THE SUPPLY CHAIN TOOLKIT

Your complete guide to supply chain risk management

SupplyChainDIVE

How managers prepare for the next crisis: *procurement, operations and logistics work together to mitigate and avert risk.*

When an earthquake strikes, it's not just the ground that shakes: Natural disasters frequently disrupt supply chains, piling opportunity cost atop property damage for millions of dollars in damage.

A tremor hit Japan's Kumamoto Prefecture last year. Hundreds of buildings fell, thousands of people were injured, and, for days, the world watched as a city destroyed picked itself back up. But the ripple effects of the quake spread beyond the island nation to global stores and dealerships as companies like Toyota and Sony halted production due to inventory shortages. Sony later reported the event cost the company over $1 billion.

Nowadays, the global nature of supply chains make such events inescapable; but what is to be done? Whether it is an earthquake in Japan, a hurricane in the U.S. Gulf Coast or strikes in foreign nations, crisis management has become part and parcel of the supply chain manager's job.

It is a team effort, however: During each crisis, the procurement, logistics and operations departments must all do their part to ensure the chain's resilience. In turn, each department should have a toolkit to reference when disaster strikes.

In this latest series, Supply Chain Dive asked professionals in each department to share how they mitigate crises. Three main lessons emerged: A resilient chain requires full visibility, a clear crisis continuity plan crafted by diverse stakeholders, and active communication upon disruption.

Click on each department above to learn more about the specific tools supply chain professionals can use to leverage procurement, operations and logistics in times of crisis.

LOGISTICS

The Logistics Toolkit

- A continuity plan
- Redundant systems
- The emergency ‘battle box’
- Active communication

When something major disrupts the supply chain, it’s imperative to have a logistics plan in place. Stakeholders save time and effort, and minimize chaos, by immediately turning to their playbook and communicating with those affected.

A supply chain crisis could be weather-related (a tornado, snowstorm, earthquake or flood), human (union strike) or a fire destroying a warehouse. No matter the cause, companies that react quickly will be able to continue operating their business with the least amount of disruption. But that requires planning.

Major companies are doing this type of advanced preparation, but “I don’t know that small or medium size businesses, ones with a $20

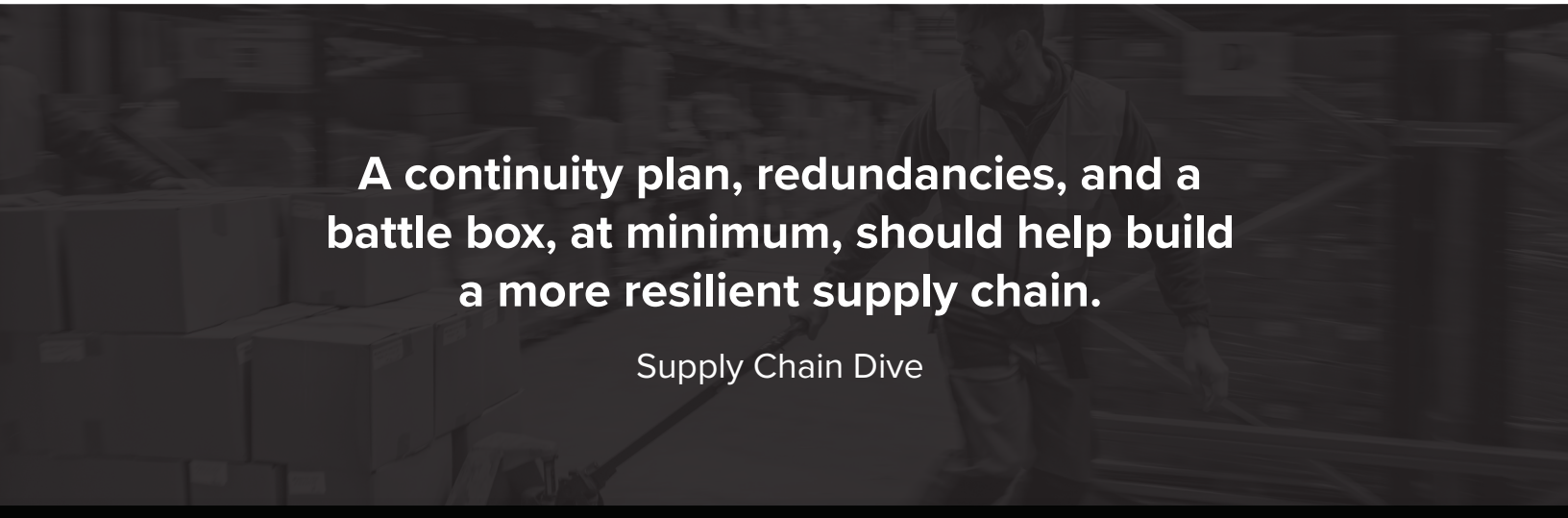
million supply chain spend are really spending a material amount of time on this," says David Broering, senior vice president of NFI Supply Chain Solutions. "They're spending more on the safety of employees versus on goods, transportation infrastructure or capacity. Transportation is a very reactionary business" when it comes to crisis management.

