

Preventing Product Damage that Occurs During Shipment



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Impacts on Supply Chain

Impact and temperature damage can occur throughout the supply chain, affecting raw materials as well as finished goods. Impacts to sensitive electronic components or temperature excursions for chemical or biological ingredients, for example, can cause manufacturing delays that ripple down the production line and throughout the supply chain, triggering bottlenecks and backlogs. These delays each contribute to lost opportunities that affect the company today and into the future.

Savvy companies are improving handling procedures and are deploying technological innovations to reduce damage and the financial losses it causes.

Organizations that maintain business as usual, however, report billions of dollars lost to damage each year.

Unsalable goods cost U.S. retailers \$15 billion per year, according to a 2017 study by the Trading Partner Alliance. An earlier, 2008 multi-industry study published by the Grocery Manufacturers of America, documented that damaged goods account for 1.21 percent of gross annual sales among retailers and distributors. Among manufacturers, damaged goods accounted for an average of 0.83 percent of gross sales. Some experts say it takes the sales of seven items to recoup the damage of one. Improving practices to reduce even one percent of those costs could result in significant savings.. Financial losses aren’t the only consequence of unsalable products. Damages to reputation and consumer loyalty can create long-term challenges that are not easily quantified. Among consumers, damaged packaging signals damaged goods. That perception affects the reputations of both the manufacturer and the retailer.

In fact, Aon Risk Solutions’ 2017 Global Risk Management Survey, ranked damage to the reputation or brand as the number one fear among consumer goods manufacturers, food processors, telecoms, and transportation manufacturing industries. It was ranked among the top five concerns by the chemical manufacturers, and by the life sciences, power and utility, aviation, and technology industries. Innovation and response to disruptive technologies were other key concerns. The risk is exacerbated in the age of social media, in which the damaged item is not only returned, but may be filmed and

placed on YouTube and other outlets for the world to see.

Causes of Product Damage

The potential for damaged products and reputations can be largely avoided, however. Much of the damage is caused by faulty product delivery and handling practices. Other contributing factors include poor package design, ill-matched transportation modes, improper pallet loading, and general mishandling.

These issues can each be mitigated, and damage, usually, can be prevented. To begin, companies must examine their entire supply chain and identify how and where the most frequent losses occur.

It’s not enough to know that damage ensued in transit. Shippers need to know which carrier had custody of the goods and where in the transportation network the damage occurred. The TPA, for example, recommends having separate accountings for damage that occurs at third party distribution facilities and at manufacturers’ sites. Knowing whether an incident occurred on the shipper’s own loading dock or at a transfer point in, say, Chicago, helps shippers and their carriers develop plans to prevent future damage. A comprehensive monitoring program can provide that detailed, objective, information and, thus, help companies maintain their profits and their reputations.

Packaging

Impacts, whether from drops, road vibration, or other causes, can create serious damage – particularly to sensitive equipment.

Robust packaging designed for a specific product is the best defense against product damage. Ample, attenuating padding and structural reinforcement help compensate for the inevitable jostling and occasional rough treatment during shipping.



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Corrugated cardboard is a favorite packaging material among all industries. It boasts high edge compression strength, but begins to lose integrity after about six months. Cardboard is also “very susceptible to handling damage when it’s moved from supplier to customer to warehouse to line-side inventory,” according to the Manufacturing Extension Partnership.

Inserting dunnage to fill the voids between products and packaging is a cost-effective method to reduce damage during transit. The type of dunnage should correspond to the product, providing the necessary shock absorption and levels of sterility the product demands.

Pallet Loading

Improper pallet loading can trigger product damage regardless of the packaging methods used. It seems obvious, but the heaviest items should be placed lowest in a pallet to create a low center of gravity and thus minimize tipping and load shifts. Also consider product

overhang. Lowes, which sells everything from lumber and power tools to household items and holiday ornaments, allows packages to overhang the pallet by only one inch on a standard pallet.

