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Transportation and logistics professionals can’t seem to get a break. Just when we thought that the economy was finally experiencing a slow albeit unsteady upturn, fuel prices began creeping higher, forcing freight rates back on the front burner.

According to the U.S. Freight Rate Index—an indicator tracking the average cost per mile of land transport in the U.S.—the double-digit increase in the price of fuel has pushed the average cost per mile from $2.22 in 2010 to $2.39 in 2011, up 7.7 percent. That means a manufacturer with an annual transportation operating expense of $100 million in 2010 can expect to add $7.7 million more for 2011.

And there’s more bad news: Many are predicting the cost per mile to get even worse with the global demand for oil increasing and the availability of truck drivers decreasing. To help us sort out how these factors are affecting America’s distribution networks, we turn to four network strategy experts from three leading supply chain and logistics consulting firms.

According to Marc Wulfraat, president of Montreal-based MWPVL International, the key question many companies are now evaluating is: At what point whether driven by reducing costs or by new business strategies, our panel of experts says that rethinking your distribution network has become more important than ever.
does it make economic sense to add
more distribution facilities to reduce
inbound and outbound miles?

Paul Evanko, senior vice president
of York, Pa-based St. Onge Company, agrees
with Wulfraat’s assessment. “Many are
making the move towards smaller dis-
tribution centers (DCs) located close to
major markets, to ports, and to inland-
intermodal logistics centers.”

But it isn’t only the price of fuel that
has shippers rethinking their distribu-
tion networks. The implementation of
new business strategies has also been
another major driver. “Almost every
company that we’ve helped with logistics
strategy in the last two years is
reengineering their logistics network to
either enhance customer service or to
help launch a new customer channel,”
says Todd Soller, retail strategist for
global firm, Kurt Salmon.

Mike Jones, president of St. Onge, is
also seeing the same changing business
strategy scenario play out in many of the
studies that his firm is doing. “Recent
network studies have not only been initiated by ongoing mergers or acquisi-
tions, but also by corporate edicts
looking for cross-divisional synergistic
opportunities,” says Jones. “With the
latter, while the individual businesses
may operate with great autonomy, the
corporate parent still wants them to
look at opportunities to share distribu-
tion and supply chain resources.”

Whether driven by reducing costs
or by new business strategies, rethink-
ing your distribution network has now
become more relevant than ever. With
typical cost savings of 15 percent
and more, these studies also result in
allowing companies to service their
customers more quickly. “This can
make a huge difference with how a
company is perceived by its customer,”
notes Soller.

“The ability to get product to market
in one to two days when the competi-
tion can only deliver in three to five days
is considered to be a serious weapon,”
says Wulfraat. “It may be worth it to
spend more to buy more market share.”

Which begs the question: Is your
network up to par? In the next few
pages, our experts share six essential
tips for network modeling success.
With a combined 83 years of experi-
ence and over 150 network studies
under their belts, you might want to
heed their advice as you optimize your
network.

Traditionally, in many DC projects,
business owners and stakeholders don’t
get involved until the very end when
they give their approval on the overall
output. But in a network strategy study,
our experts agree that engaging high-
level management early on is a must.

“Don’t have them show up on the
15th week of a 16-week study and start
throwing curve balls and challenging
the assumptions,” explains Jones. “Get
them involved from the beginning to
establish your assumption sets.”

Soller also recommends involving
managers from sourcing, product de-
development, merchandising, and sales to
get all of their perspectives for inclu-
sion in the overall solution design.
“These managers bring perspectives to
the table that make the overall result
much more effective; it also ensures
buy-in and belief that the new network
is a good decision for the business.”

Soller cites, for example, how a sales
manager can bring to light specific
needs of individual customers, allow-
ing you to address them within the net-
work, rather than creating a one-size-
fits-all solution for all customers.

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List of commercially available software tools for use in supply chain design and network modeling.
(Updated from “State of the Art Survey of Commercial Software for Supply Chain Design” by Kenichi Funaki from Supply Chain and Logistics Institute,
Georgia Institute of Technology)

Tip 1: Involve high-level management.
Tip 2: Ask the right questions.
Tip 3: Ensure the business owner is involved.
Tip 4: Get the right team at the start.
Tip 5: Identify all assumptions.
Tip 6: Get all of their perspectives.

A good distribution network redesign encompasses a number of key areas of
the business that all need to be consid-
ered and questioned.

Wulfraat lists some of critical ques-
As labor becomes more expensive in China, then manufacturing isn’t moving back here. It will move further south in Asia into Indonesia, Malaysia, Vietnam, and India,” says Evanko. “Those countries still have a labor cost advantage over China.”