Develop a continuity plan

Whether you call it a continuity plan, a disaster recovery plan (DRP) or a supply chain toolkit, it's important to gather various stakeholders together to talk through possible crisis scenarios. Leadership plays a huge role in this, as back-end support is mandatory.

At Holman Parts, a supplier and distributor of automotive power trains to car dealerships and fleet customers, Logistics Manager John Conte says company representatives from every team come together for the planning. That includes entry level warehouse, drivers, operations supervisors and vice presidents.

In the meeting, they walk through what happens in each step of their supply chain process, and document it. They talk about what happens if a certain system goes down, if the product isn't accessible, if a warehouse has a fire or if they lose internet.



A continuity plan, redundancies, and a battle box, at minimum, should help build a more resilient supply chain.

Supply Chain Dive

By having the stakeholders at the table, it's easier to understand how each role affects the others. It's a domino effect - each part of the supply chain affects others. They come up with a plan for each scenario, so that the business can continue to operate in a crisis. After the planning session, they create a flow chart and then do risk analysis.

The last step is to perform table-top exercises to make sure the plans will actually work. These sessions can be eye-opening, with stakeholders coming into the meeting with one idea, and then realizing what details are missing. They discuss which department should be up and running first. "A lot of people don't think of IT as a department, but we need internet. We need Outlook, and then we need our ERP," says Conte.

Holman Parts asks its business partners about their continuity plans as well. Given how much sensitive information they store in the cloud, including customer information, they've put measures in place to ensure they aren't hit with ransomware or data loss.

They want to ensure that their partners are doing the same. "Our partners, like freight carriers, are an extension of our supply chain," says Conte. "We ask them on our initial SOP, do you have a business continuity plan? What if your systems go down?"

Creating redundant systems

One part of the supply chain toolkit should be creating redundant systems. That might mean having enough safety stock on hand to continue operating your factory for a few days, if supplies are cut off or trucks can't get through. "Focus on what you absolutely have to do to minimize demands on partners, in terms of supply," says Broering.

It might also mean having back-up warehouses in other cities to store products, in case the main distribution center is inaccessible. While Holman Parts maintains seven warehouses in various parts of the country, they also store high-turnover products in limited quantities, at several 3PL warehouses - enough to support business needs for 12-24 hours. That's partly to serve customers in those areas, but it's also for back-up, in case their other warehouses are disrupted. Conte says they also keep spare vehicles on location.

Since customers have expectations of quick delivery, keeping the supply chain flowing in a cost-effective and timely manner is essential to Holman Parts' business. Being able to place orders for a vendor to drop-ship to a customer is part of their continuity plan. "You want to limit the exposure to the customer," Conte says. If a blizzard hits the East coast, the California customer shouldn't be affected.

Logistics managers can decrease transportation problems in times of crisis by qualifying multiple tiers of carriers in advance. However, Broering suggests conducting some business with the various carriers, in addition to just qualifying them, so they understand your needs.

If you call a partner you've never worked with before, you're just another guy.