Yet, despite following best practices, damage may still occur. Often, the cause is a combination of aging or broken pallets and suboptimal load configurations.

Transportation

CEOs are finally discovering that transportation, long an afterthought, can dramatically affect company profitability, according to a 2018 article in Logistics Management They are realizing that freight costs are only one factor in logistics planning, and are just beginning to look more deeply into their own logistics assumptions and practices with an eye to getting not only the best prices but also the safest, most reliable delivery for their goods.

Delays (and ensuing damage) are most common with less-than-truckload (LTL) shipments. Because the shipments are small, they are less likely to occur on regular schedules or to have regular routes. Therefore, palletization or packaging is more likely to be rushed, and items may have to wait longer at transfer points and be handled more than truckload freight, thus increasing the risk of damage.

Because LTL shipments often involve multiple types and sizes of goods, they also are particularly at risk from load shifting. The risk isn’t limited to LTL shipments, however. Even truckload and container loads may experience shifting in transit.

Handling

Employee training is essential in helping shippers and carriers reduce the damage that creates unsalable products. But, even under ideal circumstances, human error can result in damage. Companies, in their zeal to improve efficiency, may place undue emphasis on packaging or handling speed. In their rush to expedite shipping, employees may grow careless. It is important, therefore, to balance the need for rapid processing with an equal measure of concern for careful package handling.

Solutions to Reduce Product Damage

There is no magic bullet that eliminates product damage. Instead, to reduce the damage that leads to unsalable products, deploy a multifaceted approach that includes traditional employee training, shipping best practices, and recent technological developments. By taking a comprehensive approach to shipping and damage

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mitigation, one cargo surveyor says that damage can be reduced in approximately half of products, even within the cold chain.

Data Tracking, Collection and Analysis

To track the success of any policy adjustments, companies must collect and analyze relevant supply chain data. Data monitors provide extensive feedback on the supply chain environment, including temperature and impact events. Without this data, companies operate blindly and cannot react nimbly to the rapidly changing dynamics of the supply chain.

Tracking and analyzing data for specific products can lead to insights that dramatically enhance overall supply chain efficiency. To achieve the necessary specificity, companies can deploy data tracking devices that monitor and record the conditions products experience from the point of manufacture to delivery to the customer. A range of environmental indicators and recorders is available for every type of shipment and every range of budget.

Indicators

Simple indicators can provide go/no-go assurance for impacts and temperature excursions. Impact indicators trigger at predetermined impact levels and provide a record of potentially damaging falls or drops. Likewise, temperature indicators trigger when temperatures become too warm or too cool.

Indicators placed on the outside of packaging also provide a highly visible deterrent to package mishandling by carriers and employees. Because they supply incontrovertible evidence of an adverse event, indicators can prompt product inspections, thus uncovering hidden damage and preventing damaged items from reaching the shelves.

Monitors

More sophisticated monitors can provide detailed information about impact and vibration events – including

the direction of the impact – as well as document changes in temperature and humidity throughout transit. Recorders provide a record of single or multiple events, their extent, and their duration.

By recording the direction, amplitude, and duration of an impact, data monitors allow a thorough assessment of supply chain conditions, helping managers adapt policies and prepare contingencies for current and future

shipments.

