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BUILDING BETTER CONNECTIONS

A Message from PAC President & CEO

As the packaging industry's vital partner, **PAC Packaging Consortium** is proud and pleased to launch the inaugural issue of our **PAC Connect** magazine—created to showcase PAC and our industry thought-leaders with their insightful views on world-class package design, forward-looking trends, breakthrough innovations and packaging sustainability.

For someone who has dedicated 50 years of my working life to this dynamic industry—having made my first “cold call” in May of 1968 walking into the factory office of the **Continental Can Company**, at the time the largest packaging company in the world—this publication represents an important personal and professional milestone.

My initial introduction to the former **Packaging Association of Canada (PAC)** took place in the early 1970s when I attended my first PAC seminar at the former Skyline Hotel in Toronto. That's where I discovered the significant persuasive power of networking after hours in a bar, which is where a lot of sales and deals were made back in those days.

I became more closely involved with the PAC during the 1980s by becoming a PAC director and chair of the Ontario Chapter, followed by an invitation to join the group's Board of Directors.

After spending most of the 1990s living in the U.S., I eagerly rejoined the PAC board in 2004, relishing the opportunity to give back to the association and the industry that provided an excellent career for me and my family.

In May of 2006 I volunteered my services for a 90-day interim CEO term to pull the association back from the brink of bankruptcy and extinction—a position I have been honored to fill to the best of my abilities ever since.

I firmly believe that PAC is still the best place to connect with industry leaders, and the launch of **PAC Connect** is just the latest of many PAC initiatives designed to helping you advance your own personal and business agenda.

Having rebranded the PAC name and modernized its logo to serve the needs of the international marketplace, we have successfully initiated and delivered several important programs of truly global significance to our industry.

This includes the development of **IFS PACsecure**—a global packaging food safety protocol now covering over 160 certified plants, including those operated by some of the world's largest packaging companies such as **International Paper** and **Amcor**.

As the sustainable packaging movement became entrenched throughout the global packaging value chain, our formation of the **PAC NEXT** working group in 2011 addressed the urgent imperative for the industry to boost recycling rates and reduce recovery costs.

More recently, we were deeply involved in the formation of the **intelliPACK** partnership to advance the use and application of smart packaging technologies in the

mainstream consumer markets. In this light, the launch of **PAC Connect** is a logical extension of our ongoing global efforts to stay relevant and engaged.

This expression of sentiment would not be complete without the acknowledgment of three world-class organizations that have substantially influenced my career, including **Molson Coors**, **Procter & Gamble (P&G)** and **Walmart**. Today, two of these global enterprises have PAC board of director representation—one current chair and one past chair—with the third actively engaged across a broad range of PAC activities.

As a reflection of these activities, this issue of **PAC Connect** addresses several important themes that are close and dear to our heart, including:

Marine Pollution. Acknowledging the joint efforts by P&G and **TerraCycle** in the development of the world's first shampoo bottle made with recycled plastic collected from beaches around the world.

Design Innovation. While our own **PAC Canadian Packaging Awards** trace back to 1952, our relatively new **PAC Global Leadership Awards** competition now enters its third year, which we mark with an extensive article detailing how three international brand agencies have leveraged their design excellence to crate packaging for three recent *Best of Show Award* winners.

Food Waste. We look at how leading coffee producers are developing their unique environmentally-friendlier single-serve coffee capsule solutions that address the monumental global issue of food waste.

Circular Economy. We look at how leading beverage carton producers are working towards the shared goal of lowering the industry's global environmental footprint and conserving the planet's resources.

Having in some ways reached the pinnacle of my career with a 2014 induction into the Packaging Hall of Fame by the U.S.-based **PMMA-The Association for Packaging and Processing Technologies**—becoming the first Canadian to join this elite group of 160-plus packaging career professionals—I feel exceptionally honored today to be a part of PAC and the wonderful industry it serves.

My 50 years in the packaging business have been a wonderful chapter in my life's journey, and I am forever grateful to everyone who has helped me along the trail. Together, no wall is too tall.

James D. Downham,
President & CEO,
PAC Packaging Consortium



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THE ART OF WINNING

Raising the bar for package design excellence helps consumer brands compete and thrive in the new disruptive retail landscape

BY GEORGE GUIDONI, EDITOR

For today's package designers, producing a package to protect a product is often the starting point of a creative journey to engage the brand with modern-day consumers who increasingly judge a package on what it means and represents almost as much for what it contains.

The late great **Apple** founder Steve Jobs once deftly observed that "Packaging can be theater, it can create a story," and for all the new ways that leading consumer brands have at their disposal to make their sales pitch, there is still no substitute for actually having a good story to tell on the product's packaging.

In the Canadian food industry, one of the biggest stories of the past decade has been the meteoric growth of the yogurt product category that helped many innovative dairy producers to thrive in spite of the fairly flat growth for dairy products as a whole.

Nowadays retailing in a dizzying array of flavors, sizes, textures and styles, it is hardly surprising that the North American consumers' blossoming renaissance with yogurt products has coincided with some groundbreaking design work done by companies like the Mississauga, Ont.-based branding services agency **Davis**.

According to the company's president Ron Davis, taking on the challenge of updating an existing package design of the popular **iÖGO** range of yogurts, produced by the Montreal-based dairy products group **Ultima Foods**, was a thorough test of the company's creative prowess and credentials.



Featuring engaging new packaging design and graphics developed by leading Canadian branding and package design services provider Davis, the iÖGO brand of Ultima Foods was the Best of Show winner at last year's Canadian Leadership Awards competition.



PAC president and chief executive officer James Downham (left) presenting the 2016 Best of Show Global Leadership Award to Ronald de Vlam, founder of the Webb deVlam group of companies, for the outstanding package design work on the Grant's Elementary range of whiskies.

Taking about eight months to complete, the project had to navigate through a vast realm of interlinked nuances, talking points, design elements and a multitude of other critical variables one would expect from a growing brand family comprising more than 100 different SKUs (stock-keeping units), according to Davis.

"The yogurt category is one of the most complicated, with lots of new innovation and changing consumer preferences," Davis explains, citing the broad range of packaging formats—including bottles, tubs, pouches and cartons—entailed in the packaging refresh for the brand.

Launched across Canada in 2014, the **iÖGO** brand quickly became a brick seller and category leader in the Canadian marketplace, with its distinctive playful graphics and lettering helping create a lot of positive buzz at the shelf level and in the dairy aisles.

But with initial excitement of the launch slowly fading, Davis was brought on-board in 2015 to inject some additional marketing momentum into the brand for a comprehensive rethink of the original packaging elements, without a radical departure from the basic premise of emphasizing the product's superior flavor, freshness and the use of real natural ingredients.

"So our challenge was to deliver this in a way that was distinctive at shelf and distinctively iÖGO," Davis recalls.

"The previous design did a great job of communicating iÖGO at the shelf by being playful and distinctive," Davis says, "but as the brand innovated, some new product lines and offerings were not being found at the shelf.

"With a highly unified design system, the different products looked too similar," he says, "which limited consumer awareness and shoppability of distinct product lines."

With the creative use of Germanic umlauts in the **iÖGO** brand name acknowledged as a key graphic branding element to draw the attention of children and their parents to the single-serve **iÖGO Nano** products intended for the younger

demographics, Davis decided to reinforce the brand's identity by extending the iÖGO typography into the brand's products aimed at adults.

"The redesign focused on the shoppability concern," explains Davis, citing the identified need for a more holistic approach that would also allow the individual iÖGO subbrands to have their own say on the shelf for more effective distinction between the category segments.

"The brand had to retain its prominence," he says, "but we also needed to create awareness of the multiple segments the brand was delivering to the market."

"The fact is that iÖGO is not a 'kids-only' or 'classic yogurt' brand," he notes, "and so the new system needed to clearly communicate the brand's vast variety of offerings to the consumers."

"With one of the largest ranges of products in the yogurt category, iÖGO's offering required a powerful and consistent brand platform to create a unified masterbrand, while at the same time be able to strongly differentiate the various product lines—like Probio, Greek and Nano—to help consumers shop the category," says Davis, noting the various creative possibilities offered by the hip lettering in the iÖGO name, specifically the triple-dot accent effect over the first two letters of the brand name.

