At the end of an intense reorganization of its internal and international structures and resources, SMI sums up the results achieved in almost 20 years of activity, placing it on top position within the world’s producers of primary and secondary packaging machines and plants for the food & beverage industry.

In April 2006 SMI accomplished the goal of 3,000 secondary packaging machines sold all over the world. It’s an outstanding result, if you think that the first packer was launched on the market in 1989! Since that time SMI product range has been continuously widened and renewed, offering highly automated and flexible solutions suitable to ever vaster market segments and to more and more diversified production processes. The international marketplace has welcomed with great enthusiasm the constant technological innovation applied by SMI, to such an extent it has become the largest manufacturer in the world by number of machines sold. San Giovanni Bianco (province of Bergamo)-based manufacturing factories output every year over 300 machines to pack plastic, metal and glass containers in shrinkfilm with or without tray or pad, in wrap-around cardboard case or in cardboard sleeve overwraps.

Sales by geographical area

SMI brand has a position of remarkable respect in every continent, thanks to a widespread sales and technical support network. Europe is by far the best-selling market, since it has all in all absorbed 56.8% of production with 1,727 machines installed; in more detail, Italy stands at the top of the list with 396 units, followed by Spain with 247, Russia with 173 and France with 136. It is worth highlighting the remarkable growth of some emerging markets such as Turkey with 61 units and Romania with 43.

It is certainly not by chance if SMI received the highest number of orders in the so called “Old Continent”; this is home to thousands of mid-sized local bottlers and also to some of the largest multinational corporations in the food & beverage sector (Nestlé, Danone, Unilever, Cadbury Schweppes, Inbev, Heineken and Carlsberg). Europeans are the leading consumers of mineral water with 115 litres per capita a year. Europe continues to be an extremely interesting market for SMI business, thanks to an overall population of over 700 million people, to the high standard of living in the “wealthier” states and to the gradual broadening of the European Union to an ever growing number of emerging countries.

The Americas, with 900 million inhabitants, represent the second most important sales area for SMI machines (516 units installed, equal to 17% of the total). The main local markets are Mexico with 143 machines, the United States of America with 86, Brazil with 79 and Argentina with 49. New business prospects in this large geographical area are as encouraging as in Europe, due to the excellent potential offered by NAFTA member states (USA, Canada and Mexico) and by Latin America, where the harsh economic crisis of the ’90s seems to have inverted its course. In the Americas the presence of large beverage producers such as Coca-Cola and Pepsi-Cola as well as the relocation of several bottling/packaging plants from Europe to Latin America, where labour and raw materials costs are lower, made it possible for SMI to achieve successful sales results. Also, Mexicans are the world’s highest consumers of soft drinks with roughly 400 litres per capita a year.

At 416 units installed (equal to 13.7% of the total) stands Asia; this huge continent with around 3 billion inhabitants has over the last few years been registering the highest industrial and economic development rate in the world. Even if remarkable, SMI presence in this area is still far away from the enormous potential offered by low-income developing countries (like China and India) and by already industrialized markets (like Taiwan, Japan and Malaysia). The most authoritative research institutes do predict that China will become in a few years the planet’s leading economic superpower: hence SMI has equipped itself adequately to seize all the opportunities of this market, where there are already 242 machines in operation.

The remarkable language and culture differences along with the unpredictable fluctuations in the Asian economic trends (impetuous growth followed by deep crises) forced SMI to face many difficulties in carrying out its sales activity. The establishment of branches in China, India, Thailand and Malaysia was, therefore, a fundamental step in the company’s strategy of development and expansion in Asia, as it enabled SMI to employ native personnel both for sales and for technical support.

The remaining 12.5% of SMI production is distributed amongst Africa with 169 units, Middle East with 155 and Oceania with 57. In particular, in the Arab countries a clear recovery of investment in the mineral water and soft drinks sector has been taking place over recent years, leading to the construction of new plants and the enlargement of existing plants.

Sales by market sector

The sector of mineral waters and alcohol-free beverages (colas, orange juices, fruit juices, tea, flavoured drinks, etc.) took the lion’s share, purchasing 72% of over 3,000 machines manufactured. The consumption of bottled water and soft drinks has been increasing for more than 20 years in every corner of the world; the base factors of this phenomenon are surely the launch of PET plastic bottles, the widening and diversification.
of the product range available at the point of sale and the consumer’s greater awareness of important matters like health, wellbeing, body fitness. In developed countries this trend has led to a sudden rise in the sale of fruit juices, energy and sport drinks, low-calories carbonated soft drinks, flavoured waters.

