

# CATASTROPHIC RISK – UNDERSTANDING AND DEALING WITH THREATS TO SUPPLY CHAINS

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*One of the key sessions at the [Emerging Markets Logistics Conference](#), sponsored by Agility, (Singapore, September 24-25<sup>th</sup>), will be dedicated to supply chain risk. John Manners-Bell discusses why Supply Chains in Asia are more exposed than ever before and outlines how one company, Cisco, has re-engineered its response to potential disasters.*

In a world beset by natural and man-made catastrophes, are corporations taking the right approach to supply chain risk? How should companies avoid the huge disruptions felt in Asia, such as those experienced by the automotive and electronics industries? These are key questions which Ti's Emerging Markets Logistics Conference will address.

In the recent past, we have seen unpredictable events such as the Japanese tsunami and the Thai floods wreak havoc across the region. The modern world in which we live would seem to be increasingly volatile and subject to wild randomness. However, businesses still plan and forecast as if they were operating in a stable and wholly predictable environment.

The problem is that all companies operate with less than perfect market knowledge. By assuming that what has happened in the past will continue to occur, managers become complacent, and companies become unprepared for unexpected events.

## **'CASCADING FAILURE' THROUGH TRANSPORT NETWORKS**

One of the reasons for the volatility is the nature of modern, tightly integrated markets and global networks. This means that small probability, localised events can carry major consequences on a regional or worldwide basis. Transport, energy, financial, information and communications technology networks are more interconnected than ever before and the ways in which they are intertwined are not fully understood.

A failure or overloading of one network can have knock on effects on others. Layers of air, sea, road and rail networks interlink at nodes which enable the transfer of goods or passengers. If any one of these nodes stops functioning, there is a 'cascading failure' throughout the linked networks. For example, the cessation of services on the metro (perhaps due to a security alert) could lead to the congestion of the overland train network. Subsequent closure of stations in the rail network due to over-crowding will have an impact on the road network as people choose to go by car. This creates traffic congestion, spreading miles from the original incident, which then disrupts the delivery

schedules of freight operators. This has implications in terms of stock outs in stores and halting of production lines.

Indeed, the original problem does not need to stem from within the transport industry. A nodal failure could be prompted, for example, by a power outage, an ICT network disruption or even a flu epidemic.

### ***LEAN INVENTORY – SHORT TERMISM?***

The vulnerability of supply chains to this type of disruption has been exacerbated over the last thirty years by strategies aimed at trying to keep labour and inventory costs to a minimum. Lean inventory strategies, centralised distribution, just in time, remote, off-shored production, sourcing from developing countries and multiple tiers of suppliers have all improved companies' bottom-line, but not without cost. Although high levels of stock carry high levels of risk, they also act as a buffer against supply chain disruption. Lean supply chains act in exactly the opposite way.

As Bob Lutz, former VP of General Motors says, "Running your procurement purely in a short term, point in time, cost minimization model is like shopping for rock bottom home insurance. It looks real smart until your house burns down."

However it would be wrong to label supply chain managers as playing fast and loose with their businesses, in search of a short term buck. What they have done is to exchange 'internal' risks to 'external'. External risks are those which can impact upon the supply chain from outside sources. These can include natural disasters, but also acts of terrorism, piracy or even economic shocks. Internal risks are those which arise from keeping too much inventory; product defects; too long product life cycles – all of which characterised industry in the 1960s and 1970s when Just-in-Case manufacturing strategies were predominant.

For example, many high tech manufacturers were driven out of businesses when they couldn't keep up with new technology developments and were left with high levels of redundant stock. The compression of life cycles in this sector has meant that it has been amongst the keenest to adopt supply chain management 'best practice'.

By keeping production in-house, and closely bundled in your home market, you are reducing risks to your extended supply chain. However, you also increase other risks such as higher labour costs; lower labour standards and inability to scale production up or down quickly.

In Asia, the high tech sector provides some of the most well-known examples of out-sourced, virtual manufacturing networks. It is the most globalised and out-sourced, which has led to external risks being amongst the highest. This has led to high tech companies being at the forefront of attempts to reduce risk, without compromising inventory strategies.

## **HOW DOES CISCO MITIGATE RISK WHILST KEEPING 'LEAN'?**

High tech manufacturer Cisco is one such company. Cisco regards supply chain resilience as a core business challenge across the enterprise, not just a logistics problem. According to the US Resilience Project, the company has gone from a 'reactive approach' in the mid-2000s, through one which embraced 'pro-activity', to the position it is in today where resilience is embedded in design and processes.

This approach is best illustrated by Cisco's response to the Japanese tsunami. Within 30 minutes of the initial alert of the earthquake, the supply chain incident manager was made aware of the event, alerted the Supply Chain Risk Management team and its Supply Chain Operations senior leadership team. Within 12 hours, the primary supply chain incident management team was activated.

Utilizing Business Continuity data and processes, all direct suppliers, their associated sites and components and other critical supply chain nodes in the impacted area were identified within 12 hours of the initial earthquake.

Cisco established a Supply Chain Incident Management Team War Room within 2 days of the initial earthquake to provide a central management point and decision making forum for all Supply Chain Operations personnel involved in the mitigation effort.

In the first few days following the incident, Cisco's incident management team was able to:

- Establish contact with suppliers to assess the impact of the incident on site capacity
- Develop a prognosis of their ability to continue to produce
- Identify their ability to distribute components.

The incident management team was then able to develop a snapshot of the supplier impact and status over the entire region. In a very short period, the crisis management system was able to assess more than 300 Tier 1–Tier 5 suppliers — including site inspections and more than 7,000 part numbers — and complete a risk rating and mitigation plan.

According to management, the largest supply chain disruption in modern times created virtually no revenue impact for the company.

## **CONCLUSION**

Interlinking networks, the increasing level of supply chain complexity throughout Asia and the 'Lean Inventory' strategies adopted by manufacturers has meant that enterprises are more at risk from disruptive events than ever before. The quest for cheaper sources of labour beyond China, in markets which can be described as 'frontier economies', only heightens this vulnerability. If manufacturers and retailers are to run their businesses sustainably, they must plan for and understand 'known' risks, but

they must also be prepared for 'unknown' risks. This is possible not by planning for a specific event, but by building resilience into every stage of their supply chain processes.

### **About Emerging Markets Logistics Conference 2013, Singapore**

*The Emerging Markets Logistics Conference, sponsored by Agility, (Singapore: September 24-25, 2013) will discuss the issues included in this article and many more. It will provide exclusive research, with each session led uniquely by an expert Ti analyst, combining insightful presentations with contributions from senior figures in the manufacturing, retailing, consulting and logistics industries. In addition to a content rich programme, there will be plenty of networking opportunities to meet and discuss these issues with fellow senior industry professionals. For more information follow the link below:*

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### **About the Author**

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### **About Transport Intelligence**

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