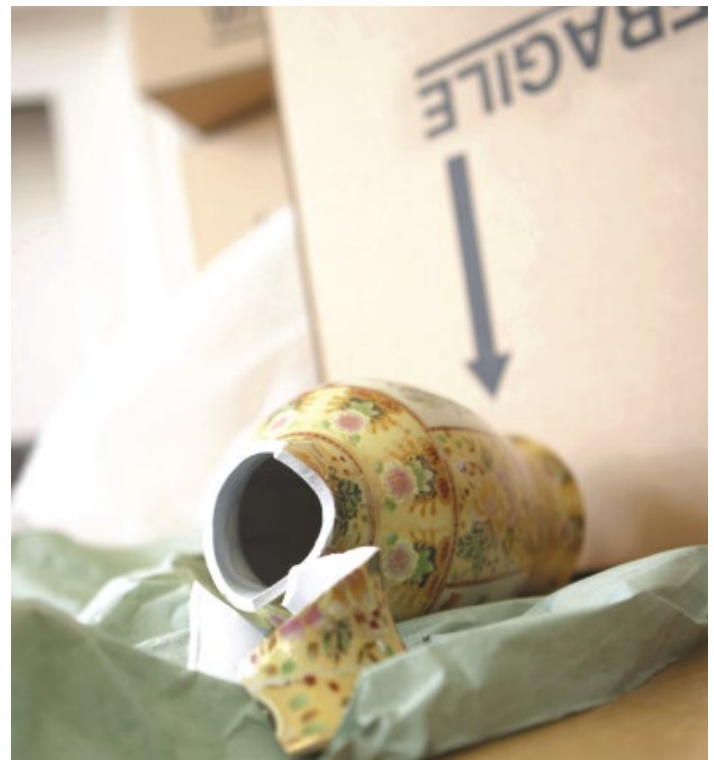
Analyzing the real world conditions cargo experiences during shipping and warehousing helps supply chain managers develop a comprehensive picture of the supply chain environment. Consequently, they can identify specific problem areas and begin to remedy them, saving costs, goods, and reputations.

Reducing Risks Reduces Unsalables

Damage in transit can never be completely eradicated, but it can be minimized with a comprehensive program to identify and address the environmental risks packages experience during shipping. With increased visibility into the actual supply chain environment, shippers have the opportunity to reduce the volume of unsalable goods, thus minimizing expenses and maximizing profits.

Achieving those results involves more than monitoring and more than training. It takes an integrated effort that identifies and documents issues, devises solutions, and trains product handlers throughout the supply chain.

Then, when the challenges are resolved, the supply chain requires regular monitoring to ensure the problems don't reappear as staff and conditions change. As an affordable and proven tool, impact and temperature indicators and recorders should factor significantly into any company's supply chain logistics.



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Conclusion

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SpotBot Cellular

A standalone device that delivers tri-axial impact monitoring and live tracking through cellular connectivity. It features real-time visualization through the SpotSee Cloud, a web based platform. SpotBot features best in class impact monitoring, generating accurate data on impacts up to 65G which is four times (4X) the range of the next best competitor.

SpotBot BLE

The device was created in partnership with Bosch to make the supply chain transparent. Once attached to the shipment, the SpotBot BLE measures and records temperature, humidity, tilt, and shock, with the data visualized through the SpotBot BLE app. The limits of each parameter can be individually configured, and any violation is traceable and assignable.

ShockWatch 2

A single-use, go/no-go devices that determines 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.

WarmMark

A single-use, ascending time-temperature indicator which alerts users of exposure to unacceptable temperature conditions.

[Speak with a local SpotSee logistics expert and explore our best in class logistics devices.](#)

Sources

"2008 Joint Industry Unsalables Report: The Real Causes and Actionable Solutions." Grocery Manufacturers Association. 2008. 5 August 2013. <<http://www.gmaonline.org/downloads/research-and-reports/UnsaleablesFINAL091108.pdf>>

"2013 Global Risk Management Survey." Aon Risk Solutions . 22 April 2013. <<http://www.aon.com/2013GlobalRisk/>>

"Palletization and Shipping Guidelines for Domestic Distribution (Regional Distribution Center and Store Direct Shipments)." Lowes. 2013. 5 August 2013. <<http://www.loweslink.com/llmain/pubdocuments/vcPkg-PalletizationShippingGuidelines.pdf>>

"An Industry Information Framework for the Pharmaceutical Supply Chain." VeriSign. 2006. 5 August 2013. <<http://www.verisign.com/static/040033.pdf>>