

PACKAGING INNOVATION

BRIEFING REPORT
JULY 2022



Welcome

Welcome to ThePackHub's Packaging Innovation Briefing Report for July 2022.

We hope you enjoy this comprehensive and unique monthly review of all things packaging innovation.

This briefing of the month's global packaging innovations and industry news ensures that you are kept up to speed and fully informed of the latest packaging innovations.

We have 124 pages of content and have collated 100 new packaging innovations for the month.

The innovations featured track The Pack Hub's nine trend areas:

Naturally Done

Everyday Engagement

The Online Surge

Making Life Easy

Materially Changed

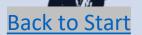
Protect and Preserve

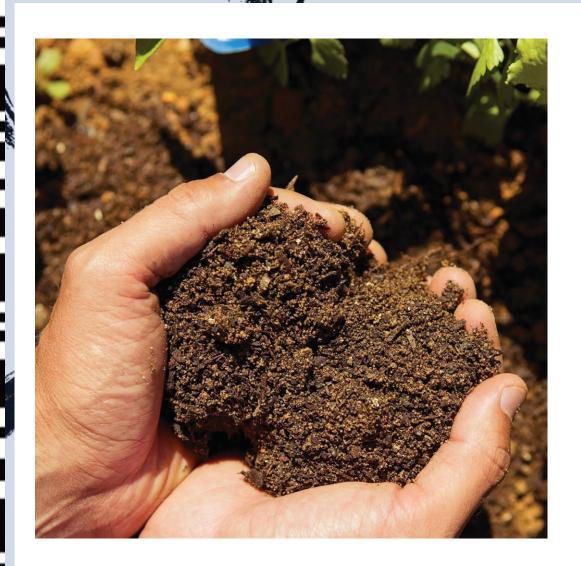
Recycling Resurgence

Getting Noticed

Refill Revolution







Naturally done

Naturally done

This trend area continues to be active with 12 new bio-based initiatives this month. Compostable and biodegradable packaging continues to be developed. We also continue to track several new bio-based material alternatives to plastic. There is a significant amount of compostable, biodegradable and bio-based examples both in development and coming to market.

Without established industrial composting systems in place in most markets, the compostable sector is at a turning point. Mass adoption will only really occur when the infrastructure to deal with the packaging is in place. Home composability is still relatively niche with most consumers not having the space or the will to participate. There are also concerns about compostable and biodegradable packaging contaminating existing recycling waste streams. Cost is also a significant barrier with the packaging sometimes costing brands and retailers three to four times the price of conventional plastic-based products. That is a substantial investment for a brand or retailer when compostable packaging's full benefits are still to be fully understood. We have yet to see many big brand examples introduced with the majority being small challenger brands looking for a sustainable point of difference. The bio-based packaging sector continues to expand at pace. Many of the initiatives listed are still in development and not yet on supermarket shelves.





Naturally Done

Bio-based pack introduced for Belgian supplement brand
Enzymes break down PET plastic super quick
Compostable tray liner alternative created through partnership
Norwegian start-up developing packaging from seaweed
Edible film helps preserve fruit and vegetables
Sugar may speed up PLA degradation process
Home-compostable lipstick tube saves use of up to three plastic ones
Compostable coffee cup and lid get certification thumbs up
Aseptic carton incorporates new bio-based polymer coating
Plant-based material extends avocado shelf life
Cosmetics brand switches to fully compostable packaging
Laser coding collaboration for compostable film starts

Bio-based pack introduced for Belgian supplement brand

Belgian probiotic and functional mushroom supplement company Suplemint has collaborated with Sulapac, the Finland-based manufacturer of bio-based plastic alternatives. Suplemint says that the importance of 'the connection between nature and well-being' is a major consideration when choosing packaging options for their supplements. They also noted that leaving a positive impact on the planet was a critical point in its decision making. The main ingredients of Sulapac are wood chips from industrial side streams combined with plant-based binders. All of their raw materials are sustainably sourced, and food contact approved. They have recipes for different purposes and aesthetic criteria, such as smooth, matte and more tactile materials in various colours. Compared to PP (polypropylene), Sulapac has similar water vapour barrier properties and better oxygen barrier properties. Sulapac is said to be mass-producible with existing plastic machinery and meets demanding technical requirements.



Enzymes break down PET plastic super quick

A team of researchers at the University of Texas at Austin have developed a special enzyme that can break down PET plastic at record speed. With the special PETase enzyme, the PET plastic in, for example, beverage bottles and other PET-based packaging can be quickly broken down into monomers, with some instances, where PET plastics are broken down into monomers in as little as 24 hours. The special enzyme developed is called FAST-PETase, where "FAST" stands for Functional, Active, Stable and Tolerant. To prove the broad effectiveness of the enzyme, the degradation of 51 different packaging products made of PET plastic and a number of fibre and fabric products containing PET were studied. The researchers say that the possibilities are endless in different industries to take advantage of this recycling process. Through these sustainable enzyme methods, they say that a truly circular plastics economy is possible.





Compostable tray liner alternative created through partnership

Italian packaging systems manufacturer G. Mondini has announced that they have conducted successful trials using manufacturer of fully compostable flexible packaging TIPA's bioplastic alternative as a tray liner. Together they will be offering a paper-based, fully compostable packaging solution suitable for wet, chilled, frozen and fresh food applications. The TIPA film will act as a liner to create a barrier against oxygen, moisture and humidity. The addition of TIPA's film means that after use the trays can be composted in line with Italy's packaging regulations, while in other markets the compostable film can be removed prior to disposal. TIPA films are made from a blend of fully compostable polymers which are designed to emulate the properties and functionality of conventional plastic materials such as PE (polyethylene) and PP (polypropylene). The companies say that the partnership opens the door to more opportunities for food produce in compostable packaging.



Norwegian start-up developing packaging from seaweed

B'ZEOS Green Tech is a Norwegian science-based startup, formed in 2017, that is developing novel biobased packaging materials using renewable seaweed extracts. Their first product was an edible straw, following funding from Innovation Norway. They are insistent on using what they define as green processing technology and partnering only with seaweed cultivators and harvesters that work with sustainable and ethical practices. After sourcing the seaweed, their biorefinery partners extract valuable compounds that they use for the creation of their packaging products. They are also researching the use of whole kelp biomass and waste streams to create final products. Not only are packaging products from B'ZEOS home-compostable, they are so natural that they can be thrown back to nature (or though this shouldn't be a recommendation) or even eaten. B'ZEOS is claimed to be an innovation suitable for many sectors, including food & beverage, electronics, cosmetics and pharma. They are currently working on flexible film and paper coatings for packaging.



Edible film helps preserve fruit and vegetables

A startup that is a spin-off of the Polytechnic University of Catalonia (UPC), has created edible coatings and packaging to aid the preservation of fresh fruit and vegetables. Bio2Coat, from Terrassa, Spain uses surplus product such as vegetables, fruit, and tubers, together with minority ingredients from natural sources to obtain a film-shaped biological source material that can help preserve food. The edible coatings it produces are said to create a barrier against oxygen and moisture to keep them in good condition for longer and improve their visual appearance, providing them with a second fully edible skin that doesn't change the product's taste or smell. They have also piloted rice packs that include a tomato concentrate that is dissolved in water, and envelopes with cereals that incorporate a cocoa concentrate and that is dissolved directly in milk.



Sugar may speed up PLA degradation process

Scientists at the Centre for Sustainable and Circular Technologies (CSCT) at the University of Bath have been experimenting with the degradability of PLA (polylactic acid) by incorporating different amounts of sugar molecules into the polymer. They found that adding as few as 3% sugar polymer units into PLA resulted in 40% degradation of the biopolymer within six hours of exposure to UV light. Although PLA is classed as biodegradable and compostable, it is, but only under strict industrial composting conditions. While it may degrade in natural environments, the process can take many, many years. The technology is claimed to be compatible with existing plastic manufacturing processes, meaning it could potentially be tested and adopted quickly by the plastics industry, according to the researchers. The hope is that this development could make the plastic much more biodegradable in natural environments such as the ocean or in a domestic compost heap.



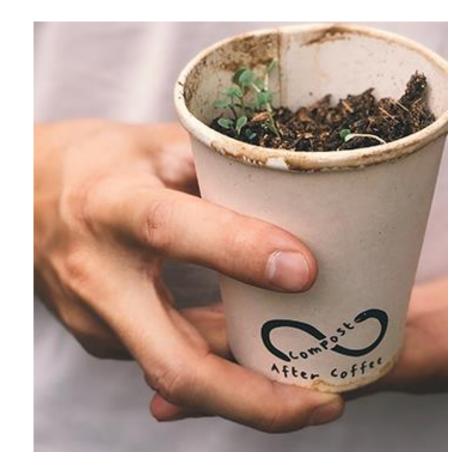
Home-compostable lipstick tube saves use of up to three plastic ones

New Zealand-based vegan body care brand Ethique has launched its first lipstick range in its signature plastic-free, home-compostable tubes, lined with plant wax. It says that each of its long-wearing high-performance lipstick, which comes in seven different shades, is the equivalent of two to three traditional ones, and can save up to three plastic lipstick tubes from manufacture and subsequent disposal. The company says that an estimated 900 million lipsticks, generally packaged in plastic, are sold each year and will eventually be disposed of in landfills. It anticipates that its new home-compostable lipstick range will tackle some of the waste and harm associated with cosmetics. Ethique has been 100 per cent plastic-free since its inception in 2012. Its shipping boxes and padding are free from laminates and plastic, labels and packing tape are recyclable, and it says that it is "proudly carbon neutral".



Compostable coffee cup and lid get certification thumbs up

An Australian start-up has been awarded home compostable certification for its coffee cup and lid after collaborating with Closed Loop Environmental Solutions. Compostable Alternatives say that they researched and tested various materials before they discovered an innovation that could be home composted in as little as a couple of weeks. The cups and lids were researched and tested in partnership with Closed Loop Environmental Solutions for 10 months to make sure they were filling a gap in the market. The cups and lids are made from sustainably sourced paper pulp, and made in Indonesia. They are delivered wrapped in FSC-certified (Forestry Stewardship Council) paper instead of plastic sleeves. Unlike other cups on the market, they don't have an inner lining but instead include aqueous barrier technology, as part of the pulp material. They are certified to break down in under six months in a home compost setup but this is often much quicker.



Aseptic carton incorporates new bio-based polymer coating

China-based Greatview is an aseptic processing company with its headquarters in Beijing. It has announced the launch of Greatview Planet aseptic cartons made from FSC-certified (Forestry Stewardship Council) paperboard and laminated with polymers that incorporate tall oil-based bio-naphtha using a mass balance approach. Tall oil, also called liquid rosin or tallol, is a viscous yellow-black odorous liquid obtained as a by-product of the kraft process of wood pulp manufacture. The launch is a collaboration between Greatview, British multinational chemicals company Ineos, and Finnish manufacturer UPM Biofuels. Greatview Planet is produced at their factory in Halle, Germany. The bioattributed polymer is used for laminating the paper board and producing the aseptic carton pack. The make-up of the carton is over 70% FSC board, the bio-attributed polymer, and an aluminium layer that accounts for 5-6% of the overall weight, which provides protection against moisture, odours, flavours and light.



Plant-based material extends avocado shelf life

Researchers at the Harvard School of Public Health have developed a new plant-based biopolymer using pullulan, a naturally occurring carbohydrate (polysaccharide) obtained from the fungus Aureobasidium pullulans and water (as solvent). Both these ingredients were processed through a focused rotary jet spinning system that turned the mix into antimicrobial pullulan fibres (APFs). Using avocados as a representative example, the researchers demonstrated that APF-coated samples had their shelf life extended by inhibited proliferation of natural microflora, and lost less weight than uncoated control samples, increasing the shelf life of avocados by about 50%. This non-toxic biopolymer does not impact the quality of the product it covers, and, according to the researchers, can be easily washed off from a food item using water and takes only three days to completely decompose in the soil. This work is said to offer a promising technique to produce scalable, low-cost and environmentally friendly biodegradable antimicrobial packaging systems.



Cosmetics brand switches to fully compostable packaging

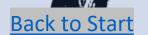
San Francisco-based MOB Beauty has announced that it will move its packaging to 100% compostable solutions by 2024. The compostable packaging collection is called NewPurpose. The product is a combination of natural bamboo, bagasse and 100% PCR cardboard coated in verdecoat, which is a protective spray used to coat food packaging to offer extra durability and water resistance. They say that all materials are sourced from FSC-certified (Forestry Stewardship Council) suppliers that practice responsible forest management. NewPurpose was developed in partnership with beauty packaging suppliers Golden Arrow, Albea and Montrose-Haeuser, alongside industry newcomer Pela – creator of Lomi. Lomi is a kitchen appliance that breaks down organic waste into nutrient-rich compost, and the NewPurpose series is fully compatible with this device. According to recent data from MOB Beautty, more than 50% of consumers worldwide consider reusable packaging to be the most environmentally sustainable packaging solution, while 28% prefer refillable options and 23% favour compostable options.