"As the most recognizable part of the iÖGO identity, the umlauts were the inspiration for the final design system and a critical unifier at shelf," Davis explains.

"All packs leverage an 'umlaut' in some way—be it encircling the O of iÖGO in the core line, or housing the iÖGO brand logo in the more specialized offerings."

Adds Ultima Foods vice-president of marketing Simon Small: "While the original iÖGO packaging was not broken, we knew there was tremendous potential if we could dial up landmarking on shelf, as well as articulating the subbrands and special offers."

"We selected Davis for their category, architecture and design insight," Small relates, "and they proved to be a tremendous partner as we challenged ourselves and previously perceived brand assets, not to mention timelines, to deliver simply stunning results."

Fittingly, those results drew the highest possible praise in the Canadian packaging industry several months ago, with the redesigned iÖGO packaging being recognized with the **PAC Best of Show** award in the **2017 Canadian Leadership Awards** national packaging competition of the country's leading packaging industry group **PAC Packaging Consortium**.

According to Davis, "The iÖGO brand is a great example of mastering tensions in branding."

"When you get that right on you get the 'dramatic simplicity' you need to help the brands achieve maximum impact with minimum effort."

"Designing to balance that tension achieved strong business performance for Ultima Foods," Davis relates.

Ultima's Simon Small concurs: "The brand and pack restructure was a tremendous project on many fronts—most importantly, results."

"The Davis team delivered a highly shoppable refresh with a disruptive restructuring of the portfolio that resulted in improved store and in baseline sales."

If helping consumers navigate the shelf easier and livelier is a hallmark of effective package design, then the London office of global brand and package design services group **Bulletproof** has certainly raised the bar with its stunning packaging update for the premium-quality **PizzaExpress** brand of chilled take-home pizzas retailing in the U.K.

Selected as winner of the **Best of Show Brand Marketing Award** in last year's **PAC Global Leadership Awards** competition of PAC Packaging Consortium, the stylish litho-printed carton board sleeve pizza boxes ooze with upscale sophistication created by a masterful blend of vivid colors, life-like product photography, witty messaging and high-end matt, gloss and foil finishes to create an irresistible visual hook at the shelf level.

Nowadays operating over 500 restaurants across the U.K, Europe, China, India and the Middle East, brand-owner **PizzaExpress** was founded in London's trendy Soho district in 1965 by Peter Boizot, a well-traveled reporter with a fierce passion for Italian cuisine.

With the original Soho location still widely revered by local and traveling foodies to this day, the company's eventual entry into the retail market was a natural step for an iconic brand celebrating its 50th anniversary, but its initial foray onto supermarket shelves did not live up to high expectations.

"When PizzaExpress approached Bulletproof to redesign their retail range,



Bulletproof's global creative director and partner Nick Rees spearheaded the comprehensive package redesign project for the popular **PizzaExpress** brand of chilled pizzas and side products at the global branding and design agency's European offices (inset) in London, England.



Above: The new carton design for the PizzaExpress Classic line of chilled pizzas featured introduction of bold colorways to provide consumers with easier navigation at the shelf level through effective product differentiation between the brand's different recipes.



Right: In addition to redesigning the pizza cartons, the Bulletproof team also developed new packaging for the brand's complementary side products such as dressings and flavored breads, with sales for both products ranges soaring right after their U.K. market relaunch.





Bulletproof designers selected a black palette for the PizzaExpress Romana range of chilled pizzas for maximum visual impact of special finishes such as gloss varnishing and foiling.



PAC Packaging Consortium created the annual Global Leadership Awards competition three years ago to recognize and celebrate the best new packaging designs from around the world.

take-home chilled and frozen pizza growth in the U.K. had slowed to two per cent, compared to 4.2 per cent for the year before,” says Bulletproof’s global creative director and partner Nick Rees, noting that private-label pizza brands accounted for a giant 87.5-percent share of the entire chilled-pizza segment.

“The lack of standout shelf impact and unclear navigation was hitting premium brands, including PizzaExpress, particularly hard.”

As Rees relates, “The PizzaExpress brand targets affluent 24- to 45-year-old consumers from the southeast of England with a taste for the finer things in life.

“We characterized them as ‘Social Life Jugglers’—sociable, outgoing consumers who seek quality convenience, prefer food with an authentic story, and view taste and freshness as paramount,” Rees explains.

To reach this coveted demographic, Bulletproof was briefed to redesign the PizzaExpress ‘At Home’ range as part of a new one-brand strategy that would:

- Deliver a consistent retail brand identity to attract restaurant customers;
- Bring to life the passion, flair and taste of the restaurant experience to home;
- Entice new customers through stronger shelf visibility;
- Deliver premium packaging to help justify the higher price point and encourage purchase off-promotion;
- Create a tiered design system for classic and premium ranges, with options for future new product development and brand expansion;
- Develop clear and coherent flavor navigation at a range level, while ensure a consistent visual identity across multiple product ranges including pizza, bread, pasta and dressings.

Working closely with the client and key packaging suppliers, it took the Bulletproof team about 10 months to complete the extensive and complex project involving a launch of two new pizza variants—**Classic** and **Romana**—as well as complementary toppings and side-dishes like garlic bread.

By all accounts, it was time very well-spent, according to Rees.

“Throughout the whole redesign, we were heavily involved in the print process—from early initial key meetings with suppliers to attending print runs—which really helped to enforce our vision for the finished product,” he recounts. “Having a really supportive client working closely and collaboratively with us on every stage of the process helped immensely,” Rees states, noting the extra degree of complexity of meeting varying launch deadlines for the **PizzaExpress Classic** and **PizzaExpress Romana** product ranges.

“Each of the product ranges had a different lead-time, so we carefully managed the creative process to ensure the design development was considered holistically, and consistently, throughout,” he says.

“In the end, this helped achieved an impactful launch of the revamped PizzaExpress retail offering that will stand the test of time.”

Once launched, the new nine- and 12-inch **PizzaExpress** cartons generated immediate impact and excitement in the chilled and frozen food aisles, Rees relates.

“We captured the heritage and exuberance of the PizzaExpress story with a masterbrand proposition which heroed the core assets of the brand,” Rees explains, “while also leveraging the warmth, passion and artisanal detailing of the restaurant

experience.

“The bold colorways for PizzaExpress Classic made for easier, more convenient navigation at the shelf level,” he expands, “while the handwritten typography was designed to feel authentic, yet playful and approachable.

“The new packaging helped creating a beacon of color in-store,” he says, “capturing the warmth and approachability of the PizzaExpress brand and demanding consumer attention by flexing the background color to reflect each flavor variant—creating a sea of color in the chilled pizza fixture.

“It’s a world away from the darker, more recessive color palette of the previous packaging,” says Rees, noting the intentionally downsized cutout windows on the front panel of the box to display the contents.

“Shunning category norms for large product windows, we significantly reduced the size of the windows on our pizza packaging, instead using our mouth-watering photography to showcase that these pizzas contain the same fresh, delicious ingredients enjoyed in PizzaExpress restaurants,” he explains.

“Moreover, we used the smaller on-pack windows to enhance the cartons’ structural integrity,” Rees points out.

“The previous pack with larger windows was structurally weak and, as a consequence, was susceptible to tearing.”

As for the companion **PizzaExpress Romana** range, comprising six tantalizing recipes, “We looked to incorporate special finishes, such as gloss varnishing and foiling, to make the new packaging feel more premium from a value-added perspective.

“We selected a black palette for the Romana range, with product color introduced through typography to clearly communicate the variant,” he explains, “while using silver foil on the branding logo, as well as matt and gloss varnish, to further ‘premiumize’ the packs.”

Rees says the new **Romana** boxes enabled **PizzaExpress** to earn a listing with the U.K. supermarket giant **Tesco**, helping the brand to tap into a vast new first-time consumer base and fuel a robust sales surge for the entire product range.

In the 12 weeks following the retail launch of the new packaging, the sales of **PizzaExpress** pizzas showed a 17-percent increase, representing an additional 1.15 million pizzas sold through the grocery channels.

Similarly, **PizzaExpress** brand breads enjoyed 3.2-percent volume growth in the 10 weeks after the relaunch.

