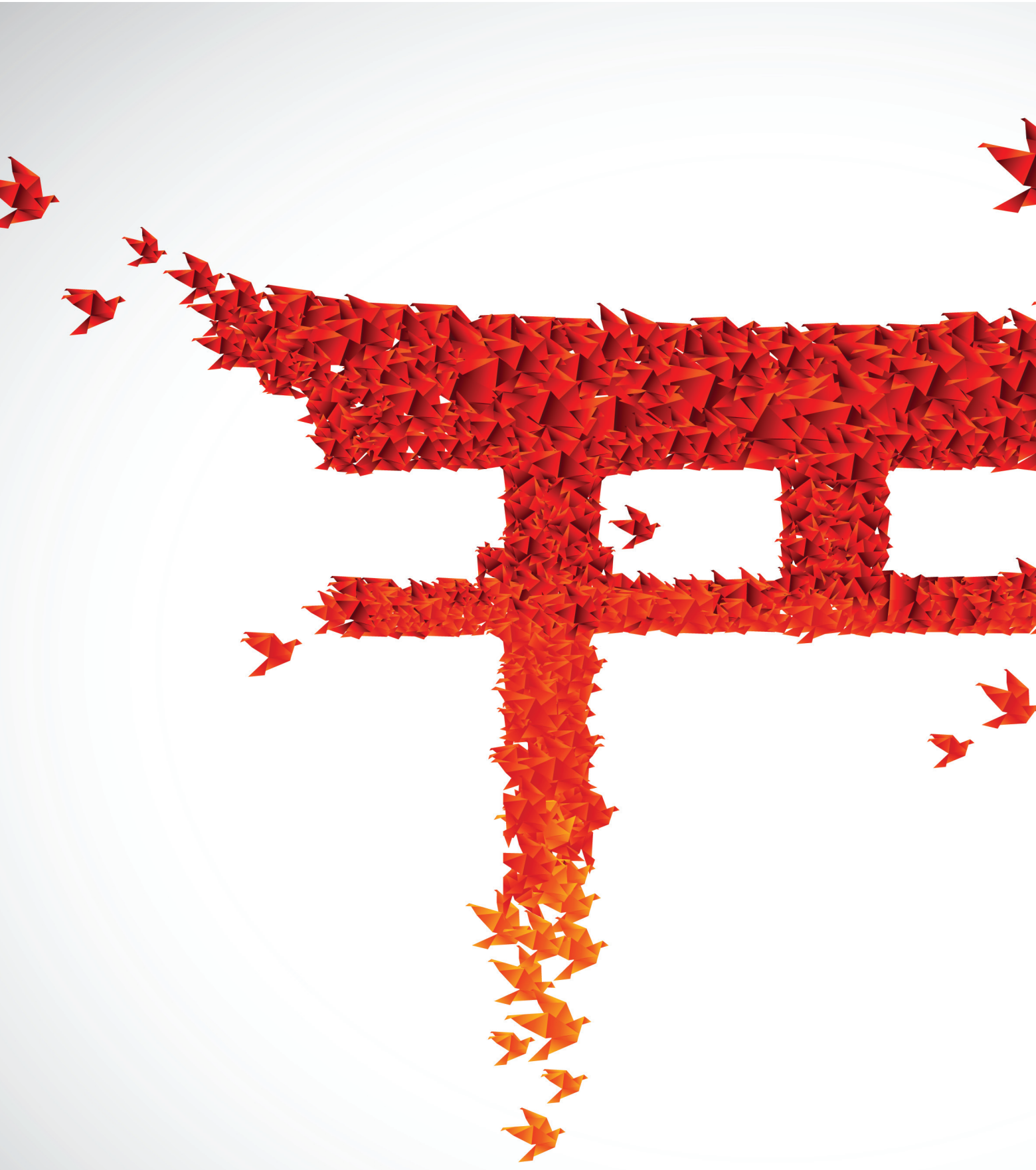

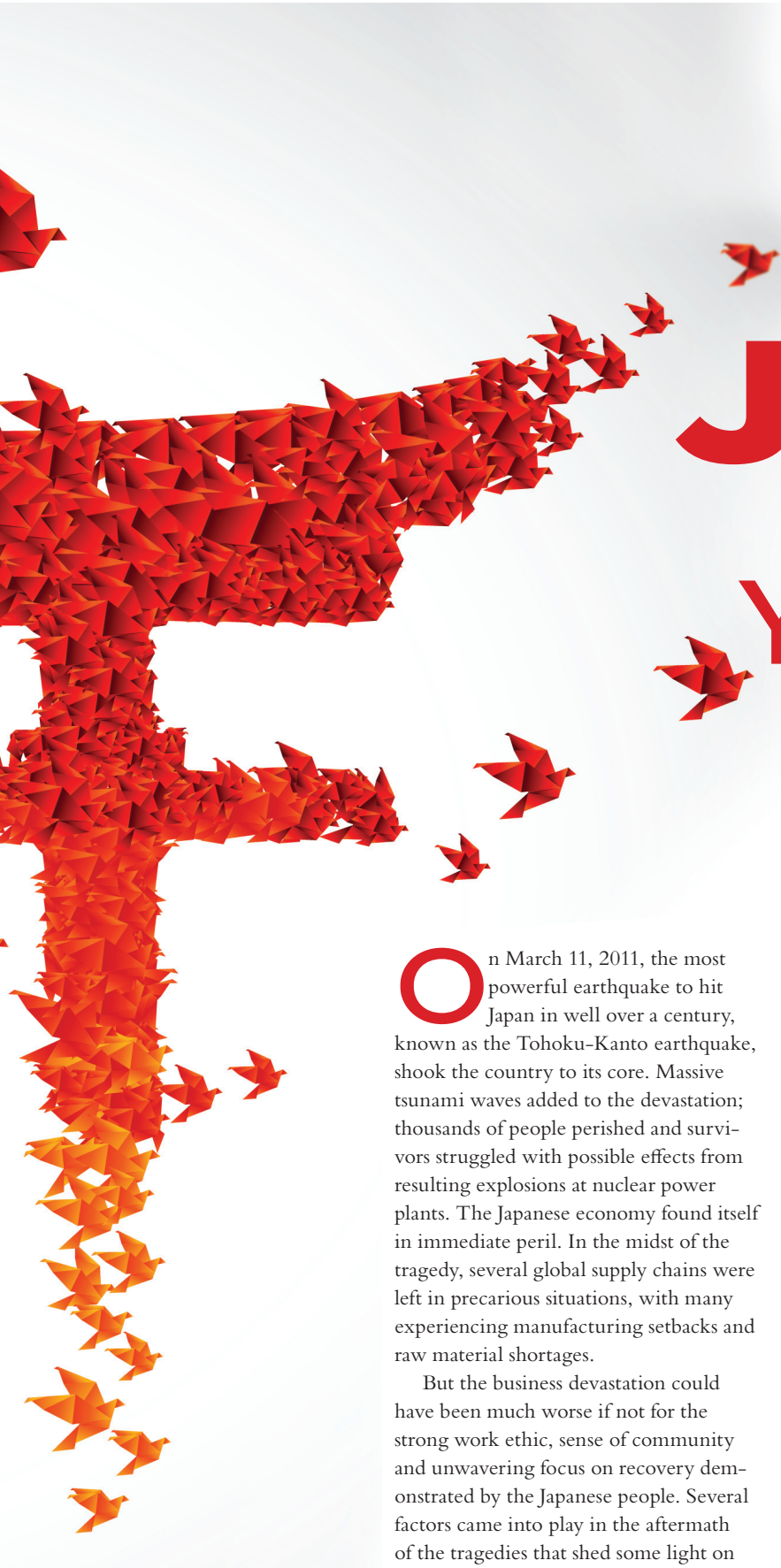

Japan: One Year Later

By Lisa Arnseth

The Japan earthquake and tsunami disasters have taken their toll on Japanese industry and on several global supply chains.

On March 11, 2011, the most powerful earthquake to hit Japan in well over a century, known as the Tohoku-Kanto earthquake, shook the country to its core. Massive tsunami waves added to the devastation; thousands of people perished and survivors struggled with possible effects from resulting explosions at nuclear power plants. The Japanese economy found itself in immediate peril. In the midst of the tragedy, several global supply chains were left in precarious situations, with many experiencing manufacturing setbacks and raw material shortages.

But the business devastation could have been much worse if not for the strong work ethic, sense of community and unwavering focus on recovery demonstrated by the Japanese people. Several factors came into play in the aftermath of the tragedies that shed some light on how supply chains can survive in even the darkest of times.