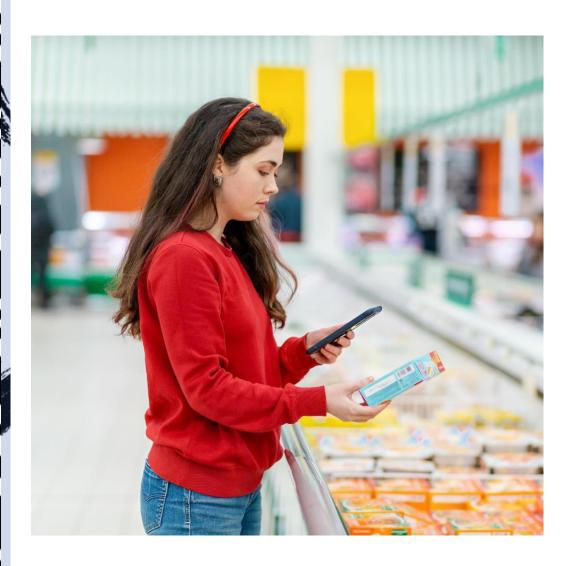


Laser coding collaboration for compostable film starts

Cambridge-based Domino Printing Sciences has collaborated with compostable and biodegradable films specialist Futamura to assess the suitability of laser coding for its NatureFlex compostable film products. Domino has launched its D-Series CO2 laser coders, which it says provide an additive-free solution for manufacturers that use Futamura's NatureFlex compostable cellulose films. Using Domino's new laser coders, Futamura reported a clean, crisp, white code on its NatureFlex compostable film with no impact on film integrity or chemical composition. Moisture barrier properties were also unaffected. The companies say that the option of laser coding a message onto the NatureFlex flexible film is an attractive prospect as the coding method does not require adding any additional materials onto the compostable substrate, which could complicate final certification. Futamura says that many of their customers want to show the final packaging's certification and additional disposal information on the film to help inform end consumers.







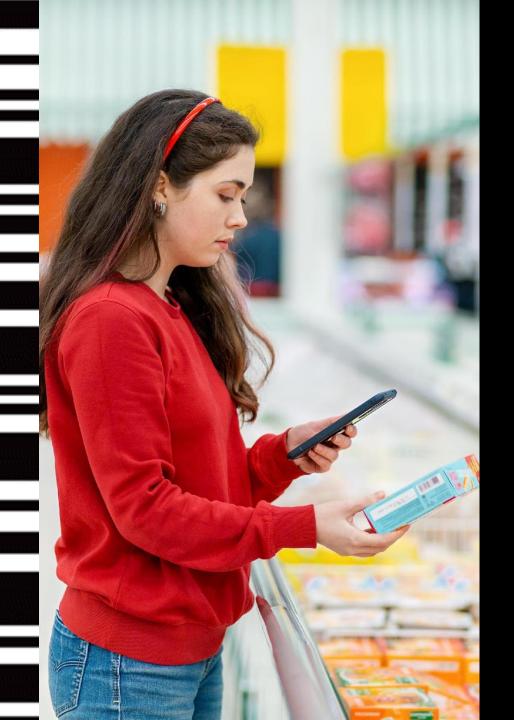
Everyday Engagement

Everyday Engagement

Packaging that engages consumers and end users has an important role to play in the market and we continue to track some great examples. Many use smart and intelligent technology to reach their goals whilst others use pack shape and distinctive pack graphics to get the conversation going.

The ability to operate an ongoing dialogue with consumers is an important brand-building tool. Smart and intelligent technology such as RFID, NFC and QR codes are increasingly used for these purposes. The costs of the capability is coming down, opening up more opportunities for more everyday usage. Inevitably, the drive to deliver sustainable products influences the decision to use many of the technology-based examples as they often do not have an acceptable end of life plan. However, we are seeing more solutions that are easier to recycle and that is opening up the sector. The use of technology to engage with consumers also generates vital data insight opportunities for brands.





Everyday Engagement

Partnership aims to maximise Internet of Things packaging opportunities

NFC tags feature tamper evidence and monitoring functionality

Food freshness indicator uses colour patterns enabled by QR codes

QR code pilot for UK confectionery range

Partnership aims to maximise Internet of Things packaging opportunities

Avery Dennison, a major provider of RFID and digital ID solutions, and Wiliot, an Internet of Things (IoT) specialist, have announced a strategic partnership committed to moving the IoT to the next level, creating a promised new era. Both companies share a vision for the future of the IoT where almost everything is connected to the internet; not just phones, computers, and homes, but also food, medicine, and clothing via packaging. Wiliot produces intelligent tags, stamp-sized computers powered by Bluetooth that attach to any product or packaging to embed it with intelligence and connectivity to create more agile, profitable, and sustainable supply chains. Avery Dennison has the capability and scale to be able to design and manufacture these second-generation Wiliot tags. It is claimed that Wiliot's passive Bluetooth technology offers the ability to work with existing infrastructure and provides another accelerator to the growth of IoT.



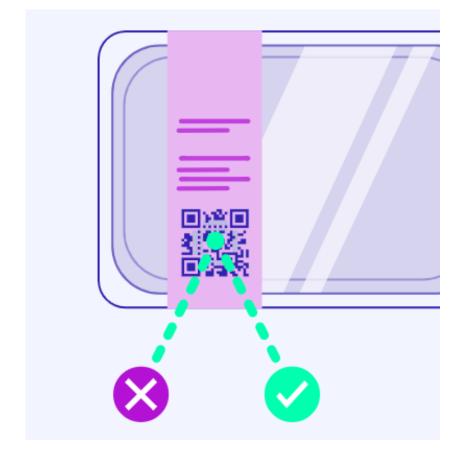
NFC tags feature tamper evidence and monitoring functionality

Dutch semiconductor designer and manufacturer NXP has launched a new family of Near Field Communication (NFC) integrated circuits (ICs) featuring tamper-detection and condition-monitoring functionality on a single chip. NXP says that the new tags are designed to provide not only tamper detection but also condition measurements using the power of a smartphone's NFC interrogation. The NFC tag, compliant with ISO 14443, offers battery-free sensing and two forms of tamper detection. NXP expects the product to be used not only for general brand authentication and tamper evidence but also for healthcare applications, as well as smart-home and retail. The tags can measure moisture levels for smart wound care, and provide fill-level sensing for smart injectable dosage devices. With these new tags you don't need to install an app on your phone to access the data, the system takes the phone directly to the link.



Food freshness indicator uses colour patterns enabled by QR codes

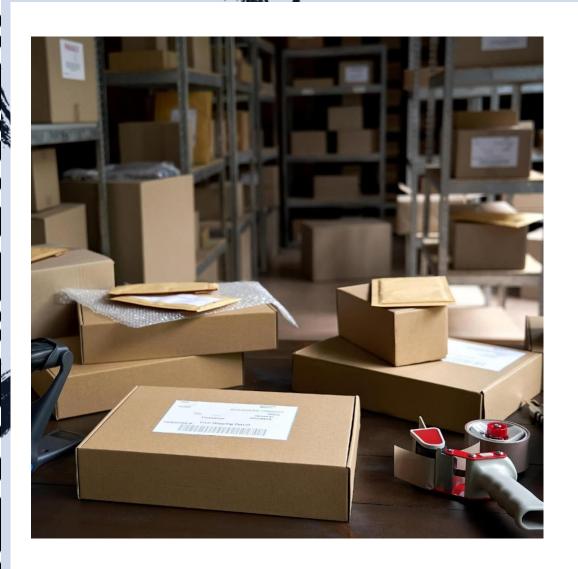
The Innovation Zone continues to find new ways to track food freshness through the use of smart and intelligent packaging. ColorSensing is a Barcelona-headquartered technology company that develops colourcorrection-based applications. Their first product on the market has packaging applications. It is called FoodSensing and it helps to cut down on food waste of food manufacturers' and retailers' products thanks to a quantitative food freshness indicator. A patented algorithm designs adhoc colour patterns for each specific application based on the use of QR technology. This cost-effective technology is based on a variety of intelligent inks and a patented computing technology. By combining different inks, ColorSensing is able to deliver inexpensive quality controls and food freshness traceability data access for every single pack. The solution also provides consumers with information about the traceability about the products. The use of a QR makes the technology accessible to all those with a smartphone.



QR code pilot for UK confectionery range

Mondelez UK has announced that as part of its on-pack summer promotion with Merlin Entertainments, a pilot scheme utilising QR codes will give consumers access to a new online platform. 'Snacking Right' will provide information about the company's global Snacking Made Right programme, including recycling information, tips on mindful snacking and its cocoa sourcing programme Cocoa Life. The platform also features the Recycle Now™ locator from WRAP – to help consumers find out what packaging materials are collected and recycled at nearby locations. WRAP says that there is a thirst for knowledge by people to recycle packaging such as confectionery wrapping. Only last month, more than half a million people visited the website to find their nearest collection points for this type of plastic. QR codes will feature on packaging across a range of Cadbury, Oreo and Barny products, with the Snacking Right platform continuing to include further brands, products and geographies in the future.





The Online Surge

The Online Surge

The e-commerce market has demonstrated strong growth in recent years and its increasing prevalence is shaping packaging innovation. The COVID-19 pandemic has given the channel a significant boost with the demand for online specific packaging continuing to be important.

The growth of e-commerce is significant. The sector has grown more in the last two years than at any time in the last 20 years. It has received a significant shot in the arm due to the COVID-19 pandemic as swathes of consumers worldwide are compelled to switch from their local bricks and mortar stores to buying directly from their mobile, computer or tablet screens. It has been reported that a notable number of consumers were online shopping for the first time, and it's fair to say that many won't go back to the same physical shopping frequency again. Shopping and packaging's role has changed forever. As the market begins to scale, there are increasing opportunities for brands and retailers to offer packaging solutions tailored first and foremost for this channel rather than being replications of the packs bought physically instore. Packaging designed for the e-commerce channel does not need to have the same security measures. The purchase decision is on a screen so bright on pack messaging is not necessary, and packs do not need to be explicitly designed to be attractive for the supermarket shelf.





The Online Surge

<u>Personalised shampoo brand makes South Korean introduction</u> <u>Size-adjustable packaging meets e-commerce sustainability needs</u>

Personalised shampoo brand makes South Korean introduction

A collaboration between two South Korean companies has resulted in the launch of a range of personalised shampoos. Retailer CJ OnStyle, has launched the new brand, called Wake Me, with Cosmax, a cosmetics ODM (original design manufacturer). The personalised shampoos can be tailored according to individual lifestyles and hair conditions. Using an online questionnaire, the shampoo is formulated to an individual's needs after assessing the condition of hair and scalp, and will then select a bespoke formulation based on function, fragrance, and effect. It is claimed that there are 14,494 different permutations. Each individual formulation is allocated its own seven digit 'recipe number' which is printed on the pack allowing the consumer to easily reorder the same product and look up information on the raw materials. CJ OnStyle and Cosmax inked a strategic business agreement last October to capitalise on what both firms believe to be huge potential for personalised beauty products.



Size-adjustable packaging meets ecommerce sustainability needs

EcoCubly is a size-adjustable packaging solution aimed at the ecommerce market. It is estimated that packages in e-commerce are packed on average only 50% full. The remaining half is mostly taken up by void fill. The innovative closure mechanism of EcoCubly allows a flexible adjustment of the packaging to the contents. Therefore void fill is reduced to a minimum and transport efficiency is increased significantly. EcoCubly's clever design is more robust and more durable than other conventional packaging solutions. As a result, EcoCubly can be easily reused and offers extensive protection against transport damage. EcoCubly comes in three different formats, the MiniCubly (one size), MeduCubly (three sizes) and the MaxiCubly (two sizes). The company has estimated that with a global market share of 0.1 % and if reused twice, EcoCubly will show savings of over 65 million new packages, save over 22 million cubic metres of water and 262 thousand trees.





Making Life Easy

Making Life Easy

Packaging that is easy to use will always have a place in the packaging innovation schedule. With the focus very much on sustainable solutions, it is important that packaging still delivers the necessary functional requirements and packaging. Easier to use packaging will always create a point of difference in the market and often meets the needs of a growing senior consumer segment.

