



September 1, 2008

Will the Oil Crisis Fuel Near-Sourcing?

By April Terreri

As the escalating oil crisis unfolds, companies with long, complex global supply chains are reevaluating whether their Asia-based networks still make economic sense.

Pete Sinisgalli, president and CEO of Atlanta-based Manhattan Associates, reports that at a recent conference sponsored by AMR Research, supply chain leaders from around the country met to discuss key issues facing the industry. "The No. 1 topic was the increasing transportation costs, whereas in the past number of years the leading topic had been supplier performance." High on the agenda of management decisions associated with transportation costs are the net value of extended global supply chains. This is prompting reevaluations whether near-sourcing offers a solution to ease the pain and an alternative location for U.S.-bound goods currently coming from China and the Pacific Rim. With about 65 percent of the country's population residing in the east, near-sourcing from Mexico, Central and South America certainly offers an attractive advantage of not having to ship cross-country from ports like Los Angeles or Long Beach.

As with any incipient change, some hesitate to conclude that near-sourcing is a long-term trend to reckon with. Denver-based ProLogis, for one, which pays close attention to customers' changing supply chain needs, remains uncertain. "To date, we haven't seen any of them make wholesale changes to the location of their facilities as a result of the run up in fuel costs," notes Mike Peters, first vice president of global services.

Others like Greg Aimi have a different view. Near-sourcing is definitely an escalating and emerging trend, notes Aimi, director of supply chain research at Boston-based AMR Research. "I think it's still in its infancy, but the cost of oil is causing it to be more acute." Aimi adds that in the first six months of 2008, AMR Research saw a significant demand for network design studies, beyond what researchers were expecting. "People are concerned about risk mitigation strategies and continued congestion issues at the Port of Los Angeles. So people are very sensitive to the effects of the outsourcing model."

'Green' also figures in the strategy. Companies can reduce their carbon footprint by choosing near-sourcing. "Everything associated with sustainability is very real," continues Aimi. "We see many of our clients already asking us to include this as part of their planning and decision-making process."

Regardless of whether this is a sea change or not, supply chain executives are taking a harder look at their manufacturing and transportation costs in an attempt to contain total landed costs. "With oil at \$150 a barrel, you have to ask the question if it makes sense for you to manufacture locally in order to cut down that transportation piece," suggests Neil Doyle, executive vice president of infrastructure and transportation development for Chicago-based CenterPoint Properties. The firm owns, acquires, and develops industrial real estate and related rail and port infrastructures, owning 45 million square feet of distribution space on 8,000 acres in the Chicago market. "You need to determine if this new model

overrides the cheaper overseas labor manufacturing coupled with the longer transportation run."

Near-sourcing reduces some uncertainties and security concerns related to overseas manufacturing and transportation, continues Doyle, pointing to Wal-Mart's surge of near-sourcing in NAFTA countries. "With fuel costs up, the old model of entering an LA port and then getting products where they need to go is being replaced by entering at the port closest to your consumption base. This means the Southeast ports since the majority of the population is east of the Mississippi."

CenterPoint developed a number of on-tarmac airfreight facilities, including several at Chicago's O'Hare Airport. "We rolled that concept into developing intermodal centers across the country with the theory being to locate your DC next to the rail terminal via the inland port model, which is no different from locating your DC next to a maritime port," says Doyle. "You get more certainty and substantially reduced cost in your supply chain because you eliminate the dray movement from the port to your warehouse."

Doyle notes DC locations are shifting closer to populated centers than was true in previous years. "The day of the DC located in less-populated areas with cheap or free land is being replaced by the population-center model. What is also coming into play now and revising the supply chain as we know it is the cheap U.S. dollar, which means it might make sense to manufacture goods in the U.S. now more than anytime in the past ten years."

Manhattan Associates reports seeing more companies reevaluating where they source product. "Manufacturing U.S.-consumed products in China added time and transportation expenses, but saved on factory labor," says Sinisgalli. "Now that transportation costs are escalating, companies are re-examining questions such as, 'Do I manufacture jeans in China or am I better off manufacturing them in northern Mexico to reduce my transportation costs?'"

While some companies are still evaluating the changing supply chain landscape, others are

beginning to make moves to near-source. But no one can change their supply chain models overnight and it will take some companies time to work through the process. "Most thought-leading companies continuously examine their supply networks to refine where they would like to be in two or three years so that as they make changes today, they are in line with their desired future end-state," says Sinisgalli.

Economics of proximity

Certain product groups make economic sense to produce in or near the consumption-market country, notes AMR's Aimi. "Products with a volatile demand that is difficult to predict, such as apparel and consumer electronics, are the ones that should be looked at for near-shoring first."

