





BY DALE BUSS

Taming the Tsunami of Plastic Waste





The pressure to curb use of plastic packaging is mounting, and it's prompted food and beverage companies and foodservice chains to come up with some creative solutions that are recyclable, reusable, biodegradable, or compostable.

In the annals of photographs that changed history, the 2015 photo of an olive ridley sea turtle may not be the Hindenburg dirigible blowing up in 1939, Neil Armstrong on the moon in 1969, or the man holding off a tank column in Tiananmen Square in 1989. But the image of a turtle captured off the coast of Costa Rica with a plastic straw up its nose accelerated a global movement against plastic disposables and packaging—and now is rippling through the consumer packaged goods (CPG) and foodservice industries.

Also amplifying consumer alarm have been documentaries such as BBC's *Planet Earth II* that chronicle the contagion of plastic waste in the great outdoors. Throw all of that emotional messaging into the echo chamber of social media, and it has created rapidly coalescing worldwide outrage over single-use plastic.

"It has really galvanized consumer action against plastic," says Chase Buckle, trends manager for GlobalWebIndex, a consumer research firm based in London and New York City. "And the war on plastic is part of a wider shift toward consumers taking a leading role in all things green."

Indeed, plastic waste has become Public Enemy No. 1 in the food and beverage business these days. As a result, traditional packaged goods giants, huge restaurant chains, and startups in both businesses—and their packaging suppliers—are scrambling to create new single-use plastic packages that are recyclable or biodegradable—or, preferably, are reusable or eliminate plastic altogether. As part of this ethos, in fact, many companies are performing thorough reexaminations of their approach to all their packaging.

A Rising Tide of Consumer Concern

Yet their response still can't keep up with a tsunami in public sentiment that continues to shift massively against soda and water bottles, plastic bags, and plastic straws, and simultaneously to elevate commitment to a "circular economy." The concern has rocketed from a marginal plaint of environmentalists to one that is at the very center of green sensibilities, nearly on a par with discussions of climate change.

WestRock, a giant paper and packaging supplier, shares research with clients that shows that 74% of

consumers now say materials used in packaging are an important way companies can show interest in and support for the environment.

"It's a gatekeeper concept for consumers and a representation of that company," says Jeremy Keenan, strategic marketing director for the Atlanta-based company. "They're competing on-shelf for presence, and consumers will choose the product and brand that connects with them on sustainability measures."

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More than 60% of consumers are likely to switch away from a brand that they don't believe is sustainable, according to research with American and UK consumers conducted by GlobalWebIndex. And 56% now are likely to pay more for products they perceive as sustainable, up from 40% in 2011.

All this attention and concern is hardly surprising. The world seems to be literally choking on single-use plastic. While some still argue about the science behind man-made global warming, there is little argument with the evident ravages of plastic wastes that aren't quarantined and hidden in landfills. Out in the ocean, there is a NASA-measured "gyre" of plastic wastes of various concentrations that has become the size of Alaska. Microcapsules of broken-down plastics are said to inhabit every creature that plies the seas and end up in human digestive systems.

Activists present reams of damning statistics about plastic wastes that seem as overwhelming as the piles of plastic garbage themselves. For example, more than 6.3 billion tons of plastic waste already exists out there. Just 14% percent is collected for reuse.

And besides the olive ridley sea turtle, other maritime animals provide unfortunate anecdotes. For example, in pushing for a plastic straw ban in California, former Governor Jerry Brown last year mentioned that researchers found 80 plastic bags in the stomach of a

With a goal of making packaged goods consumption more sustainable, a program called the Loop allows participating manufacturers to offer brands in reusable containers that are home-delivered in a shipping tote. The program made its U.S. debut with the launch of a pilot program in the Mid-Atlantic region this spring. Photo courtesy of Loop

dead pilot whale that had washed ashore in Thailand.

Combating plastic waste has become a business priority. SodaStream, which supplies a beverage carbonating device for in-home use, made that clear in a video ad, which managed to spoof a corporate rival at the same time that it sent a high-profile message to the world about its ability to reduce the number of plastic water and soda bottles flowing into the waste stream. In the style of Coca-Cola's iconic 1971 commercial, "Hilltop" (think, "I'd like to teach the world to sing"), SodaStream fielded a commercial that depicted another diverse group of singers. But each had a plastic bottle of water in their hands, and they were standing on an iceberg-sized heap of discarded plastic bottles.