Packaging that has added functionality, that is easy to use and makes life easier for consumers continues to be popular. We will continue to see many new examples come through the innovation funnel. With most of the development focus on sustainability, it is essential that brands and retailers can still deliver pack formats and solutions that meet an unmet functional need to make the consumer experience easier and more pleasurable. Plastic reduction is a primary focus for the majority of brands and retailers and there are signs this is having an impact on pack functionality in the market. We have tracked a couple of recent examples in the cheese sector where the resealable functionality has been removed to achieve packaging reduction targets. These isolated examples might just be a sign of things to come. However, the worldwide ageing marketplace means an increasing need for packaging that is easy to open and close.



Making Life Easy

World's first aluminium lug lid is easy to open

Curved, top-down design for sauce bottles enhances consumer convenience

AR development aids visually impaired in retail environments

Device can dispense and store precise liquid amounts that could 'revolutionise medicine'



World's first aluminium lug lid is easy to open

Consumer Convenience Technologies (CCT), based in Dayton, Ohio has announced an aluminium lug version of its patented EEASY Lid, which allows consumers to release a jar's vacuum by pressing a button on the lid to enable easier opening. The new aluminium version partners with their previous steel version (see link below), and CCT claims that this EEASY lid will be the world's first aluminium lug lid, making it a more sustainable option. CCT say that the EEASY Lid reduces the amount of torque needed to twist off a jar lid by more than 58% for traditional lug lids and 40% compared to standard continuous thread (CT) lids. The EEASY lid was developed after a lengthy eight years of R&D, with accessibility for disabled consumers or consumers with reduced mobility at the forefront of the innovation.



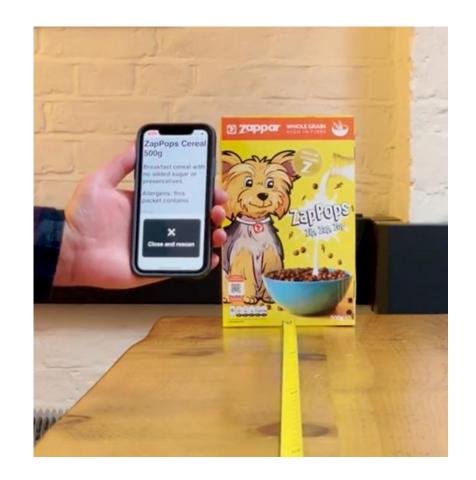
Curved, top-down design for sauce bottles enhances consumer convenience

US-based plastic packaging manufacturer Berry Global has announced the launch of a new range of hot fill sauce bottles that feature a curved, top-down design that they say enhances the dispensing experience and consumer convenience. The new bottles, known as Nova, are manufactured in PP/EVOH/PP (polypropylene/ethylene vinyl alcohol/polypropylene) to offer extended ambient shelf life for a range of sauce products, and which they say also makes the bottle suitable for recycling in domestic recycling streams. The company explains that the bottle allows for easy squeezability to enhance product evacuation, which, in addition to the multilayer structure, helps to minimise product waste. The bottles are available in 250ml and 500ml sizes, with Berry adding that it can supply 38/400 flip-top closures in valved and valveless options. Berry Global also says that the bottle is suitable for both cold and hot filling at temperatures of up to 95°c.



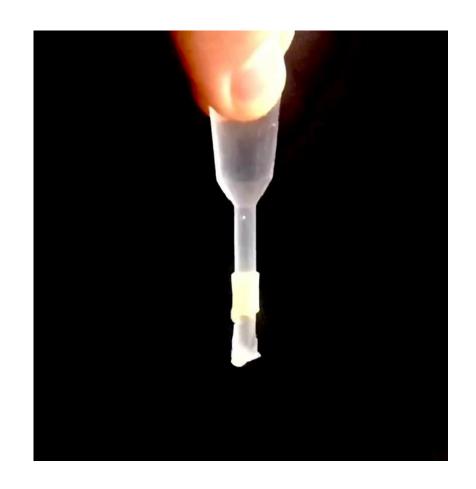
AR development aids visually impaired in retail environments

London-based Zappar is a leading company that specialises in AR (Augmented Reality) creation. Their latest development is Zapvision, which has been designed to aid the visually impaired in a retail environment. Zapvision uses D3 QR codes (so-called because of their 'dot-dot-dash' pattern), to read out whatever relevant information the brand has chosen to provide. These D3 QR codes can be scanned at over five times the distance (115cm) of a normal QR code scanned through the camera on a smartphone, the company says. This single code scheme can service both the partially sighted and sighted audiences. Zappar recently showcased this innovative adaptation of QR technology at the AWE (Augmented World Expo) exhibition, helping the visually impaired to navigate the shopping experience, enabling them to find products on supermarket shelves while providing them easy access to vital product, price and brand information in real-time.



Device can dispense and store precise liquid amounts that could 'revolutionise medicine'

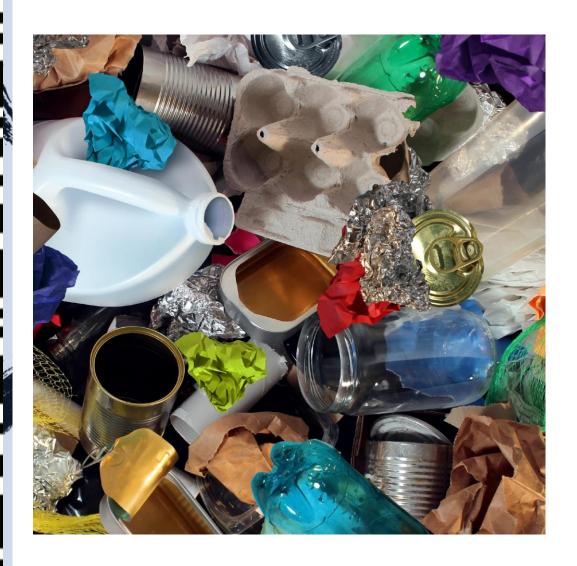
Researchers from the KTH Royal Institute of Technology, in Stockholm, Sweden have developed what they say is a cheap but effective device that can dispense and store precise amounts of liquids. The Flexpenser, an affordable invention, might help accelerate the adoption and widespread deployment of lab-on-a-chip (LOC) technology. LOCs are the equivalent of tiny but powerful microprocessors. They cram the capabilities of a full-sized health care laboratory into a small and compact package. However, until now the high cost of crafting lab-on-achip units barred the technology from entering mass production. This new development however is much more cost-effective, at an estimated manufacturing cost of \$2 to \$6. The technology, which was designed as a liquid-handling device for integration with numerous medical diagnostic applications, could also be scaled up in size for use in packaging for food, cosmetics and chemicals, for long-term storage and controlled release of liquids.



Easy-to-open PE produce bag introduced

Hilex Poly, part of US-based Novolex, has launched a new PE (polyethylene) bag that they say is much easier to open than traditional PE bags. The bags, called RollStar EZ Open Produce Bags, are designed to be used for products in the fresh fruit and vegetable department of supermarkets. The bags use a proprietary recipe that makes them easy to open, eliminating the frustration of struggling to open produce bags. The bags come in a wide variety of sizes and gauges, including versions certified as compostable by the Biodegradable Products Institute (BPI). Novolex also makes RollStar bags for meat, fresh seafood and bakery items. The RollStar compact dispenser makes it simple for shoppers to take one bag at a time, reducing waste by ensuring they take only the bags they need. The bags are also said to be leak-proof and stronger than conventional flat seal bags. They can also be custom printed.





Materially Changed

Materially Changed

The packaging continues to see a lot of change of materials driven largely by sustainability objectives. Plastic replacement is still top of the agenda for many brands and retailers as they look to switch out of the material to solutions that may offer a better environmental footprint or at least be better received by anti-plastic focused consumers. We have 26 initiatives this month.

ThePackHub continues to report many instances of brands and retailers switching primarily from plastic to other often paper-based alternatives. Some, but not all, support the move with positive evidence of these changes' environmental impact. The reality is that we are experiencing a cycle of high change where, in some cases, recyclable plastic is being replaced with other materials because consumers believe this as the right thing to do from an environmental perspective. However, not all examples stand up to stringent environmental scrutiny. Most of the material changes have often come about following significant investment in machinery and new processes. These switches are for the longer term, and any reversals are a long way off.





Materially Changed

Lightweight paper bottle for dried goods launched Sweden sees launch of tequila in cardboard bottle Dry moulding fibre rollout gets new factory boost On-demand colour label printing reduces waste Paper-based packaging range designed for frozen food Developments to replace plastic tray afoot Food-to-go range reduced by 274 tonnes of packaging German start-up offers sustainable alternative to conventional plastics and bioplastics Graphene helps reduce material usage for masterbatch resins Foamable PP touted as viable expanded polystyrene alternative Cheese pack redesign with side opening reduces packaging use First UK supermarket to switch to clear milk bottle caps across range Water container offers practical plastic-saving alternative Board-based alternative to traditional chocolate tin launched Beverage stopper combines cork and charcoal <u>Isothermal meal box change delivers 20% more efficiency</u> Paper-based beer bottles to be trialled across Europe Top toy brand on a mission to rid plastic from packaging Fibre material's usage extended to other pack formats Companies team up to offer paper-based pallet wrapping alternative Fibre-based heat sealed material launched Flat 100% rPET wine bottles make Australian launch Collaboration leads to 30% lighter PE films Transparent paper-based material alternative to plastic

Lightweight paper bottle for dried goods launched

Moulded pulp and corrugated packaging producers Cullen have introduced a lightweight bottle for dry goods, including food. It is marketed as '100% plastic-free' and made from moulded fibre pulp. The bottle is formattable in several colours and shapes, can be used in automated packaging lines and is suitable for labelling. It is compatible with snapoff or resealable closures, allowing companies to fully customise the packaging for their specific needs including dyeing to achieve brand colours. At the end of its use, it can be fully recycled and will biodegrade if left in landfill. The bottle also has reuse possibilities. Cullen have said that the packaging innovation is ready to launch with several million units ready to go.



Sweden sees launch of tequila in cardboard bottle

Mexican tequila brand Buen Vato has announced the launch of what is claimed to be the world's first tequila in a cardboard bottle. It is made from 94% recycled material and produces 84% less CO2 emissions per kg. Production of the bottle uses six times less energy, and 1.9 litres less water than conventional glass tequila bottles. Transport costs are also reduced by 0.52 kg/C02 less per litre of tequila. Buen Vato's goal for 2022 is to produce 20,000 bottles which will reduce CO2 emissions by 24600 kg. Inside the board bottle is a plastic liner which is easily removed for recycling purposes. The Swedish government, which operates a monopoly on retail sales of alcoholic beverages, will be the first retailer in the world to launch and sell this unique product. Buen Vato will be officially unveiled at the ProWein fair in Germany.



Dry moulding fibre rollout gets new factory boost

German Clean Tech Startup BIO-LUTIONS and PulPac, the Swedish dry moulding fibre pioneers, have come together in their objective to replace single-use plastics globally. With the help of machinery manufacturers, a dry moulded production line will commence production in a new BIO-LUTIONS factory in Germany this summer. BIO-LUTIONS mechanically converts agricultural residues into unique, selfbinding, durable fibero (Bio-LUTIONS brand) natural fibres. This patented method eliminates the need for binding agents or chemical cellulose isolation, as the whole fibre is used. BIO-LUTIONS intends to produce a variety of sustainable single-use disposable products such as service food items (cutlery and tableware) as well as protein, fruit and vegetable packaging. The process of dry moulding fibre technology is said to be much faster and more efficient than conventional fibreforming methods, while also saving significant amounts of valuable water resources and energy, resulting in up to 80% lower CO2 footprint compared to alternatives.



On-demand colour label printing reduces waste

Sihl Group is a German manufacturer of coated papers, films and fabrics. It has now introduced the ENDURO and PICOFILM solutions for ondemand colour label printing. On-demand printing makes it possible to manufacture exactly the desired run directly on-site, which means less waste is created. The ENDURO and PICOFILM ranges are said to offer solutions for decentralised, on-demand printing of tearproof loop tags, hangtags, and stick-on labels in short runs. Sihl says digital printing is efficient and sustainable, contributing to lower CO2 emissions as no transport routes are involved and goods are available immediately. This also means that customer-specific personalisation requests, such as simultaneous printing of advertising slogans, product information or batch numbers, can be fulfilled at any time. According to Sihl, the ENDURO AND PICOFILM grades can be printed on both sides and are suitable for outdoor use.



Paper-based packaging range designed for frozen food

Finnish paper-based packaging manufacturer Walki has introduced a range of packaging solutions aimed at the frozen food sector, which are intended to be recyclable in existing paper streams. Walki EVO Seal and Walki Opti Seal, are intended for pillow-pouches for frozen food. EVO Seal has a dispersion coating barrier against water vapour and grease, while Walki Opti Seal features an optimised PE-extrusion coating. Walki claims that both solutions are recyclable. Another product in the portfolio is Lamibel MDO-PE, a film-based material for pillow pouches made of reverse printed MDO (machine-direction orientation) film and solvent-free laminated with low sealing LDPE. According to Walki, the technology means that film thickness is minimised while performance is optimised. Walki Pack Tray, is a board-based tray that is apparently suitable for ready-made meals and is designed to replace aluminium, plastic, or plastic-coated trays. Walki claims that the tray material is 100% PET free and recyclable in the paper stream.



