

Packaging Reduction for Shippers

A Glance at Clean Freight Strategies

The major retailer Wal-Mart realized big benefits when it took another look at product packaging. The manufacturer of its private label wine bottle reduced the amount of glass used in the bottle by reconfiguring the design. A few simple changes reduced packaging weight by 8 million pounds, carbon dioxide by about 3,400 tons and took 280 trucks off the road. With all these changes, the retailer was also able to reduce the price of the wine by 20 cents per bottle.¹

Packages are defined as delivery parcels (envelopes or boxes) used by carriers or product containers (boxes, cases or pallets) used by shippers. Packaging strategies, such as lightweighting and reconfiguration, can reduce package weight or increase the product-to-package ratio, resulting in more products per truck and fewer miles driven system-wide.

What is the Challenge?

Companies committed to sustainability recognize that minimizing packaging is a crucial part of their efforts, yet they want to understand how to balance the costs of using renewable materials, more recycled content, or less material overall² with the logistics benefits of smaller, denser, less frequent or fuller loads.

As a shipper, one way to offset investments in packaging reduction is to consider the positive impact it can have on your supply chain. There are benefits to reducing packaging weight and space: the more products you load into each container, the fewer trucks you'll need, which reduces logistics costs and the carbon footprint of your supply chain.

What is the Solution?

Packaging can be made more sustainable by applying the principles of product stewardship.³

One example is Intermediate Bulk Containers (totes for bulk fluids known as IBCs), which are cube-shaped and fit on a standard pallet, providing for a more efficient use of space. By replacing standard cylindrical drums with 315-gallon collapsible, reusable IBCs, you can transport up to 2.4 times as much material per truckload, assuming vehicle weight limits are not reached. In this way 24 truckloads could be reduced to as few as ten.⁴

Other strategies include:

Use less material: Material reduction will decrease cargo weight and may also allow for denser product packing, using available space more efficiently. Steps to eliminate unnecessary packaging can include:

- Reducing or eliminating the use of pallets
- Using polywrap or shrinkwrap to reduce packaging size
- Packaging items in bags instead of boxes
- Reducing the thickness of packaging walls, increasing rigidity by using stronger, but lighter materials or changing shapes
- Redesigning packaging and even the products to fit more items into one package
- Eliminating unnecessary tertiary packaging and layers such as bags within bags

Eliminate shipping unnecessary items: Make product documentation available electronically and ask consumers to "opt-in" for additional items, such as cables or power cords, because they may not need them.

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Costs

The costs associated with packaging design include researching new materials, redesigning the size and shape of packaging, modifying packaging and handling equipment, if necessary, and prototype/field testing of new designs and materials. These costs will vary depending on the scope of your business and can be significant.

Savings and Benefits

Packaging reduction can lower your carbon footprint due to incremental savings accrued through lighter loads and/or higher product-to-package ratios which reduce the total number of trucks required to ship the same amount of product. Additionally, reducing packaging can also help increase customer satisfaction. Excessive packaging is a common customer complaint.⁵ Following are three case studies that illustrate the benefits of reducing packaging:

Use less packaging material: In 2009, Fetzer Vineyards, one of the country's largest wineries reduced the weight of its bottles from 20.3 oz. to 17 oz. on average without reducing product volume. The new bottles are made from 35 percent

post-consumer recycled glass and reduce glass usage by 16 percent. The change reduced supply chain GHG emissions associated with glass bottles by 14 percent.⁶

Hewlett-Packard, a multinational information technology corporation reduced the volume of packaging for its laptops resulting in 97 percent less material used. This enabled the company to fit three laptops per box to ship to stores instead of one. As a result the amount of product that could fit on each pallet increased 31 percent.⁷

Higher product-to-package ratios: The global retailer IKEA reduced the amount of air and unused space in its packaging for tea candles and increased the number of 100-pack candles that can fit on a standard pallet by more than 40 percent. The result was fewer truck trips, which yielded a 21 percent carbon reduction. The new packaging also increased efficiency by allowing for faster unpacking in stores.⁸

Eliminate unnecessary items: The major electronics manufacturer Cisco eliminated paper documentation and user guides from its product packaging for a telephone. This change allowed three units to fit into the shipping space previously occupied by two, saving \$1.3 million and 954,000 pounds of freight shipped annually.⁹

NEXT STEPS

1 Conduct a packaging audit. Work with your suppliers and manufacturers to reduce product packaging size and weight, fit more products into current packaging, change the product shape itself for more efficient shipping, and avoid using higher-rated packaging than is necessary to protect your products.

2 Work with carriers and others in the supply chain to determine the most efficient loading configurations for their vehicles.

3 Educate customers about how to handle weight and space-saving packaging such as intermediate bulk containers. Explain the financial benefits of this packaging such as the avoidance of disposal costs and reduced storage requirements.