John Conte
Logistics Manager, Holman Parts

“If you call a partner you’ve never worked with before, you’re just another guy,” he says. Instead, you need a working relationship with second or third tier partners across any needed mode, like LTL, air freight or expediters. Yes, you’ll pay a premium if you’re not a regular partner, but that could make a difference between having access to more affordable transportation during a crisis, and getting gouged or having to scramble.

Of course, key redundacies also include software and storing updated data offsite each day. That way you won’t lose a week or month of transactional history. At most, you’ll lose a day and can get up and running almost in real time.

Create and update the battle box

After the contingency plan is created, all documents should be available to contact the key people at a moment’s notice.

Holman Parts creates “battle boxes,” a term for the documents and laptops given to leadership if there’s a crisis and they can’t access the building. This allows them to work at home or off-site.

Each company should create what works for them, whether it’s a binder, file or laptop. It contains whatever the company needs in the first few hours to keep the business going. Examples may include employee home or mobile phone numbers and customer information.

Holman updates their contingency plan once a quarter, assigning the job to each department’s project coordinator. Any time there’s a change, the coordinator should update the information. They conduct the table-top sessions a few times a year.

Activating the crisis plan

While a crisis toolkit may contain various action plans, it still requires decision making when implementing it. Some crises are reactionary, like an earthquake or fire. Other times, with pending hurricane or snowstorm, you may get a few days to plan.

Conte says that typically he'll hold a management meeting to decide how to scale the reaction. Talking with freight customers can help make the decisions – if they're not going to put drivers on the road, that affects what his company does. He also proactively communicates with customers. Holman looks at what products they have on hand, what orders are coming in and then handles customer orders on a one-off basis.

Companies can create their own logistics toolkits, or hire a consulting company to help. FEMA offers business continuity training courses, and supply chain college programs offer courses on risk and emergency management as well.

However, having a toolkit ready with a continuity plan, redundancies, and a battle box, at minimum, should help build a more resilient supply chain.

PROCUREMENT

The Procurement Toolkit

- **Before the crisis:** Know your company; Learn your suppliers; Study the world
- **When disaster strikes:** Breathe; Double check information; Call up alternatives; Stay updated

Disruptions in the global supply chain can come anytime and from anywhere, and procurement professionals are often the first to get word of it.

Missed deliveries, customs or logistics snags, or even a document snafu preventing a supplier from completing a new design project may, in turn, prevent the buyer's company from meeting customer expectations, multiplying risk along the chain. Faced with such issues, Procurement becomes like an EMT, tasked to best serve the customer with a sense of urgency and an eye for complexity.

Job one of procurement is to maintain continuity of supply. Today's supply chains may boast integrated systems and digital connectivity,

but at the end of the day much of the risk mitigation happens daily behind desks and phones. To do so, procurement professionals must count on a set of both proactive and reactive tools that help minimize or mitigate disruptions.

Resilient chains count on proactive procurement teams

Much of the tools needed to respond effectively to a crisis are gathered far before disaster strikes. A proactive procurement department should make every effort to build a strong foundation by staying aware of risks, trends, and company or supplier needs at all times.

Here are three strategies, and some tactics, to build a resilient supply chain:

Know your company

Procurement operations, supplier selection and performance must align to the needs of your business. When crafting a procurement strategy, make sure you – and your suppliers – truly understand the priorities, financial strategies, and risks that affect your company (and theirs).

- **Align your strategy with needs** — Are you chasing cost savings with lean initiatives, capturing market share with a sprint to market, or enhancing margins with customer intimacy programs? All three? Know where you're going, and share that information with your suppliers.

- **Calibrate your financial lens** — Financial performance is the ultimate measure of business success, so make sure you understand key business concepts like ROI or margin. However, for the CEO, the final arbiter of supplier performance is registered as the cost of goods sold, so watch that bottom line.

- **Create a risk register** — Awareness of risk is critical, so track both current and potential disruptors. Look at high-level risks like hurricanes as much as low-level risk like a unique supply shortage. Label them according to intensity, and don't be afraid to mitigate middle intensity risks before they escalate.