“One of the key objectives of the relaunch was to increase cross-purchase within the PizzaExpress portfolio,” Rees reveals, “which was achieved in conjunction with a joint promotional and marketing push.

“Compared to pre-relaunch, 634,020 more PizzaExpress shoppers per year now choose to purchase a PizzaExpress side of bread with their PizzaExpress pizza—that’s a huge increase of 394 per cent.”

All in all, **PizzaExpress** earned an additional £10.85 million (\$18.8 million) in retail sales since the relaunch,” says Rees, with first-time buyers driving a lot of that growth.

“The relaunch has been integral to achieving the brand’s ambitious growth targets without a need to resort to a price promotion,” Rees points out.

“But perhaps the most impressive contributor to the brand’s increased distribu-



Developed specifically for the world's lucrative GTR (Global Travel Retail) channels, the upscale Grant's Elementary range of whiskies boasts a stunning packaging design for both primary and secondary packaging, developed by Webb deVlam's London office, making highly creative use of the Periodic Table of chemical elements to give each of the brand's products a distinct unique personality with a high level of upscale elegance and sophistication targeting discerning and knowledgeable whiskey aficionados.

tion is the new logical design system that facilitates speedy rollout of new product development to new distribution channels in a way previously inaccessible to the brand."

While the aforementioned *PAC Global Leadership Awards* competition is only entering its third year in 2018, it had already drawn an impressive number of entries and interest from many leading global brand-owners to warrant it being an annual event, according to PAC president and chief executive officer James Downham.

Partly inspired by the consortium's biennial *Canadian Leadership Awards* competition that segments competing entries according to packaging type and format—flexibles, rigid, label, etc.—it primarily focuses on brand design, marketing and innovation, regardless to the type of packaging structure employed.

At its inaugural awards gala two years ago in Bonita Springs, Fla., the iconic Scottish whiskey and scotch distiller **William Grant & Sons** picked up one of the contest's two first-ever Best of Show prizes with a stunning entry for the **Grant's Elementary** range of whiskies produced exclusively for the so-called Global Travel Retail (GTR) channels, whose total sales were estimated at US\$63.6 billion in 2016.

Developed by the U.K. office of the global branding design services provider **Webb deVlam**, the six-month packaging redesign project involved taking the existing **Grant's** packaging landscape and finessing it to address very unique requirements of the GTR retail environment.

"We had to be smart with the selections we used

and how we dressed them up in order keep the project within budget," recalls John-Paul Hunter, head of Design at Webb deVlam's London office, "but the important factor here was not to see this as negative but as a creative challenge.

"It gave us some clear guardrails to work within," Hunter explains, "and we had a positive working relationship with the production team to ensure that we could successfully execute our creative vision."

Because the global whiskey industry is highly diversified and segmented in a multitude of categories defined by point-of-origin, aging process, blending techniques and many other differentiators, creating a unifying packaging theme while allowing for each product to shine on its own merit was a formidable and sweeping undertaking.

As Hunter relates, "Webb deVlam always approaches creative challenges from a consumer point of view, so we had to secure access to different airport retail environments, store managers and sales teams, as well as the consumers themselves.

"This gave unparalleled insights into how to create differentiated product appeal and how to visually catch the eye in the incredibly unique shopping arena," says Hunter, describing the targeted consumer audience as adventurous and affluent jetsetters seeking an "enlightening" experience from their preferred brands.

Comprising the six-year-old **Grant's Elementary Carbon**, eight-year-old **Grant's Elementary Oxygen**, and the 29-year-old **Copper** blends, the new range brilliantly employed the Periodic Table of chemical elements as a core unifying theme "to celebrate the

science behind whiskey-making," he points out.

"Each age statement reflects that number in the Periodic Table and the material element is utilized in that particular product's distilling process," Hunter explains.

"So Oxygen is distilled under vacuum to create a crisper, smoother drink," he relates, "while charring the inside of the oak barrels gives Carbon a distinctive smoky flavor.

"For its part, the exclusive 29-year-old, Copper celebrates the sacrificial copper rings which remove harshness to create unparalleled smoothness," Hunter extols.

"Each product was visually nuanced with the right level of premium cues aimed at the following segments as part of a confident storytelling side-step that would consciously avoid the usual references to provenance and artisan craftsmanship," says Hunter.

"By demystifying the storytelling around modern-day whiskey production, the brand appears transparent whilst promoting its innovative techniques," he states.

"The Elementary range purposefully uses disruptive color-ways, finishes and age statements to create immediate shelf standout in the busy GTR channel," says Hunter, noting that soon after its launch *Grant's Elementary* won the Best-of-Show award in the highly prestigious *Cannes Travel Retail Awards* competition, garnering high praise for its inspired packaging excellence.

As he concludes, "Grant's Elementary is a key piece of work in the continuing goal to make Grant's a relevant option for today's whiskey audience."

Many cheers to that!



Keurig Green Mountain now makes its trademarked K-Cup coffee pods from the more easily and widely recyclable white polypropylene Number 5 plastic.

SINGULAR SOLUTIONS

Packaging innovation helping to address environmental concerns and public notoriety brewing over the popular single-serve coffee pods

BY MARY DEL CIANCIO

Single-serve coffee systems are found in many homes across Canada thanks, in large part, to the convenience and variety they offer consumers. However, the single-serve coffee pods used in these popular systems have been the subject of much criticism in recent years due to the increased amount of packaging waste associated with them.

The pods haven't typically been compostable or recyclable in municipal food waste programs, so they often end up in landfills—a major concern in today's landscape characterized by growing emphasis on environmental sustainability, responsibility and awareness.

The good news is that single-serve coffee pod manufacturers have been working tirelessly in recent years to develop innovative, sustainable packaging that addresses these concerns. Several options—both compostable and recyclable—are already available on store shelves across the country, with more rolling out every day.

Club Coffee, a major Canadian roaster, contract manufacturer and distributor of packaged coffees, believes that it has the solution to single-serve waste—its



The single-serving coffee capsules from the Montreal-based Nestle Nespresso feature 100-percent aluminum construction that makes them easily recyclable and more effectively diverted from the municipal wastestreams right across Canada, according to the company.



All key components used in the assembly of Club Coffee's PurPod100 single-serve coffee capsules are made from certified compostable materials that fully biodegrade in about five weeks.



A close-up view of the compostable PurPod100 coffee capsules running through their packaging steps at the Club Coffee plant.



The compostable properties of Club Coffee's PurPod100 coffee pods have made it the capsule of choice for some of the leading private-label coffee brands in the Canadian market, including President's Choice and McCafe.

PurPod100, the world's first certified 100-percent compostable pod.

The Toronto-based company launched *PurPod100* back in 2016 after testing it in municipal and industrial composting facilities—tests which proved that the eco-friendly pod could break down in as little as five weeks in aerobic composting processes, which is faster than many other food waste products.

The *PurPod100* is certified by the **Biodegradable Products Institute (BPI)** and meets **ASTM International's Standard D6868** for compostability, which means that it can disintegrate within an established period of time, produce compost that enables plant growth, and is safe for the environment.

And the pod can do all of this thanks to its innovative, award-winning packaging design and composition.

The *PurPod100*'s lid is made from a combination of paper and other compostable materials, as well as compostable inks; the ring—result of a collaboration between Club Coffee and the **University of Guelph's** Bioproducts Discovery and Development Centre—is made from a unique compostable blend of coffee chaff (the husk of the coffee bean) and bio-resins (plant-based plastics); and the mesh filter holding the coffee is made from renewable, bio-based materials.

The entire unit is compostable, a feat which has won the *PurPod100* accolades for sustainable packaging and innovation in bioplastics from leading trade associations and publications. Leading brands, such as **President's Choice** and **McCafe**, have also taken notice and adopted the format to house their popular coffees.

This is a win-win for consumers who get to enjoy the coffee they love, the convenience of being able to compost the entire pod, and the peace of mind knowing that waste isn't going to a landfill.

“We're delivering what consumers have made very clear they want—the same great coffee experience but with bio-based ingredients that



Nespresso encourages consumers to recycle their aluminum coffee pods through return programs with Canada Post (red bags) and municipal waste diversion agencies (green bags).

make it simple for them to dispose of with other food waste,” says Solange Ackrill, Club Coffee’s vice-president of marketing.

