



/ by RANDY HOFBAUER, Associate Editor

SUSTAINABLE PACKAGING

LOSING WEIGHT AND KEEPING IT OFF

Here's how companies are reducing packaging materials and increasing profitability in an uncertain economy.



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Unilever reduced its Knorr recipe mixes packaging by 50% by switching from bag-in-box to a printed pouch.

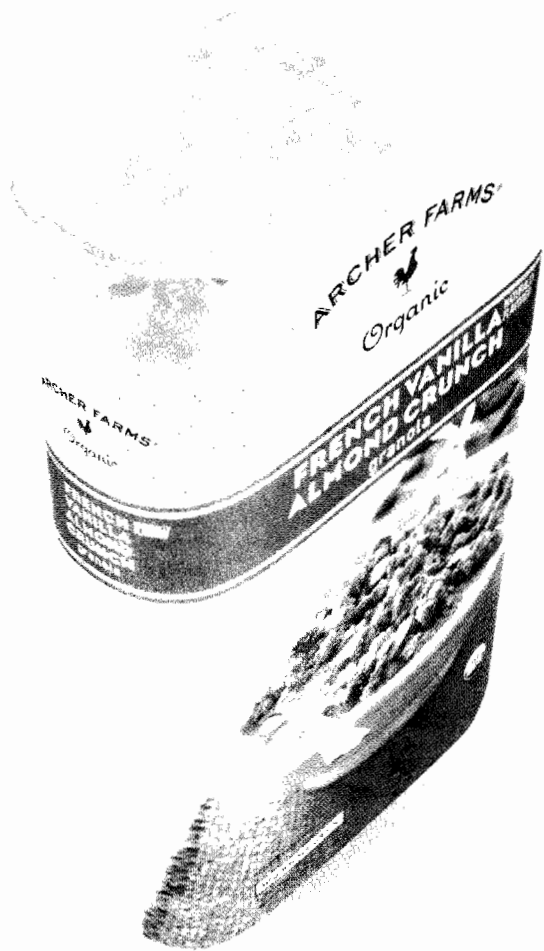
“Sustainability” has been the buzzword in packaging for the last several years. Although there are major changes being made to cut back in the amount of packaging materials and save money, some believe that we are only at the beginning of a trend.

According to Packaging Machinery Manufacturers Institute's (PMMI) Packaging Intelligence Brief on Packaging Trends, the end of the decade will see a high level of activity related to source reduction, such as lightweighting containers and closures, eliminating secondary packaging and replacing rigid packaging with flexible packaging.

Wal-Mart, when it released its Packaging Sustainability Scorecard nearly two years ago, took a leadership position and became an example to follow. It set a goal of a 5% reduction in packaging by 2013, which is expected to reduce its carbon dioxide emissions by 667,000 metric tons. The company expects \$3.4 billion in direct savings and about \$11 billion in savings across the supply chain.

Today, more and more product manufacturers are developing sustainable packaging initiatives as more and more consumers consider a product's environmental impact before they buy.

“[Consumers] are not necessarily going to pay a premium price for it yet, but if Product A is sitting next to Product B on the shelf, and Product B [uses] less pack-



aging, or is more environmentally friendly, consumers will choose Product B," says Susan Palombo, managing director at READY366 (formerly applebrandsource). "They care about sustainable issues; they just don't always know how to act on them."

Must sustain functionality!

The first and perhaps most important environmental responsibility of packaging is to protect product integrity and sustain freshness. If a cheese container doesn't seal properly, the product spoils, and both product and package have to be thrown out. On a large scale, this can lower a company's sustainability score.

"The environmental impact due to damaged or spoiled product usually far outweighs any environmental impact of packaging, especially for food products," says Roger Zellner, research, development and quality director of sustainability at Kraft Foods.

Once a package is designed to keep its contents

fresh, the next criteria a company should start looking for are options to reduce material while maintaining the package's function. Companies are saving big where film and outer cartons can be easily removed altogether.

- Unilever eliminated 50% of its Knorr recipe mixes packaging by switching to a pouch instead of its previous bag-in-box design.

- UK brand Jordan's Organic Cereal also eliminates the need for a paperboard box, opting for Alcan Packaging's biodegradable and compostable pouch. This package won a 2008 DuPont Award for sustainable innovation.

- Also in cereal, Target's Archer Farms has simplified the number of packaging components and added an extra feature. Instead of the typical bag-in-box, this cereal is packed in a bag-free paperboard box sealed with foil and sporting a reclosable lid to keep the cereal fresh after initial opening.

PET weighs in

A popular package currently being lightweighted is the polyethylene terephthalate (PET) bottle for a variety of foods and beverages. Because lightweighting the bottle's walls can make them flimsier and trickier to hold, companies are shaping their bottles to fit snugly in hand.

