

A mythical bird that never dies, the phoenix represents man's capacity for vision, and in ancient mythology it burned itself to death on a pyre from whose ashes another phoenix arose. Although you'd be hard pushed to find any fires in the snow-drenched Swiss region surrounding Lake Geneva (and even if you did there's plenty of water available in the town of Evian), a blow moulding machinery phoenix has recently risen from its slumber in the picturesque wine-growing village of Vouvry.

Magplastic introduced its first SSB machine in 1981 and virtually changed PET two-stage stretch blow moulding forever. At the time, most French water bottles were still made of PVC. Innovations in this kind of machinery slowed during the latter part of the 1990s as rotary machines arrived on the scene, providing the high volumes that the market needed. As a number of Magplastic's customers opted for higher output machines, the linear machinery concept was dealt a heavy blow.

A dearth of innovation from 1997 ended when SIH Group bought the assets of Magplastic from its original Geneva owners in 2002 and took the machinery manufacturing business in-house. Last November it moved the business into its own building opposite existing premises in Vouvry, having acquired the building from a flexible packaging business that had closed down.

"There are still some people who believe that Magplastic does not exist anymore," says Joachim Sander, chief executive of Magplastic.

K'2004 in Düsseldorf, Germany, was as much about advertising the name Magplastic Machinery to the plastics industry as it was about introducing new machinery. And this point cannot be emphasised enough in a sector as competitive as blow moulding machinery: "When we started we did a market study and counted 147 active international companies that we could consider competitors. This does not include those times when you go to a Russian exhibition and discover three new local manufacturers," says Sander.

The new incarnation of Magplastic shares a similar vision to that of the old, aiming to supply machinery

# Tortoise or hare?

So you need to blow a bottle none of your competitors can. Do you opt for a machine that gives you at least 50,000 bottles an hour or a mid-output machine that offers greater potential for innovation? Steven Pacitti visits a Swiss company that might have the answer



Magplastic in Vouvry: (from left to right) chief executive Joachim Sander, business unit manager Omprakash Yadav and sales director Jean-Marc Moriggia.

with low- to mid-output rather than competing with the likes of Kronen and Sidel.

"Everybody's trying to stick to niches," says Sander. "Even the big guys. Magplastic has always been strong in niches."

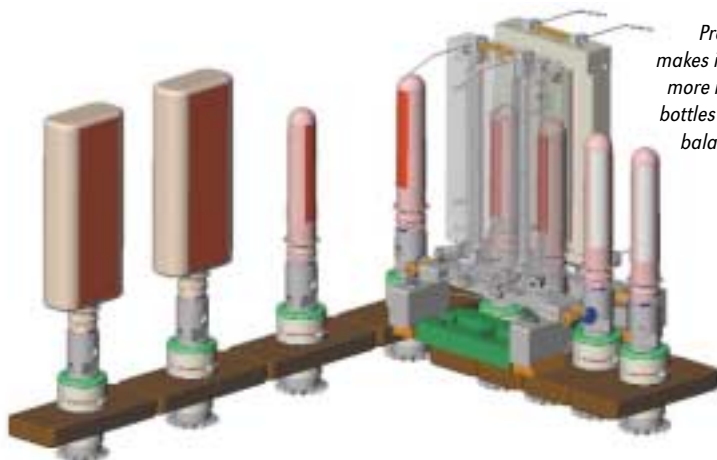
Having said that, the company's customer profile is completely different from the early 1980s, as Jean-

Marc Moriggia, sales director for Magplastic, explains: "Eighty per cent of machines we sell today have something specific to that customer. Machines we make to produce water or CSD bottles remain a sizeable part of our business but customers want something special, something they won't find elsewhere. This market is extremely competitive so you have to be able to justify your added price."

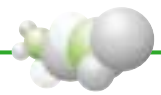
So how does the company justify the added price? The key word is innovation.

In 2002 Magplastic reduced energy consumption with the 2,800 bottles per hour (bph) SSB-02 two-cavity machine (suitable for standard- and large-size bottles). A year later came the 3,600bph SSB-03 (suitable for vegetable oils usually up to 1-litre in size) with upgraded ovens and in 2004 the 6,400bph SSB-04 and neck orientation technology was launched. Neck orientation was introduced on the SSB-02 and uses standard preforms oriented with a precision of up to 0.36 deg.