Developments to replace plastic tray afoot

UK-based packaging solutions provider Proseal has announced that it is helping many fruit growers and packers who are actively seeking an alternative solution to the standard plastic trays and punnets used in the industry. One solution is their Alexa Stackpack, a craft-board punnet that provides an inline and off-the-shelf fully printed card punnet. Until now, the folding and sealing of the pack's two flanges has needed to be done by hand. Proseal has now developed a solution that will fold and seal the flanges as the packs are filled and run through a line to significantly improve efficiency. Their other offering is the CKF Earthcycle Punnet which provides packers with the option to swap easily between plastic and pulp, as well as the chance to move from plastic-based to cellulose-based film. The company claims that packers can 'plug-and-play' these materials into their existing Proseal machines.



Food-to-go range reduced by 274 tonnes of packaging

In a move that is claimed will remove 274 tonnes of plastic, cardboard and film from their food-to-go products, UK supermarket chain Co-op has re-launched its food-to-go product range with reduced packaging impact. Single-use plastic cutlery is to be replaced with sustainable wooden 'sporks', which are designed to be used as both forks and spoons. The new 2022 summer range features several sushi products, including the Salmon and Prawn pack, the Vegan taster pack, the Premium Fish Selection and the Chicken and Duck pack, all of which the Co-op says has considerably less packaging compared to their previous food-to-go ranges. Last year, Co-op made all its own-brand packaging easier to recycle through kerbside collection or via its closed-loop system in store for soft film. Also, in November last year, the retailer partnered with consumer goods brand owner Unilever to pilot two refillable packaging concepts in a store environment.



German start-up offers sustainable alternative to conventional plastics and bioplastics

traceless is a German circular bioeconomy start-up founded in Hamburg in 2020, with the goal to offer a holistically sustainable alternative material to conventional plastics and bioplastics. Their patent-pending technology uses natural by-products of agricultural food production, meaning no additional plants need to be grown to produce traceless. The materials are produced as a granulate which can be further processed into a wide range of end products. They say that their innovative process is simple, environmentally friendly and has high scale-up potential. Each kilogram of traceless means 1,65 kg CO2-eq in saved emissions, 46,78 MJ of saved fossil energy demand, 100 litres of saved water demand, 1.06 m²a saved agricultural land demand. Depending on the conditions and the thickness of the material, composting takes only 2-9 weeks.



Graphene helps reduce material usage for masterbatch resins

São Paulo-based nanotechnology business Gerdau Graphene specialise in applying graphene for applications and new solutions to help 'revolutionise global industry'. The business has developed graphene-enhanced resin masterbatch formulas for plastics including PP and PE that reportedly increase performance whilst reducing raw material usage by as much as 30%. Graphene is mixed with the plastics to strengthen its matrix, making the combined plastic material much stronger. The company also claim that graphene can help increase barrier properties against various liquids and gasses, offer a barrier to slow down oxidation and block UV light and even improve thermal conductivity. The versatile material can also deliver useful antimicrobial properties and is recyclable when combined with plastic. Gerdau is aiming to develop graphene additives for virgin resins, as well as post-industrial and post-consumer recycled plastics and polymers.



Foamable PP touted as viable expanded polystyrene alternative

Texas-based multinational oil and gas corporation Exxon Mobil has announced the launch of a foamable PP (polypropylene) product as an alternative to EPS (expanded polystyrene). Achieve Advanced PP is said to be an affordable alternative to EPS as less raw material is required to produce the final product, thanks to what Exxon Mobil claims is its excellent structural integrity at low densities. The company also says that Achieve Advanced PP runs well on modified polystyrene foam equipment. It also offers excellent thermal insulation at a broad range of temperatures. Achieve Advanced PP allows post-industrial and postconsumer recycling, (where appropriate collection and recycling facilities exist), reducing footprint and cost without compromising product integrity. It utilises PP product attributes to resist moisture, grease and common detergents for long-lasting performance. Suggested uses include insulated food and beverage packaging such as cups, tops, clamshells and trays, produced on modified polystyrene foam equipment.



Cheese pack redesign with side opening reduces packaging use

Saputo Dairy UK has announced that it is moving its marketleading cheddar cheese to a side-opening format, in a move that it claims will save 40 tonnes of plastic annually. The dairy giant is in the process of moving its Cathedral City cheddar to the new format across the entire range. The innovation is said to reduce plastic content by 6% per pack. Research carried out by the company suggests that over 60% of consumers preferred the new side opening format. The side opening is claimed to give consumers the ability to slide the cheese in and out of the pack without touching the bare cheese block, so they can slice or grate it straight from the packet. The research also says that 73% of consumers felt the zip lock would also keep their cheddar fresher and would be easy to open and reclose multiple times.



First UK supermarket to switch to clear milk bottle caps across range

Following a successful trial early in 2022, Waitrose has become the first supermarket in the UK to move out of coloured milk bottle caps. The previously blue, green and red caps will now be replaced with a clear version, meaning that the bottle and cap can now be recycled together in a 'closed loop' system allowing the caps to be recycled and reused as food grade material which was not possible with the coloured caps. The retailer claims the move could increase the amount of rHDPE (recycled high density polyethylene) available on the market back into the food sector by 1560 tonnes per annum. The new clear caps will be used on all Essential Waitrose milk in all of its 331 stores, which accounts for 44% of milk sales, with plans to roll out more widely across the Waitrose own label milk range next year.



Water container offers practical plasticsaving alternative

Belgium-based Spadel Group offers natural mineral water under the Spa, Bru, Wattwiller, Carola, and Brecon Carreg brand names. They have now launched a large 5 litre container in a new format under its Spa Reine brand. This pack consists of a cardboard box and inside is a flexible plastic bag with a tap. After use, the consumer simply takes out the flexible plastic bag and disposes of it in the local plastics recycling container, while the cardboard box can also be recycled. Spadel says that their new eco-pack container results in a 65% reduction in plastic per litre of water compared to a 6-pack of plastic bottles, as well as a claimed reduction in carbon footprint of almost 40% compared to a crate of 6 returnable glass bottles. As part of their ongoing sustainability goals Spadel has already chosen to upgrade its plastic bottles to 100% recycled and 100% recyclable plastic for all of its brands by 2025.



Board-based alternative to traditional chocolate tin launched

Mondelez Australia has collaborated with Opal Converting to develop a limited edition board-based alternative to the traditional tin version for its Cadbury's Roses, in time for Mother's Day in Australia. The vertical box is supplied as a one-piece tamper-evident box, which upon opening, becomes a two-piece with a lid and a base. The pack features a durable double-wall structure that minimises product bowing that is inherent with a vertical-filled high-density product. It also integrates a tamper evident feature without the need for plastic shrink film. The paper-based format is 70% lighter than the traditional Roses tin and is able to add 25% more shelf ready packaging per pallet, which equates to 320 cartons per pallet versus 256 Cadbury's Roses traditional tins per pallet. The cartons feature the creative artwork of First Nations Wiradjuri artist, Karen Lee, and is called 'Mandaang Guwu'.



Beverage stopper combines cork and charcoal

Estal is a company based in Girona, Spain that provides packaging solutions to the wine and spirits industry. They have announced the launch of a new product, known as Corkcoal. Corkcoal is made from a mixture of cork and activated charcoal. The addition of charcoal is said to naturally neutralise and trap unwanted substances in the cork. Corkcoal stoppers are claimed to be more sustainable as the manufacturing process reduces waste and scrap, while also lessening the amount of chemicals and CO2 of several processes. Pressure rather than glue is used in their manufacture, and they have been designed with short stems to optimise the use of material. Corkcoal stoppers are said to biodegrade faster, as the properties of activated charcoal are known to accelerate biodegradation in combination with other materials. The Corkcoal collection consists of three models: Sharp, Barrel and Cornice, with two sizes available 21.5mm and 18.5mm.



Isothermal meal box change delivers 20% more efficiency

Canadian sustainable packaging manufacturer Cascades has announced the development of a new isothermal meal box that is claimed to be 20% more efficient than its current home delivery solution. This new solution, known as the northbox XTEND is said to create a moisture barrier that helps keep the insulation rigid. The packaging keeps food fresh during long transit times and in regions with higher temperatures and requires less ice. The XTEND packaging solution is made of recycled cardboard and was determined to be recyclable by an external laboratory and prequalified by How2Recycle. The company is also commissioning a new production site for its northbox product line: Cascades Enviropac, in York, Pennsylvania. This facility is the second in four months to be opened to support Cascades' growth in the isothermal packaging solutions market.



Paper-based beer bottles to be trialled across Europe

Danish multinational brewer Carlsberg have announced that they plan to trial 8,000 paper-based beer bottles across several European countries. The brand owner had first publicised their intention to introduce a paper bottle as reported in the Innovation Zone as far back as February 2015. The initiative continues to edge nearer to market introduction. The bottles are made from sustainably sourced wood fibre, with a plant-based polymer lining supplied by Carlsberg's partner, Amsterdam-based chemical technology company, Avantium. The bottles are fully recyclable. The cap of the bottle is not bio-based, but it is still recyclable. Carlsberg will use customer feedback to judge the level of success of the trial although the sample sizes are still relatively small speed across eight markets.



Top toy brand on a mission to rid plastic from packaging

Construction toy giant Lego has announced that it is in the process of removing all single-use plastic packaging from its products. Over the next three years, single-use plastic bags will be phased out gradually, and as it is an incremental change, Lego says that customers might find a mix of plastic and paper-based bags in their boxes. Lego's aim is that by the end of 2025, all of their packaging will be made from sustainably sourced materials that are either renewable, or made from recycled content and certified by the Forest Stewardship Council (FSC®C117818). The boxes that Lego comes in are made from cardboard, and 75% of all cardboard used is derived from recycled materials, and can be recycled where infrastructure and access to paper and cardboard recycling exist. Also, new paper-based packaging for baseplate packaging is being introduced this year, which replaces the previous single-use plastic wrappers.



Fibre material's usage extended to other pack formats

Swedish pulp and paper manufacturer BillerudKorsnäs has announced that its formable fibre material FibreForm is now also available as an unbleached, brown paper material, which it says makes it suitable for strong, reusable carrier bags. BillerudKorsnäs says that the new FibreForm carrier bags are strong and can be reused at least 50 times, and carry goods with weights up to 21 kilos. The company says that FibreForm offers a low-carbon packaging alternative to plastic that 'invites inspiring design'. The material can be cold formed and is available in both white and brown. The fact that it is cold-formable means that it requires less energy during the production process than plastics. FiberForm allows for up to ten times deeper embossing than plain paper, giving brand owners the chance to create stand-out and unique 3D effects, and a memorable tactile experience.



Companies team up to offer paper-based pallet wrapping alternative

Global packaging manufacturer Mondi has partnered with Austrian mechanical engineering company EW Technology to offer an alternative way of pallet wrapping. Using Mondi's Advantage StretchWrap paper, allows small-to-medium producers to replace conventional plastic stretchwrap, which is currently the industry standard for pallet wrapping. Advantage StretchWrap is 100% virgin paper, created with renewable materials and fully recyclable in existing paper waste streams across Europe. The two companies worked together to design the Innovative machine, which can be fully automated to wrap up to 1 pallet a minute or semi-automated to wrap 10-15 pallets per hour. According to a Mondi-commissioned life cycle assessment, Advantage StretchWrap was found to use 62% lower greenhouse gas emissions compared to virgin plastic stretch film. Also, Advantage StretchWrap is said to be a more efficient solution as the larger dimensions of the reel mean that a replacement is only needed every 400-600 pallets compared to 40-80 pallets for plastic wrapping.



Fibre-based heat sealed material launched

Ahlstrom-Munksjö is a Finland-based manufacturer of fibre-based materials. Their product PurposeSeal is a heat-sealed paper solution constructed to ensure quality and protection for end-use packaging solutions. PurposeSeal is available with one-sided or two-sided heat sealed adhesive coated options. It can also be combined with their PurposeFil paper-based material which offers numerous options such as colour, transparency, water resistance and high stretch, among others. Product categories suggested for PurposeSeal technology include ecommerce and retail packaging materials, transparent garment pouches and bags, and for single-use consumer goods packaging such as confectionery and baked goods. It is regarded as a replacement for traditional plastic film usage. Being paper-based, PurposeSeal is sustainably sourced and 100% recyclable allowing producers to easily meet sustainability goals. It has been certified recyclable passing the Western Michigan University SBS Equivalency (WMU SBS-E) test.