Learn your supply chain

Procurement is the first line of communication for a supplier, so it's up to the department to know when, why and how disruption can occur. Procurement folks with deep contact lists and a willingness to solve problems get recognized, and perhaps promoted.

- **Map out the tiers** — While it may not be practical to map out every leg of the supply chain, critical path materials should at minimum have a supply chain plot plan identifying critical links and methods of communication for all the players.

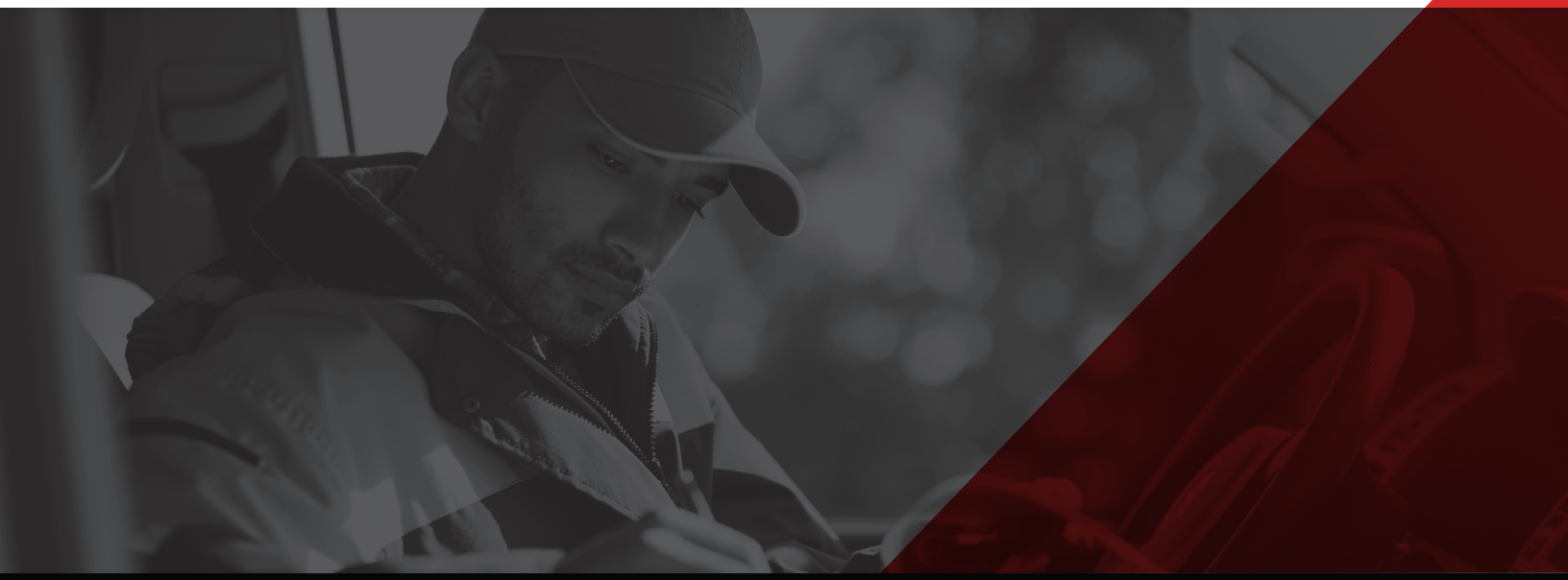
- **Practice four-way communication** — Supply grids encompass internal and external operations. Communicate horizontally and vertically, supporting suppliers with accounting and engineering help, while talking with customers and supply chain partners to improve service.

Study the world

The supply chain is truly global, and the world seems on the cusp of change. Procurement professionals should be prepared for economic, political and technological disruptors. Stay ahead of the curve by staying informed and continuing to develop your skills.

- **Assess current events** — Geopolitical tensions, economic trends, environmental pressures and global political turmoil make up a hardy stew of potential supply chain risk. Will events like Brexit, tensions in the Korean Peninsula, or flooding in California impact your prime supplier's manufacturing operations?

- **Keep learning** — Professional development is your responsibility. There is no excuse in not keeping up with current trends in procurement, operations, and logistics. The world is a click away, "I didn't know" just doesn't work anymore.



