Supply Chain Exposures—What It Means to a Risk Manager

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A U.S.-based risk manager does not have to experience an 8.9-magnitude earthquake half a world away to suffer an interruption in a critical supply chain. It can happen right here in the United States. It can result from a fire next door at a key supplier or from a tornado that occurs a few miles away. A break in supply chain can occur with a key *customer*—not just a key component *supplier*. A major disaster at a *customer's* location can be just as cataclysmic to an organization as loss of a critical *supplier*.

by William K. Austin
Austin & Stanovich Risk Managers, LLC

Consider some recent headlines:

Powerful Quake and Tsunami Devastate Northern Japan
"TOKYO—Rescuers struggled to reach survivors on Saturday morning as Japan reeled after an earthquake and a tsunami struck in deadly tandem. The 8.9-magnitude earthquake set off a devastating tsunami that sent walls of water washing over coastal cities in the north."
New York Times, March 11, 2011

California and Hawaii Escape Major Damage
"SAN FRANCISCO—A tsunami emanating from the massive earthquake that hit Japan on Friday sent seven-foot waves into the Hawaiian islands, but appeared to have caused no major damage in Hawaii or along the ..."
New York Times, March 11, 2011

Stress Test for the Global Supply Chain
"Day in and day out, the global flow of goods routinely adapts to all kinds of glitches and setbacks. A supply breakdown in one factory in one country, for example, is quickly replaced by added shipments from suppliers elsewhere in the network. Sometimes, the problems span whole regions and require emergency action for days or weeks. When a volcano erupted in Iceland last spring, spewing ash across northern Europe and grounding air travel, supply-chain wizards were put to a test, juggling production and shipments worldwide to keep supplies flowing. But the disaster in Japan, experts say, presents a first-of-its-kind challenge, even if much remains uncertain. Japan is the world's third-largest economy, and a vital supplier of parts and equipment for major industries like computers, electronics and automobiles."
New York Times, March 19, 2011

After Storms, a Path of Death and Damage
"RALEIGH, N.C.—The reality of the devastation of a storm that sent more than 200 tornadoes ripping across the South, killing at least 45 people and causing millions of dollars in damage, began to sink in Monday morning."
New York Times, April 18, 2011

Supply chain interruption—supplier and customer—must be a concern for everyone in the organization, not just the risk manager. It takes an in-depth understanding of the organization's work product and service process and its ability to sustain itself in both the short term and long term without the critical supplier or customer. Contingent business interruption insurance for loss of income and/or increased operating expenses may be part of the solution but should not be the sole solution. Contingent insurance may not be available for needed perils (i.e., earthquake, windstorm, flood, interruption in utilities) and like any insurance coverage, will have limits, exclusions, a waiting period, and a cost. The organization needs to have backup plans for alternate supply sources as well as other customer outlets before disaster strikes either a supplier or a customer. Manmade events that trigger supply chain interruptions may not be insurable, such as the 2002 U.S. West Coast shipping strike that created economic havoc as significant as a natural disaster (http://www.taipeitimes.com/News/biz/archives/2002/06/23/0000141539).

When one thinks of business interruption exposures (i.e., loss of business income and an increase in operating expenses) and coverage, it is usually in terms of insured damage and suspension of the organization's operations at *its* premises as insured location for building and contents. But, in a complex trading world, a risk management professional must review all income streams, expenses, and processes to identify all exposures that may lead to a loss of business income. It is entirely possible that the most significant business income exposure to an organization is not related at all to its premises but that of a key supplier, key customer, adjacent building, or even key object such as bridge or roadway.

The risk management professional must think in terms of contingent exposures: what can happen elsewhere to disrupt operations at any of my organization's locations. The risk manager's exposure analysis cannot be limited to physical items such as raw materials and finished products but must include the soft side of the organization's services such as call centers, technical support, and order processing, to name a few. It is also possible that the most significant exposure to business interruption may not be insurable due to event (strike), peril (earthquake), or affordability (cost).

What Is Supply Chain Management?

Wikipedia defines (SCM) as "the management of a network of interconnected businesses involved in the ultimate provision of product and service packages required by end customers. SCM spans all movement and storage of raw materials, work-in-process inventory, and finished goods from point of origin to point of consumption (supply chain)" [1] (http://en.wikipedia.org/wiki/Supply_chain_management).

How can an adverse event at a supplier or customer location affect your organization? Let's consider two examples.

Key Supplier

An adverse event at a key component supplier's location (significant fire, 8.9-magnitude earthquake, windstorm, flood, or labor strike) may in turn lead to lost sales and/or decreased profitability to the organization if it cannot make critical purchases from other suppliers at the same price point.

Key Customer

An adverse event at a key customer's location (significant fire, 8.9-magnitude earthquake, windstorm, flood, or labor strike) may in turn lead to lost sales to the organization and decreased profitability if the finished product must be sold at significant discount to clear the organization's inventory and recoup its investment.