For example, a computer company might make components in bulk and ship them to a fulfillment center close to markets, where each computer is configured according to unique customer requests. "A retailer like Best Buy might have 10 different choices of a product on their shelves," explains Aimi. "They can monitor to see which ones are selling so they can issue a slowdown or speed-up to the manufacturer, based on demand."

Chainalytics reports it is noticing another pattern among clients. "It is a strategy called postponement--or delaying for as long as possible the forward deployment of products to as close to customers as possible, holding product back further down-stream in the distribution network," explains Jeff Metersky, vice president of supply chain strategy practice for the Atlanta-based firm. "Since they don't know for certain what customer demand will be, they will hold back until they receive the final demand signal that allows them to move products to customers."

Companies are also containing costs by increasing inventory--depending on the nature of the products, reports Metersky. Remember when holding inventory was a bad thing? That strategy is changing to accommodate rising fuel costs. By pushing more inventory into the network, companies can reduce transportation spend by shipping larger shipments or

by shipping via more fuel-efficient and cost-effective modes.

One of the trade offs companies have wrestled with over the years has been the balance between transportation costs and inventory costs. "JIT inventory management was a beautiful thing when oil was cheap," explains Sinisgalli at Manhattan Associates. "In some cases, holding larger inventories but making fewer deliveries will be the future strategy."

Backhauling will be a top priority to avoid running empty miles. Sinisgalli points to industry studies that conclude that over 10 percent of the 150 billion miles U.S. truckers drive annually are driven empty. "So you can look at this from an environmental perspective as well as from a cost perspective for motivation to develop opportunities to do things more efficiently."

As this trend evolves, companies are thinking about changing their network configuration to include more and smaller warehouses close to drop-off points in an attempt to maintain service levels while reducing transportation costs, adds Sinisgalli. "You will still have the large warehouses around the ports of entry, which will remain the most efficient places to handle goods."

Metersky at Chainalytics adds that what changes the distribution network is the amount of inventory flowing from 'the make' to 'the buy.' "The demand-pull signals first indicate what is selling where and then they determine where the DC should be located. As sourcing patterns change, so will the driver as to where those DCs are located."

So where does one begin in changing already established networks? Companies need to conduct a network optimization assessment to simulate demand when to consider moving to a near-sourcing model. The manufacturing location should be close to rail and intermodal access. State taxes, labor costs, and real estate costs should be factored into the assessment. "Companies should understand what their inventory holding costs and transportation costs will be with respect to satisfying customer demand," notes AMR's Aimi. "Don't forget to add in the

realities of state and local taxes. Know the labor market and the cost of that labor, as well as real estate costs. These are additional factors you must represent when you model because if you leave them out of the modeling process, they could foil your entire plan."

Drayage costs are key for deciding where a DC should be located, yet they are often overlooked, notes Bob Liss, vice president of supply chain for The Allen Group in Dallas. For instance, a company with a DC located in a logistics park adjacent to a rail terminal that is importing over 100 containers per week can save millions of dollars a year on in-the-gate shuttle costs--versus over-the-road drayage costs to points outside the logistics park.

Liss adds that drayage costs will only get worse. He reports rising gas prices caused 1,000 truckers to go out of business during the first quarter of the year, with another 2,000 expected to do the same by the end of the second quarter of this year. "With this capacity taken out of the market, trucking rates for drayage are expected to rise between 8 percent to 10 percent by the fourth quarter."

Another strategy helping companies contain total landed costs is deconsolidation, notes Dave Ganor, vice president of Business Development for Contract Logistics at Pittsburgh-based GENCO Supply Chain Solutions. "We are seeing more requests for deconsolidation centers, not only at the major ports of entry, but at secondary ports as well in the near-sourcing strategy."

Although Ganor reports GENCO has noticed some near-sourcing movement, he says deconsolidation strategies continue to drive the networks of larger global customers. Goods are received at a transload center where they are reconsolidated into full trailer loads in response to updated demand. "They are shipped via truckload or intermodal, depending on which mode is more cost effective. Deconsolidation strategies are popular because shipping containers inland is an expensive proposition. Then you have to worry about repositioning those empty containers."

Inland ports

Rail-based freight drove the development of inland ports from about 1995 through 2005, explains Robert Harrison, economist and research scientist at the Center for Transportation Research at the University of Texas at Austin. Rail double-stack transcontinental services, particularly serving West Coast ports, soon carried large volumes of containers destined not just for northeastern markets, but to terminals serving cities like Dallas, Kansas City, Memphis, and Chicago.