“We are in front of a growing green wave of innovation because we worked with partners in the academic and business worlds to find and implement fundamental changes, like using coffee chaff that used to go to waste ... these pods are small but they’ve had a big impact.”

Keurig Green Mountain, a leader in innovative, single-serve brewing systems, has focused its efforts on recyclable pods. The company introduced its first recyclable **K-Cup** pods in the U.S. and Canada back in 2016, and has committed to making 100 per cent of its **K-Cup** pods in Canada recyclable by the end of 2018, and in North America by the end of 2020.

“When it comes to the single-serve pods, certainly the most visible challenge to the segment, and to our company, is making sure that those pods can be responsibly disposed of and have a second life,” explains Monique Oxender, chief sustainability officer at Keurig Green Mountain.

Previously, the company’s single-serve pods were manufactured from Number 7 plastic, which is not widely accepted for recycling.

After examining several options, the company decided that producing its **K-Cup** pod using recyclable polypropylene Number 5 plastic was the best solution for its customers and the environment.

More specifically, Keurig is using white polypropylene because there is more that can be

ONCE IN A LIFETIME

Putting carbon footprint in proper LCA context

When looking at the environmental impact of packaging, it’s important to consider the entire life cycle of the product it protects, including how it’s grown, how it’s shipped, how it’s manufactured, how it’s stored and how it’s used by the consumer at home, says Rachel Morier, director of sustainability for **PAC Packaging Consortium**. When you consider all of these factors, she says, single-serve coffee offers many advantages.

In fact, PAC decided to investigate the entire life cycle of coffee and learned that the majority of the coffee footprint is in the production and preparation of the coffee, with only 15 per cent of the overall footprint attributed to packaging. Its 2015 report, titled *Life Cycle Assessment of Coffee Consumption*, compared a standard bulk brewed system with a hot plate to a standard **Keurig** system using the **K-Cup** format to determine which had a better environmental performance.

It found that if the consumer brewed the exact amount of coffee and consumed all of that coffee, there was very little difference in the environmental footprint between the two when you consider that the standard bulk brew system uses more electricity and water.

However, if the consumer prepared too much coffee or had to dispose of it due to loss of freshness, the footprint of a bulk brew system increased significantly.

“We still see there’s an opportunity to reduce packaging waste,” Morier says, “but at the same time being mindful that there is actually some benefit to having a single-serve system, depending on how consumers consume their coffee.”

According to **Nespresso Canada**’s Caroline Duguay, single-serve capsules definitely suffer from an image problem rooted in insufficient public awareness of the larger issues at work.

“People often believe that packaging waste is the greatest environmental impact of coffee,” Duguay says, “but most studies show that coffee farming and the processes involved with roasting and brewing represent the majority of a coffee cup’s carbon footprint.

“One major benefit of portioned coffee is that it minimizes wasted resources,” Duguay states. “Because our precision technology uses only the exact amount of coffee beans, water and energy needed to brew a single cup, it saves resources, reduces waste and minimizes the carbon footprint.

“Moreover, many studies that analyze the environmental impacts of coffee brewing methods have found that portioned products can be a more sustainable option than alternatives such as filter coffee,” Duguay adds.

“When brewing filter coffee at home, people often use more resources than necessary by making make coffee in excess—using more grounds, water and energy than needed,” she points out.

“There’s also the energy used to run the hot-plates continuously to keep coffee warm,” she notes, “and whatever is left over ultimately just gets lost down the kitchen sink.”



Rachel Morier,
Director of Sustainability,
PAC Packaging Consortium





made from it, which allows the company to contribute to the circular economy, keeping resources in use for as long as possible.

The user simply has to peel away the lid, remove the grounds for composting, and place the plastic pod in the recycling bin.

“Our commitment is recyclable and recycled: We want to see it go all the way through the system,” says Oxender.

In order to ensure that these new pods can “go all the way through the system” and that they aren’t too small to be captured and diverted to the appropriate area, the company completed field tests at recycling facilities across North America using RFID (radio frequency identification) technology to track its pods.

Following these tests, Keurig discovered that the pods are not too small and, on average, make it to the correct recycling container line 90 per cent of the time.

For its part, Montreal-headquartered **Nestlé Nespresso Canada** has based its capsule sustainability strategy on the inherent recyclability of aluminum used to manufacture its single-serve capsules.

“Not only is it the best material to protect the quality of our coffee,” says the company’s communications director Caroline Duguay, “but it is also infinitely recyclable.

“Indeed, 75 per cent of all aluminum ever produced is still in use today,” says Duguay, adding the company goes through great lengths to collect all the coffee grounds during the recycling process to make nutrient-rich compost.

As she relates, “Our capsules are 100-percent recyclable, and we have put in place a local recycling system to collect capsules with minimal efforts for our consumers.

“They do not need to empty the capsule: they simply have to put the used capsules in a bag provided by Nespresso and return the bag via one of our different recycling options available across the country.”



FEATHER IN THEIR CAP

Joining forces for the greater green cause

As leading Canadian suppliers of single-serve coffee pods, PAC members **Club Coffee**, **Keurig**, **Mother Parkers** and **Nestlé Nespresso** are teaming up in a joint project aimed at enhancing the sustainability and environmental profile of this packaging format.

The key aim of this project will be to find practical answers to the following questions:

- What factors are involved in consumer decisions regarding disposal of coffee pods?
- What are the optimal ongoing ways for coffee brands to influence disposal outcomes?
- How do brands best communicate to consumers what they should

These options include a drop-off at one of 51 Nespresso-operated boutiques across Canada and, depending on availability, through municipal waste collection programs a special “red-bag” return program with **Canada Post**, and a special at-home recycling program administered by **TerraCycle Canada**.

“From then, Nespresso takes care of the rest,” Duguay says. “The bags are collected and sent to our recycling partner, the coffee grounds are separated from the aluminum, and both are given a second life.”

Adds Nespresso Canada president Luc Valleix: “We know how important it is to reduce our environmental footprint and provide simple and accessible recycling solutions for our Club Members.

“We are particularly proud to be able to offer an innovative recycling service in collaboration with local partners.”

As Valleix makes it clear, developing innovative packaging is only part of the big picture.

The bottom line is that consumers must dispose of the packaging properly in order to see the maximum environmental benefit and not contaminate the various wastestreams—namely by not putting compostable pods in a recycling bin and recyclable pods in a compost bin.

This requires a change in the behavior of the consumers, many of whom have grown accustomed to simply throwing the pods in the garbage.

Communication is naturally key to solving this dilemma, but spreading the word is not just the responsibility of the manufacturers alone.

“It’s got to be a combined voice,” says Oxender. “We are also reaching out

to and very much willing to work with communities so that it’s a common voice coming from the municipality and the brands about how to recycle the pods.

“And [we are] also open to working with other pod manufacturers to make sure we can minimize that confusion out there around ‘What do I do with this pod?’

“Having common and very clear, succinct instructions will be key across the entire industry segment.”

Rachel Morier, director of sustainability for **PAC Packaging Consortium**, agrees: “For single-serve coffee companies to make successful packaging that is sustainable, it’s not theirs alone to solve.

“It requires cooperation from everyone. It requires cooperation from the consumer. It requires cooperation from waste handlers and municipalities.”

Indeed, collaboration is critical, adds Club Coffee’s Ackrill.

“We have learned much more than we expected about sustainable packaging solutions when we started down this path. One of the big lessons has been the value of collaboration with experts to find the best ways to meet the needs of our customers and consumers,” she says.

“We all have a stake in finding better ways to address environmental concerns about waste.”

Through collaboration, continued innovation and an increased emphasis on sustainable packaging, the single-serve coffee sector is making major strides in ensuring that its customers have a solution that they can feel good about—a solution that’s better for their families and the environment.



do with their pods after use so that those consumers dispose of them properly?

Current thinking envisions the project as first analyzing the issues surrounding the disposal of single serve pods through secondary research and primary research, followed by application of that analysis to design a survey tool to test consumer understanding and decision-making regarding disposal of coffee pods.