SodaStream—which has been acquired by PepsiCo—recruited celebrities such as actress and singer Sarah Catherine Hook to join its choir of people, and Rod Stewart voiced a sea turtle that was being carried by Icelandic strongman Hafthor "The Mountain" Bjornsson.

Challenging the Status Quo

Practically anything Starbucks does qualifies as a cultural moment, so its NextGen Cup Challenge also has attracted a lot of attention. Run by Closed Loop Partners, the Challenge is an initiative aimed at redesigning the fiber-to-go cup to create a widely recyclable or compostable alternative. Among the other major CPG and foodservice brands involved are McDonald's, Coca-Cola, and Nestlé.

The 12 winners of the Challenge include alternatives to the polyethylene plastic liners that can make to-go cups difficult to recycle,



ranging from a coated paper cup that is recyclable and home-compostable from Thailand-based PTT MCC Biochem to WestRock's recyclable and compostable paperboard solution for cups.

"We're in a unique and interesting time," notes Keenan. "There's a convergence from consumers, media, and government regulation. We're seeing an acceleration away from plastic."

Indeed, governments have gotten involved: France, for instance, has made an ambitious commitment to recycle 100% of its plastics by 2025, and the United Kingdom announced a 25-year environment plan with a major focus on moving away from throwaway plastics. The European Union has banned plastic plates, cups, and cutlery beginning in 2021. Many U.S. communities already have banned plastic straws. (See sidebar on page 24.)

But the real action on this problem is at the company level, where CPG and foodservice players alike are scrambling as never before.

"Everyone agrees that plastic waste does not belong in our oceans or anywhere in the environment," declared Procter & Gamble Chief Executive Officer David Taylor in

January as he announced the founding of a new organization called Alliance to End Plastic Waste, made up of 30 member companies that committed more than \$1 billion

A recyclable fiber-based cup suitable for hot and cold applications earned packaging supplier WestRock one of the winning spots in the NextGen Cup Challenge organized to help promote innovative solutions to packaging waste. Photo courtesy of WestRock



Reaching the Last Plastic Straw?

Fighting for early season position against intra-division rival the St. Louis Cardinals, the Milwaukee Brewers chose to emphasize something else at Miller Park on Earth Day this year: The Major League Baseball club has eliminated clear plastic straws from its food stands.

The action was just one of many these days that line up against plastic straws. McDonald's announced that it will ban plastic straws at its restaurants in the United Kingdom and Ireland. Alaska Airlines will become one of the first airlines to eliminate plastic straws and stirrers. And on and on.

Estimates are that Americans use 500 million plastic straws every day and that 8.3 million plastic straws pollute the world's oceans and beaches. While 8 million tons of plastic flow into the ocean every year, straws comprise just a tiny fraction of 1% of that total. But the idea of vanquishing plastic straws has become a national environmental cause célèbre.

Plastic interests are fighting back, of course, among other things promoting recycling and reminding consumers and the foodservice industry that plastic bans only target waste and don't account for all the environmental costs associated with the production of alternatives.

In response to mounting interest, manufacturers of paper straws have begun to introduce more viable options. A year ago, the cost of a paper straw was about three times that of a plastic straw. But that differential has been cut in half over the past several months.

Companies like Aardvark Straws of Fort Wayne, Ind., acquired last year by Hoffmaster Group, are stepping up to the opportunity that has opened up in the marketplace thanks to environmental concerns about plastic straws. "We make the best product in the world," insists Andy Romjue, president of the foodservice division of Oshkosh, Wis.-based Hoffmaster. "It's about the paper, adhesive, and the way you wind it. It's the mixture of those three things that creates a straw that either falls apart within minutes of being in a beverage or can last for hours and hours."

Rob Stillman, president of FarFromBoring



Rhino brand paper straws became available late last year, and demand has been strong. Photo courtesy of FarFromBoring Promotions

Promotions in Boca Raton, Fla., says he was inspired to develop a line of paper straws after receiving requests for them from clients. Stillman wanted to make a straw with "a certain kind of paper" that he won't identify, "with a gluten-free binder wrapped three or four times in certain cases." The resulting *Rhino* brand paper straws "don't fall apart or unwind in your drink or taste like cardboard," he says.