When disaster strikes, react accordingly

When disaster strikes, and it will, look at it as a learning opportunity.

Many years ago one of my engineering colleagues said to me "don't sweat it Rich...there is a workaround for everything." Jim was right. There are no new problems, just different ways to solve them. However, here's one tried-and-tested process that can help get you started:

Double check your information

Panicking never helped anyone and chances are there are those in your organization already screaming about down production lines, unhappy customers, and the impending business apocalypse due to a late shipment. Take a moment to double check what you know. Having full information is empowering and takes emotion out of the situation.

- **Keep your wits about you** — Take a breath, analyze the situation, get the full story from the supplier including the get-well plan, and look at alternatives to solve the problem. Maintain a professional presence to diffuse emotional responses and show that there are adults in the room.

- **Check on the validity of emergency** — Far too often we rely on a computer report to identify a missed delivery or material shortage. Make a call, take a walk, or send a text: The story in the cloud is often different than the story on the ground.

- **Learn the whole story** — Contact the offending supplier to find out the real story. Discuss problems, solutions and alternatives. Develop a 'get well' plan. Quantify the solutions in time and money and present those findings to the appropriate decision makers. Work through the tiers if need be to get to the core of the issue causing the turmoil.

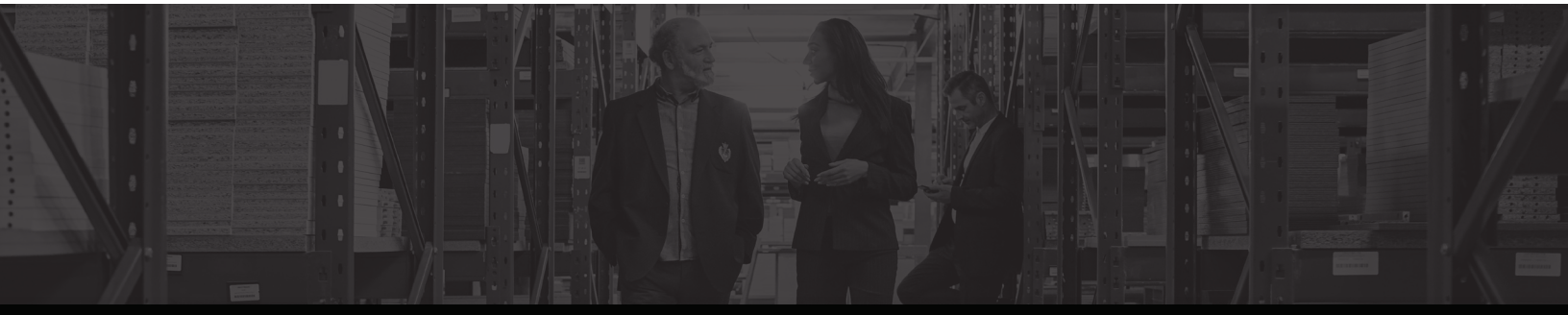
Stay updated and find alternatives

Once you have assessed the severity and validity of the situation, it's time to act. We learn a lot when working through a problem, and sometimes, we even come out better for it.

- **Find an alternate source** — Sometimes you just need to find another supplier and place another order. I've stumbled on many good suppliers when existing suppliers have failed for one reason or another. And, a good supplier will not take advantage of you during your emergency; they want future business.

- **Develop second sources for critical products** — If a sole source supplier is creating a potential risk, invest in qualifying a second source. A good supplier will understand that they may have a secondary print position. But they will stand ready if the primary supplier fails. Some safety stock may help as well.

- **Keep track and communicate** — Update the delivery information and the status of the problem resolution to the necessary stakeholders, based on the criticality of the disruption. Being as accurate as possible (to the hour) will keep people off their toes.



I've worked the line and staff positions in several manufacturing companies and I've never seen the factory go dark, a customer quit, or a supplier try to fail on purpose. In fact, I'd say half of the problems are caused by the organization doing the purchasing.

No matter the planning or the preparation, most of the risk issues are out of your hands. Resolving them, and working through the root cause problems so they don't reoccur, is not only fun, but also your job.

