

IN RECENT DECADES, global trade has become an increasingly important factor in the world economy. Imports to and exports from the United States, for example, grew from 6 percent of the gross domestic product (GDP) in 1950 to 25 percent in 2007. Along with global trade come the logistical demands of moving products across the globe—by airplane, by ship or barge over water, or by rail or truck over land. As a result, the cost to move goods and the search for efficiencies have resulted in changes in transportation and warehousing.

The highest-volume seaports in the world include Hong Kong, Shanghai, and Shenzhen in China; Singapore; Rotterdam in the Netherlands; and the combined Los Angeles/Long Beach harbors in the United States. Some of the largest air cargo hubs include Memphis, Tennessee; Hong Kong; Anchorage, Alaska; Paris, France; Frankfurt, Germany; and Shanghai.

Moving goods among water, air, and ground transportation modes has become a critical aspect of logistics, as a product made in China and sold in the United States, for example, may be transported by a combination of water, rail, air, and road. As a result, real estate development opportunities have evolved at and near where the transfer between these modes occurs—known as intermodal hubs. Places most affected in the United States include the Los Angeles basin, and central, midcontinent locations such as Chicago, Illinois; Dallas, Texas; and Memphis.

Several changes to the supply chain, as it pertains to international trade, were analyzed in “New Age of Trade (Part 1),” a June 2006 report by Cushman & Wakefield. They included:


- ▷ The use of larger facilities (warehouses);
- ▷ More “cross-dock” facilities (warehouses with truck docks on two sides, which allows

Even as the global recession affects global trade and the movement of goods, logistics remains important.

Locations that are near and with access to major roads, airport hubs, railways, and waterways will generate demand for real estate development opportunities that take advantage of the logistics of global trade.

Logistical Demand

SAM NEWBERG



Real estate development opportunities have evolved at and near where the transfer between various transportation modes—water, rail, air, road—occurs. Some of the largest of these intermodal hubs in the United States are in central, midcontinent locations such as Memphis, Tennessee; shown here are new lifts, to transfer goods from rail to truck, at the BNSF intermodal terminal in Memphis.



SAM NEWBERG

Large-scale distribution centers, called inland ports, enable containers to be offloaded from trains and moved to warehouses where the goods can be sorted before being trucked to their final destinations. Shown here is the CenterPoint Intermodal Center—CIC-Elwood—outside Chicago, Illinois.

products to come in one side, be sorted, and then loaded out the other);

- ▷ Increasing use of rail to move goods; and
- ▷ A push into exurban or rural locations in search of less expensive land.

According to John Morris, managing principal with the Chicago office of C&W Business Consulting, part of New York City–based Cushman & Wakefield, companies look to balance cost of labor, occupancy, and fuel when making real estate decisions. While companies that move goods seek locations with best access to, or at the crossroads of, two or more forms of transportation, they also require state-of-the-art facilities and abundant labor forces.

Shipping containers are the standard form of moving goods. Even though it was invented more than 50 years ago, only in the past 15 years—through globalization—has the shipping container become the standard; the advantage is that containers can be transferred among numerous modes, including barge, ship, train, and truck. Today’s containers are 40 feet (12.2 m) in length, although a 20-foot-long (6.1-m-long) measurement is still standard. Thus, each container equals two 20-foot equivalent units (TEUs), a common industry measure.

Because so many U.S. imports are made in China or elsewhere in Asia, most container traffic arrives on the West Coast. The combined ports of Long Beach and Los Angeles have by far the highest share of TEUs in the United States, and in North America. Annual TEUs in that location were 15.7 million in

2007, according to the Alexandria, Virginia–based American Association of Port Authorities. The next closest are New York/New Jersey (5.3 million); Seattle/Tacoma, Washington (3.9 million); Savannah, Georgia (2.9 million); and Oakland, California (2.6 million).