Tip 3

Use an effective network modeling packaged tool

Up to a certain scale, modeling your network in house using home-grown spreadsheets and databases can get cumbersome—if not impossible. Choose one of many commercially available network modeling tools.

“These tools can help a company develop a very robust initial solution and build the capability within your organization to continually monitor what’s happening within the logistics network,” explains Soller.

Wulfraat cautions, however, against solely depending on these tools to optimize the network. “A software tool will help to figure out a small but important subset of the overall information that is needed for a study,” he says. “But truthfully, the CEO does not care if you used a hammer or a drill for the job. The CEO wants to understand the financials, customer service impacts, and risk sensitivities.”

What’s the consensus? In any good network model redesign, you need both. "It’s important to involve the business owners within the organization in conjunction with using the analytics available in the tools," concludes Soller. "The business owners help you ask the right questions and the tools assist you in developing more sophisticated answers to those questions.”

Tip 4

Perform an inventory optimization study

According to St. Onge’s Evanko, one of the most overlooked areas in many network designs is inventory. While adding more DCs may reduce transportation costs, it also requires you to carry more inventory—and many times this inventory is

More thoughts on America’s Distribution Networks:

Marc Wulfraat, president, MWPVL International:

“The concept of the 12,000 mile supply chain whereby goods produced in China and Asia are shipped into North America is here to stay for any industry with a high labor time component involved in the production of goods. We expect to see a shift towards near-shoring and domestic production for products that are characterized by high cube/weight/value as businesses look for ways to reduce inbound transportation expense and to increase inventory turns caused by 25-30+ day delivery lead times inbound.”

Mike Jones, president, St. Onge Company:

“Ten years ago, people were hung up on inventory reduction. That desire to reduce inventory drove the consolidation of facilities. Now, with low interest rates decreasing the carrying costs of inventory versus the rising costs of freight, many have argued for more facilities. The more facilities you have, the shorter the lead times, the lower your outbound freight. However, the more important your inventory sizing and deployment strategy becomes.”

Paul Evanko, senior vice president, St. Onge Company:

“More companies have expressed interest in sustainability as corporate citizens and also as wanting to be perceived by their customers as ‘being green.’ So when we do a network study, one of the things we’ve been looking at is the impact of various network configurations on greenhouse gases. You can see what the incremental cost would be to add a facility that might yield a significant reduction in greenhouse gases.”

Todd Soller, retail strategist, Kurt Salmon:

“In the past many companies would have their own internal network and not leverage any logistics service providers or 3PLs. Companies are becoming much more sophisticated. They’re using 3PLs and integrating them into their own internal network of DCs. 3PLs have a greater capacity to scale and ramp with regard to seasonal volume, assist with rapid geographic expansion, and handle certain product flows that allow a company to level load its existing network while meeting the demands of a changing environment.”
far from optimal. “But it can be made optimal by coordinating an inventory optimization study with the network design study,” says Evanko.

After the modeling tool identifies the number of facilities needed and roughly where they should be located, Evanko suggests using algorithms to determine the right amount of inventory to achieve a specific level of service that can be customized for each of the facilities.

Jones points out that how you deploy inventory becomes more and more important the more facilities you have: What products are you going to stock? Where are you going to stock them? “We’re getting customers wanting us to supplement the network study to answer more tactical level questions,” says Jones. “It’s not just how many facilities and where they’re located, but how am I going to deploy the inventory, route my trucks, and in some cases look at the design of the facilities themselves.”

Certain areas have become hotbeds for distribution primarily because of their proximity to the U.S. population.

Evanko points out, however, that these popular areas that companies gravitate toward means that there could be fierce competition for the labor force. Turnover rates become high because workers would rather work down the street for another DC that’s offering 25 cents more an hour.

He recommends analyzing the local labor market of the candidate locations to determine not only if there’s an adequate labor supply, but also to determine if socio-demographic characteristics are amenable to jobs in light manufacturing and distribution.

**Tip 6**
**Take your time.**

**Tip 5**
**Make sure there’s labor.**

Depending on the complexity of the network, the availability of the data, and the experience of the project team, a typical network study can take up to six months.

“I’m amazed at how many companies are making big, multi-million dollar decisions, but for some reason don’t spend the time to do it right,” says Jones. “They have to do it in five to six weeks. Most of these studies rarely take less than three or four months to do right.”

Maida Napolitano is a Contributing Editor to Logistics Management