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Global Logistics Trends

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NEW ECONOMIC DEVELOPMENT OPPORTUNITIES BASED ON TODAY'S SHIFTING GLOBAL SUPPLY CHAINS AND INCREASING E-COMMERCE SEGMENT OF THE RETAIL INDUSTRY

Where is the next distribution center going to be located? Why is one market capturing businesses, while another one is not? How do logistics and transportation factor into the site selectors search criteria? Getting in front of the path of progress begins with properly positioning a region as a destination for goods distribution or manufacturing. It is essential that economic development groups provide market information in a manner that reflects the strengths being sought by site selectors during their evaluation. Therefore, understanding how logistics, transportation, and shifting supply chains impact the key decision elements of both retail distribution and manufacturing operations is imperative for all economic development professionals.

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There are countless links between global trade, global logistics and local economic development. However, identifying and capturing the opportunities these connections present remains a daunting challenge for local and regional economic developers. Defining "the path of progress" as it relates to economic growth and jobs creation requires a solid grasp and understanding of the many elements of global trade and logistics. A strong knowledge of these elements and insight into the factors which impact the movement of goods, both in terms of imports and exports, is essential and often times requires access to trade intelligence, transportation and logistical data.

Port container yard where goods are stored before and after transit.

SUPPLY CHAINS FOR GOODS MOVEMENT

Supply chains are moving conveyor belts on which multiple custodians participate in moving goods from their global origins to final destinations. Production of goods which require higher labor content often seek the global source where low cost labor is readily available, and the supply chain adjusts to accommodate the new production center wherever it may be located in the world. Recent trends have seen that the production of goods with high material content and value are returning to production locations "near-shore," closer or back in the United States. The logistics professional must manage the moving conveyor belt of goods from new origins to local destination in such a manner to not erase the benefits of lower cost production with poor supply chain execution.

There are many factors that go into a strategy for moving goods globally. The key ingredient and deliverable of this article is to focus on how to translate complex goods movements into economic development in terms of corporate growth and the corresponding job creation. Through increasing knowledge of how goods move and how goods movements are managed, economic development efforts can be more effective and the measurement of jobs created and retained more easily measured.

A typical supply chain, moving goods from a foreign factory to a distribution center in the United States, will have as many as nine and often times a dozen or more custodians who actually move cargo from one place within the supply chain to the next. These custodians are managed by the seller or the buyer of the goods. In some cases, the seller or buyer uses a third-party logistics service provider to manage the physical movements of goods by the custodians.

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Where is the next distribution center going to be located? Why is one market capturing businesses, while another one is not? How do logistics and transportation factor into the site selectors search criteria? Getting in front of the path of progress begins with properly positioning a region as a destination for goods distribution or manufacturing. It is essential that economic development groups provide market information in a manner that reflects the strengths being sought by site selectors during their evaluation. Therefore, understanding how logistics, transportation, and shifting supply chains impact the key decision elements of both retail distribution and manufacturing operations is imperative for all economic development professionals.

Definitions

Logistics professionals – Professional logisticians are often certified by professional associations. One can either work in a pure logistics company such as a shipping line, airport or freight forwarder or within the logistics department of a company. However, logistics is a very broad field encompassing procurement, production, distribution, and disposal activities. Hence, the career perspectives are very broad. New trends in the industry are the 4PL or Fourth-party logistics – consulting companies offering logistics services.

Custodian – A person responsible for protecting or taking care of something or keeping something in good condition.

Mode "of transportation"– A term used to distinguish substantially different ways to perform transport. The most dominant modes of transport are aviation; land transport, which includes rail, road, and off-road transport; and ship transport. Other modes also exist, including pipelines, cable transport, and space transport. Each mode of transport has a fundamentally different technological solution, and some require a separate environment. Each mode has its own infrastructure, vehicles, operations, and often has unique regulations. Transport using more than one mode is described as intermodal.

Price elements – Detailed cost structure including all auxiliary fees, taxes, and monetary costs associated with each of the service options being researched.

Capture rate – Percentage of goods that remain within a market and do not simply pass through on their way to another market.

Stock parts – Those parts or components that are common to a manufacturing process and are essential to produce the final goods made at a facility. These parts must be kept on hand in order for operations to function properly.

The custodians, the management of the custodians, and the flow of information and financial data required to pay for movement of goods must be coordinated so that the time between shipment and the receipt of goods is predictable. Predictability is more critical for higher value manufacturing goods and less critical for lower value freight that is routed at the discretion of the buyer or seller to achieve the lowest costs between origins and destinations. These two categories of freight, **time sensitive** and **discretionary cargo**, are important as the routings, port selection, mode selection, and price elements vary widely between the two categories of goods moved on the global conveyor belt.