With most containers arriving on the West Coast, even though most of the country’s population and spending power—and therefore, warehouses and stores—are located in the East, there has been a major increase in container trips by rail. Trains are the mode of choice because they are far more fuel efficient for long-range trips, even though trucks are faster.

An emergent development opportunity is to locate warehouses near intermodal rail facilities in the center of the country, known as the American heartland. Large-scale distribution centers, called inland ports, are popping up near intermodal rail facilities. There, containers can be offloaded from trains, moved a short distance to warehouses, unpacked, sorted, and then trucked to their final destination, resulting in major cost savings for companies.

To accommodate unloading, sorting, and reloading of increasing volumes, warehouse buildings have evolved as well. It is not uncommon to find structures that average 1 million square feet (92,903 sq m) each, with 32-foot (9.75-m) clearance heights, lined with up to 100 or more dock doors. Modern buildings are cross-docked, with dock doors on opposite sides to allow goods to be brought in on

one dock, unloaded, repackaged, and loaded out the other.

Large-scale inland ports have been created in cities like Dallas; Chicago; Gardner, Kansas, outside Kansas City; Columbus, Ohio; and Indianapolis, Indiana. Inland ports need to:

- ▷ include an intermodal terminal to transfer goods from rail to truck, known as a “lift”;
- ▷ be larger than 1,000 acres (405 ha);
- ▷ have direct rail access to one or more major seaports;
- ▷ be near a large metropolitan employment base;
- ▷ have foreign trade zone status; and
- ▷ have good access to the interstate highway system.

Major well-established inland ports include AllianceTexas in Fort Worth, Texas, and



the CenterPoint Intermodal Center—Elwood (CIC-Elwood), located southwest of Chicago.

Tenant lists at inland ports read like a “who’s who” of Fortune 500 companies. AllianceTexas is home to 200 companies, 65 of them Fortune 500 or Forbes 500 firms. Part of a 17,000-acre (6,882-ha) master-planned community, AllianceTexas includes an intermodal facility with 600,000 lifts per year, more than 29 million square feet (2,694,188 sq m) of warehouse/distribution space, and 29,000 jobs.

CIC-Elwood comprises 2,500 acres (1,012 ha), an intermodal facility with 8 million square feet (743,224 sq m) of warehouse space, with another 21 million feet (1,950,964 sq m) planned in two phases, and 5,000 jobs to date. Despite the cooling economy, CIC-Elwood recently signed two major leases.

UPS has its main hub in Louisville, Kentucky, known as Worldport, at Louisville International Airport. UPS’s sorting facility currently handles more than 300,000 packages per hour, 250 daily flights, and parking for 117 airplanes (right and below).



Several other inland ports, such as the Rickenbacker Global Logistics Park (GLP) in Columbus, Ohio, are emerging. Duke Realty Corporation, an Indianapolis-based commercial development and brokerage firm, is developing a 1,500-acre (607-ha) site surrounding the Rickenbacker International Airport there. The location in Columbus includes a direct rail link to the Hampton Roads deepwater port, located near Norfolk, Virginia, via the Norfolk Southern railroad. In addition, Columbus is within a one-day drive of fully half of the U.S. and Canadian population, making it a competitive location for an inland port. The Rickenbacker GLP is a partnership between Duke and the Columbus Regional Airport Authority, and comprises the 300-acre (121-ha) Rickenbacker Intermodal Terminal, which opened in March 2008 and operates 400,000 lifts annually.

Duke Realty Corporation is marketing a new 1 million-square-foot (92,903-sq-m) warehouse building as the first of 20 million square feet (1,858,060 sq m) of development planned for Rickenbacker GLP. This will add to the 30 million square feet (2,787,091 sq m) of warehousing that has been developed in the area already. When built out, the park will add 10,000 jobs to the 15,000 that already exist there.



Companies like Zappos, an online shoe distributor, have located in distribution warehouses near Louisville, drawn by UPS and a nearby north-south interstate.