Finally, to test different approaches to consumer education, such as in terms of package information, in-store information and information provided by compost manufacturers such as municipal solid waste programs.

The result would be a new body of applied and evidence-based knowledge about how best to inform consumers about product innovations and packaging options and how best to maximize appropriate disposal by consumers of compostable and recyclable products, when both are in use, in local solid waste programs.

SMART AND SMARTER

The promise of intelligent packaging inches nearer to practical everyday reality in keeping pace with the fast-changing retail landscape

BY GEORGE GUIDONI, EDITOR

In today's fiercely competitive global retail environment, packaging must do far more than simply protect the container's contents and draw eye contact with the passerby shoppers.

Increasingly, new considerations of extended shelf-life, improved product and brand security, greater transparency and full product traceability are driving robust global demand for technology-based packaging and labeling solutions to validate product authenticity, deter counterfeiting, monitor freshness and track environmental conditions—just for starters.

It's all part of the larger goal of ensuring a more positive consumer experience from the moment of purchase—be it at the store or a home delivery—to eventual disposal of the package, preferably in the most environmentally-friendly way possible.

According to a recent report published by **Allied Market Research**, the global smart packaging market size is estimated to reach nearly \$38 billion by 2022, growing at a brisk annual rate of 6.9 per cent from 2016 levels.

“Changes in lifestyle patterns due to rapid urbanization, particularly in emerging economies, and growth in consumption of beauty products with advancement in technology are driving the growth of the smart packaging market,” according to the study, titled *Smart Packaging Market: Global Opportunity Analysis and Industry Forecast*.

Also often referred to as ‘active’ or ‘intelligent’ packaging, some of these technologies—such as oxygen scavengers, anti-microbials and thermochromatic inks—have been around for years, without necessarily being called smart *per se*.

But it is really the advent of smartphone technology and the growing interconnectivity of all sorts of devices in today's Internet of Things age that are providing the perfect launch platform for a full-on smart packaging revolution in mainstream consumer markets, according to the technology's proponents,

As the Allied Market Research study points out, “The emergence of printed electronics holds out the promise of enhanced traceability and data capture, with the potential to integrate brand owner and consumer via web-based apps and social media.

“The challenge for brand-owners and packaging producers is to understand the



Manufactured by Jones Packaging in London, Ont., the Clinipure cartons utilize the ThinFilm Electronics OpenSense NFC (near field communications) labels embedded inside the cartons to enable smartphone users to easily authenticate the photochemical product packed inside.

possibilities and to identify the solutions to realize them,” the report states.

In North America, efforts to promote wider use of smart packaging technologies are spearheaded by the Ottawa-based **intelliFLEX Innovation Alliance**, which includes the **intelliPACK** program of educational and skill-training events and initiatives the group administers jointly with strategic partner **PAC Packaging Consortium**, with support of the **National Research Council (NRC)**.

Under the program, intelliPACK's Leadership Council organizes a series of seminars and conferences throughout the year across North America covering the design, process and materials used in the manufacture and application of printed electronics and other fledgling smart packaging technologies.

So far, the global healthcare industry has been one of the more enthusiastic adopters of the smart packaging technologies, largely for product traceability purposes.

“The integration of barcodes, RFID (radio frequency identification) tags or sensors is highly useful within the industry as it monitors authenticity of medicines and provides the patients, pharmacists and other healthcare professionals with details about the expiry date, consumption, and dosages,” the Allied Market Research report points out.

“In addition, smart packaging industry helps the healthcare sector to deal with challenges such as counterfeit and patient compliance, thereby providing complete security.”

Likewise, the personal care product manufacturers are also ramping up their use of so-called “smart coding” techniques to combat counterfeiting and ensure product authenticity.

The ability to share and gather vast amounts of data and information offers a multitude of consumer market research opportunities for leading multinational CPG brand-owners and other manufacturers, according to Christina Cvetan, who works at the R&D Packaging Capability, Print & Connectivity department of global consumer products powerhouse **Unilever plc**.

“Unilever has been involved in the development of “smart” packaging for many years, focusing more recently on the emerging printed electronics capability and the ability to enable a connected package,” Cvetan says.

“Connected smart package solutions will enable the physical package to provide intelligence and experience via the digital world,” she explains.

“The intelligence capability provides the ability to drive more sustainable packaging and to track and report end-to-end impacts that can lead to design and ef-



From Left: PAC president James Dowhham shares the spotlight with keynote speaker Joe Jackman, chief executive officer of Toronto-based branding and graphic design firm Jackman Reinvents, and Peter Kallai, president of the intelliFLEX Innovation Alliance, at last year's Get Smart Summit conference on smart packaging technologies in Mississauga, Ont.



Deploying the near-imperceptible Digimarc Barcode technology at supermarket self-checkout aisles expedites the whole process by virtue of not having to manipulate the package in order for the scanner to read the UPC code, resulting in shorter lineups and happier shoppers.



Digimarc's chief evangelist Larry Logan takes the stage at an industry seminar to explain the benefits of his company's patented Digimarc Barcode technology used for a broad range of smart packaging applications such as product authentication and self-checkout automation.

efficiency improvements.

"The experience delivery also provides an opportunity to enhance the customer, shopper and consumer engagements," Cvetan adds, "along with an opportunity to gather specific data and insights across the packaging touch-points that can then be used to deliver an enhanced user experience and improve any package design."

With an estimated 2.5 billion people worldwide using a Unilever brand product, the extra cost of implementing smart packaging solutions ultimately outweigh the future costs of ignoring the technology altogether, according to Cvetan.

"Manufacturing advancements in printed electronics, sensors and communication capabilities are driving affordability—making it more attractive and practical for users," says Cvetan, advising aspiring end-users to do proper research and due diligence prior to selecting the right smart technology to suit their application-specific needs and objectives.

"The rapid pace of technology developments is moving so quickly that it can be a challenge to maintain focus on a specific technology or capability," she says. "It requires disciplined focus, speed and close collaboration to trial, prove, learn and execute successfully."

One company that has enjoyed considerable success in marketing its own patented technology for smart packaging applications is the Beaverton, Ore.-based software developer **Digimarc Corporation**.

Founded in 1995, the publicly-traded company got its start by developing digital watermarking technologies that were initially used to protect government documents and digital cinema markets, recently expanding its focus to retail markets following the 2014 launch of its near-invisible **Digimarc Barcode** technology.

As the company's deftly-titled chief evangelist Larry Logan explained in a recent interview, smart packaging is poised to become the next big must-have in today's increasingly chaotic and competitive retail landscape for brands to protect their market share and nurture brand loyalty among the tech-savvy millennial consumers.

Q. What are the key value-added benefits of smart packaging compared to traditional packaging?

A. Traditional packages are fine to protect and promote the product, but in today's digital era they don't effectively communicate with consumers and the data-driven supply chain systems that are crucial for ensuring on-shelf availability (OSA) and maintaining profit margins for retailers and brands.

Smart packaging delivers more data to make every step in the supply chain more reliable and efficient—from the matching of component parts during the manufacturing process to initiating effective product recalls for consumer brands.

For retailers, particularly for 'fresh food' labels, smart packaging can facilitate dynamic markdowns to help move items that might soon expire without all the manual effort common today.

For consumers, smart packaging delivers greater product transparency, whereby shoppers can instantly access nutrition facts, other ingredients and information about product origin.

As for brands, they can communicate directly with consumers via mobile de-

vices to continue the conversation at home, whether that means providing recipes, how-to tips, consumer reviews, cross-selling suggestions, or other opportunities to maintain a digital dialogue.

Q. What exactly is so 'smart' about Digimarc's technology?

A. At Digimarc, we deliver machine-readable codes by subtly altering the graphic elements within the packaging artwork to convey meaningful information.

In normal usage, this change is imperceptible and cannot be discerned by consumers. However, computing devices such as retail scanners, machine vision cameras, and mobile devices can instantly detect the data.

We use the actual artwork pixels to be the carrier for the code, in essence creating what we call "signal rich art." It cannot be removed or altered, which helps prevent theft and counterfeiting.

And, because the Digimarc Barcode is largely imperceptible, it can be replicated across most surfaces of the packaging, which means it scans faster and more reliably regardless of the angle or rotation it's presented to the scanner, or in case the UPC gets damaged in some way.