OPERATIONS

The Operations Toolkit

- **A map to assess**, mitigate and manage risk
- Tools to **predict the impact of disruptions**
- A manager willing to **make the tough calls**

Pilots can be certified in two ways: Visual Flight Rules (VFR) and Instrument Flight Rules (IFR). VFR certified pilots can fly only when visibility is good. IFR pilots, however, can fly purely on instruments.

“If you’re a VFR pilot, you’re assuming the sky is always blue and you can fly visually. Most companies are VFR flying,” says Bindiya Vakil, founder and CEO of Resilinc, a Milpitas, CA, provider of supply chain risk and resiliency solutions. “They never know when IFR conditions might appear. Just because you leveraged out of your last event doesn’t mean you’ll get the same thing next time. You have a supply chain operating, but then something happens.

Without monitoring it, you think everything is normal."

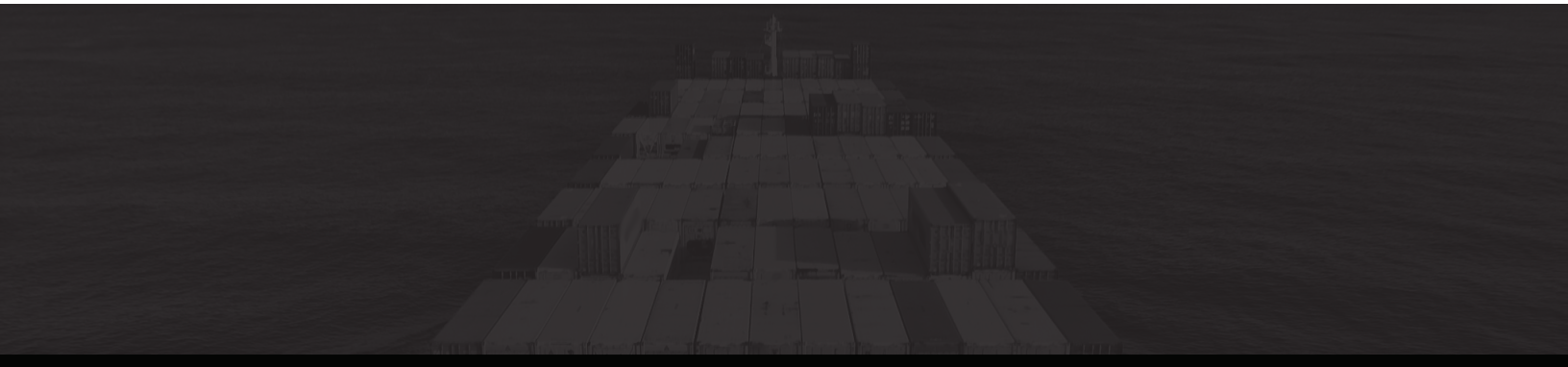
Normal can be shattered by what has become known as Black Swan events — something that comes as a surprise and has a major impact. To deal with them takes preparedness and a proactive approach, facilitated by mapping the supply chain.

4 stages to achieve risk maturity

Supply chain network mapping, Vakil explains, is a process to create an end-to-end map — from raw materials to customers — that yields the connections, relationships, and dependencies between internal manufacturing and partner supplier sites.

It is a critical factor in achieving supply chain visibility by identifying the multiple sub-tiers (your suppliers' suppliers) of an end-to-end supply chain. With it, organizations can document and identify such things as single-source suppliers, upstream and downstream partners, labor suppliers and more.

Greg Schlegel, founder of The Supply Chain Risk Management Consortium, keeps his eye on Black Swan events, as well as all the other risks that are out there waiting to wreak havoc. As a professor, APICS-supported Risk Certificate workshop facilitator, and supply chain executive of 30 years, Schlegel tells his students to "always remember, never forget to ID risk, assess risk, mitigate risk (if you can) and manage that risk."



His mantra is a four-stage journey to what he calls the "New 21st Century Risk Maturity Model:"

1. **Visibility.** Make sure you know exactly where your suppliers, distribution centers, customers, etc., are.