Flat 100% rPET wine bottles make Australian launch

Packamama is the manufacturer of an eco-bottle aimed at the wine market and is a Garcon Wine spin-off. The business has collaborated with two Australian winemakers, Accolade Wines and Taylors Wines, to launch the bottle in Australia. The bottle is made from 100% recycled and recyclable PET (polyethylene terephthalate) with a flatter profile that they say allows twice as many bottles to fit in a standard wine case, helping to reduce carbon emissions linked with transit. Packamama says that the use of recycled PET as the main material also makes the bottles approximately 83% lighter than glass bottles. Initially, Banrock Station and Taylors' One Small Step range will be sold in the bottles, though Packamama have estimated that a reduction of 250,000 km of road freight could be achieved if the two companies switched their entire portfolio to the eco-bottles. The bottle is fully recyclable after use, although this does not include the cap.



Collaboration leads to 30% lighter PE films

Two European flexible packaging manufacturers have collaborated to produce lighter weight PE films. Austrian Constantia Flexibles and Dutch Plasthill Technical Films have combined to scale the former's proprietary micro embossing technology, CompressSeal, which offers higher seal integrity than standard polyethylene (PE) films while weighing up to 30% less, without compromising on thickness. CompressSeal is said to consist of a novel micro embossing technology that allows for a reduction in the grammage of polyolefinic sealant films by up 30% while offering the same thickness as standard packaging, the lighter weight of the packaging helping to reduce its carbon footprint. In addition, the companies claim that CompressSeal technology reportedly reduced the issues associated with migrating slip agents usually used for PE and PP films. Expected uses include flow packs for washing detergents, dry pet food, coffee, nuts, and savoury foods, as well as for stand-up pouches for liquids.



Transparent paper-based material alternative to plastic

Ahlstrom-Munksjö is a Finland-based manufacturer of fibre-based materials. Their product Cristal is a flexible paper with various levels of transparency that provides an alternative to plastic films. It can be used on an array of converting platforms to create window packaging or sachets for an all-paper packaging solution. It is available in various transparency levels depending upon the customer's requirements, ranging from outstandingly clear to subtly translucent solutions. Cristal papers have a smoothness and high gloss, for a unique touch and feel, and are suitable for printing, lamination, glueing, coating or waxing. It can be converted into sachets, bags, or paper windows. Cristal Transparent Papers can be used in many industries, including ecommerce, health and hygiene, food or even office supplies. Cristal is 100% fibre-based, recyclable to EN13430, and home and industrial compostable to EN13432.





Protect and Preserve

Protect and Preserve

Solutions that help to extend shelf life, reduce food waste and protect contents have environmental as well as cost-saving implications. We continue to track many new initiatives in this area. The COVID-19 pandemic has seen a rise in supply chain-based examples that aim to improve the safe distribution of vaccines.

The prevention of food waste continues to be a priority, and we are tracking many examples of packaging formats that have been designed to reduce the wasting of product. There are widely reported statements that between 33-50% of all food produced globally is never eaten, and the value of this wasted food is valued at over \$1 trillion. Technology is playing its part with many recent developments using technological know-how to help detect and communicate changes in the state of food. Packaging has a key role to play in ensuring that produce and food waste is minimised. In this section, we focus on examples that improve the environment by increasing shelf life or reduce waste. The section also includes examples of packaging that protects the product through improved secondary packaging solutions that take on board environmental or cost concerns.



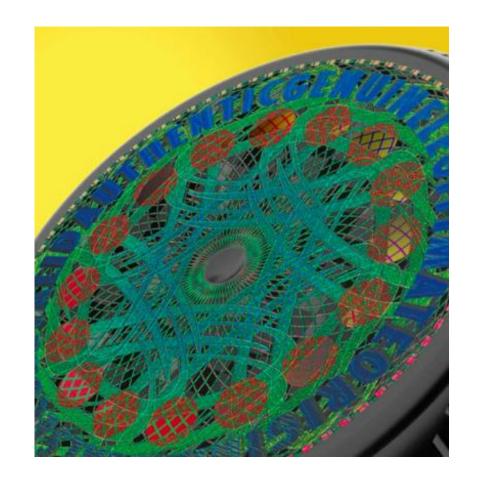


Protect and Preserve

Holographic security labelling system takes on fakes
Irremovable unique code helps counterfeit proof products
Blockchain technology ensures perfume brand's authenticity
Popcorn-based insulation may have packaging applications
New material eliminates food packaging bacteria

Holographic security labelling system takes on fakes

Australian manufacturer Caps & Closures has announced the launch of ID-Shield, a holographic security labelling system. Caps and Closures were mindful that many companies in food and beverage and the health and home products sectors are aware that fake products can undermine brands. Their ID-Shield solution is claimed to prevent the copying of a brand's product labelling whilst adding a unique look that guarantees that consumers will recognise the product as genuine. ID-Shield is said to offer a cost-effective and integrated security functionality that is suitable for small production runs, or scalable to the largest of volumes. The company says that ID-Shield's 'jewel-effect' hologram gives designers access to the entire rainbow of colours and holographic effects, all dynamically displayed in their respective logos, marketing messages or anti-counterfeit devices. They also say that ID-Shield gives an impressive visual stand out on the shelf and draws shoppers to products.



Irremovable unique code helps counterfeit proof products

Dusseldorf-based supplier of drug packaging solutions, Gerresheimer, has launched a traceability concept that it says will ensure complete transparency throughout the value chain and greater safety for the patient. The company says that clearly marked primary packaging helps to minimise the risk of costly and dangerous mix-ups when filling medicines. A unique code on the primary packaging that cannot be removed is also an important step on the way to a counterfeit-proof product. Gerresheimer also says that the codes are the key to connecting previously separate worlds in the value chain, and that thanks to the digital infrastructure for traceability, all downstream parties can link, analyse and share any data with the individual product unit. In the event of a drug recall, the link between the unique code of the primary packaging and the serialised medicine makes it possible to draw quick and precise conclusions about the affected product units.



Blockchain technology ensures perfume brand's authenticity

French perfume brand Le Jardin Retrouvé uses blockchain technology to guarantee its perfume's authenticity. As sales grew rapidly in the Chinese market they realised there was a huge problem with counterfeiting and grey markets. To overcome these issues and to help reassure both customers and distributors they turned to blockchain technology supplied by French company Sorga. By scanning the QR Codes printed on the packaging, consumers get access to a large number of inviolable pieces of information tracing the origin and manufacturing of products. Then, once they have bought a product, they can subscribe with a code printed inside the pack to receive a certificate of ownership and be identified by the brand as the sole owner of the product. The platform is available in four languages, English, French, Chinese, and Spanish, but direct exchanges are automatically translated, so it can be used in any of the brand's countries.



Popcorn-based insulation may have packaging applications

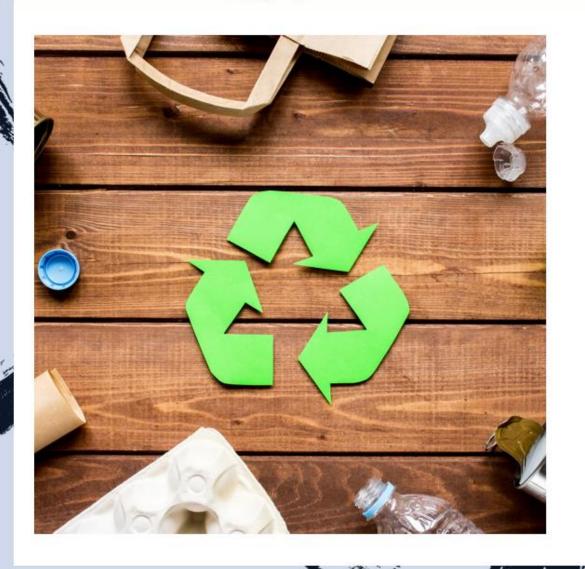
A research group at the University of Göttingen has been researching manufacturing processes for products made of popcorn that are sustainable and efficient. The University has now agreed to a licence agreement with the building materials company Bachl Group for the commercial use of the process and the products for building insulation. The research group at the Faculty of Forest Sciences and Forest Ecology has now managed to develop a process by which insulation boards made of "granulated" popcorn can be produced that have excellent thermal insulation properties and good protection against fire. The great advantage of this granular material is that it is a plant-based and a sustainable alternative to the products derived from petroleum currently used in the industry. The researchers also say that the new popcorn products have water-repellent properties, which opens up even more opportunities for practical applications and extends their useful life. This development clearly has potential applications in the packaging industry.



New material eliminates food packaging bacteria

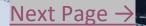
Scientists from the "Polymers" and "Tecnofood" research groups of the University of Burgos have created a new polymeric material that has the ability to eliminate bacteria in food packaging, thereby extending its shelf life by up to 50%. The developed polymeric material interacts with bacteria and viruses, and in particular alters the pathogenic bacteria of food or environmental origin to produce an inhibition of the propagation of microorganisms. It allows the use of these materials in the preparation or manufacture of biocidal materials oriented to use as bactericidal absorbents in food packaging, and in textile fibre coatings for the manufacture of masks. These materials are also said to be reusable, as after washing with water they can be reused at least 10 times. It is also possible to dissolve them in certain organic solvents so that they can be managed as liquid waste.





Recycling Resurgence





Recycling Resurgence

Recycling initiatives continue to be one of the most active sustainability areas driven by challenging Plastic Pacts around the world that are part of a three-pronged objective to deliver 100% recyclable packaging by 2025. The UK packaging tax that requires 30% recycled content is influencing change as well as the focus on stretching recycling targets. We are seeing more chemical recycling initiatives as well as recycled PS and PP developments coming to our attention.

This large section includes recycling initiatives as well as packaging that now incorporates (more) recycled content. We can report many examples of mono-material developments and other measures to improve recycling rates. The introduction of Packaging Taxes is also on the horizon, influencing the recycling of packaging. The UK's was implemented in April and will see a levy on plastic packaging with less than 30% recycled content. This activity inevitably influences the demand for packaging reduction activities. There is still a long way to go in terms of consumer education and essential infrastructural and capability changes to improve recycling rates. We can report on an increase in the number of chemical recycling initiatives coming to our attention although still modest at this stage. Mechanical recycling processes is still the dominant way to deliver recycled packaging and this looks set to continue.





Recycling Resurgence

Ocean-bound plastic used to create yoghurt pot is Aussie first

Prototype digital watermarking passes semi-industrial testing

Mono-material PP packaging developed for ice cream

Shatter-resistant PET trays include 50% post-industrial recycled content

Fibre-based barrier layer in development for cartons

Companies combine to develop stand-up pouch with PCR plastics

Captured carbon converted into plastic feedstock could be a 'game-changer'

Paperboard packaging produced with waste from self-adhesive labels

Mass balance process aims to create feedstock for difficult-to-recycle packaging waste

On-the-go drink range to switch to 100% rPET

Paper cup-and-spoon combo launched to meet Directive requirements

Mono-material plans for Australian biscuit range

Infinite recycling of plastic is start-up's goal

Paper-based shampoo bars reduce packaging usage

Flexible packaging gets mechanical recycling boost

Plastic-free paper soap pack makes Brazilian introduction

Snack pots made from 39% recycled soft plastic is a market first

PE mono material cheese pouches are fully recyclable

Worm species happily eats polystyrene for alternative to recycling

Brazil campaign encourages disposable cup recycling

Luxury wine brand switches to recycled plastic

More than 10 thousand tons of virgin plastic switched to recycled

Recyclable paper pulp used for COVID-19 testing kit

Ocean-bound plastic waste included into new label material

Hybrid fruit punnet is an Australian first

Four-way collaboration leads to innovative recycling process

100% recycled content PE bags launched for fashion industry

Resin development creates all-PE recyclable packaging

New trigger sprayer incorporates plastic spring improves recycling

Fibre-based screw cap is recyclable as paper

Recyclable bag for e-commerce launched

High-barrier kraft paper offers variety of recyclable pack formats

Ocean-bound plastic used to create yoghurt pot is Aussie first

Adelaide-based yoghurt producer MOO are the first Australian brand to make food packaging entirely from ocean-bound plastic. The company's co-founder Mick Sanders was giving a talk at a primary school in Australia and was expecting questions about the production of yoghurt. Instead, he was inspired greatly by several inquisitive nine-year-old children asking about what MOO were doing to help the environment. He then decided to use some of their suggestions and ideas to develop the recycled ocean-bound plastic pack now in the market. MOO have since partnered with recycling agencies to obtain the materials, and supermarkets such as Woolworths to give consumers the opportunity to do their part in helping clean up the seas. 1.1 million plastic containers, which is the equivalent of around 100 tonnes of plastic, will be removed from beaches, oceans and waterways via the initiative this year.



