(Consumer convenience, functionality and sustainability are at the heart of innovation in packaging. Credit: DenisProduction.com/Shutterstock.com)

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(Consumer convenience, functionality and sustainability are at the heart of innovation in packaging. Credit: DenisProduction.com/Shutterstock.com)

Emma-Jane Batey speaks to design engineer Andzejus Buinosvskis and marketing manager Mariya Ushakova from RETAL to learn how this global plastic packaging manufacturer is exceeding its brand-owner customers' requirements.

The impact of the EU single-use plastic (SUP) directive on tethered closures sees a ruling that all beverage containers of up to 3L must have lids that 'remain attached' is not only set to be positive from an environmental perspective, but also in terms of plastic packaging innovation.

Given the crucial yet often underplayed role of closures in performance and, to a lesser extent, brand awareness, this SUP directive brings lids and caps into the spotlight. And now that closures have been given their chance to shine, they seem to be rather enjoying it.

For global caps and closures manufacturers, their work has long been in the shadows, yet for those involved in the creatively technical aspects of the design of closures – with a deep understanding of how the closure literally allows the product itself to be protected – this is not news.

For carbonated beverages in particular, the role of the closure is driven by the pressure of the fizzy drink within, so understanding how that performance influences the engineering elements is key. The additional demands of tethered closures has created challenges for the companies producing something that consumers take for granted.

Andzejus Buinosvskis, design engineer for RETAL, a global plastic packaging manufacturer that works with many of the world's leading food and beverage brands, explains how the EU's SUP directive is influencing his work. "In the early days of tethered cap development all plastic packaging manufacturers were working in our own bubbles." he says.

"But as the regulations and their impact have become more clearly understood and, particularly, now we have more specific requirements from our household-name brand-owner customers, we are able to develop solutions that are unique to us."

Buinosvskis's assertion that brand-owners are increasingly specific in their requirements for caps that meet the soon-to-be-implemented SUP directive by remaining attached means that most manufacturers with their own in-house R&D departments are working within the same guidelines.

"We expect to have one tethered cap that is suited to all our current portfolio of closures and also has some room for growth in terms of our upcoming developments," he continues.

"It is fair to say that all the tethered solutions from the different manufacturers are quite similar as we have all seen the spec list from the leading brandowners; they are driving the innovation in many ways because, of course, once a particular solution is taken up on the market by the key customers, it has a ripple effect."

That spec list is almost certainly driven by the widely identified core market trends of sustainability and convenience, which are both also at the heart of the regulation itself. Mariya Ushakova, RETAL's marketing manager for Europe and the US, explains how staying close to the customer is more important than ever when creating solutions that meet legal requirements.



"Open communication is imperative; we are always focused on creating win-win situations for us and our customers," she says. "RETAL actively participates in exclusive events like customer innovation days where we can talk openly with our customers and really get to the bottom of what they like and don't like.

"Ultimately, we want to know exactly what the parameters are in terms of design engineering and then we can see the tiny area we've got to play with."

That 'tiny area' is where design engineers like Buinosvskis get to flex their muscles. "It's a constant process of learning and changing, especially with these minute elements, because that is where the competitive advantage lies, both for us and for our brand-owner customers," he says.

While it can sound like 'design for design's sake' to talk about minor changes, it is worth remembering the practical fact that closures, particularly for beverages, need to be easy for anyone to use.

We may be fit and able-bodied, or young or old with less strength or dexterity, but whatever the circumstances, we open a bottle, lift it up to our lips and drink. This means that those 'tiny details' can be uncomfortable and/or inconvenient if they're poorly executed.

So, what are the 'tiny details'? And how do plastic packaging manufacturers and, specifically, their R&D teams, help to make them as effective as possible? "The precise geometry of tethered caps means that there are opportunities around the connection point of the element that stays connected and the cap itself; we also see the particular shape of the protrusion as a chance for exclusivity," Buinosvskis says.

"Our own solution has a unique L-shaped protrusion, developed for the PCO1881, that delivers two benefits as it provides a tactile feedback to show the closure is fully open and it also helps keep the bottle open yet comfortably away from the consumer's face."

EU regulated plastic packaging for brand-owners

These brand requirements are themselves driven by EU regulations, and the need to offer comfort and convenience to the consumer, while meeting increasingly strict CSR targets. Ushakova understands how this meeting of minds impacts product innovation.

"Consumers appreciate convenience and functionality, even if they do not always know what that entails from a design perspective. They just want what they buy to work, to be easy to use," she notes.

"So 'intuition' is a big buzzword in packaging at the moment, particularly in closures, as it's not about the 'why' – it's about the 'how'. Household-name beverage brands are stepping up their focus group product testing and giving people different products to see how intuitive they are to open and to

"It's not about explaining or instructions; they just want to know how a consumer will use the product themselves – and if they like it."

Ushakova believes that consumer convenience and functionality is at the heart of intuition, with successful packaging needing to be easy to understand in terms of how to open right from the start, even though new formats can become more intuitive as they're increasingly adopted by the

"Trends that warrant packaging development to increase brand marketability and deliver consumer value are worth watching," she adds.

"Studies show that consumers want more sustainable packaging, but they primarily want those environmental decisions to be taken by the brands themselves; recycling rates are not particularly impressive, so consumers clearly want to buy a more responsibly-packaged product.

"Tethered closures are an excellent example of this – by keeping the closure connected to the bottle, it's far more environmentally responsible."

Sustainability is a trend that is unlikely to go away, not least as it too is evident across the EU SUP Directive. In terms of closures, sustainability is impacted by the 'remain attached' regulation as well as the weight of the closure, although that is more complex as it needs to have a certain heft in order to contain the necessary pressure of the carbonated beverage within.

"Environmental stewardship is certainly a trend that requires companies to focus on source reduction, effective recycling and reducing carbon footprint emissions, in order to help themselves, and their customers, to meet financial and sustainability goals," Ushakova continues.

"EU directives obviously push these aspects as they give us specific dates and targets, but the overriding trend is that consumers want to be more responsible generally."

Beyond the practicality of closures, both from a performance and a material perspective, come the creative opportunities that may initially be hard to find. Yet those tiny details are evident here too, with the interior and exterior surface of the closure an opportunity for direct consumer marketing that has been largely overlooked.

While '80s and '90s kids may fondly remember the excitement of finding a raised letter under the lid of their tube of Smarties, today's consumer has somewhat higher expectations of what customer engagement involves.

Buinosvskis has been integral in RETAL's launch of laser engraving on closures, offering its brand-owner customers the chance to add easy-to-read messages and images onto the packaging solution itself. Images and codes can be laser engraved on the underside of HDPE closures, so sequential codes, special offers and more can all be added at little extra cost.

"The marketing opportunities for laser engraved closures are endless," Buinosvskis explains. "With the UV option, no additives are needed to support the absorption of the laser beam, so it's really cost-effective.

"It adds a unique touchpoint for customers and it's great for brands because there is a vastly reduced risk of the customer checking to see if they've won without buying the product, as can happen with on-label promotions."

Working in open conversation with global brand customers as a whole team ensures that all these elements of a successful closure are brought together in the most effective manner. "Ultimately, we all want to sell greater volumes, so we need to make sure we are ahead of changing regulations and understand consumer trends," Ushakova says.

"But we're all people too – we're consumers that want to be responsible and not waste our money on products that don't reflect our personal values. So, we take care to talk with our customers regularly, and to speak with our colleagues in R&D and in sales. We encourage open communication that is honest about what our clients' customers want and how they want to use it."

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