Large brewers are SMI’s second best customers, since they bought 12% of the machines produced. Beer consumption underwent profound changes in recent years: most of the wealthy markets with high-income consumers have recorded a considerable drop in the sale of alcoholic beverages and the choice of the beer type has become more and more selective. On the contrary sales are booming in emerging and developing markets, where beer is seen by low-income populations as a sort of “welfare attainment”. Countries like China, Russia and Brazil are quickly climbing the ranking of the largest beer producers and consumers, ousting from top positions some “historic players” such as USA, Germany and the United Kingdom.

The foodstuffs sector occupies the third place, with a 9% share of the total. Canned or bottled food has been in use for decades in the most industrialized countries, but it is now spreading rapidly in the rest of the world as well; in fact these types of packaging ensure high-levels of food hygiene and preservation, along with easy and low-cost distribution operations.

The remaining 7% of the machines manufactured by SMI is destined to milk and milk-based products, wine and spirits, pharmaceuticals and chemicals.

Sales by machine type
The great majority of mineral water, soft drinks and beer manufacturers employ heat-shrinking film to pack plastic bottles or cans. This choice is chiefly due to the lower cost of this packaging material in comparison with the corrugated cardboard case or the kraft paperboard sleeve; in addition the final package can boast high-levels of quality as for compactness, robustness and transportability. All that, along with the launch of PET bottles, stands at the base of the high demand for heat-shrinkwrapping machines.

Corrugated cardboard casepackers, running up to speeds of 80 packs/minute, come second amongst SMI most successful products; almost 320 units (equal to 10.5% of the total) of this kind of machine were sold, mainly to manufacturers of drinks marketed in glass bottles (typically prestige mineral waters, beer and wine). The much higher costs of cardboard in comparison with heat-shrinking film deter many companies from using the former even if, on the other hand, it offers countless advantages in terms of product protection from impacts and breakages. According to trustworthy research institutes packaging in corrugated cardboard boxes is destined to become the forced choice for the high-cost drinks industry only.

Overwrapping cardboard sleeve multipackers count for 6% of SMI production and are mainly employed to pack small-sized containers. This equipment provides a production rate of up to 300 packs/minute and allows to use not only the kraft board, that is one of the most expensive and valuable packaging material, but also the microflute board, that grants good quality packs at less cost.

The rest of the units delivered is represented by combined machines (a hybrid equipment between a shrinkwrapper and a casepacker) and by automatic handle applicators.
Important “conquests” for as well SMIFORM; since 1999 this dynamic division of SMI has specialized in the production of rotary stretch-blow moulders for PET, PEN and PP containers. The innovative technology set up by SMI for the stretch-blow moulding of polypropylene (PP) containers offers several advantages compared to the more traditional extrusion-blow moulding technology: higher output rates, lower investment in machines and equipment, lower energy costs and greater flexibility in the format change. Stretch-blow PP containers not only represent a good and much cheaper alternative to containers made from extruded PE, they also have technical and aesthetic features very close to those made from PET; chemical, pharmaceutical and detergent industries make large use of PP containers, because of their particular suitability for the packaging of liquids with corrosive agents.

Successfully placed among the five largest manufactures of rotary stretch-blow moulders in the world, SMI is going to achieve two remarkable goals by the end of 2006: the sale of the 150th machine and the increase of outputs to 1,800 bottles/hour per cavity. In about six years, the validity of the technical solutions adopted, the high-level safety standards and the low costs of machine operation and maintenance allowed SMI stretch-blow moulders to gain the confidence and appreciation of dozens of large and small-sized customers, despite the fierce competition by the “historic players” of this market sector. SMI has been capable of offering highly automated machines for the production of a wide range of containers – by size, shape and material – with a price/performance ratio among the best on the market.

Sales by geographical area
If on the one hand SMI core business, e.g. secondary packaging machines, made great strides in the latest 10-15 years, on the other hand the stretch-blow moulding division has literally shot ahead, with a production increase from 6 machines in 2000 to more than 30 in 2005. The hefty investments in Research & Development allowed remarkable technical progresses in a short period of time, giving SMI the chance to enter the primary packaging sector, too. The results achieved up to now are surely satisfactory: 142 stretch-blow moulders sold all over the world, important installations in the leading bottling companies’ plants, constant enhancement of the machine technical features and performances.

Like for end-of-line packers, Europe represents the most successful market also for rotary stretch-blow moulders, absorbing 63.4% of the whole production (90 units in 142); the most “receptive” countries are Italy, in pole position with 29 machines installed, chased by Russia with 16, Spain with 12 and Turkey with 9 units.