Discretionary cargo moves at a different pace and price points than time sensitive cargo. Discretionary cargo often is made up of consumer goods which can have a longer supply chain in order to accommodate the lowest total transit price between origin factory and distribution centers. For example, a retailer who orders seasonal Christmas merchandise in January or February to access the lowest cost production is not in any hurry to receive the goods, thus this freight is routed at the lowest price and delivery schedules are not rigid. However, this procurement strategy only works when the production cost savings are not erased by the storage requirements or higher transportation costs.

Time sensitive freight is most often used in the manufacturing or production of goods. Therefore, it requires a more stable delivery schedule and seeks a rate structure that provides a high level of this predictability as part of the overall delivery process.

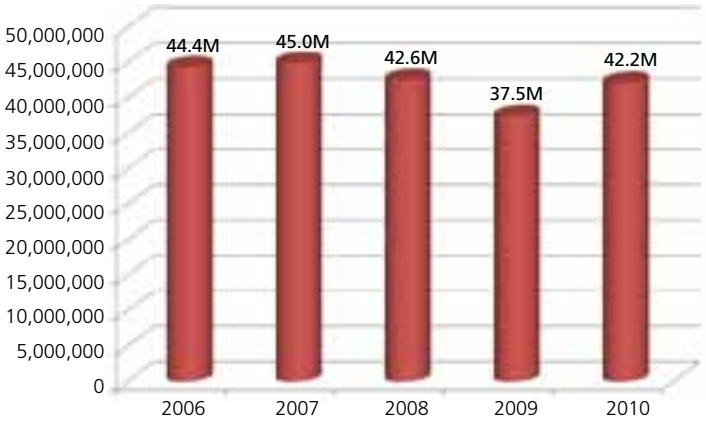
NEW DEVELOPMENTS IN GOODS MOVEMENT

One important development in the past several years is the capability and lift (number of containers that the ship can hold or capacity) of the new generation of container ships that are moving loaded ocean containers between global origin and destination points. Cargo loaded in containers is moved in-tact and managed by the ocean carrier in a door-to-door, port-to-port, or port-to-door movement. The choices on routing and destination are only magnified by the new ships' capacity and the challenges associated in dealing with the new, larger vessels.

However, a significant milestone accomplishment will occur in 2015 when the Panama Canal lock expansion is completed and ships up to 12,500 TEU (twenty-foot equivalent units or containers) will for the first time be able to transit through the Canal. This remarkable engineering achievement will manifest itself in an array of changes in the ocean carrier's strategies for port rotations and calls resulting in implications for all ocean ports on the Atlantic, Pacific, and Gulf Coasts of Mexico, Canada, and the U.S. Not only will larger ships call on ports, but the accompanying larger discharge of container at these ports will require larger cranes (up to 24 TEUs wide across the width of the ship) and port wharves and require a process to support moving the larger amounts

The Panama Canal today has the capacity to handle vessels carrying up to 4,500 20-foot units. Once the expansion is completed in 2015, 12,500 20-foot unit vessels will be able to transit through the Canal.

Total TEUs Processed at U.S. Ports 2006 - 2010



of cargo off the port terminal to inland ports or market destinations.

The Panama Canal has limited capacity and ships carrying up to 4,500 20-foot units can transit the Canal, while larger ships cannot transit the Canal. In order to utilize the economies of scale presented by the larger ships, ocean carriers are now deploying ships that can carry 6,000, 9,200, 12,500, and soon 18,000 20-foot container units. These larger ships require deep water, higher air clearance and require that ports' facilities are able to manage a larger discharge and load-out of cargo in competitive timeframes. Today, these larger ships can transit the Suez Canal, which has resulted in some of the ocean carriers already routing the larger ships to ports that previously were only served by the Panama Canal class of ships.

As the ocean carriers continue to introduce more of the large vessels into their rotations between countries, economies of scale will demand more sailing time on the water and less port time. One yet undetermined outcome of the carrier's decision process will be which ports it will select to be in the rotation of the larger ships. This decision, when made, will have a dramatic impact on the ports, both those selected for the larger ships' service calls and those not selected. The three keys to a port's success due to their critical impact on the ocean carriers are: sufficient water depth, sufficient and competitive wharf/dock/terminal capacity and capability, and a strong capability to manage cargo to inland destinations either by truck or rail service outside the port's fence line. It is this inland capability that will drive port growth in the future. Therefore, ports with mature rail services, balanced capacity for imports and exports, and adequate water depth will be the ports where the ocean carriers will send their larger ships for service.