Traditional barcodes are usually on the bottom or back of a box, requiring cashiers to manipulate the package at checkout. This takes time and effort, which has historically lead to long lines for shoppers and significant workplace injury claims for cashiers the retailers who employ them.

Q. Which products are best-suited for smart packaging applications?

A. Any consumer packaged good can be a good candidate for using Digimarc Barcode—especially those featuring CMYK process printing.

When using other technologies such as RFID (radio frequency identification) or NFC (near-field communications), retailers and brands often have to limit their application to more premium products, at higher price-points, to help defray the increased per-unit costs owing to expensive chips or hardware installations.

Q. How big of an issue is affordability for more widespread smart packaging adaptation?

A. The costs of some of these technologies, including RFID and NFC, have come down over time, which makes them ever more likely to be used beyond the luxury product categories to which they were relegated in the past.

But perhaps more importantly, the widespread adoption of smartphones—nowadays found in almost every purse or pocket throughout much of the developed world—has opened up huge opportunities across many industries.

Insofar as it relates to retail and product packaging, consumers can now swiftly scan products to compare prices online, while instantly accessing consumer reviews, instructional videos and other helpful content.

And as the cost of scanners, detectors and machine vision camera systems, including inventory management robots, continues to fall in the future, all these innovations will become much readily accessible to many retailers and brands.

Q. To what extent is smart packaging a consumer-driven development?

A. Many analysts note that the Internet of Things now includes packaging—resulting in significant investment towards network-enabled devices that reduce costs and improve the shopping experience for consumers.

Consumers expect and demand that products are transparent, and they desire access to content that cannot fit on a package. Because they want instant access to more and better information about the products they buy and the foods they eat, smart packaging is an obvious area of future focus for retailers and brands.

Also, a smart package is an ideal way to foster greater brand affinity and one-to-one engagement between the CPG and its users, which is a powerful capability for brands that are under the challenge of lost market share.

Q How does your smart packaging technology measure up against competing alternatives?

A. One of the most obvious advantages of Digimarc Barcode is our flat-rate pricing. Brands buy the Digimarc Barcode, license it on an annual basis, and pay their graphics vendors a one-time fee for its application to their packaging.

After that, there are no per-unit costs, regardless whether suppliers ship 10,000 or 10 million packages. This cost certainty is very attractive to many companies.

Moreover, our solutions are very broad-based, so that in addition to facilitating consumer engagement and improved front-of store efficiency, we can reduce the frustration with self-checkout by making scan-and-go more reliable and easier for the shopper.

In terms of performance, Digimarc Barcode is more reliable and efficient because it is a platform solution benefitting each step along the package journey—from manufacturing to the consumer at home, post-purchase.

And although Digimarc Barcode has been applied to all forms of printing, it is at its best when working with process printing (CMYK) because it limits the visibility to the human eye, while maximizing detection capabilities for computer devices.

Q With all that said, what is holding back a more widespread adoption of smart packaging in the mainstream consumer retail channels.

A. We must appreciate that we are talking about a very new consumer behavior. To some extent, the fact that

the vast majority of shoppers aren't accustomed to scanning products in their pantry or on store-shelves has contributed to the inertia.

But that's already beginning to change. Shoppers are savvier today, and younger generations who've grown up immersed in technology are becoming a larger percentage of the workforce and the economy.

On the corporate side, some retailers are waiting for critical mass of smart packaging on shelves, while some brands are reluctant to activate their packaging until a majority of retailers have scanning devices to detect smart packaging.

It's a classic conundrum that is usually overcome at first by a minority of enterprising, forward-thinking and disruptive innovators, as is the case in many different markets.

You see such innovation-thinking with our initial adoption by **Wegmans**, which was also the first retailer to broadly deploy the now-standard UPC codes. We think the retail sector, where the separation between bricks-and-mortar and the digital shelf has all but vanished, is at that stage now, and we are happy to play a role to support this sea change.

At Digimarc, we believe that packaging is an analog solution in a digital world, and we are the bridge between them.

DAYS AT THE BEACH

A shampoo bottle made with recycled beach plastic offers hope for stemming the tide in ongoing epic battle against marine pollution



BY GEORGE GUIDONI, EDITOR

The idea that there will be more plastic than fish swimming in the world's oceans within our lifetime may seem unfathomable, but according to some leading environmental experts, it's an inconvenient reality fraught with disastrous consequences for mankind and the planet.

According to a widely cited 2016 report from the highly-respected **Ellen MacArthur Foundation** in the U.K., there are at least eight million tonnes of plastics leaking into the ocean each year—threatening to overwhelm and obliterate the planet's increasingly fragile marine ecosystems.

"In a business-as-usual scenario, the ocean is expected to contain one tonne of plastic for every tonne of fish by 2025," the report warns, "and by 2050 more plastics than fish [by weight]."

While such dire warnings are all too often shrugged

off as unfounded hysteria in today's new political climate of global warming denial, it's hard to argue with the mounting body of ugly evidence washing up on beaches around the world in the form of discarded plastic bottles, bags, pouches and other packaging debris that continuously escapes into the world's waterways at an alarming rate.

On the bright side, some of the world's leading consumer packaged goods (CPG) brand-owners and manufacturers who are the biggest end-users of the runaway plastic packaging are finally owing up to their part in creating the mess, and the urgent need to start cleaning it up pronto.

For the Cincinnati, Ohio-headquartered consumer goods colossus **Procter & Gamble (P&G)**, this meant not just cleaning up the littered beaches, but using the collected bits of plastic to make a useful new product, rather than simply divert the rubbish



TerraCycle's founder and chief executive officer Tom Szaky making a presentation at the 2017 World Economic Forum in Davos, Switzerland, outlining the basics of his company's collaboration with Procter & Gamble and SUEZ Environment that collects washed-up plastic waste from the world's beaches and upcycles it into recycled HDPE pellets that can be used to make new useful products, including the new Head & Shoulder brand shampoo bottle launched by P&G last year in France and Germany.

to landfills.

After conducting extensive studies, P&G decided to leverage the global mass appeal of its iconic **Head & Shoulders** shampoo brand to bring the issue to public light in the form of a distinctively-marketed special bottle containing 25-percent reused plastic waste collected from polluted beaches, oceans, rivers and other waterways.

To carry out the project, P&G turned to its trusted long-time recycling partner **TerraCycle**, Trenton, N.J.-based waste recovery company specializing in the “upcycling” of hard-to-recycle waste.

“We have already worked with P&G for over five years

across the world running over a dozen national collection and recycling programs—from recycling household cleaner packaging in Canada to dirty diapers in Holland,” says TerraCycle’s chief executive officer and founder Tom Szaky.

“The success of those programs gave the P&G team to entrust their Ocean Plastic supply chain initiative to the TerraCycle team,” says Szaky, who grew up in Toronto before enrolling at **Princeton University** and founding TerraCycle in 2001 after dropping out of his sophomore year.

The two companies, both active high-profile members of **PAC Packaging Consortium** and its **PAC NEXT** initiative, quickly proceeded to bring their vision to life after

partnering up with the French utility company **SUEZ Environment**, which specializes in wastewater treatment and waste recovery.

“This all moved relatively quickly after P&G came to us with their challenge in late 2016,” Szaky recalls. “All the R&D, supply chain creation and delivery of the first order were completed in time to announce the project to the world at the annual World Economic Forum in Davos, Switzerland, in January of 2017.

As Szaky recalls, “The main issue was to get the maximum amount of ocean plastic into the bottle.

“Bottle molders needed testing data to make sure the material wasn’t too degraded to use, so the R&D process was quite involved, with lots and lots of testing.

“We had to fully understand the material specifications of the standard H&S bottle so we could make sure the resin we produced would be moldable,” Szaky relates.

“After much testing, it was determined that we could go to a maximum content threshold of 25 per cent.”

Each of the three partner companies made significant input in the development of the suitable recycled plastic pellets, says Szaky, also extending credit to hundreds of different NGOs (non-governmental organizations) and other volunteer group for running collection programs worldwide.

“TerraCycle’s role was to manage the entire process—from on-site collection and getting that waste to TerraCycle warehouses to processing it into the finished plastic pellets to be supplied to P&G’s bottle manufacturing partners,” Szaky explains.