Kraft Foods recently redesigned its PET salad dressing bottles to better fit the contour of a customer's hand and use less refrigerator storage space. The new design also reduced PET content by 19%, which adds up to 3 million pounds annually. These reductions also offer added payback.

"Our optimized bottle design has also delivered additional sustainability benefits, including improved inbound transportation efficiency of 18%, by allowing a greater number of bottles per truckload," says Zellner.

Here's another example. For its Hunt's ketchup bottle, ConAgra uses DiamondClear PET from Constar Int'l, which is blended with oxygen scavenger material. This monolayer structure competes well against bottles made from plastics with barrier layers of

« Target's Archer Farms cereal box replaces the traditional bag-in-box style with a reclosable canister from Sonoco that uses 55% recycled materials.

» Short-skirt closures, like on Coca-Cola's 20-ounce PET bottle, can reduce total container weight by one or two grams.



material such as ethylene vinyl alcohol (EVOH).

PET has received its share of flak this past year in the bottled water market, a category of the beverage industry that has become the environmentalist's scapegoat. Nevertheless, this looks to be a mere starting point; criticism will eventually spill into both the carbonated and non-carbonated beverage markets.

In the future, water bottles may be replaced by technology such as water pitchers and filtration devices from brands like Clorox's Brita or Procter & Gamble's PIR. But, in the meantime, companies are focusing on using less PET in their beverage bottles.

- Nestlé is turning major heads with its new Eco-shape bottle. The bottle, which weighs only 12.5 grams, is 30% lighter than the typical half-liter water bottle, but curved to fit the hand. The label size was reduced by 30%, as well.

- Coca-Cola has also answered demands for less plastic by redesigning its 20-ounce PET bottle to contain 20% less plastic. Surface bumps help make it easier to grip.

- Pepsi's bottle for its non-carbonated beverages contains 20% less plastic, but is designed with several troughs to fit the consumer's fingers.

Putting the pedal to metal

Metal cans are undergoing similar reduction measures. Lightweighting of both aluminum and steel cans is an ongoing process. Today's engineering allows for com-



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— ROGER ZELLNER, RESEARCH, DEVELOPMENT AND QUALITY DIRECTOR OF SUSTAINABILITY, KRAFT FOODS

panies to reduce wall thickness while still providing high performance. Compared with 20 years ago, aluminum beverage cans are 28% lighter, and steel food cans are 33% lighter.

Heinz, for example, recently worked with UK waste strategies company WRAP (Waste and Resources Action Programme) to optimize its canned foods packaging. Heinz introduced thinner, lighter can ends, which can be used on both two- and three-piece 73-millimeter diameter cans, are 0.18mm thick, only 0.02mm lighter than before. However, Heinz saved roughly \$767.5 million and 1,400 tons of steel, earning it Best in Class status.

"We are delighted to have achieved Best in Class status with our new Easy Open End," says Phil Crompton, Heinz capital engineering department manager. "By sharing the challenges in adopting the new ends with colleagues in the canning industry, we are sure others will soon follow."

'Flavor'-able alternatives

While instant coffee and Tang might seem like a blast-from-the-past, more manufacturers are packaging powdered versions of popular brands in stick packs. Some of the most popular names in refreshment are now being offered as powdered flavors, including Gatorade, Powerade and Arizona Iced Tea. The principle is similar to concentrates; empty the pack in a bottle of water or milk, mix and enjoy.

"Concentrates basically cut packaging use in half while providing equivalent functionality," says Bob Lilienfeld, editor of *The Use Less Stuff Report*. "Thus, energy use during transportation is cut in half, packaging waste is cut in half and in-store stocking costs are cut way back, as well."

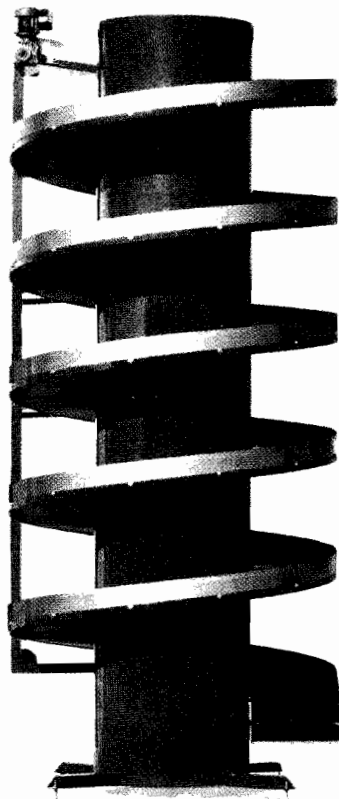
The same is working for food, too. Kraft has released its Jell-O instant pudding mix in single-serve stick packs, giving the consumer a less wasteful package choice over the traditional single-serve plastic cups. ▶

▶ Beverage brands such as Gatorade are offering beverages in single-serve powder packets that mix with water, eliminating bottles altogether.