At the core of the recovery efforts stand the working-class people of Japan, known as *Gemba*, or translated as "the place where value occurs." The Gemba were able to reflect and respond to the immediate challenges brought by the disasters much faster than the leaders in many Japanese corporate headquarters, according to Osamu Uehara, CEO of ISM—Japan, Inc., and a former supply management executive with more than 35 years of experience both in Japan and the United States. "The world was very impressed with the patience and resiliency of the Japanese people as relief operations were mobilized all across the country. Both the community and the production sites displayed dignity, order and a sense of mutual aid to bring the devastated area back from the brink," says Uehara.

Japan: One Year Later

By November 2011, several Japanese companies, including Honda and Toyota, reported a return to normal production levels. Large international companies announced plans to either expand their markets in the country, or in the case of Hewlett-Packard, for example, transfer the manufacture of several notebook computers from China to Japan. Gaining the confidence of the global business world has clearly helped Japan recover, despite the quake damage to Japanese manufacturing industries and the significant impact on global supply chains.

Hiroyuki Ishige, chair and CEO of the Japan External Trade Organization (JETRO), stated in a November 2011 *Japan Earthquake Recovery Briefing*, "The production capability of those afflicted firms has been restored to pre-quake levels, enabling them to once again provide a stable supply of their products to customers around the world. In addition, most foreign companies with operating sites in Japan recognize Japan's importance in the global economy and continue to develop their business in the country in spite of the calamity."

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Piles of debris and rubble are still seen in many areas due to confusion regarding clean-up and rebuilding efforts among the different ministries and agencies in Japan. For example, says Uehara, bridges are the responsibility of the Ministry of Land, Infrastructure and Transport; seafood falls under the Ministry of Agriculture, Forestry and Fisheries; issues regarding radioactivity following the nuclear plant meltdowns are being handled by the Ministry of the Environment; and public health is the responsibility of the Ministry of Health, Labor and Welfare. "All of these different entities trying to sort out responsibilities creates sectionalism, and prevents bureaucrats from achieving a swift recovery or speedy disposition of debris," explains Uehara. "Also, debate on the security of the nuclear power plants and any affected industries is affecting all of Japan. Scientists, scholars, experts and other well-informed professionals are attempting to understand and mitigate the scope of radiation leakage, and this is taking a lot of time, as well."

Radiation concerns continue to affect the way cargo moves throughout Japan. Yoichi Noto, CEO of NRS Corporation in Tokyo, notes that the Fukushima nuclear plant disaster impacted its chemical logistics operations regarding cargo transport. NRS identified areas with strong radiation and set conditions and limits when delivering its product to the affected areas. "We set no-entry zones and entry zones with conditions," he says. "We also set rules so that when receiving cargo from areas with strong radiation levels, we will measure the radiation levels of the cargo when it arrives, and we require the drivers that enter those areas to cover their skin and wear masks." Noto says that as the radiation levels gradually decrease, NRS is periodically revising the restrictions, easing them when possible.

Difficulty Measuring Early Impact

In an August 2011 Deloitte report, *Impact of the Disasters in Japan on U.S. Manufacturing Supply Chains*, several CPOs and supply chain professionals of Japanese companies reported their own experiences in the aftermath of the disaster. To resume normal operations, companies that source or manufacture in Japan reported major concerns, according to the Deloitte report. Deliveries of components from manufacturers in Japan and resumption of production by deeper-tier suppliers, especially in the cases of microprocessors and electronic components, were two primary concerns.

It took several weeks for the full impact of the disasters to hit several supply chains. Regarding imports, the long transportation lead times for items shipped by sea meant that several components were already en route to Japan when the disasters occurred. In the multitiered structure of the automotive supply chain, for example, disruptions to the components in the deeper tiers (microactuators, small motors, specialty electrical connectors and the like) were not immediately apparent. But as time went by, items produced in affected areas or shipments that arrived via those ports began to feel the impact. At press time, custom electronics and items such as resins, solvents and cleaners were still an issue to survey respondents.

In the Deloitte report, Japanese automakers said they are reconsidering how to most effectively split production between domestic and overseas factories, largely due to the ongoing uncertainty surrounding the availability of energy following the issues with reactors at two nuclear plants. Outside of the auto industry, various manufacturing companies are still experiencing sporadic production disruptions due to shortages of parts sourced from the affected regions.