SAM NEWBERG

Design guidelines are an important part of Rickenbacker GLP, and are common at other logistics hubs, including AllianceTexas. The guidelines control design aspects such as building color, signage, and landscaping, and even provide walking trails and recreation areas around ponds that are required for stormwater runoff.

Air freight is also a major piece of the logistics puzzle, with major economic and real estate implications. The United States has significant air cargo operations at O'Hare, LAX, and JFK airports, but perhaps the best known are FedEx in Memphis and UPS in Louisville, Kentucky.

Based in Atlanta, UPS has its main hub in Louisville. In 1982, UPS started UPS Next-Day Air service, and in 1999 the company began a major expansion to its hub operations there. Dubbed Worldport, UPS's sorting facility at Louisville International Airport encompasses 4 million square feet (371,612 sq m); an additional 1.2 million square feet (111,483 sq m) are planned as part of an expansion to be completed in 2010.

A highly automated system of conveyors and sorting machines at Worldport currently handles more than 300,000 packages per hour, 250 daily flights, with parking for 117 airplanes. Most of the activity occurs at night, between the hours of midnight and 5 a.m.

According to UPS officials, 111 companies have relocated to or started operations in the Louisville area since 1991, adding 8,700 jobs

on top of the 20,000 UPS jobs in the city. UPS Supply Chain Solutions operates a 3.5 million-square-foot (325,160-sq-m) facility, immediately south of the airport, where it provides services that benefit from proximity and access to Worldport, but that are outsourced by other companies. For example, UPS provides laptop repair for Toshiba; laptops can arrive at Supply Chain Solutions via a UPS plane, be repaired, and then be shipped out immediately. "We call it 'end-of-runway service,'" says Mike Mangeot, manager of public relations at UPS Airlines.

Being close to the UPS Worldport is seen as a benefit for the 111 companies that have located in Louisville. Zappos, an online shoe distributor, for example, can receive orders online and ship immediately. "You can literally order shoes at 11 p.m. and get them the next day," explains Mangeot, because they can be easily moved from warehouse to airplane.

Real estate development around the airport is significant, and the industrial sector nearest the Louisville airport—where the UPS Worldport is located—is the largest in the metropolitan area. The fastest-growing area is in the south Louisville suburbs of Bullitt County, located 20 miles (32 km) south of the airport on Interstate 65.

Powell Spears, an industrial broker with Colliers Harry K. Moore in Louisville, says UPS is a huge driver for distribution warehousing in the area, and that Interstate 65 is also a vital

north-south corridor. Major tenants include Zappos, Stride Rite, GSI Commerce, Gamestop, Johnson & Johnson, and Ann Taylor. Major industrial developers such as ProLogis also have opened distribution facilities in the area.

Bullitt County includes two major industrial parks, Salt River and Cedar Grove Business Park. GSI Commerce signed a lease in 2008 for 480,000 square feet (44,593 sq m) in Cedar Grove. Zappos occupies 885,000 square feet (82,219 sq m) in two facilities, one in Cedar Grove and the other in Salt Creek.

Although Louisville is competitively positioned with the presence of UPS, it is not immune to the economic recession, Spears explains. "It would be naïve to think that we would dodge what is going on." Linens 'n' Things, for example, is a casualty of the retail slowdown, and Bullitt County will add that retailer's 600,000 square feet (55,741 sq m) of distribution space to the vacancy in the market. However, the presence of UPS and the access it provides are viewed as positive for Louisville in the future.

With FedEx and Northwest Airlines (now part of Delta) hubs in Memphis, the region's economy is based on the airport and logistics. "An aerropolis is an urban grouping of aviation-intensive businesses," says Arnold Perl, a land use attorney and partner at the Memphis-based law firm of Ford and Harrison LLP, chair of the Memphis Logistics Council, and chair of the Memphis-Shelby County Airport Authority.