The U.S. ports have seen wide variations of growth over the past years as reflected in the graph. Not only are these numbers significant, it is important to note that within these volumes the ports include imports, exports, and empties reloaded to ship back to countries where new production will be loaded into the empties.

Many U.S. ports are currently moving an equal or greater amount of goods through their export programs. These exports are equally important to the future of the port facilities and strategic position. Ports that can establish a "balance" between import and export volumes offer a benefit to the ocean carrier which selects that port as part of its routing schedule.

For export loads, often the port's "reach" inland is much more important than it is for imports. In fact, one significant challenge at today's inland ports is how to better match up the import's recently emptied container and the demand for an empty container to be loaded with an export. This matching effort, once successfully managed by economic development teams and industrial developers, will add a new layer of success to the creation of a vibrant economy resulting in the creation and retention of local jobs in regions where imports and exports are closely managed and matched.

All ports differ vastly in terms of the amount of the cargo which remains within the local market known as the "capture rate" and how much moves inland to other markets. This equation of captured local cargo or inland cargo is important as it will ultimately define where industrial and economic development occurs.

A portion of the imported containers move inland within a sealed container moving by truck or rail to large inland terminals and from these terminals to distribution or manufacturing centers. Other containers are unloaded at the ports and goods are reloaded into new and often larger containers for domestic transit inland by either truck or rail to a distribution or manufacturing center where they are unloaded. The process known as transloading occurs when the ocean carrier only moves the goods between ports and

Cranes unloading containers from an ocean carrier.

A gantry crane loads a container onto a railcar for movement inland.

wants an immediate recovery of the carrier's container or when an importer seeks an economy of scale by shifting goods from an ocean carrier (20- or 40-foot units) into domestic containers which are 53 feet in length. This means that for the inland move, the importer who transloads can shift four ocean containers of goods into three domestic containers for the inland portion of the journey.

At the port, import containers that are received will either move inland intact, are transloaded at or near the port, or are moved to a local or regional distribution center. All ports differ vastly in terms of the amount of the cargo which remains within the local market known as the "capture rate" and how much moves inland to other markets. This equation of captured local cargo or inland cargo is important as it will ultimately define where industrial and economic development occurs. However, due to the differences in each port's capture rate and the practice by cargo owners of routing discretionary freight through different ports based on rates, time of year, demand levels, and economic trends, capturing opportunities can be challenging for economic developers. This difficulty is further compounded by the regular shifts in routing and local capture rates occurring within port markets and inland destinations.

IMPACT ON ECONOMIC DEVELOPMENT

Economic developers who want to be successful in capturing jobs as a result of the demand for industrial buildings in their communities must understand the complexities occurring in the global supply chain. They must also be willing to invest in data that provides them with clear insight into which containers arrive in their local market and where these containers' contents are consumed. Most containers arrive full of retail and consumer goods which are then moved from distribution centers to retail stores. Another "set" of containers will hold parts used in manufacturing or assembly. They are timed very specifically in the global supply chain, so that they show up "Just-In-Time" (JIT) for delivery so that they can be used instantly in the manufacturing process. Manufacturers in the U.S. keep only two to four days of "stock" parts, making the accuracy, predictability, and consistency of any supply chain the most important element.

If an economic developer can determine what is flowing into his/her region, then the "list" of target companies becomes much clearer for making the case for relocation. The closer a supplier is to its customer, the better for both parties. This phenomenon is known as clustering and it has been used by economic developers for years as a targeting method. The key is getting good reliable data to support that process.

The second part of the supply chain, the movement outbound from distribution or manufacturing center to stores or consumers, is equally critical and important for economic development and jobs capturing efforts. This second movement of goods is a function of several important factors, all of which have direct impacts on economic and industrial development. Distribution centers are located at sites that match up the total inbound (from factory to distribution center) and the total outbound (from distribution center to stores or consumers) sectors of the supply chains.

Some retail distribution centers are located to support replenishment of stores on a daily basis; other distribution centers support weekly store support, while other distribution centers support direct delivery to consumers who purchase through e-commerce platforms. Store expansion is an important element in site selection and retailers will position new distribution facilities in locations where organic store growth is occurring or is planned. Locations which support predictable flow into the distribution center from ports and match the flow outbound to stores or consumers are the most sought after and have the highest percentage of jobs created.


Trailers are brought to distribution centers where inventory is sorted and disbursed to stores, other distribution centers or directly to customers.

