

Thinking Outside the Corrugated Box

Quality Insider Article

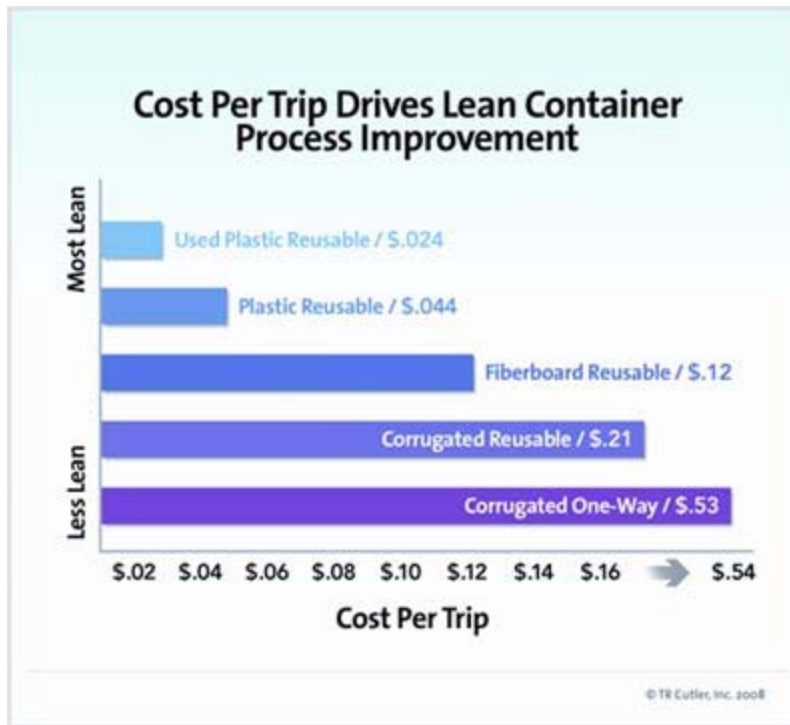
Lean theory suggests that the possibilities for quality improvement exist everywhere. Rarely does that concept translate to a damaged corrugated box in a warehouse—but it should. The cost of damaged packaging, particularly cardboard containers, is very significant in bottom-line costs (damaged merchandise, replacement, and reshipping costs) as well as negative customer satisfaction costs.

Cardboard box makers cannot guarantee that orders will be free of gluing defects, the primary source of box quality defects. Even technology that promises box makers the ability to provide 100-percent visual inspection of every glue tab to ensure their perfectly glued boxes, falter under weight capacities and stacking realities.

The Fibre Box Association (FBA) and the Technical Association of the Pulp and Paper Industry (TAPPI) have attempted to help companies benchmark plant performance with the newly updated Productivity and Waste Survey, which provides useful benchmarking data. The report provides metrics so that companies can evaluate productivity, waste, and starch consumption data against participating plants. Surveying top performers, it includes information on machinery and labor operations, as well as waste from box plants in U.S. operations, as well as several international plants.

Journalist Lynda Searby reported in *Packaging News* late last year that, “Guaranteeing packaging integrity and eliminating defects such as leaky seals, faulty closures, and incorrect pack-product combinations has never been more important. This ‘necessity’ of consistently delivering flawless packaging has spawned a battery of integrity testing and inspection equipment, from leak detectors and torque testers to vision systems and materials testing.”

All these testing procedures cannot change the physical structure of cardboard-corrugated packaging, nor the propensity to surpass the physical weight and stacking limits of the materials. Add to this the exorbitant costs of this packaging choice and most chief finance officers, plant managers, purchasing agents, and quality assurance professionals quickly opt for plastic or metal containers.



The per piece packaging costs for used bulk containers and totes can be as low as 5 percent of the costs for a comparable expendable solution, depending on shipping volumes.

Reusable packaging reduces costs without compromising quality

Folding bulk containers, industrial totes, and metal storage bins are used over and over again within a facility or between a supplier and a customer. They can be used literally thousands of times. These bulk boxes are much cheaper in the long term when compared to buying cardboard boxes and wood crates every time that product is shipped. Savings can be observed in the per piece packaging cost. While the upfront investment in returnable packaging may cost more, savings can be realized quickly through repeated use. The containers, bins, and totes are used repeatedly. Labor costs are reduced by eliminating box assembly. Material handling costs are also reduced, as there are fewer moves from stackable containers.

“The quality effect of using metal bins drives fewer rejects from damaged packaging and since plastic and metal containers can stack very high, the amount, utilization, and safety of floor space is immediately enhanced,” asserts David Madden, president of ContainerExchanger.

Industries that frequently utilize reused metal bins and plastic packaging options include automotive molders, automotive components, durable goods manufacturers, metal stamping, and metal casting. “Absolutely any industrial company that must store or ship intermediate product benefits from using noncorrugated packaging,” says Madden. “When there are subassemblies or large parts that are transported to an ‘internal’ customer (a different part of the plant), these packaging solutions are optimal.”

The quality and cost benefits of reusable metal bins

Durability and reusability of high quality metal bins doesn’t affect quality and because some containers are collapsible, return shipments are more cost effective. Some metal bins are very heavy-duty, holding significant quantities of heavy product such as casted or machined metal parts. This product can then be stacked and stored in a relatively small space. Wire baskets are also effective, because they are highly affordable. “A light-duty wire basket is pretty cheap for the internal storage volume, and they are often used to hold cardboard for recycling or

transporting and storing light stamped parts or molded parts,” Madden suggests.

Reusable vs. expendable packaging

While corrugated boxes are expendable, the cost in quality isn't acceptable. Damaged products due to damaged cardboard cannot be tolerated by any quality standard. Customer dissatisfaction from defective products is simply too high a price to pay. New metal and plastic containers are often very expensive and difficult to cost-justify vs. the disposable containers. The solution of reusing high quality metal bins and baskets, along with solid plastic containers provides a perfect balance of cost containment and upholding the lean quality mandates.

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