It is not just about the airport, however. Memphis is known as a “quadrmodal” city. It includes the largest cargo airport in the world, the third-largest rail center (behind Chicago and St. Louis), and the second-largest water port on the Mississippi River, and it is within range of more cities by overnight truck (600 miles/960 km) than any other U.S. city. “They’re all here,” says Perl. In fact, he notes, one in four local jobs can be traced to the quadrmodal logistics industry in Memphis.

As noted in Cushman & Wakefield’s “New Age of Trade” report, Memphis benefits from its proximity to rail and road. Five of the seven Class 1 freight railroads serve Memphis, and several have improved or are improving their intermodal rail yards to improve their logistical abilities. In 2005, Canadian National (CN) and CSX railroads opened a joint intermodal

terminal in Memphis, and Burlington Northern Santa Fe is in the process of expanding theirs. Total lifts in Memphis are approaching 1 million. The CN railroad provides access to the new Prince Rupert port in British Columbia, which opened in 2007 and is two days closer to Asia than Los Angeles/Long Beach.

The airport and much of the river, rail, and road activity is in the southern half of the Mem-

phis metropolitan area, and thus, the south and southeast metro areas benefit the most from being a quadrmodal inland port. The southeast sector alone has nearly half of the almost 200 million square feet (18,580,608 sq m) of industrial space, although DeSoto County just over the border in Mississippi is the fastest-growing sector of the region. A direct road connection from the CN/CSX intermodal terminal to the airport and southeast warehousing areas is also planned, which is expected to create further demand for distribution facilities there.

Major companies with headquarters or significant space in Memphis include AutoZone, Williams-Sonoma (more than 5 million square feet/464,515 sq m), DDN (pharmaceutical logistics), Cummins Diesel, Nissan, Kyocera, Nike, and Technicolor. “Many of these companies are only here because of FedEx,” says Perl.

Green logistics is an emerging opportunity across the distribution industry. The first LEED (Leadership in Energy and Environmental Design) certified distribution warehouse in the southeastern United States opened in the Memphis metropolitan area in late 2007. Building F of the Crossroads Distribution Center measures 800,000 square feet (74,322 sq m) and is certified LEED Silver.

With its aerotropolis and what is regarded as good quadrmodal access, Memphis is considered positioned to be a logistics leader for a long time to come. It should continue to attract commercial development, particularly distribution warehousing, with a focus in the southern end of the metro area where more transportation modes intersect.

Current economic conditions have resulted in inventories piling up, ships being mothballed, and truck, air, and rail traffic being down all over, says Brian Klinksiek, assistant vice president of Investment Research at Heitman, an advisory firm based in Chicago. “There is excess slack in the supply chain, combined with [low] oil prices and lack of capital to improve efficiency,” he explains. “As a result, the short-term pressure to adopt these business models has weakened.”

Klinksiek notes that companies understand the efficiencies of inland ports and locations near air cargo hubs, because in the long term they will retain their advantage. “Logistics will normalize, perhaps sooner than the rest of the economy.” He recommends focusing on building relationships in the next one to two years, and suggests taking advantage of built-to-suit opportunities when they arise.

“Until demand corrects and available real estate is absorbed, not much new development will occur,” notes Morris. “However, the first-rate locations will continue,” he adds, indicating that the balance of labor costs, occupancy cost, and fuel prices will always be a factor.

“Access is to the 21st century what location was to the 20th,” says Perl. There may be short-term economic pain, but the forecast for long-term logistics indicates that real estate development opportunities will be best near areas where two or more modes of goods transportation meet, he maintains.

Louisville, Chicago, Dallas, Columbus, and Memphis offer evidence that a good location will continue to matter in the world of logistics. But metropolitan areas that invest in a variety of infrastructure and transportation venues will benefit as well. **U**

SAM NEWBERG is a writer and consultant based in Minneapolis, and is the founder of Joe Urban, Inc., at www.joe-urban.com.



The first LEED (Leadership in Energy and Environmental Design) certified warehouse in the southeastern United States, Building F of the Crossroads Distribution Center, is in suburban Memphis.

SAM NEWBERG