

Assessing the Total Cost of Supply Chain Damage



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...as it ripples through departments.

Compartmentalization is one of the biggest hurdles to saving money and increasing efficiency throughout an organization. There's a naïve belief in organizations that if each department operates efficiently, the overall organization will be efficient too. While this is true to a degree, it overlooks the ways decisions in one business unit affect outcomes in another. Damage is a good example. Managers outside logistics and packaging are largely oblivious to damage unless it directly affects their own cost centers. Therefore, they may not try to prevent damage if they pay the cost of prevention but don't also benefit from the savings that result from these actions.

For example, researchers at the University of Tennessee¹ found that although every supply chain executive acknowledged the role of insurance in risk mitigation, it wasn't within their area of responsibility or among their concerns. What else are they overlooking?

Damage's Ripple Effect

Unit managers don't always understand the wider repercussions of damaged items, but CFO's know the total cost of damaged goods extends beyond any single department or budget. The costs of damage ripple throughout the organization in the form of both direct and indirect expenses. Filing a freight claims, for example, typically takes about two hours. That's two hours of lost productivity.

Damaged items also must be inspected and stored, taking more time and space. When prorating the total costs of damaged goods storage, including property taxes, utilities, and rent or mortgage, the costs escalate. Sales also may be affected. For example, if damaged items can be salvaged and sold at a discount, they compete with full-price items. If many damaged items are available, they may subtly damage the company's reputation. Reshipping items increases logistics costs, especially if overnight shipping is required. It also can cause delays that may affect a customer's current and future buying decisions. For example, if an item was needed by a specific date, customers may be unwilling or unable to wait for reshipping and may go elsewhere. They may lose faith in the company's commitment to quality. For future orders, customers may favor its competitors.

Damaged freight also must be measured in terms of lost opportunity. This nebulous notions measures what a company's personnel and capital could do if it isn't held up while freight claims are resolved or items are repaired. For example, rather than placating customers who experienced damage, sales reps could be calling on potential new customers. Packaging designers could concentrate on developing more resilient, cost effective materials rather than troubleshooting existing packaging. Companies could be paid sooner and use that capital to fund additional staff, expanded facilities, or marketing campaigns to attract new business.



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The Cost of Downtime

When considering the total cost of damaged goods, be sure to also consider the cost of downtime for customers, and your own company's exposure to their losses. While the cost of downtime varies greatly among industries, Information Technology Intelligence Consulting Research² reports that a single hour of downtime costs nearly all businesses (98 percent) with more than 1,000 employees more than \$100,000, and 81 percent of respondents more than \$300,000. One third said 60 minutes of downtime costs between \$1 and \$5 million.

In looking at some key industries, the average cost of a data center outage³ is \$740,357, according to Vertiv. While 22 percent of outages are linked to cybercrime, others result from faulty cooling, weak batteries, poor maintenance, and similar failings. Monitoring could alert IT professionals to many of these potential problems, allowing them to be proactive.

In the energy industry, unplanned downtime costs offshore oil and gas producers an average of \$38 million each year, although some experience losses as high as \$88 million. While repairs account for the bulk of the expense, the hidden costs of lost or delayed production cost companies an average of \$20,000 per day. Monitoring could reduce that downtime.

Depending on the cause of the downtime, the shipper or carrier may be held partially responsible. As a supplier, you can be penalized financially for your role in causing or prolonging the downtime.

Monitoring

Many of the events that cause damage and downtime can be prevented by discovering what conditions items actually experience during shipping and storage. Impact monitors which provide the real time location of impact, tilt, and temperature excursions increase a logistics managers' visibility into the supply chain so they can take actions to reduce damage. Increasing supply chain visibility is the thirdmost preferred risk mitigation strategy⁴ among logistics managers (behind compressing cycling time and choosing strong suppliers), according to University of Tennessee research.

The key is not just in learning that a particular shipment was dropped, became too hot, or was transported on its side, but in spotting trends and determining how to prevent future occurrences. For example, if a temperature sensitive shipment containing pharmaceuticals or chemicals was left on a hot tarmac too long, the item's properties may change. The items may become dangerous or, in the case of medications, even deadly. The solution may be to use packaging with better thermal protection, use cooler routes during the warmest months, or select carriers that guarantee minimal tarmac time.



