

# supply chain

## ALL IN THE TIMING

Recent catastrophes in Japan are spurring a reevaluation of just-in-time manufacturing.

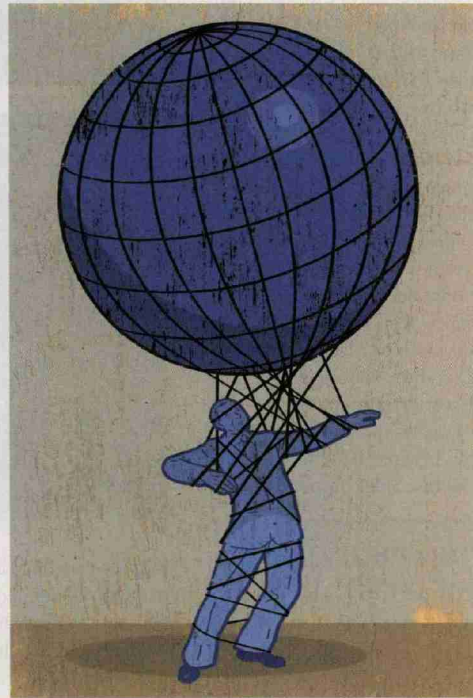
BY DAVID M. KATZ

**T**HE SEQUENCE OF DISASTERS THAT HIT Japan starting on March 11—the record-setting earthquake and associated tsunami, a series of aftershocks, and the ongoing crisis at the Fukushima nuclear power plant—are likely to affect the supply chains of many U.S. companies for some time to come.

Particularly hard hit has been the manufacturing sector, with two industries, automotive and electronics, feeling the most pain. “With Japan producing 40% of the global component supplies, electronics have been especially worrisome. Bringing in new sources of supply is not easy, since many of the electronic components manufactured in Japan are highly specialized, and it will take time to find new sources,” according to a report by Dun & Bradstreet on the business impact of the catastrophe.

In the auto industry, the effect on car makers has ranged from the outright curtailment of manufacturing—both within Japan and at other locations, including the United States—to a diminished choice of options. Honda Motor, for instance, began cutting production levels at its U.S. and Canadian auto plants at the end of March because it lacked critical parts supplied by Japanese manufacturers, and predicted that production adjustments would continue for an undetermined time. Less affected was Ford, which reported that the only impact was a slowdown in producing vehicles in certain paint colors stemming from the fact that it had sourced an essential pigment from a plant in an affected area of Japan.

At the risk of seeming insensitive to an event that



claimed such a heavy human toll, it can be said that the Japanese earthquake and its aftermath appear to have provided some useful supply-chain lessons for U.S. companies. For many, one lesson has been how little they actually know about who their suppliers' suppliers are, and how prone those partners are to disruptions. Also instructional has been how vulnerable the most extreme forms of lean, just-in-time production can be to inventories when a crisis hits.

On the plus side, the global nature of supply lines that have evolved in recent years has enabled many U.S. companies to find alternative sources quickly.

The effects have indeed been disparate, for companies both large and small. Contrasting the experi-

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ence of two vastly different companies with operations in the United States—both of which depend heavily on suppliers in Japan—brings home that disparity. On one hand, there's Toyota Motor, one of the hardest-hit companies. Citing parts-supply difficulties, Toyota suspended production in April at its North American plants on Mondays and Fridays and assigned the plants to produce at 50% of their normal rate on Tuesdays through Thursdays. The company stated in a filing that it expects that huge disruption to “normalize in stages, starting in August, with full normalization expected to take place between November and December 2011.”

Compare that with the smooth sailing that Joto Sake has encountered. A New York-based importer of 10 artisanal brands of the rice wine from generations-old family brewers, Joto might have been expected to suffer severe disruptions of shipments of its delicate product. Although sake breweries are scattered in a number of other nations, Japan is the sole source of supply of the brands that the company's owner, Henry Sidel, imports. Add to



From its exporting to its local dealerships, Toyota suffered mightily from the earthquake. Company president Akio Toyoda pledged recovery by December.

**AT THE EPICENTER, AND BEYOND**

Top 10 supplier industries affected by the Japanese earthquake and tsunami

SECTOR	# OF SUPPLIERS
1. Manufacturing (durable)	873
2. Services	247
3. Computer services	140
4. Wholesale (durable)	203
5. Manufacturing (nondurable)	136
6. Transportation	76
7. Professional services	49
8. Holding companies and investment offices	33
9. Construction	32
10. Wholesale (nondurable)	31

Source: Dun & Bradstreet, April 2011

that the fact that sake is a dated product with a defined shelf life—meaning that on-time shipping is an urgent matter—and you have a supply chain that would seem to be hugely vulnerable to disruption.

