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Manage Risk Through Resilience
CEOs should build a culture that copes with the unforeseen.

Yossi Sheffi

Of there is one lesson to be drawn from the natural disasters and terrorist attacks that shocked the international community in 2005, it is that organizations need to be resilient enough to withstand and learn from unexpected disruptions. How to build resilience into organizations is one of the most important issues facing chief executives in 2006.

Hurricanes, earthquakes and terrorist attacks are just some of the crises that companies must be able to deal with. Globalization is stretching supply chains internationally at a time when market volatility is on the increase, exposing companies to more risk. Moreover, enterprises can ill afford to interrupt business operations given the intensity of the competition and the cost pressures they are under. A resilient company is not only better able to endure the vagaries of global trading, it can actually gain competitive advantage by being one step ahead of the competition when a disruption hits. A fast recovery is crucial.

Resilience, a notion borrowed from material science, represents the ability of a material to recover its original shape following a deformation. For companies, it measures their ability to, and speed at which they can, return to their normal performance level (production, services, fill rate, etc.) following a disruption.

Resilience can be achieved through redundancy by carrying enough extra inventory to provide emergency cover when disaster strikes. However, holding idle inventory or underutilized capacity is expensive and difficult to justify. Furthermore, as demonstrated by "lean" and Six Sigma processes, inventory surpluses can lead to sloppy operations, resulting in increased costs and reduced quality.

Another approach is to build flexibility into the supply chain. This is a far more effective source of resilience. Flexible or agile supply chains can help a company not only withstand disruptions by adapting quickly to changing conditions, but also better respond to the day-to-day gyrations of the marketplace. One begets the other, because a supply shortage and a demand spike are, at their core, a problem of supply/demand mismatch. Companies that have built their supply chains to respond to significant demand fluctuations have also built in the ability to respond to supply shortages.

Building resilience through flexibility involves change on a number of fronts. For example:

- Developing the ability to move production between plants, using interchangeable and generic parts in many products, and cross-training employees.

- Using concurrent processes of product development, ramp up and production/distribution.
- Designing products and processes for maximum postponement of as many operations and decisions as possible in the supply chain.
- Aligning the procurement strategy with supplier relationships.

The ability to interchange parts and even manufacturing facilities makes chipmaker Intel much more flexible and hence resilient. The company's plants are based on the same basic layout, so if one is hit by a stoppage for any reason Intel can switch production to a sister facility relatively easily. The company used this option during the 2003 SARS outbreak in Asia.

Concurrency, or the ability to execute different supply chain processes in parallel, reduces time to market by shortening cycle times. Trimming time to market also means that the recovery period after a disruption is likely to be briefer. To this end, Lucent created a special Supply Chain Network organization in 2001. This network cuts across the company's engineering, procurement, manufacturing, distribution and even sales divisions, enabling processes in these areas to be managed concurrently.

Postponement (i.e. postponing the final configuration of a product later in the supply cycle when better demand information is available) and built-to-order operations allow for diversions of parts and semifinished material from surplus areas and products to satisfy shortages. Fewer products in a finished state (or at the final destination) give the company more leeway to refinish the products according to actual demand, which may be very different following a disruption, and not have to hold unwanted finished products. The same logic applies to postponed distribution operations. Thus, with only a few days of committed orders, Dell was able to fare much better than Apple during the 1999 Taiwan earthquake, which disrupted the worldwide supply of memory chips.

Aligning procurement with supplier relationships is a powerful way to boost flexibility. Companies have two fundamental choices when developing supplier relationships: extremely close relationships with a small group of core vendors, or a much more extensive network that is kept at arm's length. Neither strategy is right or wrong, but each has its demands. If the close-knit option is preferred, companies must have an intimate knowledge of their suppliers so they can detect potential problems early. A company that is reliant on a few select suppliers cannot afford surprises. Such a strategy requires investment in the supplier relationships. If a company prefers to keep its trading partners at arm's length, it must maintain multiple relationships to spread the risk of one supplier failing unexpectedly.

It is worth noting that collaborative relationships with trading partners can pay big dividends, since the vendors become allies in times of crisis. Such relationships allowed Toyota to recover very quickly, with the help of more than 100 suppliers, from a fire that gutted the sole plant of its main P-valves supplier in February 1997.

But the most crucial factor that distinguishes companies that bounce back from a disruption, and those that do not, is corporate culture. There is something in the DNA of certain companies that makes them resilient. Organizations such as Nokia, Toyota, UPS, Schneider National, FedEx, Dell and the U.S. Navy can be studied to understand the principles that make them flexible and resilient. While on the surface these organizations may not seem to have much in common, a closer look shows that they share several common cultural traits.

For example, they are able to detect problems and take corrective action before the potential disruption becomes disastrous. Cell phone manufacturer Nokia demonstrated this capability in 2000 when a fire disabled its main supplier of chips. In Nokia's open culture, the news traveled fast, and the company acted by securing alternative supplies. Its competitor, Ericsson, reacted more slowly, in large part because its relatively closed culture tended to hinder the flow of bad news. Nokia went from strength to strength; Ericsson exited the business not long afterward.

Another trait found in resilient organizations is empowerment at the lowest level of the organization to act quickly in a crisis. Most executives are familiar with Toyota's employees having the responsibility to stop the production line when a problem is detected. It may be surprising to learn that the U.S. Navy is also able to detect and react quickly to imminent danger using the same principle. On aircraft carriers, anyone on deck—even the most junior sailor—can stop flight operations instantly, if he or she detects a problem.

The lesson for CEOs: Encourage the airing of problems and empower individuals to raise the alarm. When your ship is headed for the rocks, the sharpest eyes on deck are those closest to the danger, and they should be empowered to act before it is too late. s

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