"So the notion was to take commodities to one centralized metropolitan site and deliver product to DCs close to these new terminals," Harrison explains. "They are multi-modal, value-added centers that come in all shapes and sizes, and are really streamlining the importation process for containerized products originating from primarily Asia."

Inland ports do more than just duplicate port or gateway functions at inland locations. They concentrate transportation and logistics services, helping transportation planners to promote economic development through logistics integration. Some value-added services include light manufacturing, as in the case of Hillwood's Alliance Texas in Fort Worth.

"This was one of the early successful and fast-growing centers with a large BNSF terminal, airport, and interstate access that attracted a variety of DCs and logistics services," Harrison reports. "They now provide a whole range of services to support DC operations and the efficient movement of goods. When DC efficiency was impacted by labor turnover due to the long commute from Dallas, Hillwood constructed a housing subdivision, together with associated services. It is a planned community rather than a terminal in the traditional sense." The development now includes high-end homes, an air cargo facility, medical facilities, and shops.

Nokia's near-sourcing arrangement at Alliance is a good example of how inland ports can expedite product manufacture. A few years ago, the company had a two-prong approach, with components coming

in from both Singapore and Mexico. "They had regular service from Singapore on Lufthansa into Dallas-Fort Worth and they would near-source everything else based on their daily order requirements," Harrison says.

Black & Decker has a similar arrangement, utilizing the border maquiladoras along the U.S.-Mexico border. Imports from Mexico still tend to be trucked, although the Mexican rail system is being strengthened. Kansas City handles both Asian and NAFTA commodities and is a major proponent of the inland port concept to the point where they are negotiating to have a Mexican customs facility to handle inbound NAFTA commodities, reports Harrison.

Whether products are coming from Mexico, Central America, or China, they must move efficiently from the border into the heartland. "The price of fuel is driving the long hauls away from truckers to stack-trains, which will terminate at a few inland intermodal terminals," explains Liss at The Allen Group. Companies with DCs at logistics parks adjacent to intermodal terminals in key distribution cities like Chicago, Dallas, and Kansas City can save on the cost of moving containers.

The Dallas Logistics Hub, developed by The Allen Group, is preparing for opportunities existing in that market. Its location, on 6,000 acres, will benefit from the proximity of two Class 1 railroads, four major interstates, and Lancaster Airport, which will become an air-cargo facility. Its plans include mixed-use development and will have 60 million square feet of distribution, manufacturing, office, and retail space.

"When the Panama Canal is widened, the Port of Houston traffic can truck right up to Dallas," says Liss. "And three miles west of the hub's western boundary is I-35, which is the NAFTA corridor going down to Laredo. So it is ideally located for Mexican imports."

Bringing international containers to Dallas where they can transload into domestic containers will help

balance the network while achieving better total landed costs, explains Liss. "You are closer to the eastern markets and you have carriers looking for backhauls, so the economics are there. You have to be loading in both directions, so you can create domestic capacity with import loads and then turn the boxes around with export cargo." He notes that the cotton industry is one major segment looking for export boxes. Anticipating increased export volumes, Liss recently met with container leasing companies to negotiate a supply of guaranteed containers into Dallas.

The railroads are investing in updated infrastructure to handle increasing volumes in their high-density lanes. "Railroads are improving their tracks to be service-competitive with trucks," says Liss. "BNSF and UP are double-mainlining high-density intermodal corridors. This will increase their capacity and improve service." He adds that Norfolk Southern is investing millions into the Meridian Speedway to connect into Dallas from Meridian, Mississippi and KCS has invested over a billion dollars in its rail lines in the U.S. and Mexico.

Down the road

An area to watch, notes Harrison, is the rise in U.S. exports. "We will begin to think about inland ports as part of the supply chain that works in both directions. With the falling dollar and the growth of exports requiring containerized boxes, there will have to be a bit of fine-tuning of the supply chain."

In conclusion, it is accurate to say that the global supply chain is flexing at the moment, although slowly. "The cost of fuel is definitely affecting the supply chain," says AMR's Aimi. "We now have to contend with higher fuel costs after the overzealous approach to moving to China. This is causing volatility in the network so we have to reassess our move to China."

Europeans have faced high fuel prices for years and have continually adapted their supply chain networks, inventory levels, and transportation functions to improve operating performance,

reminds Sinisgalli at Manhattan Associates. "So there are parallels between what Europeans have already adopted and what the U.S. will likely evolve to. As the microeconomic landscape shifts rather radically, we will see companies that adapt to rising fuel prices with better-optimized supply networks achieve a competitive advantage."