



Calvin Pang, Husky Asia Pacific general manager, packaging, opened the conference with a presentation on how advanced moulding technologies are leading the lightweight trend for closures and thin wall containers

Emerging sustainable concepts

Ask anyone from the plastics packaging industry to name their chief concern today, and it is likely the immediate response would be the rising material cost. Against this business backdrop, packaging companies and brand owners alike are increasingly looking to leverage on the advantages emerging in many forms of sustainable packaging.

Lightweighting of closures

Weight reduction is clearly a key driver for sustainability in the rigid packaging industry. Machine supplier **Husky** is seeing a growing lightweight trend in closure manufacturing. "We are focusing both on the total system performance and on the closure quality," explained Calvin Pang, Husky Asia Pacific general manager, packaging.

Husky has recently commercialised its 1.7g bottle closure production system first launched at Chinaplas 2008, with four systems sold to a Chinese customer. Pang also elaborated on the emerging industry trend towards one-piece closure design, which offers lightweighting possibilities, faster cycles and better tamper proof features.

Closure manufacturer **Bericap** highlighted how overall packaging cost reduction can be achieved by lightweighting across the still water, edible oil, dairy, hot fill and carbonated soft drink (CSD) packaging applications. "Any kind of downgauging will be more demanding for the entire capping, handling and manufacturing process, which requires more advanced technologies," said Bericap business development director Lothar Brauer.

Sacmi put forward the beverage closure variations achievable on compression moulding presses to develop along with global neck finish standards, and

Sustainability issues across the rigid and flexible packaging fields were enthusiastically discussed at the APN Plastics in Packaging 2008 conference

Giovanni Pierantoni, Sacmi sales manager for closures, made the point that weight reduction can be accomplished together with additional innovative features such as tamper evidence to the closure design.

Ongoing improvements in compression moulding technology are expected to further benefit both single-piece and two-piece closure production. "Depending on the closure application and the region, compression moulding can be competitive. For example in Japan, a large proportion of the beverage closures are compression moulded," Pierantoni said.

With the current lightweighting developments in closures and preform industry, Brauer expects interesting technical challenges to emerge: "Big retailers are pushing to reduce carbon footprint and packaging cost, which is leading the industry to develop cost efficient solutions that are focusing not only on lightweighting. Packaging product developers and manufacturers are now challenged to provide solutions that are competitive in terms of cost and convenience for the consumer."

Driving forces for thin wall packaging

Health safety concerns and functional aesthetics are two of the main driving forces for thin wall packaging developments.

"Tamper evidence requirements are driving a lot of the demand for thin wall injection moulding," Pang said. "Thermoforming may be catching up on the part design, weight and performance, but Husky sees injection moulding offering more advantages for tamper evidence design."

Pang used the ice cream market in China as an example of how thin wall containers can chip away at

the dominance of thermoforming and paper processes for a large, growing packaging segment: "A lot of the containers currently used to package ice cream products are thermoformed, except the high premium brands that pay attention to tamper evidence features. Injection moulding has an advantage here, where there are complex designs and more precision moulding involved."

In mould labelling (IML) is another area where injection moulding holds an advantage over thermoforming processes, as viewed by Swiss machine supplier **Netstal**.

"We think IML will stay with injection moulding applications rather than with thermoforming," said Rüdiger Grings, Netstal product manager for packaging, who added that thermoformers would likely encounter problems controlling the IML label positioning.

In Asia, Grings said that complete IML production cells are especially pertinent for packaging companies who are looking to export their products, even if it entails a higher initial investment.

"Price is not always the most important aspect," Grings explained. "You need good machines to run at high cycle times to succeed, and you can achieve better design with injection moulding processes. Our customers have also been able to increase their sales volume with a superior packaging product. Another advantage is that information and barcodes can be better presented on an IML label, and a lot of companies are taking this into account."

Borouge application marketing manager Trevor Robinson showcased the polyolefins major's new polypropylene innovations with added-value features to facilitate high speed thin wall packaging applications, from PP grades for fast cycle moulding to transparent PP solution with deep freezer impact.

Downgauging performance

On the flexible packaging front, one of the key issues discussed at the conference is how downgauging is starting to play an increasingly essential role for packaging converters in the region.

Vijay Shankar, vice president of sales for **Mamata**

Brampton Engineering, updated the audience on the latest developments in blown film extrusion to help converters deal with the technical challenges of the barrier film market, including how downgauging options can be best exploited with highly developed multilayer film structures.

"This is the future of any food packaging used anywhere in the world," Shankar said. "You want to have the best barrier performance to increase the shelf life of the food product while reducing the packaging cost. In film co-extrusion, size does matter in terms of being able to increase the number of layers in a film structure to achieve certain properties."

From a processing point of view, the bubble stability is most important to what film converters can achieve from downgauging. "To downgauge and reduce the layer thickness, most important is how the bubble is able to sustain itself. Here, the film extruder and the die play a very important role," Shankar added.

Borouge film application marketing manager Peter Malmros introduced how benefits such as higher stiffness, improved heat resistance, and improved barrier properties can be delivered through its Borstar PP blown film grades — for which the high stiffness of the PP film material proves to be more advantageous for downgauging over some other film resins.

Polyester film manufacturer **Polyplex** is addressing sustainability requirements by downgauging PET film from 12 microns to 10 microns. "We are considering further downgauging capabilities on our production line. Recyclability and biodegradability are serious concerns today," said Rohit Vashistha, Polyplex Thailand head of sales and marketing, who added that PET film can be easily downgauged while PET waste is widely accepted for post consumer recycling.

A presentation by **Mamata Machinery** export manager Rajesh Sonar also looked into the sustainability aspects of flexible packaging pouches. "In Thailand, we see a lot of initiatives to use environmentally friendly materials for packaging," observed Sonar. "Other ways to improve packaging sustainability include changing a rigid package to a flexible pack, downgauge flexible packaging for source reduction, as well as redesign materials to improve processability or redesign the extrusion equipment to increase efficiency."



Over 90 delegates attended the APN Plastics in Packaging 2008 conference



Left: Presenters at the conference include (clockwise from top left) Borouge application marketing manager Trevor Robinson, Sacmi sales manager Giovanni Pierantoni, Mamata Machinery export manager Rajesh Sonar, and Netstal packaging product manager Rüdiger Grings