E-COMMERCE IMPACTING GOODS MOVEMENT

Today, seven percent of all retail transactions are conducted through electronic or mobile commerce platforms and occur outside the traditional retail storefront. Within five years, almost 25 percent of the total commerce will be conducted outside the traditional retail storefront. This new type of commerce will create demand for new locations for distribution locations supporting this commerce, new configurations of facilities which are vastly different from traditional distribution centers, and higher-level labor requirements at these new commerce facilities.

E-commerce fulfillment continues to increase, reshaping the retail global supply chain and requiring non-traditional distribution methods.

Consumer goods will arrive in the same configuration to these e-commerce distribution centers; however, the flow of goods out of these e-commerce distribution centers is vastly different than what occurs at the traditional retail fulfillment center. For e-commerce distribution centers, proximity to ground transportation terminals (UPS or FedEx) is essential, as most cargo moves outbound as a single item ordered for delivery by an individual.

These two retail supply chains, retail storefront support and e-commerce order fulfillment, are managed differently by retailers. Some retailers will use one warehouse for support of both channels of demand, while others will build a separate new facility to support the new e-commerce demands. Other retailers will use a third-party fulfillment company to support their new e-commerce storage, order fulfillment, and shipping demands while maintaining their current storefront fulfillment processes.

Free shipping is a critical element in successful e-commerce. By having the selected store-distribution centers located in markets with robust overnight ground transportation services, the retailer can meet these demands without the added cost of a new locally constructed purpose built distribution facility.

A recent announcement has been made that some stores in key population centers are being reconfigured so that part of the floor plan is now devoted to a small e-commerce pick and pack operation. This is an important development and new strategic initiative which will allow this retailer immediate access to local transportation networks near the stores to support timely order processing, fulfillment, and delivery to consumers. By converting some store space to distribution resources, this retailer has resolved the problem of distribution networks in close proximity to consumers by making the store a dual-purpose facility.

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Periodical and Resource Information

The Journal of Commerce delivers high-quality intelligence and expertise on trade, logistics, and transportation including updates on maritime, ports, rail & intermodal, trucking, air cargo, logistics, regulations & policy, economy, and global trade. (www.joc.com)

American Shipper magazine was first published under that name in May 1974 and is designed to serve the information needs of shippers, carriers, and third parties involved in international transportation and for executives managing international logistics and supply chains. (www.americanshipper.com)

PIERS is the most comprehensive database of U.S. waterborne trade activity in the world, providing information services to thousands of subscribers globally. They offer business intelligence tools and solutions based on PIERS unique infrastructure and proprietary technology that allows PIERS to not only publish import data but also complete coverage of U.S. export transactional data. Complementing the U.S. trade intelligence, their international trade data spans the globe, covering every major world economy with an emphasis on significant trading partners and emerging source regions in Asia and South America, such as China, India, and Brazil. (http://www.piers.com)

The Wall Street Journal provides insight into economic and industry trends impacting the world and the U.S. This publication often provides significant articles regarding transportation, global trade, port and rail infrastructure, corporate announcements, and a multitude of other information that can be utilized when analyzing a market or investment opportunity. (http://online.wsj.com/home-page)

ECONOMIC DEVELOPMENT OPPORTUNITIES

Getting in front of the path of progress and positioning a region as a destination for goods distribution or manufacturing is what every economic development agency in the country wants to do. Providing information so that regional strengths are evident to site selectors who locate distribution or manufacturing centers for evaluation is also what every economic development agency in the country wants to do. Why are there so many efforts and so few successes? The answer is that many marketers who work as economic developers do not utilize trade and logistics data to formulate decisions, messaging, and strategies.

Data anchors the marketing program. Information about supply chain execution, order fulfillment, distribution, and logistics is available, actionable, and affordable. The key is to find a source for the data that builds knowledge of trends in logistics which can be matched to a region's strengths, and based on the findings used to capture jobs in logistics, transportation, and distribution at the local level. Trade data will show these trends and define how goods flow in both retail and e-commerce systems. "Getting it right" means accessing and using data to focus the economic development efforts to increase success.

This author recommends a few key journals, subscriptions, news magazines, and data providers to assist in this process. They are: The Journal of Commerce, American Shipper, Pacific Shipper, PIERS, The Wall Street Journal, and Commerce/Census trade data.

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In closing, the world of logistics and the global supply chain used to be much simpler and made much more sense to practitioners here in the U.S. Not so anymore. The global conveyer belt that brings goods from China, India, and Brazil to U.S. doorsteps is much more complicated, however it provides many more economic development opportunities. Understanding the supply chain and logistics process will reap benefits to any economic development agency and will result in accelerated business development and jobs growth.