

## SUPPLY CHAIN RISK: A WAKE-UP CALL

**The disaster in Japan has once again brought to light the need for every organization to conduct a comprehensive analysis of its supply chain. Reduced inventories, increased production, lower cost bases and best practices have all been derived from the assumption that your suppliers are committed to consistently meeting your needs. But catastrophes have a way of sweeping away such assumptions and capabilities in a moment.**

For example, we have seen the interruption of supplied parts, as well as the closure of Original Equipment Manufacturer (OEM) plants in the U.S., which were awaiting shipments from suppliers in Japan. This is the time, in the wake of arguably one of the world's most damaging earthquakes, to heed the wake-up call and conduct an evaluation of your supply chain risk. Even a lesser catastrophic event can cause similar supply chain disruptions.

The first step an organization should take is a Supply Chain Impact Analysis, a process designed to prioritize supply chain operations by assessing the potential quantitative (financial) and qualitative (non-financial) impact an organization may experience. Specifically, this includes a review of:

- Potential bottlenecks in supply routes, production or service
- Upstream and downstream single points of failure and trade disruption vulnerability
- Equipment requiring long lead time, is custom or foreign made
- Single- or sole-source suppliers
- Multiple suppliers in one geographic area all subject to a common potential disruption
- Processes requiring long batch time, time constraints or lengthy validation requirements
- Interdependencies among internal and external entities and facilities
- Customers' delivery time requirements

This analysis can be performed using engineering methods, mathematical modeling, forensic accounting, simulations, surveys,



**A supply chain is the stream of processes for moving goods or services from the initial customer order or request through final output. Every organization has supply chains in varying degrees, depending upon the size of the entity and the type of product or service provided.**

questionnaires, workshops, interviews or a combination of these tools. The goal is to obtain a complete understanding of a supply chain's critical components:

- Production/Service Delivery
- Supply/Inventory
- Location
- Transportation
- Information



**PRODUCTION/SERVICE DELIVERY** The ability to maintain production or deliver a specific service is the first element in an organization’s supply chain. Understanding the changing needs of customers as well as the need to adapt to market demands, increases in production costs, operational issues and quality control concerns is essential. The supply chain impact analysis will identify critical processes and internal and external interdependencies throughout all phases of operation.

For example, the economic and quality advantages of lean sourcing including Just-in-Time (JIT) management and dedicated suppliers have been enjoyed by companies for decades as an alternative to controls exercised through vertical integration.

Could the further fallout of this disaster be the end of JIT management? Probably not, but the indirect cost will be that senior management focuses more heavily on its supply chain risk. We may see more companies revert to vertical integration, but this does not necessarily treat the risk. In other words, just because you acquire the company supplying you does not make that operation any less prone to catastrophic risk. The real fallout will likely be that supply chains become increasingly lean as well as “green” to respond to environmental concerns.

**SUPPLY/INVENTORY** Risk managers will need to meet with their supply chain personnel to gauge the risk of losing suppliers upstream and customers downstream of their own operations. Together, they will need to provide for more formal arrangements with second and third tiers, as well as reciprocal supplier agreements, which will allow for contingencies in a crisis. OEM certifications, where needed, should be planned ahead of time. This will help spread operational risk throughout the organization. The robust supply chains will necessarily be in line with organizational values.

**LOCATIONS** The physical location and security of all owned property, third-party facilities and infrastructure needs careful examination. While it is important from an economic standpoint to locate assets in places where raw materials are readily available, operations are easily performed and a specific market is served, natural disasters and other perils may present an exposure to the site and operations. Organizations need to perform a risk assessment at and near all locations to identify the impact a catastrophe would have and implement prevention or mitigation strategies.

**TRANSPORTATION** The ability to move finished goods from one location to another, as well as receive components and raw materials, is a critical component in the supply chain. Whether you are relying on over-the-road transportation, air, ship or rail, the reliability of the transportation mode used requires careful consideration. Pay particular attention to seasonal goods or services; when a transportation disruption for even a very short period of time, could have catastrophic effects.

**INFORMATION** As with most processes or functions in today’s business climate, supply chain management is completely dependent upon information technology. A tremendous amount of data must move instantaneously and throughout the world, usually resulting in millions of dollars in revenues. Since there is no room for error, most organizations have a down time, or Recovery Point Objective (the maximum amount of data loss an organization can sustain during an event) of zero minutes. For example, the inability to receive an order via the internet or over the phone will send a shock wave throughout the entire process.

## THE EVALUATION PROCESS

Evaluating your supply chain risk is a continuous process that will reveal the acceptable level of interruption throughout the life cycle of the good or service produced, as outlined in Figure 1. During this process, answering the following questions should prove beneficial:

- Do you understand the operational and financial impact if a component of the supply chain fails?
- Has a seasonality impact analysis been performed?
- Have issues or concerns with time-sensitive constraints been identified?
- Have recovery and technology resources critical for functions performed in the supply chain been identified? Are back-up strategies available?
- Are any documented by-pass procedures available in the event of a disruption of services or materials?
- Are there sufficient back-up (such as safety stock) or alternative suppliers of raw materials, third-party production capabilities or personnel?
- Do your suppliers and business partners have a business continuity plan that is up to date and tested on a regular basis?
- Do your supplier contracts contain a service level agreement (a formal agreement between a service provider, both internal and external, and their client which covers the nature, quality, availability, scope and response of the service provider)?
- Are your back-up or alternative suppliers’ capacities verified regularly against current needs?

*Figure 1.*





Every organization relies upon the goods and services of another source to support day-to-day operations. Identifying the critical products, supplies, resources, personnel and information you need to function is essential. In the event of a crisis or disaster, you do not want to stake your business and reputation on the hope that your vendors, suppliers and other partners are available to assist you. Your business continuity, risk management and supply chain management programs must work together to ensure that critical functions and processes are identified and bona fide recovery strategies are readily available.

## CONTACTS

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