or store, thereby bypassing the importer's distribution center. This saves time and handling costs. For distribution center bypass programs to work effectively, the importer must have tight control over foreign production and quality control to ensure the products loaded in the container meet the customer's requirements. Using an origin consolidation company can help mitigate this challenge.

A Total Landed Cost Approach

When sourcing products, companies need to look at the total cost of bringing products into the US and on to their final customers. This perspective might change the final decision on where to buy when length and variability of supply chains and the resulting costs are considered. Increases in system inventory are often necessary to protect against longer and more variable lead-times—and these increases in inventory costs must be considered in the total cost equation. As mentioned earlier, safety and quality costs also must be part of the total cost evaluation.

Involvement in Advocacy Organizations

The notion that "freight doesn't vote,"[77] should be a key take away for shippers facing the evolving regulatory environment. Our lawmakers often propose laws and regulations that have good intent, but if the legislators do not have sufficient information on all aspects of an issue, they may not choose the best course of action that considers all stakeholders—including businesses. Additional education of various constituencies including legislators on the various issues will benefit everyone.

Both consumers and shippers desire increased levels of safety and security, but consumers often don't have complete information on the effect this will have on their everyday lives if not managed properly. Therefore, it is critical that companies involved in international and domestic trade provide the necessary knowledge of the fundamentals of global commerce and the complexities of supply chains to decision makers so that these considerations are adequately addressed.

Thus, companies involved in global trade should make their voices heard through participation in organizations that advocate at the federal, state, and local levels to help achieve sound transportation infrastructure and supply chain security-related policies and legislation. This legislation will work to treat the public concerns of congestion, security, safety, and environmental protection but not cripple commerce or impede the public demand for affordable goods. The National Shippers Strategic Transportation Council (NASSTRAC), The Waterfront Coalition, the National Industrial Transportation League (NIT League), Retail Industry Leaders Association (RILA), and the American Association of Exporters and Importers (AAEI) are only a few of the organizations in which practitioners can become involved.

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