“Once the material is received, TerraCycle does a manual sort to remove hazardous materials or other unrecyclables, like fishing nets, and send the waste to a SUEZ facility, where it is mechanically sorted, cleaned and pelletized.

“The finished HDPE (high-density polyethylene) pellets are then sent to P&G’s bottle manufacturer APLA to be compounded, formed and filled.”

According to Brent Heist, head of P&G’s Packaging sustainability team in Cincinnati, the new bottle is the “first of its kind” in terms of containing significant recycled content *and* also being recyclable itself.

“It also matched all the technical criteria necessary to ensure consumers have a delightful user experience,” says Heist, while also praising the gray bottle’s distinct shelf impact and differentiation, along with its effective messaging about the bottle’s environmental attributes.

“The public response to the Head & Shoulders beach plastic campaign has



Volunteers from Initiatives Océanes, a cross-France program administered by Surfrider Europe, getting ready to begin collecting plastic waste washed up ashore one of the many beaches cleaned worldwide as part of a unique collaboration between TerraCycle, Procter & Gamble and SUEZ Environment.

been fantastic,” Heist extols.

“Consumer responses have indicated a strong connection to the need for increased recycling to help ensure that their beaches are not polluted with plastic waste.”

Szaky estimates that the project has effectively removed 80 tonnes of plastic waste from beaches and waterways across six continents.

“As far as we know, this is the largest solution to ocean plastic to date in terms of volume and the recycled content used in the package,” says Szaky, citing “incredible” consumer response to the unique new *Head & Shoulders* shampoo bottles launched across France last summer.

“That successful launch enabled P&G to develop exclusive relationships with top retailers Carrefour in France and Rewe in Germany,” he says, “and both retailers saw very strong sales of the product.

“Thanks to that early success, the project is now being expanded to North America, Latin America, Asia, more EU countries and Oceania,” says Szaky, noting the new P&G bottle has gathered seven international awards in 2017 alone—including the **United Nations (UN)**’s *Momentum for Change Lighthouse Activity Award* last fall.

“We knew we were doing something worthwhile and exciting,” Szaky reflects, “but to be recognized by an organization like the UN for our efforts is pretty amazing and very inspiring to our partners, our team and our collectors.

“We hope this will be just the beginning and that this platform will continue to make a meaningful impact on the global crisis of ocean plastic,” says Szaky, noting very positive early indications.

“From the beginning, we and P&G talked about it as a bigger movement—and not a one-off market-

ing campaign,” Szaky relates. “In just a few months, a beach plastic dish soap bottle will go on shelves in the U.K.,” he adds, “and we are in the planning stages for other launches later this year.

“In addition, P&G has expanded their ‘Ocean Plastic’ platform to their dish-care products business and is likely going to add other business units this year, while a number of their competitors have reached out to us, aiming to launch similar platforms in 2018 and 2019,” Szaky states.

While Szaky acknowledges that the 80 tons of plastic removed from the waterways as part of the new *Head & Shoulders* bottle development may at this stage be the proverbial drop in the ocean, he is very upbeat on positive momentum the endeavor has built up for tackling the global marine pollution problem head-on.

“Instead of just talking about something, we figured out a way to do it by focusing on execution, rather than theory,” he states.

“The P&G team really stepped up to the plate by making a firm commitment to use this plastic,” Szaky points out, “and that drove their organization, as well as ours, to make it a reality quickly and in a big way.

“It would have been easy to talk and analyze costs and benefits a lot longer, but we all jumped in and focused on making execution the Number One priority.

“It was only after that we looked at the cost efficiencies and other supply chain benefits, which incidentally were also realized in a big way.”

Says Szaky: “We and P&G are on a mission to call attention to the gargantuan global issue of ocean plastic pollution.

“We are educating through messaging in-store and on the bottle, we are encouraging consumers to physi-



From Left: Sarah Teeter of TerraCycle, Jean-Marc Boursier of SUEZ Environment, and Lisa Jennings of Procter & Gamble receiving the United Nation’s Momentum for Change Lighthouse Activity Award at a special ceremony last year in Bonn, Germany.

cally participate in beach cleanups, and to purchase the bottle to show support for the issue,” he concludes.

“Through these opportunities, we will hopefully help people understand the problem of ocean plastic, change their thinking about waste, and encourage new consumer behavior.”

Adds Heist: “Consumer education and awareness of the need to recycle is a continuing effort [and] P&G will continue to expand our campaign to help drive awareness for the need to recycle in other countries as well.

“The ideal outcome would be that all consumer packaging is properly collected, sorted, processed and recycled into usable plastic materials to be used in packaging again,” Heist concludes.

“There should not be any plastic waste on the world’s beaches, full stop.”

NO TIME TO WASTE

Global waste crisis fuels broad-based momentum to remodel conventional manufacturing mindset around the key Circular Economy principles

BY GEORGE GUIDONI, EDITOR

A world without waste may sound like a utopian pipe dream, but in mankind's everlasting quest to make our planet a better place the journey can often be as important as the final destination.

For Canada's leading packaging industry group's **PAC Packaging Consortium**, its journey to a waste-free future began in earnest in 2011 with formation of the **PAC NEXT** working group, mandated with developing programs and action plans to help companies across numerous sectors to reduce their environmental footprint through the big 3 R's of reduce, reuse and recycle.

Nowadays headed by PAC director of sustainability Rachel Morier, the group has recently embraced the bold new concept of a Circular Economy—coined by the leading U.K. environmental think-tank **Ellen MacArthur Foundation**—as a guiding blueprint for its future efforts in advancing packaging sustainability.

While Morier admits there is a lot of work to be done to turn skeptics into believers, her commitment to promoting the cause of Circular Economy is aptly matched by her deep conviction in its feasibility and viability.

"The Circular Economy is absolutely



PAC's director of sustainability Rachel Morier heads the PAC NEXT initiative aimed at helping to facilitate and bring to life the long-term vision of a world without packaging waste.



Manufactured by ReWall Company, the interior wall panels inside this plant are made from recycled paperboard beverage cartons via an innovative a specialized process that requires no water, formaldehyde glues or other hazardous chemicals.

achievable, or else there would be no use in investing time and resources in it," Morier proclaims.

"Of course, it requires much hard work, careful planning and collaboration, with many challenges ahead to align the interests of government, industry and the public.

"It will take a concerted effort to re-work a system that has been in place for years," Morier acknowledges, "but the momentum is building step-by-step with each new corporate policy, each new passing legislation, each new sorting or processing technology, and with each new packaging innovation."

Often described as an alternative to the traditional linear economy model based on the three pillars of 'make, use, dispose,' the Circular Economy is a more closed-loop regenerative system that not only emphasizes the maximum use of the available resources for the duration of a product's life-time but also the reuse of those materials at the end of each product's service life to make other products—thereby taking the 'dispose' part, i.e. waste, completely out of the equation.

While the concept was developed primarily to address the growing worldwide problem of plastic waste, it is equally applicable to virtually any man-made material used to produce packaging for consumer and industrial goods, as well as the goods themselves.

As Morier explains, the Circular Concept economy inherently requires a big picture approach to new product development whereby the product's end-of-life is addressed at the early design and prototyping stages.

"I believe the Circular Economy model reminds us

that there is no defined single path to achieve circularity," she says.

"Some argue that the focus of the Circular Economy model is making everything recyclable or compostable, which is false.

"If you have created a recyclable package but your overall carbon footprint is high, then there is still work to be done," says Morier.

"If you have sourced local and renewable materials to reduce your carbon footprint but your packaging still ends up in landfill, then there is still work to be done."

Says Morier: "The biggest challenge with adopting the 'circular economy' is that it requires long-term thinking and a willingness to collaborate.

"As a result, this can be very difficult to plan for in today's fast-paced, competitive environment."

Difficult but not impossible, says Morier, citing the 100-percent recycled plastic containers used for the **Lush Cosmetics**' hand and body creams, with five-percent content made from reprocessed plastic waste collected from the shorelines of British Columbia islands under auspices of the **Ocean Legacy Foundation** group.

"The intent is to source materials renewably to create a packaged product that can then be put back into the system to be recycled again," Morier relates.