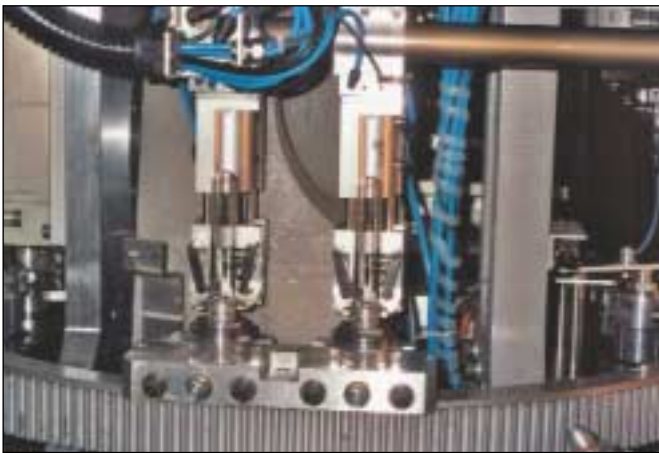
"Sidel and SIG do neck orientation but they use a special preform with a notch, or two notches,



Preferential heating makes it possible to blow more intricately shaped bottles from preforms by balancing the hot and cold axis.



Left: Cad/cam solutions for 3D designing of the new Pakido range by Aisapack. Above: A user-friendly machine design featuring a single control point for all operations and accessibility to all components. Below left: Temperature control device ensuring that only the preforms with adequate temperature profiles are blown. Below right: Preforms being loaded onto the blowing fingers before entering the moulds.



depending on whether you wanted orientation at 360 deg or 180 deg. The notch would be the spot where you position the cap," says Moriggia.

This year also sees the arrival of preferential heating technology on the SSB-04 and heat setting potential for all machines for temperatures close to 85 deg C, the latter is due out during the second quarter. But the company is pushing speed even further thanks to a modular concept which will see the introduction of the SSB-08.

"This will be the same as the SSB-04 but with two lines of presses instead of one, pushing capacity up to more than 12,000bph," says Moriggia.

Although six- and 12-cavity models are in the pipeline, the company believes that the focus should be on an eight-cavity machine. Preferential heating, meanwhile, balances the hot and cold axis for more difficult bottles; without it you would waste material. Hot-fillable containers are also planned.

One interesting development on the four-cavity system is the redesigned quick change blowing nozzles. By sealing onto the preform neck ring with balanced neck pressure (40 bars throughout), neck distortion risks are

prevented while blowing the preform.

"In older machines the blowing nozzle would have a bit of play so it would adjust when the moulds are closing but this is also now more precise," says Moriggia. "We have increased nozzle diameter from 14mm to 19mm and can run faster, and we also have low dead zones in the compression so you get less vari-

ation in pressure and less air consumption."

With a sales and service office in Cincinnati, USA, and a service facility in Sao Paulo, Brazil, Magplastic opened its Pune, India, subsidiary late last year. Formerly the market leader in India — a result of the large number of small production units there — the company is hoping for something of a renaissance in

## Which tube technology?

"On the seamless tube side, you always decorate around the container, which is slightly slower and a bit more limited. For laminate tubes you decorate it flat so you can use similar printing methods to label printing and combine different printing methods for better results. With laminate tubes you always see the remaining side-seam.

The packaging industry prefers an all-round printed container. Our new Lamex tube offers some of the advantages of laminate tubes with the possibility of printing before or after tube making. It consists of a laminate body welded along the side, and over-

extruded to further secure the side-seam and minimise its visual presence. The over-extrusion can be pigmented and then requires post decoration or can remain transparent, allowing you to print the laminate first. Some people are trying to sell the advantages of the laminate tube into the plastics tube market and I imagine there will be some success. Likewise, you can find seamless tubes in toothpaste for some niche products, such as Elmex in Switzerland. It is a laminate tube but over-extruded and printed all around."

**Joachim Sander, chief executive, Magplastic Machinery S.A.**





the country after it lost out to Sidel. Sidel bought Ahura in India, a local competitor of Magplastic, in 2001 and the introduction of French technology into the country effectively ended Magplastic's interest there because import duties were almost 50 per cent.

"To be successful in Asia, you have to be in Asia," says Sander. "Opening a manufacturing facility in India is a decision we took very quickly because the country has yet to reach its potential, and you can also supply other countries in the region."

In emerging regions you generally have two types of customers: those who are entering the stretch blow moulding business and are cost-conscious, meaning that they are more likely to buy cheaper machinery from Poland, Russia or China because they don't care about the look of the bottle or its performance, and you have the companies who want to go into the market and do a good job, and also supply multinational companies demanding higher packaging standards.