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Likewise, if fragile objects like glass and mirrors (and products that incorporate them, like TVs) are transported at the wrong angle, they are more likely to break. Knowing this, managers can adjust standard operating procedures, train staff, and reinforce the packaging. If equipment was dropped or hit during transit, the company may need to revise handling procedures, retrain handlers, and inspect the item for hidden damage.

First, however, managers need to be aware goods were mishandled. The return on investment can be significant. SpotSee customers report that in-transit monitoring has dropped their damage rates an average of 60%. One international online retailer says monitoring shipments for impacts, tilts, and temperature excursions helped it reduce damage by 90%, while another large online retailer says damage rates fell from 10% to about 2%.

Calculating ROI

There's an adage that "One 'uh-oh' can wipe out a thousand 'atta-boys'." If you value happy customers, preventing that one 'uh-oh' can be reason enough to invest a few dollars in monitoring shipments for impacts, tilts, and temperature excursions. The return on investment comes sooner than you may expect. For example, although the most sophisticated recorders may cost a couple thousand dollars, they can be used many times per year for several years. Therefore, a monitor that costs \$2,000 that's used six times per year for five years has an annual usage cost of \$67 per shipment.

When shipping high dollar items like medical imaging equipment, electrical transformers, or computers, investing an extra \$67 can save significantly more money by signaling the potential for hidden damage and by eliminating the finger-pointing that occurs once damage is determined. And, importantly, monitoring provides data that can help prevent damage in the future.

Sharing this device with other departments further defrays its cost. This may mean working with other departments that are responsible for similar items, as well as with packaging and logistics business units. For example, the same monitors that record events during transit also can be used to analyze the robustness of new packaging and internal warehousing handling, as well as product testing. With each new application the cost per use decreases.

An Option for Every Need

A variety of SpotSee monitoring options are available with differing capabilities. For example, while some monitors provide multiple uses and detailed information about the time, geographic location, others focus tightly on the impacts themselves, only providing information about the dates and times certain impact thresholds were exceeded. A range of even simpler, single-use devices indicate impacts above predetermined limits. That's true for temperature excursions, too. Some indicators record the fact that an excursion occurred, while others have report-generating capabilities, and document the extent and duration of the excursion so managers can make informed decisions regarding product disposition.

Sources

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2. "ITIC » Posts » Hourly Downtime Tops \$300K for 81% of Firms; 33% of Enterprises Say Downtime Costs >\$1M." ITIC RSS, itic-corp.com/blog/2017/05/hourly-downtime-tops-300k-for-81-of-firms-33-of-enterprises-say-downtime-costs-1m/.
3. "The Cost of Data Center Downtime." Vertiv Insights, www.vertivco.com/en-us/insights/articles/infographics/cost-of-data-center-downtime/.
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Conclusion:

While the direct costs of damage may be associated with the logistics or packaging departments, the true cost of damage accrues to the entire organization, indirectly affecting many departments and many decisions. Taking steps to reduce the costs of damage – regardless of department-- therefore, makes sense. Speak with a local SpotSee logistics expert about your supply-chain and learn how to reduce damage and save money in your operation.



ShockLog® 298

ShockLog 298 monitors and records shock, vibration, and environmental conditions experienced by any type of structure or equipment, whether in use, in transit, or in storage. With the capacity to record data for 870 events and 262,000-time slots, the device alerts you whenever damage may have occurred so you can respond promptly. Optional sensors extend the value of your ShockLog by providing more intelligence about your environmental journey by adding temperature/humidity sensor into unit, or adding a temperature/pressure/humidity accessory sensor.



ShockWatch® 2

ShockWatch 2 impact indicators are single-use, go/no-go devices that determine if fragile products have been dropped during transit or in storage. The indicators are field-armable, tamperproof devices that turn bright red when an impact beyond a specific threshold has occurred. Each ShockWatch 2 has a unique identifier to support traceability.



TiltWatch® XTR

The TiltWatch XTR is single-use tip indicator used to monitor goods that must remain upright. Once applied to the packaging, the TiltWatch XTR will provide evidence of mishandling if the shipment is tipped. However, the tilt indicator remains unaffected by movement resulting from normal handling conditions.

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