"Not only does this packaging help incorporate recycled content to reduce greenhouse gas emissions," she notes, "but it also raises consumer awareness of ocean plastic pollution."

Other examples abound.

Isabelle Faucher, managing director of the **Carton Council of Canada (CCC)**, points to her group's collaboration with the Des Moines, Iowa-based construction materials manufacturer **ReWall Company** as a shining example of Circular Economy at work.

Founded in 2008, ReWall is a thriving manufacturer of roofing products and construction materials made from recycled food and beverage cartons such as the aseptic paperboard cartons manufactured by companies such as **Tetra Pak** and **SIG Combibloc**, among others.

The company employs a specialized low-energy, eco-friendly process that uses no water, formaldehyde glues or hazardous chemicals to produce quality roof cover board, exterior sheathing, wallboard and floor underlayment.

"We have discovered that the unique properties of food and beverage cartons, such as strength, durability and resistance to mold and moisture, make them an ideal material for creating high-quality building materials," says ReWall Company's chief executive officer Jan Rayman.

"In addition, the life-cycle of the cartons will continue to grow because the building materials themselves can also be recycled."

With technical and financial assistance from Carton Council, ReWall has more than doubled its manufacturing capacity late last year with the addition of new specialized equipment—enabling ReWall to recycle over 600 tonnes of recovered paperboard per month.

"Ensuring there are stable and robust end-markets to recycle used cartons is critically important to the circular economy," says Faucher.

"Recycling is a crucial component of the circular economy, and sustainable, high-performing recycling systems are es-

sential to recovering the source materials that supply the manufacturing process.

"Since our formation in 2009, we have collaborated with municipalities, sorting facilities, the waste management industry and schools to increase carton collection and recycling," says Faucher, "while also working tirelessly to make post-consumer cartons a valuable commodity tradable on the global markets."

These activities are perfectly aligned with the sustainability mindset guiding all operations of the global aseptic packaging and processing technologies leader Tetra Pak.

"Our vision for packaging in a Circular Economy is simple: Packaging

The new Signature Pack aseptic paperboard beverage carton from SIG Combibloc made entirely from renewable plant-based materials is being launched across multiple global markets this year.



Isabelle Faucher, managing director the Canadian Carton Council (CCC), says it is essential to identify and develop promising end-use markets for recycled packaging waste to help the Circular Economy grow and evolve.

material made of renewable content, sustainably sourced, and recycled at the end of its life-cycle,” states Elisabeth Comere, Tetra Pak’s director of environment for the U.S. and Canada.

“We recognize that the linear ‘make, use, dispose’ model puts significant pressure on natural capital and drives the need for energy/fossil fuel and, consequently, the generated carbon emissions,” Comere explains.

“On the other hand, the Circular Economy, both recognizes both the potential of using renewable materials from sustainable sources, and the converting of waste into new resources to help reduce greenhouse emissions and their climate impact,” she states.

According to Comere, about 57 per cent of all food and

beverage cartons consumed in Canada are currently recycled into new products—more than double the 26-percent rate only 10 years ago.

Considering that the Tetra Pak cartons are for the most part largely constructed from renewable materials sourced from certified forests and sugar-cane plantations, the company’s contribution to the development of a Circular Economy puts it right at the front of the movement, Comere contends.

“Our ultimate goal is to produce packages derived entirely from renewable resources,” she points out. “We made great strides in 2011 when we were first to market plastic closures made from sugar-cane derived ethanol, and in 2014 with the launch of the first milk package made entirely from plant-



Flow Water founder Nick Reichenbach says using the Tetra Pak paperboard beverage cartons to package the company’s mineral water has significantly contributed to obtaining the B Corporation certification for outstanding social and environmental performance.

based materials, an achievement recognized at the 2016 Circular Awards.”

Says Comere: “Tetra Pak is well positioned to tackle the transition to a Circular Economy.

“Through our R&D investments, we continuously test new technologies and explore the use of new materials in our packaging, says Comere, noting that the Tetra Pak cartons out in the market today are on average 20 per cent lighter than they were 30 years ago.

“This is how we deployed bioplastics derived from sugar cane, which replaced traditional fossil-fuel based plastic for the caps and protective layers in our cartons, for example,” she adds.

“We are also exploring the use of ‘new’ raw materials such as algae or biomass as feedstock for our carton packages,” says Comere, while urging Tetra Pak’s vast customer base in the global food industry also to adopt a more circular mindset.

“The food packaging industry has an essential role to play in reducing impact on the environment and consumption of natural resources,” Comere asserts.

“It has a unique opportunity to help accelerate the transition to a Circular Economy by promoting and investing into recycling and by embracing the use of renewable materials from sustainable sources in packaging.”

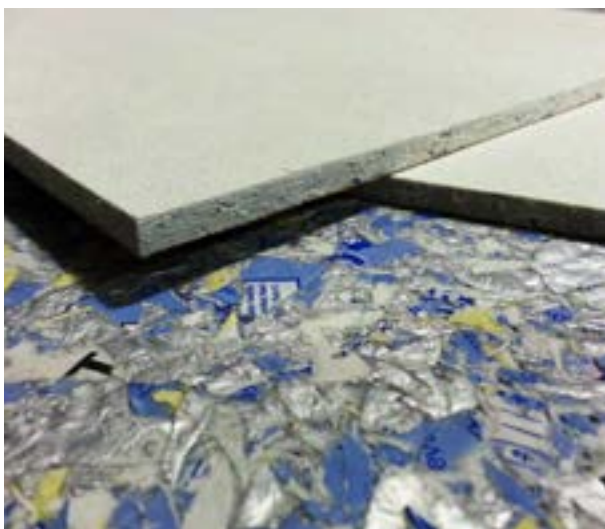
Like Morier and Faucher, Comere stresses the vital importance of the need to evaluate a product’s end-of-life legacy early in the product design stages.

“Considering a package’s end of life treatment when choosing materials and design is key,” she states.

“That’s why Tetra Pak designs its cartons not only with recycling in mind, ensuring they fit with the existing recycling infrastructure, but that they can also be converted into useful new paper-based products or building materials, for example.”

Nicholas Reichenbach, founder and president of upstart Canadian water bottler **Flow Water**, says he is proud of the fact that the company’s flagship brand is packaged exclusively in Tetra Pak’s **Tetra Prisma Aseptic Edge** cartons incorporating the **DreamCap** and **HeliCap** resealable closures made from bioplastic polymers derived from sugar cane.

As Reichenbach relates, his deliberate selection of Tetra Pak packaging for the brand played a big role in



ReWall Company now has the capacity to recycle over 600 tonnes of used beverage cartons each month to make a growing range of quality building products.

obtaining the coveted **B Corporation** certification of **B Lab** for top-level “gold standard” social and environmental performance.

“We were actually awarded one of the highest-ever scores for a Canadian company,” says Reichenbach, citing exceptionally high audit scores for the company’s waste management, recycling and material sourcing programs.

ing programs.

“This was all very much inspired by the Circular Economy model,” he states, “which is really the mantra for our company.

“We have a responsibility to our customers and our staff to be the highest-quality sustainable company on the planet.

“In fact I created Flow with the idea of being the world’s first socially and environmentally responsible water—a carbon-neutral, fully sustainable water company with a positive impact on the world around us.

“The use on nonrecyclable or noncompostable plastic bottles is still a major problem for the world’s water industry,” Reichenbach says, “and being the first Canadian company to put high-quality mineral still water inside a Tetra Prisma carton aligns us with Tetra Pak’s acknowledged status as one of the world’s leaders in environmentally-friendly packaging solutions.”

Adds Reichenbach: “I am a firm believer in the Circular Economy, which is already taking shape in part due to the economic necessity of having to maximize the planet’s resources.

“With the world’s population growth continuing to accelerate, we all must be able to master the art of doing more with less for the sake of humanity’s future well-being, and the Circular Economy model offers the best path forward to achieving that goal.”



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Agenda to include topics impacting value chain with focus on retail, branded goods and packaging. Futurist, all aspects of Ecommerce, designing for Circular Economy, Food Waste and Omni-channel. Innovations for transportation, smart, plastic, cannabis packaging.

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