Prototype digital watermarking passes semi-industrial testing

German plastic packaging manufacturer Paccor is celebrating following a semi-industrial test that mimicked real-world conditions for a prototype digital watermark recognition unit. The successful validation was carried out by the initiative for digital watermarks "HolyGrail 2.0" initiated by AIM – European Brands Association and the Alliance to End Plastic Waste. Paccor took part in the test series with 10 different products. The black, silver and clear PET trays and the PS/PET Duo Smart cups showed detection rates of 100% (total average value of tested products from all participants at 99%) and rejection rates of 97-100% (total average value of tested products to all participants at 95%). Their PET drinking cups were only slightly below these values. Paccor says that the results show that digital watermarking technology can enable more specific sorting of packaging waste on an industrial scale.



Mono-material PP packaging developed for ice cream

The world's eighth largest producer of polyethylene and polypropylene, Austria-based Borealis, have developed mono-material PP ice cream packaging made from bio-based feedstock alongside German sustainable packaging producers PACCOR. The bio-based feedstock is obtained without interfering with the human food supply chain, as it is obtained by second-generation waste and residue streams. The lids and tubs will be moulded in Borealis' Bornewables PP, and will be sold under the Froneri ice cream brand, Aino. According to Froneri, they are the first ice cream company to receive the ISCC PLUS certification in the sensitive frozen food packaging market. Once the ice cream packaging has fulfilled its use, it can be fully recycled at the kerbside.



Shatter-resistant PET trays include 50% post-industrial recycled content

The consumer products division of global packaging manufacturer TekniPlex has announced the launch of shatter-resistant PET (polyethylene terephthalate) food trays with 50% post-industrial recycled content. The Pennsylvania-based company says that during a year-long production campaign with a poultry processor, the trays showed no signs of cracking or breakage throughout the supply chain, providing outstanding protection. TekniPlex says that the trays offer premium performance, as they are designed to survive the rigours of the case-ready environment. They say their PET trays are shatter-resistant even in harsh, cold environments - reducing breakage, product loss, leaks, and the risk of safety recalls. The trays also feature a proprietary innovative technique called Hidden Rim Technology, which prevents the overwrap film from tearing and creates freight and shipping efficiencies. TekniPlex says that these trays are a drop-in replacement for foam polystyrene trays, meaning there is no need to update existing equipment or alter production processes.



Fibre-based barrier layer in development for cartons

Leading Swedish-Swiss global packaging business Tetra Pak has announced that it has successfully completed a 15-month commercial technology validation of a polymer-based barrier aimed at replacing the aluminium layer in its cartons. Although thinner than a human hair, the aluminium layer is reported to contribute a third of the greenhouse gas emissions linked to base materials used in carton construction. Tetra Pak is now moving to the next level of development and is testing a fibre-based barrier that they say is a first within food carton packs distributed under ambient conditions. Consumer research revealed that approximately 40% of consumers would be more motivated to sort for recycling if packages were made entirely from paperboard and had no plastic or aluminium. Tetra Pak claims that early results suggest that the pack with a fibre-based barrier will offer substantial CO2 reduction when compared to traditional aseptic cartons, together with, importantly, comparable shelf life and food protection properties.



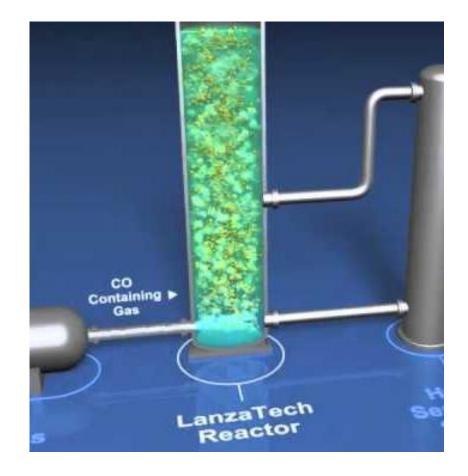
Companies combine to develop stand-up pouch with PCR plastics

A collaboration of four companies has resulted in the development of a stand-up pouch made with post-consumer recycled raw material (PCR) for non-food products. The structure of the pouch contains 'I'm Green' recycled PE (polyethylene) resin from Brazilian petrochemical company Braskem, and PET (polyethylene terephthalate) film with PCR (post consumer recycled) Ecophane resin, supplied by US-based Terphane. Antilhas Embalagens then take the films, which they print and laminate, and are passed onto Gualapack who then inject the spout and lid with recycled polyethylene and shape the pouches. The commercialisation of the product is the responsibility of Antilhas and Gualapack. The resulting structure is claimed to be a pack with 43.3% post-consumer recycled content (r-PE and r-PET), generated from waste collected through reverse logistics of Braskem packaging and sanitary landfills. The pouches have been subjected to the same protocols and tests and safety as the versions made with virgin resin.



Captured carbon converted into plastic feedstock could be a 'game-changer'

In what is being described as a 'game-changer', a collaboration between Illinois-based LanzaTech and multinational brand owner Danone has resulted in the discovery of a new route to monoethylene glycol (MEG), which is a key building block for polyethylene terephthalate (PET) resin, fibres and bottles. The chemical recycling development has been hailed as a potential breakthrough for creating lower-carbon plastics. Previously, carbon had to be converted into ethanol, then ethylene, then ethylene oxide, then MEG. Removing these multiple steps makes the process both more energy- and resource-efficient, resulting in a material with a lower emissions footprint. LanzaTech has said that a development phase spanning several years will need to be completed to build on this proof-of-concept success, before PET packaging, such as plastic bottles can be manufactured and released to the general customer market. PET usually contains around 25-30% MEG.



Paperboard packaging produced with waste from self-adhesive labels

Natura & Co is a Brazilian global personal care cosmetics group headquartered in São Paulo. They have started using recycled paperboard packaging manufactured using their own waste label liners, which are recycled by Polpel. Polpel is the only company in Brazil capable of recycling used paper liners. The noble fibre of the material (bleached long fibres) is recovered, and thanks to the quality of the fibres in this material, it is possible to manufacture paperboard packaging. In this case, they are transformed into Natura's Ekos line soap boxes, which recently received the Grandes Cases Award for Packaging for innovation. The liner used is made of silicone paper, waxed or resin coated, and the basis of self-adhesive labels. The liner, which used to be a waste product, follows a new cycle and becomes a raw material, transforming itself into cellulosic pulp and, later, being made into paperboard again.



Mass balance process aims to create feedstock for difficult-to-recycle packaging waste

Researchers at the University of Florida have been conducting trials on a new method of converting difficult-to-recycle packaging materials into methanol for use as feedstock in further plastics production via mass balance. The research has been carried out in conjunction with the Consortium for Waste Circularity and the Flexible Packaging Association (FPA). To date, they claim to have successfully processed, multi-layer materials, metalised films, barrier films containing PVDC, and cross-linked photopolymer flexographic plates, into synthesis gas, also known as syngas. The Consortium for Waste Circularity views Eco-Methanol as a way to boost the recovery of waste as well as the recycled content in products and packaging. The organisation refers to this process as Regenerative Robust Gasification. The testing programme is apparently now being expanded to packaging industry stakeholders, targeting difficult-to-recycle but functionally valuable packaging materials.



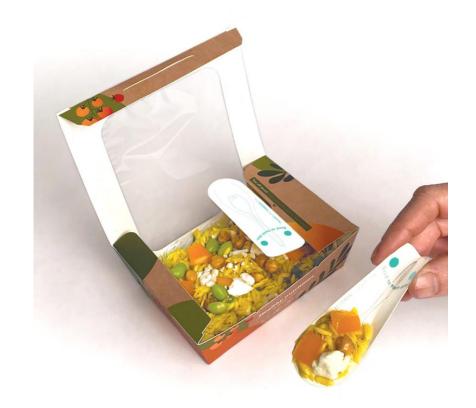
On-the-go drink range to switch to 100% rPET

Suntory, owners of Ribena and Lucozade, has announced that all of its on-the-go 500ml bottles will be made from 100% rPET (recycled polyethylene terephthalate) plastic by the end of the year. The move includes Lucozade Sport, Lucozade Energy, Orangina and Ribena. A major challenge for Suntory has been the secure supply of food grade quality rPET – only the highest quality plastic can be used to remake food and drink packaging, but it is estimated that the UK currently only produces around 1.3 million tonnes of food-grade rPET every year. Suntory has calculated that for all soft drinks companies in Europe to produce bottles from 100% rPET, this would need to increase by an estimated 3.56 million tonnes. Suntory also notes that demand for this material is pushing up costs – the European price of rPET is currently 39% more expensive compared to virgin PET.



Paper cup-and-spoon combo launched to meet Directive requirements

California, US-based producers of sustainable cutlery EcoTensil have collaborated with Przegędza, Poland headquartered packaging manufacturers Trendy Top to develop a new integrated private label top-cup solution, which includes a compostable paperboard spoon sitting in the cup, hygienically sealed with a peal-away label. This paper spoon allows for fully mono-material packaging, increasing rates of recycling. The paper cup and spoon are made from PEFC-certified paperboard, and are compostable and recyclable through kerbside provision. One of the main advantages of the packaging innovation is that it meets the requirements of the 2021 EU Single-use Plastics Directive for single-use plastic utensils.



Mono-material plans for Australian biscuit range

Australia's largest manufacturer of biscuits has announced that it is to make its soft plastic packaging fully recyclable by moving from multilayer to mono-material structures by the end of 2023. The new materials will result in recyclability of the packaging through the Australian RedCycle and New Zealand Soft Plastics Recycling schemes, and is well in advance of the upcoming National Packaging Targets set by the Australian Packaging Covenant (APCO) set to take effect in 2025. The rollout of thinner, fully recyclable packaging will begin with the Farmbake range, a popular product for New Zealand consumers, which is also available at Australian independent grocery stores. This move will mean a plastic reduction of 9 tonnes each year, the claimed equivalent of six medium sized cars, while still retaining shelf life and freshness. Arnott's is currently at 75% recyclability (units) across its packaging portfolio, with an intention to get to 100% by 2023.





Infinite recycling of plastic is start-up's goal

Samsara Eco is an Australian start-up that is promoting the goal of the infinite recycling of plastics. They have developed a revolutionary biocatalyst technology that depolymerises plastic waste and allows for the reuse of the monomers in producing food grade plastics with the same characteristics as virgin plastic. Samsara's technology breaks down plastic (polymer) waste into its original building blocks (monomers) for reuse to manufacture new food-grade plastics and polyester. Unlike current recycling technologies, the Samsara process is economical, with a low carbon footprint, and produces food-grade recycled plastics with the same structural integrity as virgin plastics. The process can handle currently hard to recycle plastics, including coloured, multi-layer and mixed plastics. The start-up has recently raised \$6 million in funding from the Clean Energy Finance Corporation, Woolworths' venture capital fund W23 and CSIRO's Main Sequence Ventures.



Paper-based shampoo bars reduce packaging usage

The world's largest consumer packaged goods company Procter & Gamble (P&G) has announced that its shampoo and conditioner portfolio will now be available in a bar format. Head & Shoulders, Pantene, Herbal Essences and Aussie brands will be in this configuration as an alternative to the conventional liquid in plastic squeeze bottles. The bars have a volume equivalent to two 250ml liquid bottles and are packed in recyclable FSC-certified paper boxes. This activity will help to contribute to the company's ambition to reduce the amount of virgin plastic they use by 10,000 tonnes per year. This would equate to approximately 300 million bottles being wiped out every year. The new bars come in an easy-to-hold shape and have been created to meet consumer preferences and compare with the performance of their liquid equivalent. P&G has made a commitment to achieving net-zero greenhouse gas (GHS) emissions across its supply chain by 2040.



Flexible packaging gets mechanical recycling boost

At least 98 companies and organizations have come together to comprise the U.S. Plastics Pact, which is aimed at building a circular economy for plastic by moving from single-use to reuse and increasing the reuse, collection and recycling or composting of plastic packaging, by 2025. By the spring of 2023, a \$24 million, 170,000-square-foot plastic recycling plant will be in operation, northwest of downtown Minneapolis. It's the first U.S. operation from recycler Myplas USA. The goal is to expand film recycling of single-use plastics, leading to the supply of recycled resin for use in new products. Mechanical recycling is the approach Myplas is taking. Plastic waste will be sorted by type, ground into smaller pieces, washed to get rid of contamination, and then extruded to form pellets, which can be used to make other plastic packaging products. According to an estimation by the Flexible Packaging Association, the residential recycling rate for film and flexible packaging in 2020 in the US was just 2%.