Many Japanese companies experienced a surge in imported supply to make up for lost domestic supply. Noto says that although domestic supply is beginning to resume, the customers of NRS continue to depend on a percentage of imported supply. "We think that from now on, to

prepare for future disasters, the number of customers seeking portions of their supply overseas will increase, so we will see more imported cargo moving through the country," says Noto.

Working Together, Creating New Continuity Plans

One reason for the quick recovery of some industries is that companies moved beyond basic competition, showing active support to help other businesses return to production. For example, Uehara says that Renesas Electronics (a new semiconductor manufacturer resulting from the April 2011 merger between NEC Electronics and Renesas Technology) has approximately 30 percent market share of microcontrollers in the world, and yet its Naka plant was seriously damaged on March 11. To help support the recovery of the plant, many auto manufacturers gathered at the Naka plant and volunteered alongside one another to bring operations back to a major supplier. More than 2,500 people came to the plant's aid and helped in any way they could. Uehara notes that one of those individuals experienced in the well-known Toyota Production System method spotted several bottlenecks hindering the production process. This individual gave appropriate instructions to those on the floor to resolve the issues efficiently and quickly. In the end, the Naka plant was able to resume normal operations at the end of September 2011, one month earlier than projected.

Manufacturers with backup suppliers prior to the earthquake had a clear advantage. According to Uehara, a major international auto manufacturer that exclusively sourced microcontrollers from Renesas was proactive in its risk management efforts by lining up an alternate supplier. Without that foresight, the company would have been forced to cut production in half following March 11. By July 2011, the manufacturer had returned to normal operations thanks to its alternate supplier.

Other positive outcomes have occurred, as well. "Most companies that work with Japanese suppliers took stock and are now much more aware of specific risks and challenges facing their supply chains," says Uehara. In some cases, manufacturers are actively considering reshoring or insourcing to shorten supply chains, as economics have now changed. By doing so, these companies may help eliminate risk associated with global supply networks.

According to the Deloitte report, the disaster opened opportunities for new technologies. As Japanese companies rebuild and resume operations, many are using this time to upgrade and install new technology rather than simply replace the old (such as expanded use of cellphones over reinstallation of land lines, or construction of higher-speed trains). Following the nuclear reactor concerns, it seems apparent that clean energy research may gain new traction, as organizations seek safe, environmentally sound energy sources with fewer high risks associated with nuclear power.

In general, says Uehara, this large-scale natural disaster truly highlights the serious dangers for organizations when supply chains are affected by such events. As they witnessed the Japan disaster unfold, senior managers of companies around the world realized that protecting the upstream supply chain and ensuring smooth supply management operations was crucial not only to the purchasing function, but also the survival of the entire company.

It also highlighted a particular market reality: Because of customers' expectations, supply disruption due to a natural disaster is not likely to be forgiven by using the terms "act of God" or "force majeure." Customers expect uninterrupted supply in this highly connected, sophisticated business environment. "In the 1960s and 1970s, management teams tended to shift toward the risk-taking direction, with risk management rather than crisis control being the focus," says Uehara. "Today, management is transitioning to risk mitigation and elimination to recover normal operations when disruptions occur due to natural disasters or acts of God. This updated way of thinking is likely to lead to new company policies designed to protect supply chains and prevent customer disturbance until absolutely necessary, if at all." ISM

The Critical Issue of Risk Management

One of the lasting lessons stemming from the March 11, 2011 Japanese disaster is that companies that were prepared, either with detailed business continuity plans (BCPs) or risk mitigation strategies, fared much better than those with a lesser degree of readiness. "This disaster was an unexpected, unprecedented catastrophe, and proved that supply management executives needed an unprecedented plan for recovery, as well," says Osamu Uehara, CEO of ISM—Japan, Inc., and a former supply management executive with more than 35 years of experience both in Japan and the United States. "Business or supply continuity planning, on a strategic level, is the most critical policy when it comes to corporate survival, sustainability and being able to meet customer expectations."

In the Deloitte *Impact of the Disasters in Japan on U.S. Manufacturing Supply Chains* report, almost 58 percent of respondents said they plan to rethink their supply chain risk strategy, and 42 percent plan to extend their strategy deeper in the supply chain tiers.

According to the Deloitte report, companies should reflect on and answer the following questions:

- Are our suppliers managing risk as carefully as we do?
- Will a disruption at one of my supplier locations impact our customers or our reputation in the marketplace?
- Are they committed to being a reliable supplier, and to the prosperity of our business?
- Have they taken reasonable steps to protect their ability to meet their business obligations?

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