A flattering success has been achieved by SMI stretch-blow moulders even in Middle East countries that, as a whole, have acquired 14.8% of the total, equal to 21 units installed. The third geographical area by number of clients is Africa, where, above all in Maghrebi states, there are 15 machines running (10.6% of the total). 7.7% of the entire production was exported to the Americas and 2.8% to Asia.

Sales by model segment
The great majority of SMI stretch-blow moulders are installed in mineral water and soft drink bottling plants, with an 87.7% share of the total. That is not certainly a surprise, given that nowadays almost all these beverages are packed in plastic bottles, mainly PET: a material featuring several advantages: it is unbreakable, cheap, mouldable, recyclable, etc. Furthermore, SMI has been able to immediately foresee new market trends, such as the sudden rise of the “bulk water market” that has been setting double-digit increase rates over recent years (about 10% annually). For this market segment SMI has designed and launched a dedicated series of rotary stretch-blow moulding machines, named SR HC (High Capacity) and used to produce containers up to 10 litres.

9.2% of SMI stretch-blow moulders are running in some huge beer manufacturing plants, particularly in Eastern Europe. On the contrary, the employment of plastic bottles to pack this beverage has not taken off in Western Europe yet, due to a series of reasons related to consumers’ deep-seated purchasing habits. The sector, however, is in continuous evolution, since plastic bottle producers have set up a series of innovations – such as multilayer PET containers or special polymers – capable of preserving the beer quality as successfully as glass bottles and aluminium cans.

Sales by model
SR series is composed of 9 “standard” models, from 4 to 20 cavities, for the manufacture of containers up to 3 litres, and of 2 “High Capacity” (HC) models, from 4 to 6 cavities, for the stretch-blow moulding of containers up to 10 litres. SR 6 and SR 8 models, attaining a production speed of 10,000 – 12,000 bottles/hour, represent 60% of the machines installed and are employed in mid-sized bottling plants. SMI stretch-blow moulders with output rates between 16,000 and over 22,000 bottles/hour (SR 10, SR 12 and SR 14 models) hold a 30% share of the total. The remaining 10% of the whole production is made up of SR 4, SR 4 HC, SR 6 HC, SR 16, SR18 and SR20.
Since the very beginning of its activity SMI had guessed that its production range would be gradually broadened, with the end goal of supplying all or most of the equipment usually forming a packaging/bottling line. Following within this view, in 1998 SMILINE division was established with the core business of producing conveyance systems for loose containers or packs. During the last few years SMILINE has known a fast process of growth and development, that has led to a widening of production and assembly areas from the initial 900 m² to the current 4,500 m². SMILINE range of equipment, mainly used in the food & beverage industry, comprises the following types of products: medium and high speed multilane dividers, to distribute in one or more rows loose products/packs and then channel them towards packaging machines and palletizers; air conveyor belts, to transport empty containers from the blower to the filler; chain conveyor belts, to take loose products/packs both to packaging machines and to palletizers.

SMILINE multilane dividers achieve a running speed from 200 to 500 containers/minute (according to the model) and can be split into two categories: DV models, featuring a single infeed lane and multiple outlet lanes and the GDV model, having one or more lanes both at the infeed and at the outlet.

As far as air and chain conveyor belts are concerned, SMILINE products feature a series of advantages that make them highly competitive: use of high-quality and wear-proof materials, drastic reduction in energy costs, extreme flexibility and quickness in format change operation; easy and effective production line management. The automation and control of SMILINE conveying systems is in fact carried out by the VLS (VaryLine System) PRO, an advanced hw/sw solution fully developed by SMI and based on PROFIBUS fieldbus.

The VLS PRO allows to control up to 121 inverter-equipped motors by means of a single control station that, thanks to its small size, can be placed in the production line's most convenient place. Here are the most important characteristics of the VaryLine System PRO:

- employment of a distributed architecture: each section of the conveyor line is in fact driven by its own field inverter-equipped motor, and this allows to reduce not only the space occupied by the electrical cabinets but also the complexity, time and wiring costs of the conveyor belts;
- possibility of connecting each line section's sensors directly with the inverter controlling the section motor, with no need to use additional I/O modules;
- integration into a single control panel of the human-machine interface and of the PC commanding the conveyor line, programmable through IEC61131 languages (like a standard PLC);
- modularity, which allows installing manifold VLS units inside the same production plant.