Plastic-free paper soap pack makes Brazilian introduction

A Brazilian manufacturer of personal care products has announced that it is moving its bars of soap into plastic-free paper packaging. Luky is switching its range of Nips All Day soap into Gualapack Brazil's Green Pack paper-based packaging. It uses plant resins to make the wrap waterproof and effectively seal the packs without the use of plastics. This eliminates the traditional plastic layer usually required for sealing and moisture resistance and means that the packaging is compostable and recyclable. The paper-based packaging will be used on Luky's Fennel and Green Tea soap products. Gualapack announced the acquisition of Brazilian packaging company Teruel Embalagens – Papéis Amália Ltda, producers of Green Pack and specialists in flexible paper solutions, in September 2021. Green Pack is also suitable for food products, across various packaging formats, including flow wraps, pouches and sachets.



Snack pots made from 39% recycled soft plastic is a market first

In a five-way collaboration, Heinz has been able to trial Heinz Beanz Snap Pots that contain 39% recycled soft plastic which was collected at in-store collection points at UK's biggest supermarket Tesco. Heinz and Tesco were aided with this achievement by Plastic Energy, Sabic (Saudi Basic Industries Corporation), and Berry Global. Following collection at Tesco Stores, the material is delivered to London-based Plastic Energy, who converts the plastic into an optimal oil feedstock. SABIC then takes the recycled oil and uses it as alternative feedstock in the production process to manufacture virgin, food-contact approved polymer pellets. Berry Global thermoforms these pellets into new, post-consumer recyclable Snap Pots. The pots are made with 39% recycled plastics based on a mass-balance approach. Finally, the pots are sent to Heinz to be filled with beans and delivered back to Tesco stores. Once used, the pots can be recycled as part of conventional UK kerbside collections.



PE mono material cheese pouches are fully recyclable

Leading European packaging manufacturer Coveris has announced the launch of a range of recyclable, reduced plastic pouches for UK supermarket Iceland's grated cheese. The cheese packs will switch to Coveris' MonoFlexBe, a PE (polyethylene) mono-material, which will make them fully recyclable. The move replaces the previous material which was a PE/PA (nylon) mixed material. The new substrate is said to have like-for-like functionality and comparable shelf-life. The weight of the pouch is also reduced by 1g, which is estimated to reduce plastic use by 7 tonnes annually. Iceland also says that the move to a monomaterial means that 41 tonnes of plastic can now be easily recycled through retailer front of store plastic film collections, including Iceland's instore plastic collection and recycling service available in over 150 Food Warehouse stores.



Worm species happily eats polystyrene for alternative to recycling

Researchers at the University of Queensland, Australia, have discovered a species of worm with an appetite for polystyrene. Due to a bacterial enzyme in its gut, the common Zophobas morio "superworm" can eat through polystyrene. The researchers fed the superworms different diets over a three-week period, with some given polystyrene foam, some bran and others put on a fasting diet. They found that the superworms fed a diet of just polystyrene not only survived but even had marginal weight gains. The researchers liken the superworms to mini recycling plants, shredding the polystyrene with their mouths and then feeding it to the bacteria in their gut. The products from this reaction can then be used by other microbes to create high-value compounds such as bioplastics. Going forward they intend to look into how they can upscale this process to a level required for an entire recycling plant.



Brazil campaign encourages disposable cup recycling

Following a successful three store pilot programme in 2021 to recycle their paper cups, Starbucks have now expanded the programme to nine stores in São Paulo, with plans to expand the scheme to 60 stores by the end of the year. In the eleven months that the initiative has been running they have collected and recycled over 80,000 cups. The recycling initiative is administered through the "Ciclobom" circular economy project – developed by BO Packaging with the support of paperboard producer Ibema and reverse logistics startup smart Green Mining. Customers place their single-use paper cups in designated collection boxes installed in selected stores. The cups are then processed by a system that uses low water resources to remove the plastic layer. The plastic is sent for recycling while the paper fibres are transformed into 30% post-consumer recycled cardboard to become sleeves for more Starbucks cups.



Luxury wine brand switches to recycled plastic

French luxury giant LVMH, owner of luxury brands such as Louis Vuitton, Givenchy and TAG Heuer, and wineries such as Château Cheval Blanc, Château d'Yquem, Moêt & Chandon and Veuve Clicquot, has launched its first rosé wine from Provence in a PET bottle. The plastic used for the recycled bottles is obtained through Prevented Ocean Plastic. The project uses recycled plastic collected from coastal areas at risk of ocean plastic pollution. The PET bottle is manufactured by Packamama, and is fully recyclable. Weighing just 63 grams – almost 10 times lighter than a standard bottle – and with a "flattened" shape, it is 40% smaller spatially than a circular-shaped package, which makes it more efficient to pack and transport. Château Galoupet who make the wine aims to produce the most ecological drink possible. The vineyard is being converted to organic viticulture and neither the wine nor the grapes use any chemical product.



More than 10 thousand tons of virgin plastic switched to recycled

Unilever Brazil has announced that it has replaced more than 10,000 tonnes of virgin plastic with recycled plastic in four of its best-known brands, Seda, Dove in beauty and well-being, Comfort and Fofo in household care. In the food category they are increasing their use of recyclable monomaterials by using PP (polypropylene). With this increase in recycled plastic in its portfolio, Unilever Brasil is taking another step towards achieving another global goal, to reduce the use of virgin plastic by 50% by 2025, an absolute reduction of 100 thousand tons worldwide, or the weight of more than 8,000 double-decker buses in the countries where it operates. Unilever is a reported pioneer in using post-consumer high density polyethylene resin (HDPE) on a large scale, attributing value to plastic after consumption and directly fighting plastic pollution.



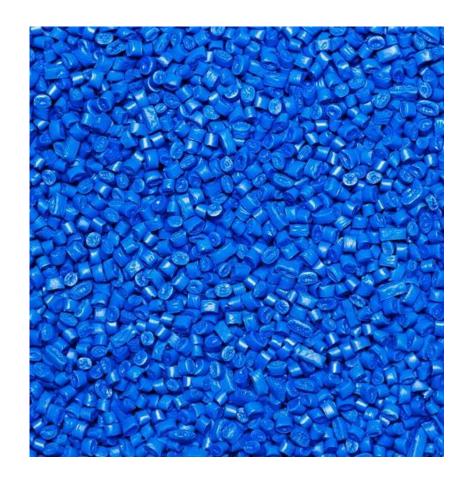
Recyclable paper pulp used for COVID-19 testing kit

A London-based design studio has developed a biodegradable and recyclable COVID-19 testing kit concept, which aims to lessen the environmental impact of tests being used today. The kit, designed by Morroma predominantly uses recyclable paper pulp, but has also been designed to be more user-friendly. The Eco-Flo outer packaging is made from recyclable paper pulp, while the sachet is made from Futamura's biodegradable NatureFlex film. It is claimed the material should break down in approximately 4-6 weeks. To make the kit more user-friendly, they also moved away from nasal swab technology. The team looked to Parallel Amplified Saliva rapid POint-of-caRe Test (also known as PASPORT), a developing technology that tests for the virus through saliva samples. It has been estimated that the UK lateral flow testing programme has contributed enough plastic waste to fill 19 Olympic swimming pools so far.



Ocean-bound plastic waste included into new label material

Finland-headquartered label manufacturer UPM Raflatac has announced a collaboration that means that it will now be able to incorporate ocean-bound plastic waste into its labels. The new range will be known as Ocean Action labels and will include the use of oceanbound plastic using a mass balance approach. OBPCert (Ocean Bound Plastic Certification) estimates that ocean-bound plastic waste generates 80% of plastic marine litter. The waste plastic will be collected by HHI, a Malaysian recycling company, who will use chemical recycling to convert the waste into pyrolysis oil. This will then be sent to SABIC to create high-quality PP plastic granulates. The granulates are then used by Taghleef Industries in the process used to produce the label film for the final material by UPM Raflatac. UPM Raflatac says that the Ocean Action label materials are suitable for fast-moving consumer goods such as household and personal care products, packaged foods, and beverages.



Hybrid fruit punnet is an Australian first

Two Australian companies have collaborated to develop the country's first sustainable hybrid grape punnet. Australia's leading grower, packer and marketer of fruit and vegetables company Costa were looking for an innovative and sustainable format for their premium Vitor grapes, and enlisted the help of Melbourne-based consultancy N.A.V.I. Co Global (Network, Advice, Value, Innovation). The result was a hybrid grape punnet which is made of an FSC (Forestry Stewardship Council) cardboard base with a plastic lid made of 100% recycled PET and is 100% recyclable. The new format reportedly has 80% less plastic than the previous pack, resulting in a substantial reduction in plastic use. The construction enables the punnets to be carried easily but also allows the cardboard packaging to double up as a grazing platter when opened. It also has clear on-pack messaging to send consumers to online digital content via a QR code.



Four-way collaboration leads to innovative recycling process

Four companies are coming together in a new partnership – barrier film experts Evertis, BASF, Bobst and Granada-based Sulayr with a goal to create an intricate process to recycle multi-layer PET. They plan to use adhesives which are primarily water-based. Each company has a specific role in the partnership, all helping to make the process more efficient. Evertis produced the multi-layer PET/PE film, and BASF created the laminate, which is their Epotal water-based adhesive. This is then processed by a coating created by machinery experts Bobst, to then be recycled at the end of its use by Sulayr, who are responsible for the separation of the layers, and making the material available to be used again.



100% recycled content PE bags launched for fashion industry

Multinational packaging company Avery Dennison has announced the launch of its Re-Think packaging range, an introduction with a strong focus on the fashion industry. It features a 100% recycled content PE (Polyethylene) bag made from GRS-certified (Global Recycle Standard) material. The company says it is designed to provide an alternative to singleuse plastics, introducing reusable products and recyclable materials, and limiting the number of packaging materials being used across the supply chain. The range also features a plasticfree garment bag which it says is durable, transparent, kerbside recyclable, and uses FSC (Forest Stewardship Council) accredited paper. PE bags have been the go-to solution for shipping garments through supply chains for decades, due to their low cost, durability and convenience.



Resin development creates all-PE recyclable packaging

Nova Chemicals, a Canadian petrochemical producer, has introduced a specialised high-density polyethylene (HDPE) resin that can be used to produce recyclable all-polyethylene packaging. The special HDPE resin is intended to replace conventional mixed material laminates, such as high barrier biaxially-oriented PET/PP (polyethylene terephthalate/polypropylene) films, which cannot be recycled. This new mono-material can be used to make 100% high-density machine direction oriented film, producing laminates that promise to have high stiffness, good heat resistance and clarity. Nova says that this new material is suitable for applications in areas such as food packaging, heavy duty shipping sacks and e-commerce. Nova has been increasing its efforts to produce recyclable plastics as part of its sustainability efforts and ambition to create a circular economy for plastics, including fast tracking a chemical recycling plant in Edmonton, in conjunction with Canadian biofuels producer Enerkem, which could divert 230,000 tonnes a year of waste from landfill.



Mono-material pouches launched by pet food brand

Purina is an American subsidiary of Swiss multinational food and drink conglomerate Nestlé, and is one of the biggest pet food providers in the world. Recently, they trialled a pilot study in the Netherlands, testing the level of success with recyclable packaging under their Felix brand. In response to the trial's performance, they have recently launched monomaterial recyclable pouches made of polypropylene for two of their major brands across Europe: Gourmet Mon Petit and Felix Soup. The recyclable pouches are to be sold in batches of six in recyclable cardboard boxes. This initiative is congruent with the company's objective of delivering entirely recyclable or reusable packaging by 2025.



*Visit purina.eu/packaging for more information.

New trigger sprayer incorporates plastic spring improves recycling

US-based Silgan Dispensing has announced the launch of an innovative new trigger sprayer, known as the SP05 R. It features a patented plastic spring that enables the removal of non-recyclable materials and metal found in conventional dispensing solutions. By using these innovative springs, the dispenser can be made almost entirely of a single polyolefin, making the pump or sprayer ultimately more compatible with today's recycling streams. The company says that the SP05 R is recognised by RecyClass as being compatible with both HDPE and PET recycling streams based on third-party laboratory testing, using the Recyclability Evaluation Protocol for HDPE. The RecyClass recognition relies on the use of a clear PP trigger and other conditions being met. The SP05 R can also be made with a child-resistant feature if required by the customer. The trigger sprayer is said to be suitable for home, health and beauty, garden, automotive, and hair care applications.