Another approach to the waste dilemma is to make plastic straws biodegradable using resins or additives such as polylactic acid (PLA), a bioactive thermoplastic derived from renewable resources. PLA straws act like plastic in that they don't separate as paper straws do.

But "they are a little bit flimsy to look at, and they appear to be a poor quality replica of a plastic straw," says Peter Horwitz, CEO of Tiger Packaging, Boca Raton, Fla. Some clients have been attacking that drawback by providing PLA straws with a printed paper wrapper that says "compostable" or "recyclable" so that consumers understand the tradeoff.

with the goal of investing \$1.5 billion over the next five years to help end plastic waste in the environment. "This is a complex and serious global challenge that calls for swift action and strong leadership."

Food Companies Take Action

Many food and beverage companies also have announced their own specific goals to use recycled content and ensure that their packaging is recyclable. Leaders in this area include Anheuser-Busch, Coca-Cola, Danone, Kellogg, McCormick, McDonald's, Nestlé Waters, PepsiCo, and Starbucks. For example, Danone pledged to increase recycled content in water bottles to 100% by 2025 from the current 25%; McDonald's promised to have recycling in place at its 36,000 locations by 2025; and Coke's World Without Waste initiative pledged that its packaging will contain 50% recycled content by 2030.

Former Unilever CEO Paul Polman emerged early as a decisive actor and thought leader among CPG executives about how the industry could attack the waste challenge. Already since 2010, the waste associated with the disposal of its products had decreased by 28%, and the weight of its packaging had been cut by 15%, the company said last year. Before he retired in January, Polman further pledged Unilever to ensure 100% of its plastic packaging is fully reusable, recyclable, or compostable by 2025, to source 25% of its resin from post-consumer recycled content, and to publish its full plastics palette by 2020.

"There is no doubt that the response from the consumer goods industry will be amongst the most critical in determining the speed at which positive change takes place," Polman said in a Unilever release. "We are at a critical juncture."

Loop is a new durable packaging program launched at the World Economic Forum earlier this year

As a participant in the Loop circular shopping platform, organic food company Nature's Path created a reusable container for its granola.

Photo courtesy of Loop



that offers popular products from about 25 CPG companies in reusable containers that customers can order online or purchase in stores and return to the company when finished. Launched by TerraCycle, a New Jersey-based recycling company, the goal is to cut plastic waste and advance the “circular economy.”

So, for instance, Unilever has designed containers for the program that will ship *Hellmann's* mayonnaise in durable glass. Nestlé designed *Häagen-Dazs* containers that are a double-walled aluminum jar that actually keeps ice cream colder than traditional waxed-paperboard packaging.

Requiring the packages to be reusable does introduce an element of complexity because the brands want to make sure consumers perceive all the containers as being fresh and

tamper-free. “We’re looking to help build a world where plastics need never become waste,” Simon Lowden, president of PepsiCo’s global snacks group, told Bloomberg. “Trials like this help us evaluate the future potential for reusable models and our ability to scale initiatives.”

Besides the NexGen Cup Challenge, many foodservice brands are launching other initiatives to cut plastic waste. KFC, for instance, announced its intention to make all of its plastic-based, consumer-facing packaging reusable or recoverable by 2025. The Yum Brands–owned company already is headed in that direction with initiatives such as replacing its plastic in-store serving trays with a paperboard tray that includes a grease barrier and is produced by WestRock.

“With different substrates and



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Shrinking the Footprint of Food and Beverage Packaging

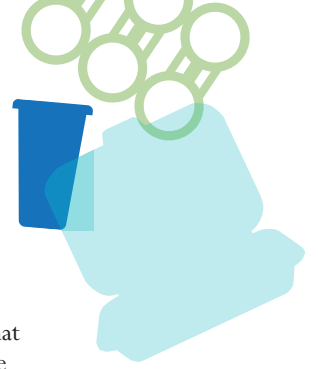
Over the years, packaging supplier Tetra Pak has played a major role in the food and beverage arena with its multilayer containers, embraced by dozens of brands because of their superior preservation abilities, because they come in seemingly innumerable configurations, and because the brand owned by Sweden’s Tetra Laval

Group produces great-looking packages.

