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## Green Supply Chain: Thinking Outside the (Cardboard) Box

By [Justin Lehr](#)  
GreenerDesign  
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Ghirardelli Chocolate Company in San Leandro, Calif., is the longest continually operating chocolate manufacturer in the United States, and they value tradition. But when it comes to smart operational decisions, the company is not afraid to chart new territory. In 2005, Ghirardelli replaced disposable cardboard boxes with reusable plastic totes to transport their premium chocolate squares inside the plant and to outside packagers. Since making the

change, they have not looked back.

"Before switching to reusables we'd have to replace and pay for the disposal of some 350 tons of chocolate-soiled cardboard boxes each year," remembers the plant's planning manager, Vellay Kannappen. Ghirardelli expects to realize over \$2 million in net savings over the course of five years, the assumed life span of the containers and washing equipment.

Like Ghirardelli, a growing number of companies are taking a hard look at the cost and performance of cardboard boxes, wood pallets and other limited-use transport packaging. While it's far from being a standard across industries, "going reusable" has paid off handsomely for many leading companies. Some of them -- including John Deere, Toro, Cummins, General Motors, Pepsico, as well as Ghirardelli Chocolate -- will share their success stories and experiences at today's "Choose Reusables!" Education Forum, a conference in Oakland, Calif., focused on all aspects of reusable transport packaging.

### Benefits and Advantages

Unlike cardboard boxes and wood pallets, reusable containers and pallets are made of durable materials and designed for many years of use. Switching to reusables eliminates the purchase and disposal costs of one-time or limited-use transport packaging. Once the initial cost of reusable transport packaging is recovered, this means direct savings-and a boost to the bottom line.

In addition there are less obvious, secondary savings opportunities, such as lower labor, reduced inventory and shipping costs, and decreased product damage. Savings in these areas is what makes the switch to reusables worthwhile for many companies. One of them is ANG Newspapers, which has since merged with the Contra Costa Times to form the Bay Area News Group.

The costs associated with repairing, storing and handling the company's huge fleet of wooden pallets amounted to \$46,000 annually and was eating into ANG's profits. Disposing of large amounts of waste from broken pallets added to the company's expenses. The switch to 1,700 reusable plastic pallets has made time-consuming pallet repair a thing of the past. The reusable pallets have also increased operational performance and worker safety because, unlike wooden pallets, they rarely collapse under a heavy load. As a bonus, the change has helped streamline ANG's distribution system.

"The standardized shape of these pallets makes handling and storage much easier," says packaging plant manager Randy McLeod. "We've also hot stamped them for identification and to keep track of inventory and space. Nothing gets lost."

For food and beverage manufacturers and distributors, superior product protection is the number one reason for transitioning from cardboard and wood to reusables. Sturdy, moisture-proof reusable containers have a high stacking strength and good insulating properties that protect products even in rough shipping environments. In the agricultural industry where profit margins are slim, reducing spoilage is critical. Many farming operations now

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use robust yet well-ventilated reusable crates to package and ship produce. Improved ventilation removes field heat faster, improving produce freshness and lowering cooling costs.

As one would expect, choosing reusable transport packaging over limited-use alternatives is better for the environment, too. And today more than ever, sustainable operations and a greener supply chain add value to a company's portfolio and appeal in the marketplace.

Research by StopWaste.org has shown that energy use, solid waste, and greenhouse gas emissions are all significantly greater for disposable packaging, even when it's recycled, compared to reusables. A 2004 life cycle study that compares reusable plastic crates to corrugated cardboard containers found that reusables produced 95 percent less solid waste, required 39 percent less energy and generated 29 percent less greenhouse gas emissions.

Because reusable containers and pallets are lighter and can be stacked more efficiently, fewer forklift trips are needed inside a facility and more product can be loaded onto each truck, reducing the number of trips. That means lower fuel costs as well as emissions -- a big concern with today's high gas and diesel prices.

#### Who Should Consider Reusables?

Switching to reusables can add large profits to a company's bottom line, but it also requires operational changes and up-front investment. Typically, reusable transport packaging has a higher initial cost than one-time or limited-use transport packaging because it is designed and manufactured with more durable, longer-lasting materials. Other costs may include new material handling equipment, such as washers and sanitizers, additional or new storage systems, and reverse logistics (the return transportation of empty reusables packaging components).

However, these costs are usually offset by the savings opportunities: reduced disposal and labor costs, decreased or eliminated product damage and better worker safety. The return on investment (ROI) for the higher cost of reusable packaging depends on the frequency of reuse: the more trips each reusable container or pallet can make, the higher the ROI. Operations that will generally benefit from reusables are those with a flow of consistent products in large volumes and "closed-loop" systems, where the delivery of products can be combined with the return of empty containers in one trip. Large or bulky products -- or those easily damaged -- are also good candidates for reusable transport packaging.

To help businesses determine if a switch to reusables makes sense for them, the Stopwaste Partnership, together with the Reusable Packaging Association, has developed a Reusables Cost Comparison Tool. The tool is available at [www.useresables.org](http://www.useresables.org), a website that addresses all aspects of reusable transport packaging. The site also includes case studies, a listing of relevant events and workshops, and many other resources.

*Justin Lehrer is the program manager at StopWaste.org.*

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