Therefore the VLS PRO is very easy to use: through the touch screen LCD control panel, the operator can set the line working parameters, adjust the conveyor belt speeds in accordance with the product flow and type, stop the conveyor belts should a lack of product occur and automatically restart them when the product flow is back, measure production data, plan maintenance operations and identify in real time cause and location of possible problems. In addition to that, thanks to a multilanguage human-machine interface the operator can select among twenty languages, including Chinese, Arabic and Russian. To manage low-complexity lines SMILINE offers the VLS PRO ECO version, that stands out for an extremely interesting price/performance ratio in addition to the benefits mentioned above. The VLS PRO can also carry out the following tasks:

- control of High Efficiency Particulate Air (HEPA) conveyors, with automatic check of the filter condition and warning signal when they must be replaced;
- control of multiple operator terminals, so as to allow an easier system management in highly-complex logistics lines;
- control of OPC connection to factory supervision systems;
- control of “lung” systems, product unthreading and deviation.

In recent years SMILINE has also started designing complete lines and supplying turnkey plants. A bottling and packaging line works properly only if all its components – machines, conveyor belts and peripheral equipment – run in perfect synchronism, so as to create a harmonic block. It is thus a global and integrated system, whose performance is the result of the interaction among the single elements rather than the mere addition of their yield. SMILINE designing
engineers work out customized solutions, choosing machines and equipment assembled in SMI plants (rotary stretch-blow moulders, end-of-the-line packers, conveyor belts, control and automation systems) or supplied by other reliable manufacturers (fillers, labellers, palletizers, etc.). In more detail, each new project is managed by a team of experts, according to a well defined sequence of work phases:

1) **Data and information collection**: in close cooperation with the end user, SMILINE experts deepen all the aspects of the plant to realize; the more precise and detailed the information and the measurements are, the more the line design will be focused on and fit to customers’ actual needs.

2) **Preparation of a comprehensive solution**: SMILINE staff lays a detailed feasibility study that keeps into account all the technical and commercial aspects of the project. Special attention is paid to the following matters:
   - high degree of process automation;
   - flexibility of the solutions proposed;
   - economic competitiveness of the project;
   - promptness of the technical answer.

Each feasibility research is complemented with detailed layouts of both the complete line and of the product packaging options.

3) **Proposal explanation**: all the aspects of the solution are shown to the customer. At this stage the cooperation and the meeting of minds between SMI and the end user become even more important: the “preliminary” project, in fact, is ultimately modified and updated in order to fully match the customer’s requirements in terms of customization, flexibility and performances.

4) **Order management and plant installation**: the customer can count on an experienced project manager, who deals with all the steps from the order placement to the final commissioning of the complete line. This allows to optimize equipment manufacturing times and procedures, as well as to thoroughly plan the installation, start up and commissioning operations.

So far SMILINE has worked out several projects for a wide range of installations (from 5,000 to 90,000 containers/hour), providing turnkey complete lines with an excellent price/performance ratio and a top-class degree of safety, reliability and efficiency. Even though the “line engineering” is a field that SMILINE has approached only recently, the results achieved in the last few years represent a really encouraging beginning.
SMIPACK, the small pearl of the SMI Group, is growing and developing at a stunning pace. The results accomplished in the year 2005 prove it: the ISO 9001: 2000 certification obtained in September; the gradual growth of the workforce, currently composed of 34 employees; a 7.5 million Euro turnover (+34% on 2004) and a number of machines sold equal to more than 2,700 units (+25% on 2004). Also 2006 has started with highly propellant signals: in the first half year, in fact, sales raised about 25% compared to the same period of the previous year. At present SMIPACK boasts an indisputable leadership position in its own market segment, with over 14,000 machines installed in Italy and abroad.

About 65% of SMIPACK production is still represented by L-seal hood packers (S, SL and SE series), that are undoubtedly the “core product” of this young company based in the province of Bergamo. Over recent years, however, SMIPACK has invested remarkable resources in the development and set up of new types of equipment: L-sealers with shrink tunnel (FP series), shrinkwrappers with sealing bar (IP series) and handle applicators (MA series). With specific regard to the L-sealers with shrink tunnel, if in 2000 FP range had a mere 3% share of the whole production, presently it counts for a much higher percentage (16% in 2005). “All that” - comments Giuseppe Nava, SMIPACK managing director - “allowed us to broaden and, at the same time, diversify our product range, hooking into a market segment we were absent from. In fact L-seal hood packers can’t run faster than 900 packs/hour. On the contrary, the FP 6000 fully automatic L-Sealer equipped with shrink tunnel, which was launched on the market at the end of 2003, achieves outputs of 2,400 packs/hour and, thus, can be installed in medium speed packaging lines. We have staked a lot on the FP series” - continues Giuseppe Nava - “and we will keep on doing the same in 2006. Certainly all our efforts and investments have been widely paid back by more than satisfactory sales results”.