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Sam's Club square milk jug is compact and stackable, eliminating the need for secondary packaging.

Simplifying the secondary side

Many initiatives are being taken to reduce materials on the secondary packaging side, as well.

When Unilever switched to a shrink-wrapped corrugate tray for its Wish-Bone salad dressing, it estimated that it would save the company 4 million fewer pounds of corrugate, 11,000 fewer pallets and 500 fewer truck loads.

But secondary packaging isn't just being reduced—it's being eliminated altogether. Some notable examples are:

- While it isn't a new concept, the square, case-less milk jug for Sam's Club provides an important shipping and storage feature: stackability. With its square design, it doesn't need a shipping case. It ships just as well on a corrugate pad.

- Coca-Cola switched from corrugated trays to single corrugated pads for shipping, and reduced shrink film gauge, too.

- The Heineken Draughtkeg eliminates the need of bottles or cans, as well as secondary packaging, by providing 5 liters of beer from a 100% recyclable steel can. Since beer kegs are generally purchased for consumption in group settings, the cost of approximately \$2 per pint of beer is budget-friendly.

"I think of [the Heineken Draughtkeg] as a metaphor for any product that gives you direct distribution without individual packaging," says Palombo. "It makes you think, 'Wow, why do we need to put beer in 12-ounce bottles?' There are reasons, but suddenly there's a primary package that completely eliminates any secondary packaging. It's cradle-to-cradle and it's recyclable, so you can bring it back. It's sort of the purest example of a primary package, totally eliminating secondary packaging."

Having a sophisticated pallet

An often-overlooked element in the packaging reduction process is tertiary packaging. This is unfortunate because traditional wooden pallets make up to 50% of distribution center



"Slip sheets not only cost less than pallets, but they can increase energy efficiency and decrease transport costs by as much as 25%. That's real money."

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waste. Replacing those pallets with slip sheets reduces materials, making the benefits threefold: they take up less space, cost less money and weigh less.

But there certainly are other sustainable benefits.

"Many of the plastic versions [of slip sheets], especially those made from HDPE (high-density polyethylene), are made from recycled materials, and can be reused and recycled, as well," says Lilienfeld. "Slip sheets not only cost less than pallets, but they can increase energy efficiency and decrease transport costs by as much as 25%. That's real money."

And as for money, just as every rainbow has its pot of gold at its end, companies are trying to predict where and when the next big changes will occur that offer a way to increase the use of environmentally friendly materials while still maintaining profitability.

While material reduction plays a huge part in today's sustainability initiatives, some see it as being driven more by internal cost-cutting measures in engineering, manufacturing and supply chain. Many brand managers are waiting to see what changes consumers want to see on store shelves. Perhaps changes such as eliminating secondary packages and replacing rigid with flexible packaging open a bigger window into the future.

When reducing packaging weight, though, remember to look at all three areas as a whole: primary, secondary and tertiary. It doesn't make sense to lightweight a primary pack so much that you need to beef up your shipping cases for stacking strength or to prevent additional damage and product waste. **F&BP**

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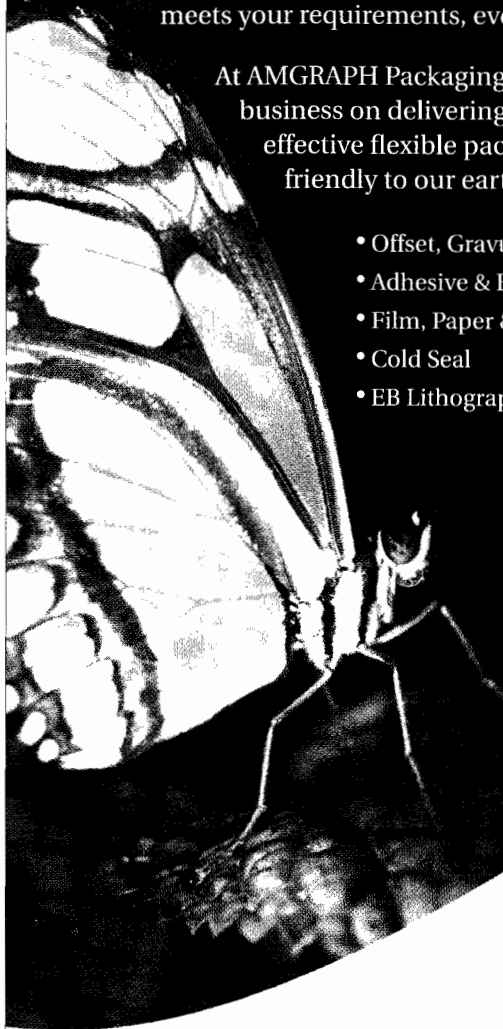
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