Yet Toyota, with its capacity to access alternative suppliers around the world, fared much worse than Joto Sake, which has five employees. What was the difference?

**MAN-MADE DISASTERS**

Perhaps the most important distinction stems from a simple truth: the effects of a disaster on a company's supply chain largely depend on the state of the company itself and the conditions it faces when disaster strikes.

At the time of the earthquake, Toyota was just starting to emerge

from a man-made disaster: a series of devastating recalls that undermined its long-standing reputation for bulletproof quality. In addition to alleged deaths and injuries attributed to accelerators that became entrapped under floor mats, the defects led to class-action suits and government investigations. There were more than 14 million Toyota vehicles worldwide subject to recalls and other safety adjustments in fiscal 2010, the majority of which occurred in the third and fourth quarters of that year.

At the same time, Toyota, like other automakers, was struggling to recover from the global recession. Besides its economic and safety problems, the company is also synonymous with the just-in-time method of managing supply chains—a method that has come in for considerable criticism in the wake of the disaster. To many observers, the disaster has called attention to the weakness of systems so lean that they're especially vulnerable to supply shocks.

Toyota and companies that have followed similar strategies are learning

Clockwise from top: Reuters/Toru Hanai/Issel Kato/Carlos Barria

that they have "instituted part of what they need to be successful. They've built world-class relationships with world-class processes that run very smoothly when things are going well," says Jim Lawton, president of supply-management solutions at Dun & Bradstreet. Now, he adds, they have to assess the suppliers of their suppliers, and beyond, to be able to manage disruptions should things not go well.

As a result of the production strategy championed by Toyota, companies have increasingly outsourced their manufacturing operations in order to cut costs. That has meant that CFOs have less control over supply chains, even as the chains have come to include more and more links in more and more countries, according to Lawton.

Seeking cost reductions by cutting down on inventory and the number of suppliers they deal with, manufacturers in the auto, consumer electronics, and high-tech fields have found themselves short on safety stocks and lead time. "I'm not sitting with a month of inventory any more. I'm sitting with days or hours of inventory. Now, suddenly, there's this direct connection between a disruption on the supply side and a disruption of customer shipments and financial commitments," says Lawton, who expects many companies will reevaluate lean inventory techniques in the wake of the disasters.

Unlike Toyota, Joto Sake's business prospects were at their peak when the earthquake hit. Over the past 10 years, the beverage has become a trendy accompaniment to Japanese food in the United States, and business

has boomed. This year, Sidel expects the company's annual revenues to rise from \$1.8 million to \$2.7 million, building on a rise of 30% the year before.

#### A LITTLE LUCK

That demand prompted Sidel to make changes that unwittingly prepared the company to avoid an inventory crisis. One week after catastrophe struck Japan, a 40-foot container housing 2,000 cases of sake arrived via ocean freight. "Usually I do 20-foot containers, but our business has been doing well, and it's been growing, so I ordered big," he says. Even so, that shipment was barely big enough to supply the stores and restaurants Joto serves, which were in the midst of panic buying because of the situation in Japan.

The cases the firm imports now also carry twice the number of bottles. Faced with margins tightened by stiff dollar-yen exchange rates, Sidel decided to switch from 6-packs to 12-packs. That's because much of Joto's shipping and warehousing expense is charged to it on a per-case basis, regardless of the number of bottles per case.

By boosting inventory even as it cuts costs, Joto appears to have addressed two horns of a dilemma. On one hand, as a small business with high foreign-exchange costs, Joto doesn't have enough free cash-flow to boost its safety stock substantially. On the other hand, Sidel feels he must try to increase his stock because of what he sees as ongoing uncertainty about supply-chain risks in Japan.

Although Joto has thus far experienced only two-to-three-day shipment delays, such occurrences could stretch out. As a result, "I'm erring on the side of being more aggressive in terms of increasing our inventory," he says.

Will Toyota and other much-lauded embracers of just-in-time practices follow suit? **CFO**



"I'm erring on the side of being more aggressive in terms of increasing our inventory."

**HENRY SIDEL,**  
OWNER OF JOTO SAKE

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