But viewed through the lens of sustainability, Tetra Pak’s solutions present some challenges. Its packages are multilayer marvels of industrial design made out of polymers, paperboard, and aluminum, all of which is recyclable—but not all of which is biodegradable. And while Tetra Pak has

been boosting its use of renewable materials and also offering paper straws instead of plastic with some of its containers, to make its case as a force for green, the company mainly has to rely on concepts such as lightweighting and shipping efficiency.

Actually, in a broad sense, Tetra Pak’s dilemma is shared by much of the packaging



materials, we can give them the performance they need with trays,” says WestRock’s Keenan. “This also gives KFC something to use in their brand. They can connect with the consumer on this for their in-store dining experience.”

Beyond limiting their use of virgin plastic, many CPG companies are getting even more basic and rethinking packaging altogether. Lifeway Foods, for example, recently launched corn-based biodegradable packaging for certain sizes of its kefir probiotic dairy beverages that previously were housed in single-use plastic.

“Consumers demand it, but it’s also important for the earth not to have plastics and to reduce our plastic footprint,” says Julie Smolyansky, CEO of the Chicago-based category

leader. “As manufacturers, we have to be very conscious of that. We want always to reduce our impact on the environment if not leave a positive impact. There’s certainly a cost to doing it, but this goes beyond costs and profits.”

And David Kohl has created a brand of medjool snack dates called *Joolies* that he grows on his vast farm in Southern California. Scion of the family that founded Kohl’s Department Stores, he knows business. And so when he decided to attempt to decommo-ditize dates, much as *Wonderful Pistachios* had done with pistachio nuts several years ago, he hired émigrés from Wonderful Company to help with positioning and marketing.

Kohl also focused on packaging, quickly rejecting the traditional

clamshell plastic containers that housed existing snackable date brands in favor of a completely recyclable paperboard container. The company bedecked the package with palm trees and other attractive graphics and included features such as a slide-out tray for whole dates with a pop-up hole where consumers could put the pits.

“We wanted to create a package that would entice people to find out what *Joolies* are,” Kohl said. “But we also knew that making it 100% recyclable would be a big attraction in itself to today’s consumers.”

Retailers Embrace the Cause

Some retailers also have gotten into the fray. Trader Joe’s, for instance, plans to reduce its use of single-use plastic. While it already took some

industry. While needing to aim overall for the slightest environmental footprint for their products, the requirements of food and beverage preservation and protection must be considered. Eco-friendly considerations include the following:

- **Reusability.** Obviously the most desirable outcome for any package in environmental terms, reusability clearly is the least convenient for companies and consumers alike, and sometimes more costly than envisioned.

“You could have some degree of standardization so that reusable containers could be stacked in a cupboard at any restaurant,” says Claire Koelsch Sand, a packaging consultant and adjunct professor at Michigan State University and California Polytechnic State University. “The issues with reusable food packaging are labor and food safety. But maybe you could have an antimicrobial that could be manufactured into the plastic.”

Reusability is more culturally accepted elsewhere than in the U.S. marketplace. In Germany, for example, Coca-Cola’s *Honest Tea* brand recently launched refillable glass bottles that consumers can take to central locations. “Glass bottles when we were growing up (in the United States) always had a bit of scuffing on them, they’d been reused

so many times,” says Seth Goldman, founder of Honest Tea. “We want to see how many times (German consumers) will reuse these.”

- **Recyclability.** “To adapt to a new use,” as Merriam-Webster defines recycling, is probably the most popular green option. When it comes to packaging, that typically means separating the materials, if necessary, and putting them back into the supply chain for reuse. But the sustainability equation also must consider the energy expended and other resources used to make the recycling loop work.

“In general for North America, the best path is looking at how products can be made recyclable even though there’s not enough of an infrastructure there currently,” says Sal Pellingra, vice president of innovation and technology for ProAmpac, a flexible packaging giant.

As Peter Horwitz, CEO of Tiger Packaging, notes, “Recycled product takes less virgin material out of the environment, and we’re putting less virgin material back into the environment—just recycling what’s already out there. We know that eventually this product is going to end up in a landfill like everything else, but at least we’ve used less virgin material to get there.”