What Can Be Done—Start with the Risk Management Process

Proper attention to each step of the risk management process is critical to identify all appropriate issues related to supply chain exposures. Wikipedia defines business continuity planning (BCP) as "the creation and validation of a practiced logistical plan for how an organization will recover and restore partially or completely interrupted critical (urgent) functions within a predetermined time after a disaster or extended disruption." (www.wikipedia.org/wiki/Business_continuity_planning).

BCP must be conducted with input from all levels of the organization. BCP is used whether the issue is *how* the organization will recover from a localized disaster and interruption at one of its locations or the issue is a supply chain disaster at a key supplier or customer. BCP, when used correctly, can be a dynamic process to identify supply chain exposures and can serve as a template for loss control strategies (i.e., alternate suppliers, customers, etc.).

The creation, modification, and implementation of a business continuity plan may be the most efficient risk management technique for SCM in any organization for both its short- and long-term success. While risk financing, such as contingent business interruption insurance, may provide needed funds during a time of interruption, it will last for a finite time—a period likely much less than the actual period of interruption.

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[1] Harland, C.M. "Supply Chain Management, Purchasing and Supply Management, Logistics, Vertical Integration, Materials Management and Supply Chain Dynamics." In: Slack, N (ed.) Blackwell Encyclopedic Dictionary of Operations Management. UK: Blackwell, 1996.

BCP is the template for recovery and will likely continue in place long after its insurance is exhausted, assuming the organization had insurance prior to the loss. BCP may also outline timely and efficient ways to maintain the supply chain at the time of a disaster and diminish the need for business interruption insurance.

The risk management process and BCP rely on common processes in order to be successful to the organization from risk identification to loss control to continually testing the process. The diagram in Figure 1 is one way to visualize the risk management process for a supply chain and how to use BCP techniques as part of the overall identification and mitigation objectives.

Figure 1

Process	Objective of Process Step	Supply Chain Issues
Risk Identification	Identifying potential losses and their causes	Identify key suppliers and customers and alternate supply sources.
Risk Analysis	Estimating the likelihood and expected value of potential losses	Estimate lost sales and decreased profitability using other supplier(s) and customer(s).
Design a strategy	Choosing an appropriate mix of risk control and risk financing techniques	Test Business Continuity Plan (BCP) in conjunction with identified key/alternate suppliers and customers. Consider how contingent business income and/or extra expense insurance can be used to mitigate decreased profitability on short and long term basis.
Implement strategy	Carrying out the details of the plan	Implement tested BCP plan and purchase contingent insurance as deemed appropriate and cost effective.
Monitoring	Monitoring the results of the plan and considering the impact of internal and external developments	Monitor changes in organization’s use of critical suppliers and customers and amend BCP and insurance as deemed appropriate and cost effective.

Contingent Business Interruption

While contingent business income coverage for the organization may be available to address these exposures through policy forms such as Insurance Services Office, Inc. (ISO), CP15 08 06 07 "Business Income from Dependent Properties," it is possible some coverage already exists within the more commonly used business income and extra expense coverage forms. Use of BCP may suggest and/or create backup sites and other suppliers as a means to mitigate the risks identified in the following examples.

Adjacent Building

A fire occurs at a major building down the street from your organization's facilities. While there is no damage to any property of your organization, it nevertheless loses sales for a period of time when the local fire department declares the area unsafe and stops all incoming traffic to your organization.

Solution

Civil authority coverage is typically provided in a business income form. The risk management professional will need to review the exposure to determine whether the insured period of time is sufficient for a foreseeable event and whether the waiting period before coverage applies is appropriate. Changes in coverage will need to be considered and sought as deemed necessary.

Bridge

A bridge is the only way in and out of one of the organization's key operations. If a flood washes the bridge away, there will be a significant potential for curtailed sales as the organization waits for the bridge to be repaired and normal operations to resume.

Solution

Coverage for lack of ingress/egress may be needed and available, although coverage may not be available from all property insurers. The risk management professional will need to review the exposure to determine whether an insured period of time and waiting period for a foreseeable event is acceptable and cost effective.

Utility Interruptions

An impairment in incoming utilities such as electricity, water, telephone, and Internet may cause a loss of income to the organization even if no direct property damage results.

Solution

Various coverage forms are available from ISO and through independent filings of insurers that address an interruption in incoming utilities as stated above or even an interruption in outgoing services such as sewer and other wastewater. The risk management professional will need to review each specific exposure to determine whether an insured period of time and waiting period for a foreseeable event is acceptable and cost effective.

Conclusion

In 2011 and for years to come, global trade, whether in hard goods or services, will continue to expand quickly. The risk management professional cannot rely on his or her sole knowledge and understanding of the organization's varied and unique suppliers and customers to understand bottlenecks and supply chain problems. Logistical exposures from damaged bridges or tunnels may create supply chain disruptions. Communication channels must be built and maintained with staff within the organization who have anything to do with SCM.