Fibre-based screw cap is recyclable as paper

Iconic vodka brand Absolut is collaborating with Swedish start-up Blue Ocean Closures to develop a fibre-based screw cap as an alternative to its existing cap solution. The partnership includes several development phases. The creation of prototypes and tests will take place in 2022 with the aim of presenting a commercial solution in 2023. Blue Ocean Closures' innovative and plastic-reducing closure cap is mainly created from wood fibre materials from FSC-certified (Forestry Stewardship Council) forests, combined with a thin top sealing barrier, which can be designed for different types of filled products. The completely bio-based seal is recyclable as paper and reported to be degradable in the sea as well as in nature. The collaboration with Blue Ocean Closures is part of The Absolut Company and Pernod Ricard's ambition to create a completely circular business with the goal that 100% of the company's packaging can be reused, recycled or composted by 2025.



Recyclable bag for e-commerce launched

Hilex, part of South Carolina-based Novolex, has introduced a new heavy-duty recyclable PE (polyethylene) bag aimed at the ecommerce sector. The ProWAVE Tote is made with 20% recycled content, and is designed for kerbside pickup, home delivery or carryout use. The bag features folded handles and a double-ply top that provides stiffness so the bag stays open, making loading easier and more convenient. The rectangular bottom optimises the use of storage in a vehicle's boot or back seating area. The ProWAVE Tote is available in recycled white, grey and kraft colours, and the print can be fully customised on the side panels for branding. The reusable bag is said to be suitable for hot, frozen or refrigerated items. The ProWAVE is 100% recyclable where facilities exist, and options are available to meet a variety of recycling standards



High-barrier kraft paper offers variety of recyclable pack formats

Finland-based UPM Speciality Papers has announced the launch of UPM Solide Lucent, a recyclable speciality kraft paper that the company says can be used as a coating base or for single-packs, bags, and wraps. Solide Lucent is said to offer high strength, density, and folding properties that help to ensure the mechanical integrity and barrier performance of the packaging during converting and throughout the value chain. It also gives excellent print results with both flexo and rotogravure printing. Solide Lucent is available in two lighter grammages, 45 and 62 g/m², for smaller packs requiring pack flexibility, and higher grammages of 72, 78, and 90 g/m², which offer rigidity and sturdiness where needed. Solide Lucent is a kraft paper that is repulpable and designed to be recycled in existing fibre recycling streams. It is made from virgin cellulose fibres from responsibly grown forests, with FSC and PEFC certification available, and has a fibre content of over 95%.





Getting Noticed

Getting Noticed

Despite the growth of online, the importance of creating impactful and noticeable packaging continues to create a point of difference. The packs have a role to get noticed on shelf as well as engage and delight in the consumer's hand and again this month we have some great examples. Despite the shift to online purchases, packaging that can get noticed continues to come to our attention. The importance of standing out on supermarket shelves or even in kitchen cupboards cannot be understated.

A pack's first impression can be the difference between success and failure in an ever-increasing competitive marketplace. We have tracked several examples that do just this. Also creating an impact in the hands of consumers is also important. A challenge for brands and retailers is to deliver pack finishes and decorations that meet the need to be sustainable.





Getting Noticed

Individual beer labels created to celebrate Pride Week
Glow-in-the-dark packaging for US marshmallow brand

Individual beer labels created to celebrate Pride Week

Digital print continues to be used to create engaging and differentiated content. The technology has been adopted to create some packaging noise in support of Pride Week in Israel. BeerBazaar have launched BeerColada, which is a sweet beer with coconut and pineapple flavour hints and has been released in eye-catching special edition packaging. Each pack has a different character on each label to help celebrate the versatility and beauty of the week. The So B What You Wanna B(eer) campaign has been brought to market via digital print heavyweights HP. Each beer label is unique and denotes a distinct character with different skin tone, clothing, earrings, glasses, hairstyle and facial hair ensuring that no two designs are the same. It has been achieved using the randomisation technology of HP Mosaic. Incredibly, it is reported that the labels took less than one week to create. They were printed at Israel-based Kinneret Press.



Glow-in-the-dark packaging for US marshmallow brand

Global food giant Kraft Heinz has launched glow-in-the-dark packaging for its Jet-Puffed marshmallow brand this summer. The new Jet-Puffed Camp S'mores will be packaged in a glow-in-the-dark bag to make it easier to find the bag of marshmallows when the sun sets around the glowing campfire. S'mores are an American tradition, generally thought to have been invented around 1927 by girl guides and consist of just three ingredients of biscuit, marshmallow and chocolate. S'more is said to be a shortened, sugar-fuelled version of 'some more'. For the launch of new Jet-Puffed Camp S'mores, the brand also created a new Star Registry-official Jet-Puffed constellation, Jet-Puffed S'morion. Fans can discover S'morion in the night sky using a custom AR filter or by scanning the QR code on the back of the new Camp S'mores packaging. Jet-Puffed's new glow-in-the-dark packaging is available at Walmart and other retailers for \$2.99 (£2.47).





Refill Revolution

Refill Revolution

Refillable and reusable packaging continues to come through the innovation funnel. The growth is in part driven by the Plastic Pact aim to deliver reusable packaging by 2025. Many of the initiatives are from start-up and challenger brands with multinational brand owners also getting in on the act with small-scale trials and pilots. The dry food, household and health and beauty sectors are the most active.

Reusable and refillable packaging examples have increased in occurrence, notably over the last two years as brands, retailers and suppliers look at ways of tackling single-use and difficult-to-recycle packaging. A change in consumer attitude is emerging with resistance to single-use packaging. The innovations collated can be segmented into the Ellen MacArthur Foundation's four reuse models – Refill at home, Return from home, Refill on the go and return on the go. Dry food, household and personal care sectors are the ones that are making the most ground. Many of the in-store examples listed are small trials and pilots as major retail chains test the water with a small number of initiatives in outlets. Their next moves will be eagerly anticipated.





Refill Revolution

Delivery brand partnership sees more products in reusable packaging
Supermarket chain launches paper-cotton bags to fight plastic waste
Wine barrels made from reusable hemp canvas and potato starch
Pre-filled refill packs set for trial programme
Brazilian beer returnables gets heavy focus
Wooden lipstick is easy to refill
Closed cycle brand deposit system is a German first

Delivery brand partnership sees more products in reusable packaging

UK-based reusable packaging-focused delivery company Good Club have announced the commencement of their first ever partnership with a retail company. They will be assisting Muller-owned delivery company Milk & More expand their range of zero waste packaging grocery lines. The collaboration, aptly named 'Good Club at Milk & More', will offer to customers a new range, comprising ten product lines, including tea, coffee, sugar and cereals. There is also pasta and rice, and glass jars for storage, which join the alreadyvast range of products delivered to customers' doorsteps by 7am. According to Good Club, this use of over 100 million one-pint glass bottles will prevent the use of over 1,600 tonnes of plastic waste.



Supermarket chain launches paper-cotton bags to fight plastic waste

UK supermarket chain Iceland has launched new branded reusable paper-cotton bags that are available for sale for £1 (\$1.22). In the UK, the cost of plastic carrier bags doubled to 10 pence in May 2021 in a move to discourage their usage. It is hoped that the higher price of £1 for the cotton bags may help to encourage reuse, as customers may feel that they will save money in the long run. Iceland are mindful of the amount of plastic waste in the UK, and are trying to combat this by reinforcing a "bag for life" mindset. As for the environmental aspect of the cotton bags, one study by the Ministry of Environment and Food of Denmark suggested that cotton bags are so water intensive to produce that to balance out the environmental impact from production, consumers would need to reuse the bag around 20,000 times. The cotton bags are also non-compostable and most are non-recyclable, due to the PVC-based printing used.



Wine barrels made from reusable hemp canvas and potato starch

French wine barrel makers Barthe Group has brought to market barrels that are made from fully biodegradable packaging. The new barrels are constructed from a combination of reusable hemp canvas and a plastic film made from potato starch. Previously, the company delivered its barrels under layers of plastic film from the petrochemical industry, combined with cardboard. The distinctive barrels are said to have three advantages compared to the previous ones – they provide better protection for the barrels during transport, the materials are biodegradable and compostable, and the hemp canvas can even be reused as mulch. US wineries were the first to receive their orders in this unique packaging at the start of the year. In order to attract new customers they have chosen not to add on the additional cost of this packaging innovation to their selling prices.



Pre-filled refill packs set for trial programme

A trial to test the effectiveness of pre-filled refill packs will take place for upmarket retailer Marks & Spencers with the announcement of a couple of stores starting trials. UK outlets in Bluewater and Stevenage will be the first taxi out of the rank to be joined by four others in different parts of the UK. As part of the trial, shoppers will be able to purchase a refillable bottle of 500ml, 750ml and 1l sized product, which will be already pre-filled. There will be a deposit charge of £2, which will be refunded as a voucher when the empty bottles are brought back to the store. Empty bottles will be sent for cleaning and refilling before being shipped back to stores to start the process again. The metallic bottles contain a plastic spray trigger or pump that can be recycled at the end of their useful life.



Brazilian beer returnables gets heavy focus

As part of its ongoing sustainability goals, Brazilian brewing company Ambev part of AB Inbev is aiming to increase the amount of its beverages sold in returnable packaging. Ambev claims that the use of returnables generates more savings for the consumer who, after the first purchase of the container, pays only for the liquid, creating a more positive impact on the environment and more profitability for the point of sale. Ambev promotes the consumption of returnable products both in the establishments themselves and as a take-home purchase option, offering the product at a more attractive price in this second format. Ambev's expectation is that, by 2025, 100% of the company's products are in returnable packaging or are made mostly of recycled material. In the case of returnable products, this means that the bottle will be safely reinserted into the beer production cycles.



Wooden lipstick is easy to refill

Two European beauty packaging suppliers have collaborated to develop a refillable wooden lipstick. Quadpack, based in Spain, has combined its expertise in wooden packaging with the French company Aptar, which supplied the lipstick mechanism technology. Called the "Iconic Woodacity Lipstick", the new packaging solution was designed for minimal impact and maximum consumer engagement. It combines Aptar's Iconic mechanism with Quadpack's Woodacity full-wood patented technology. Attached to an aluminium tube, the mechanism is contained in a mono material wooden casing custom-designed and manufactured by Quadpack. Aptar's mechanism is POM-free (acetal), glue-free and lubricant-free, offering a smooth, constant and precise rotation. The lipstick is refillable with ease: consumers simply pull out the used mechanism and snap in the new one. It is also possible to use refills of different colours simultaneously with one single casing to further reduce the pack's impact. The 100% certified ash wood brings a natural touch and a sensory dimension to the pack.



Closed cycle brand deposit system is a German first

German plant-based bath and body care company Kneipp has announced a partnership with Berlin-based Circleback. Circleback is working with Kneipp and other partners from the cosmetics industry to bring cosmetics packaging into a closed cycle as part of their deposit system. The pilot project will initially be launched in this half of the year at Edeka Moch in the Alexa shopping mall in Berlin. Customers can hand in empty cosmetics and personal care packaging at Circleback deposit machines. They will receive up to 20 cents per package via a Circleback app. Circleback says that despite plastic packaging being a valuable raw material, only a fraction has been recycled to date, and until now only small amounts of the plastics from Germany's yellow bag system are recycled into equivalent packaging, with large amounts of plastic being incinerated. Kneipp has set itself the goal of making all of its packaging completely recyclable by 2023.



About Us

ThePackHub is a leading UK-based packaging innovation consultancy specialising in delivering packaging solutions to brand owners, retailers and packaging suppliers. ThePackHub manages a market-leading innovation database called The Innovation Zone. The easy-to-use resource has over 6,000 packaging innovations from around the world updated at to 25 initiatives a week. This internal insight and knowledge feeds into much of the consultancy we undertake. ThePackHub also has an unrivalled network of packaging contacts and connections across the industry.

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Our team delivers technical support for packaging projects, large and small. From quick and helpful tips and advice through to the project management of significant packaging initiatives, ThePackHub has established a strong reputation for helping companies from start-ups to multinational organisations. Our recent clients for technical support have included EAT, Greencore, Able & Cole, Loch Duart, Innocent, Aunt Bessies, Waitrose, Leathams, WRAP, KP Snacks, Iglo, Fortnum and Masons, Church and Dwight, Aubrey Allen, Glanbia, Pip & Nut and Happen!

We have published several packaging reports covering sustainability, packaging trends, supplier guides, seasonal packaging and more. The Pack Hub also hosts packaging events. We have delivered a dozen face-to-face seminars that provide insight from expert speakers as well as bring the industry together to network and collaborate.

The Pack Hub has a wealth of experience helping many major companies with their packaging innovation. Clients include Arla Foods, Waitrose, Barilla, Coca Cola, PepsiCo, Mondi, Premier Foods, AB InBev, Kraft Heinz, Mondelez, Mars Wrigley, Church & Dwight, PZ Cussons, Meiyume, Walgreen Boots Alliance, Marks & Spencer, Lidl, Aldi and many more.