Even though SMIPACK is a mid-sized business, it stands out for its deep international call: 85%-90% of the machines manufactured are exported. In the years 2003 and 2004 about 90% of exports were destined to the most mature and consolidated market by far, e.g. Europe, with higher sales peaks towards Western Europe countries (Spain, France, Germany and the United Kingdom). In 2005 and the first half-year 2006, however, this percentage reduced to 80% against greater sales results in Oceania and in the emerging countries of Central and South America. It is worth mentioning that exports to Oceania rose from 1.1% in 2004 to 5.9% in 2005, while those towards the American market recorded an equally remarkable increase (from 1.4% in 2004 to 4.9% in 2005). Over the last years the sales flow to Asia has been registering a quieter but satisfactory growth, considering that this market is more complex and the local competition is fiercer than elsewhere.

The year 2006 is rich of technological novelties and innovations, too. In June SMIPACK resumed the production of the FP 6000 automatic L-Sealer’s inox model, particularly suitable to pack foodstuffs such as meat or fish. In addition, the new model FP 6000 CS was added to the product range; this latter, compared to the FP 6000 “standard” model, features countless advantages: the “centre seal” system, to centre the sealing point according to the product height so as to improve the “eye-catching” properties of the final pack; the possibility of packing products with height up to 20 cm (5 cm higher than those processed by the FP 6000 model); the increase of the output speeds to 3,000 packs/hour, when packing products lower than 5 cm.

In July both the L-Seal hood packers and the L-Seal packers with shrink tunnel were completely renewed from the electronic point of view. In-house R & D efforts along with newly released electronic cards led to the introduction of the brand-new Flextron® technology. In more detail, Flextron Electronic Controller® is a modular and flexible system for the control of small-sized industrial machines; it comprises a Master unit with a 16-bit microcontroller and a series of remote devices for the management of signal and power I/O. Flextron® flexibility is based on an outermost unification/standardization of the signal and power I/O control devices, that can be used without distinction on all the models of the same range. Flextron® modularity, instead, comes from its own module-based architecture, where the control panel and the CPU are clearly separated from the signal and power I/O devices. In this way should one of these devices get broken, damaged or defective, it can be replaced without also changing the control panel or the CPU; this results in shorter repair times and lower spare parts costs.

Within the end of 2006 the FP range will be further expanded by the roll-out of the FP 8000 CS automatic L-Sealer with shrink tunnel. This model will allow to pack products up to 25 cm high, will be equipped with a large-size sealing bar (80 x 60 cm) and will be available in the CS version only (provided with the “centre seal” system).
Almost three years have gone by since SMIWRAP resumed and broadened the 100-year-old Cartiere CIMA paper mill’s activity. “Despite the difficulties caused by an unfavourable economic trend” - says Vito Nava, SMIWRAP chairman - “the paper market for foodstuffs flexible packaging offered a good deal of opportunities to exploit. These early years have been surely the toughest, but I am satisfied with the results achieved so far and I trust in an even brighter future.”

As a matter of fact, the figures of SMIWRAP business are quite remarkable: the sales volume raised from 3 million Euro in 2004 to 10.6 million in 2005; the workforce increased to 100 employees, thanks to the restart of the vegetable parchment manufacturing line; the product range was reviewed and rationalised after a careful analysis of the market demand.

The industrial site of the former Cartiere CIMA was considerably refurbished. Currently, the following plants are in operation: one production line manufacturing supercalendered, greaseproof and machine-finished papers equipped with its end-of-line coating machine; one production line equipped with a supercalender featuring off-machine heating; one PE-coating machine; one rewinder dedicated to the working of semi-finished products and three rewinders serving the production lines. In addition to this, in June 2006 the vegetable parchment production line was restarted after many maintenance interventions. This type of paper, SMIWRAP is the sole Italian producer of, is characterised by very good printability and high-degree resistance to grease and moisture, achieved thanks to a special treatment with concentrated sulphuric acid. At present the vegetable parchment is available both in white (transparent, opaque or PE-coated) and in coloured version and can be employed for the baking of food in traditional or microwave ovens and for the preservation of frozen food. Cimasil is worldwide known.

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