- **Compostability.** The ultimate environmental gambit for a package is that it could

be broken down completely and returned to the earth as humus. Compostability is one of the biggest selling points of paper straws that are made with polylactic acid, which is derived from plants, for example.

Yet greater compostability isn’t a complete solution either because consumer preferences get in the way. “The trend is moving paper to all-recyclable or compostable,” Horwitz says, “but how can you add things like moisture resistance and other properties to paper that consumers want, and so it can be used for more applications? You add plastic.”

- **Biodegradability.** Plastics can be biodegradable too, of course. That’s similar to compostable, but with a few distinct differences: While the substances are broken down to a microscopic level, they’re not organically absorbable by earth or oceans because they’re not ultimately biological.

And biodegradable plastics create a problem because the extremely fine particles have become a major scourge in ocean and land pollution. “Plastics degrading are fine, but degrading in an uncontrolled environment creates a nightmare,” Sand explains. “It’s one thing to collect plastic bottles, but if they degrade into the soil and start contaminating it, that’s just a problem. Most people in packaging know that’s not sustainable.”

steps late last year, such as eliminating single-use plastic bags for customers, the chain also has launched new efforts, such as reducing the amount of produce sold in plastic packaging, replacing Styrofoam trays with recyclable ones, and eliminating nonrecyclable plastic and foil from tea packaging. And Target, in its Design for Tomorrow Initiative, has incorporated recycling targets into larger sustainability goals. Whole Foods announced recently that effective this summer, it is eliminating plastic straws from its stores in the United States, Canada, and the United Kingdom.

Alltown Fresh, a convenience store in Plymouth, Mass., has opted for recyclable, biodegradable, and compostable plant-based packaging for every order of avocado toast, iced coffee, and house-made granola that goes out the door. There's nary a Styrofoam cup or plastic straw to be had by the mostly Millennial clientele attracted by better-for-you food and beverage options that are atypical for a c-store.

"It's important that there's a purpose and a cause not just around the food but everything associated with the experience," says Ryan Riggs, senior vice president of retail operations. "And part of that is packaging. It's of importance to this demographic set, and it's the right thing to do."

Perhaps ironically, while activists and industries have been attacking the plastic problem, there has been relatively little concern expressed about an environmental scourge that is even worse: foam. Foam plates and cups are made from polystyrene, a rigid thermoplastic material.

Vericool is attacking that. Based in Livermore, Calif., the startup designed 100% recyclable coolers made from 100% postconsumer materials that have become popular for cold-chain shipping of meal kits, confections, and other products, replacing the reliable but



The Joolies brand opted for recyclable paperboard packaging in lieu of the plastic clamshell packaging often used for dates. Photo courtesy of Joolies

eco-dangerous foam container. "We came up with a solution that's going to change the market forever," says Darrell Jobe, founder and chief executive officer of Vericool.

Foodservice companies are also experimenting with ways to eliminate the ubiquitous foam takeout container. "What if when you don't eat all your pad Thai, the restaurant gives you a reusable container that's like Tupperware?" says Claire Koelsch Sand, chief executive officer of Packaging Technology and Research, a consulting company. "Every place could use a standardized reusable container, and next time you're at a restaurant, you could bring it with you. But most people probably wouldn't; it's like how people leave nondisposable [grocery] bags sitting in their trunk."

Indeed, despite all of the advances against the stream of single-use plastic waste, huge challenges remain. One of them is the debate among companies, suppliers, activists, and regulators about the desirability of various types of "sustainable" packages, ranging from reused ones to those

that are recyclable, biodegradable, and compostable. (See sidebar on page 26.)

Another challenge is that all of this new packaging costs mountains of money to develop and often ends up adding expenses across the value chain. "Trying to change the behavior of people who continue to use the same amounts of single-use or disposable plastics comes down to affordability," says Buckle of GlobalWebIndex. That criterion "trumps sustainability in every single age group" and especially with older consumers, he says.

But for the sake of both sea turtles and humans, the food business will continue to work on ways to reduce the environmental footprint of its packaging, plastic or otherwise. "There's not just going to be one solution," Sand says. "We need to rethink how we do everything." **FT**

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