

Sustainable packaging hitting its technical stride

Breakthroughs in materials make possible lighter and more recyclable forms

By SHEILA LIVADAS

Decades of advances in packaging science have steadily pushed aside plain-vanilla labels and generic boxes. Once an afterthought, packaging is now a window into a company's soul, revealing its priorities and values.

For some businesses, that means using packaging as a marquee for green business practices.

"Environmentally friendly packaging has become an expectation of our customers," says Dennis Bacchetta, marketing director at Rochester-based Diamond Packaging. "We're seeing renewed interest in highly decorative packaging done economically and more sustainably."

He adds: "Brands want their packaging to be disruptive and visually appealing—and eco-friendly at the same time. They want to differentiate their products with the latest converting techniques, including specialty coatings, foil or tightly registered embossing."

Besides giving products headed for store shelves a green makeover, more companies have begun focusing on packaging's role in internal operations. Scaling back the materials used to protect parts during shipping, for instance, helps save space in transit and reduce waste.

Though packaging has gained ground as a measure of sustainability, it sometimes represents only a fraction of a company's overall environmental impact, especially in water- and oil-dependent industries. The absence of a widely accepted definition for sustainable packaging makes its impact even more difficult to quantify.

"It's very hard to nail down, in terms of is one choice absolutely better than the other," says Daniel Johnson, professor and chairman of Rochester Institute of Technology's packaging science department.



Photo by Kimberly Simpson

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Products with less packaging that get damaged or spoiled before reaching end users throw a wrench into sustainability efforts because of the resources spent to replace them, he adds.

To reduce costs and boost sustainability throughout their supply chains, more companies in the consumer goods sector have turned to "lightweighting," a practice that hinges on lowering packaging's weight.

"In general, across all our markets that we cover, we have been in a lightweighting mode for probably five years now," says James Hammer, president and CEO at Rochester-based Hammer Packaging Corp.

One longtime Hammer Packaging client that has turned to lightweighting is Poland Spring, a subsidiary of Nestlé Waters.

"They've been downsizing the resin content in their plastic containers for the last seven to nine years now," Hammer says. "And along with that project with the bottle manufacturer, we're actually running a very lightweight coated paper for the label for sustainability (purposes). So, we've gone from a conventional ... 60-pound coated one-sided sheet to 47-pound, which is a much lighter-weight sheet."

Hammer Packaging clients also are showing interest in floatable-film labels, which have lower density than traditional shrink-sleeve films and allow labels on bottles made from polyethylene terephthalate, or PET, to float and separate from containers during recycling. Floatable labels do not contaminate post-consumer PET

fragments, known as “flakes,” that act as a base material for producing clothing, pillows and carpeting.

“Recyclability is a big thing when it comes to beverages,” Hammer says. “A couple of our largest customers—Coke, Pepsi and Dr Pepper—I mean, they’re all in a recyclable mode strategically to try to figure out how to get their product to be more friendly with the environment.”

Food-industry companies also are exploring their packaging options.

Earlier this month, Wegmans Food Markets Inc. announced it will begin bottling its “Food You Feel Good About” pasta sauce in PET jars. The Rochester-based supermarket chain cited the material’s shatter-resistance and recyclability among the reasons for the change.

“The production costs for our pasta sauce did not change with the switch to PET, so the retail price also remains the same,” says Tracy Van Auker, media relations coordinator at Wegmans.

Cosmetics companies are getting into sustainable packaging as well.

To produce gift-set packaging for L’Oreal USA’s Matrix Biolage Therapies hair care line, Diamond Packaging recently used an unbleached high-yield, low-density paperboard that is fully recyclable and made from a renewable resource. The cartons and inserts were manufactured using 100 percent wind energy.

The packaging also describes L’Oreal’s sponsorship of the Conservation Fund’s Go Zero campaign, which aims to help individuals, companies and foundations meet carbon-reduction goals while restoring forests and habitats.

“The natural look and printed graphics combine to deliver an appealing message,” Bacchetta says.

Rising demand for sustainable packaging has sparked greater interest in product-to-package ratios, Johnson says. The stakes are high to get those calculations right because of a concept known as “slack fill,” which the U.S. Food and Drug Administration defines as the difference between a container’s actual capacity and the volume of the product it contains.

“In particular, if the package is a little bit too large for the actual product ... it’s very easy to get complaints about slack fill,” Johnson says.

In recent months, allegations of slack fill have led to litigation. New Jersey-based Mondelez International Inc., for example, is attempting to quash a proposed class action over whether it deliberately under-filled boxes of its Sour Patch Kids Watermelon candy. The company has defended its packaging decisions on various fronts,

including arguing that the boxes need some empty space inside in order to prevent the contents from sticking together.

Lawsuits aside, slack fill rarely involves malicious intent, Johnson says.

“Companies work very hard, actually, to get the correct amount of product into the container,” he adds. “Nobody wants to be accused of trying to shortchange a customer.”

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