## Synergistically speaking

Aisapack has always been a stand-out subsidiary of the SIH group because it is the only company of the group focusing on innovative packaging solutions rather than on production equipment.

The company's Pakido PET package, launched in 2001 and produced on a dedicated Magplastic machine called PBM, introduced the idea of upside-down squeezable food containers, a concept that has been adopted today by countless other companies. What made Aisapack's original design different is that it was influenced by its sister company Aisa, active in tube production equipment design, taking the form of a conventional tube. Blown from a preform that was open at both ends, it heralded new opportunities for tubes in the food industry.

However, as an innovation it was perhaps too different or novel for a conservative food industry and Pakido was not the runaway success many predicted.

Rather than dispose of the idea, Aisapack has returned with a new variant, as Sander explains. "The new variant is no longer based on a preform with two openings, it is a bottle preform blown on a standard SSB machine. The first priority of this kind of squeezy bottle nowadays is not the weight but the functionality. The pumping action demanded requires a lot of

wall thickness. The first Pakido was based on the concept of economising material (making it thin wall), but now rather than talking about material usage, we are talking about how good the suck-back properties are in order to guarantee proper valve functionality."

Its ability to be produced on a standard machine is a big advantage because if Pakido does not require large enough volume production the machine can be utilized to produce beverage volumes. And investment can be shared to enable the company to produce both types of containers on a single line.

At the Interpack exhibition in Germany this month the company will unveil some variants of Pakido made of different materials and shapes. Products being displayed include honey, strawberry and cheese spread.

After spending some time working on plasma coatings for packaging barrier enhancements, Aisapack introduced its Bacomex barrier compression moulding technology. Applied on Aisa's PTH tube heading machines, Bacomex allows for an EVOH barrier to be embedded into the shoulder of a tube. Until now, comparable tube packaging systems would either need to add an injection moulded part into the shoulder or use a multi-layer structure in a separate operation afterwards, producing an important amount of process waste.

"There is no application for our solution yet but there is a lot of demand for high barrier tubes," says Sander. "Cosmetic manufacturers follow a trend towards more and more natural products, but these products are sensitive and will need a barrier package. Over the counter (OTC) drugs are moving from aluminium to laminate tubes also requiring barrier enhancements."

And in Japan, food is already being packed in tubes made by multi-layer blow moulding offering good barrier but poor decoration possibilities.

## From preforms to tubes

In the tube machinery market, Aisa and PackSys Global are the only two major global players.

The leader in toothpaste tube making machinery, Aisa has lines that work between 90 and 300 tubes a minute with plans to increase this further. It is also the preferred supplier of tube maker Betts, which has plants in the UK, Brazil, USA, India, Poland, Russia, Indonesia and China, as well as for Colgate's in-house tube making operations.

Once again the company has found that

innovation does not always lead to commercial success. Last year it won an award for a dual chamber tube used for Colgate Simply White toothpaste; the idea is that two chambers dispense two reacting components at even rates through the nozzle, using a thin EVOH barrier film in order to keep the two chambers sealed from each other. The thinner the film used, the better the performance because there is less resistance to the dispensation of product.

However, only one such product is being sold at the moment: "The market's not ready to invest in a technology like that," says Sander. "Most applications probably don't have enough volume to justify the investment in a fully automated line."

Aisa's biggest laminate tube making machine is the SAESA 3000 with capacity for 300 tubes a minute, but it is enjoying good success with smaller end machines in countries like Russia. The SAESA 800L (90 tubes a minute) is suitable for smaller volumes and developing markets, and operates at tube diameters between 12.7mm and 50mm.

Meanwhile, the company's biggest PTH tube heading compression machine runs at 200 tubes a minute and one is pending shipment to a customer in the near future. At the other end of the spectrum, the small PTH-40 with capacity of 40 tubes a minute is successful in developing countries like South Africa or for oval tube production.

The lesson learnt from Magplastic and its sister companies Aisa and Aisapack is simple: it's not necessarily a race for the fastest machine or the thinnest part that will bring you the greatest success in the plastics packaging business. Sometimes it's a question of how unique the product your machine produces is, and you don't have to be a world-beater to win that accolade. ●

More information from Magplastic Machinery SA, Rue Alfred-Pot 1, 1896 Vouvy, Switzerland. Tel: 41 244 820 250. Fax: 41 244 820 226. [www.magplastic.com](http://www.magplastic.com)

Pakido has returned with a new variant, a bottle preform blown on a standard SSB machine. This page illustrates some of the design possibilities.