2. **Predictability.** Can you predict or do you understand how your company will react? Digitize your supply chain and map it on the computer. See how you will react to Black Swan incidents by simulating the model.

3. **Resiliency.** After you've completed the first two, then build resiliency into the supply chain. How many single-source suppliers do you have? How many sole-source suppliers (with a patent)?

4. **Sustainability.** This is about eight years out in the journey. Each stage takes about two years to complete.

Visibility: Actively monitor your supply chain

"The first thing to do is go out there and get some education," Schlegel says. "There's a huge body of knowledge out there, a huge, emerging body in supply chain risk management."

Step two, Schlegel says, is building that always-hot supply chain buzzword: visibility. And that's where mapping and monitoring come in. "Most of us don't have it, whether upstream or downstream." It's not just about who suppliers are, or the price, but where they are located, he says. "You have to know where your suppliers, customers, DCs and contractors are. What you don't know in the global supply chain will hurt you."

Step three: Once the supply chain is mapped, it's time for risk management. Schlegel advises incorporating risk management

A typical high-tech manufacturer might have 900 suppliers with 40,000 components and half of them can be single source.

Bindiya Vakil

Founder and CEO, Resilinc

into regular monthly business meetings to identify the risks and apply them across the map. “Not all risks are the same,” he says. “Evaluate them. Assess them in dollars and cents in the supply chain and write them down in order, highest to lowest risk. After you do that, establish a risk response plan.”

Mapping will help you monitor your suppliers and vendors. By watching key performance indictors (KPIs), you’ll know which of your suppliers and vendors will be able to assist. If you’ve done your work properly, you’ll know the availability of additional inventory or a backup source. And you’ll know which of your suppliers has a response plan in place.

Predictability: Adjust operations according to risk

Sometimes you get a warning. In the case of weather-related disturbances, for example, there often is time to react prior to the storm striking.

If that’s the case, look at your distribution checklist and notify your suppliers. If one of your distribution centers is in the storm’s path, ensure that you can send product from another. If your only factory

is endangered you'll need to outsource or, if necessary, find another site and move. Ensure, also, that there is safety stock in your distribution centers or warehouses.

"A typical high-tech manufacturer might have 900 suppliers with 40,000 components and half of them can be single source," Vakil says. "Where are the factories? Where are the supplier parts (which factories are they using)?" Areas like Vietnam, Thailand, South Korea, China and Japan are vital for high-tech manufacturers. By knowing this information, you can react immediately when disaster hits.

Resiliency: What if risk is uncertain?

Sometimes, however, disruption is unexpected or a mystery. In 2006 there was an outbreak of Escherichia coli O157:H7 (E. coli), caused by tainted lettuce and spinach in packaged salads. The bacteria caused illness and at least three deaths. No one even knew which grower produced the products.

"The government was trying to figure out whose product was tainted," says Robert Allen, principal and operations practice lead at The Hackett Group. "Retailers took it all off the shelves. Mother Nature is still a supply chain. The stuff is in the ground, in plants; every company had to respond in a smart way."

Allen's client, one of the packagers, had a disaster plan, and reacted within a couple of hours. "It was really about clarity and quickly stopping production and product dispersal, cleaning the lines and talking to the growers," Allen says. "The job became tactical: Stop the supply chain, then start it again."

"The client recognized that this has nothing to do with profit or business. It's health. They were proactive with the retailers to pull

product, even working with competitors to help. They took it on as leaders in the industry. It took communications and networking. Stakeholders were brought together frequently. They talked to retailers and authors to learn how to adjust," he says.

What you don't know in the global supply chain will hurt you.

Greg Schlegel
Founder, The Supply Chain Risk Management Consortium

Months later, the cause was found. One of the spinach fields was at a lower elevation than a dairy farm. "Imagine what happens when it rains," Allen asks. "The stuff can't be washed off because it gets right inside the leaves. It took weeks for the authorities to figure it out."

Yet, expected or unexpected, a known cause or a mystery, operations disruptions usually do not wait for certain information or the resolution. A resilient supply chain hinges on built-in visibility, predictability and a manager's willingness to make tough calls when information is lacking.