

O-COM

THE OPTIMA MAGAZINE

FLEXIBILITY

HOW YOU
BENEFIT FROM
ROBOTICS

ROBOTS MASTER COMPLEXITY

RELIABLE HELPERS

NEW OPPORTUNITIES, NEW DYNAMICS



Hans Bühler
Managing Director / CEO,
OPTIMA packaging group GmbH

Dear readers,

Behind us lies challenging weeks and months. The COVID-19 pandemic has changed all our lives.

But even a crisis holds opportunities. New dynamics emerge and established technologies gain importance.

It was and is especially important to us to support you with comprehensive service and quality. Solution-oriented and, as always, in partnership.

In this issue of the o-com, you can read how Optima masters the crisis together with you. Synergies within the Optima Group, inventive talent, creative power and a lot of flexibility were and are the ingredients to get through this time in the best possible way.

You can also expect exciting news, user reports and technical articles on our four top topics: Flexibility, Safety, Digitalization and Sustainability.

I wish you good health and strength for the challenges ahead.

Yours,

Hans Bühler

LEGAL NOTICE

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Robots master complexity

Robot systems are becoming more and more important. That is why we are devoting our title article to the strengths of these reliable assistants. The ways they are used at Optima vary greatly from one division to another, but there is one thing they have in common.

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Fast, flexible and sustainable

This is how you could describe the high-tech capsule system that Optima has delivered to Ahold Delhaize, the Netherlands' leading food retailer. There is one very special feature that transforms the combination of a capsule filling machine and a cartoner into a technological zenith.



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The packaging of the future

Optima sets up Sustainability Department

The huge commitment of all our staff has continued to speed up the completion of filling and closing lines for potential vaccines.



During the crisis, machine solutions like the OPTIMA ImmuFill® were in particularly high demand. This solution enables the filling of reagents for diagnostic test kits.



IMPORTANT FOR YOU

- Optima has maintained the production and supply of spare parts during the Corona crisis and successfully carried out adjustments to capacity.
- In the run-up to the pandemic, the supply chain had already been made crisis-proof through strategic measures that had been put in place.
- Tried and tested technologies like virtual FATs, Smart Services, and new communication formats such as webinars have continued to grow in importance.
- During the pandemic, the synergy effects within the Optima Group were particularly beneficial.
- Specific machine solutions for urgently needed products were delivered very rapidly or adapted to meet the new requirements.

JOINING FORCES TO FIGHT COVID-19

The COVID-19 pandemic is presenting major challenges for companies worldwide, and Optima is no exception. But as we all know, every crisis brings its own opportunities. New solutions have been found for the challenges posed by these times, by adapting tried and tested technologies and creating new ones. Digital technologies are continuing to grow in importance.

When, in March 2020, the pandemic hit Germany with full force, we at Optima immediately took a number of measures to ensure that we were there, serving our customers, employees and partners to the best of our abilities. An internal task force was immediately formed to assess the latest developments on a daily basis and define the right measures to take. For example, an online information portal was set up for our workforce, and strict infection prevention measures were introduced. Many of our employees were and still are working from home. At the same time, we informed our customers about the measures we were taking and how we were maintaining business operations. Optima Materials Management, Assembly and all other departments worked on solutions to adjust to the situation in the best possible way and to avoid serious delays.

Global availability of goods assured

Having identified new ways of working in this challenging situation and launched the first crisis communication measures, we focused on supporting you, our customers and partners, in this unique situation: with our expertise, highly flexible machine solutions, virtual machine acceptance, and digital services. The corona crisis is leading to strong shifts in demand. The need for specific consumer goods and hygiene products, pharmaceuticals, and medical technology has increased exponentially. We have responded rapidly to this development and are providing special machine solutions that can be flexibly adapted to meet changing market demands. We have assisted companies in the cosmetics industry to convert their manufacturing to produce disinfectants. Ventilators are also scarce. Our highly flexible OPTIMA MPS

machine solution helps to counteract these current shortages and automates the manufacturing of air filters to be used in ventilators. Various diagnostic methods, including PCR test kits, are used to detect coronavirus. Optima provides suitable filling and closing equipment for all diagnostic test kits. The OPTIMA VFVM and OPTIMA SV / H filling and closing machines are used for filling prospective vaccines and medications for treatments.

Digital is the trump card

The pandemic has strengthened Optima's resolve to continue to single-mindedly follow its chosen path towards becoming a digitalized company. The opening of the Optima Digital Innovation Center and the presentation of our new Smart Services (see o-com special issue for Interpack) are the foundations for this. In the same way as the Additive Innovation Center has been advancing 3D printing technology in the production of parts, the Digital Innovation Center will play a significant role within the

Synergetic effects make new solutions possible

In a crisis, the motto is, "stick together". With Optima, this aspect was also particularly apparent, both in terms of evening out capacity between the individual business units and in designing manufacturing and packaging solutions for protective masks. Cooperation between all business units meant that Optima was able to offer fully automated manufacturing machines with different performance levels for FFP protective masks within a very short time. Tried and tested packaging systems with different performance ranges were able to be flexibly adapted to package disposable protective masks.



PCR tests, among other methods, can be used to detect SARS-CoV-2. Optima provides suitable filling and closing equipment for all diagnostic test kits.



➤ The Barrier Technology webinar was a great success and proved to be a valuable addition to trade shows.



⤴ The company is reaffirming its digital direction in opening the Optima Digital Innovation Center. Smart Services can be experienced at first hand there.



⤴ OPTIMA Total Care offers virtual Factory Acceptance Tests. Optima customers can decide the extent to which they want to make use of them.

Optima Group as a think tank and in further developing and presenting digital solutions. At the Digital Innovation Center, Optima will present its own Smart Services in addition to digital technologies and applications relating to augmented and virtual reality. The new showroom will make digitalization tangible for customers and visitors. Customer webinars, such as the Barrier Technology webinar, will also be an added feature in the future.

The issue of remote service is of major importance right now. Smart Services include the area of "Smart Assistance", as well as others. With our "Remote Assist" digital service, our experts are virtually on hand to assist you on any mobile device when there are format changes or process problems. This is how we ensure that you receive optimum service in these situations, too.

"This means that additional customer experts who are not part of the acceptance team can be called in for certain areas," explains Heiko Kuehne, Vice President for Cosmetics & Chemicals at Optima Consumer. Key suppliers were also contacted by Optima to answer the customer's questions. This has generated an exchange of ideas across disciplines and strengthened the partnership. Moreover, operating staff who do not normally get to travel to the acceptance test are also able to gain an in-depth insight. This means short commissioning times and a rapid start to production. "This is the confirmation that we made the right decision some time ago when we added virtual FATs to the portfolio of our life cycle management program, OPTIMA Total Care," says Kuehne. Customers can choose the extent to which the acceptance process is accompanied virtually – either as a complement or in full.

Virtual FATs ensure delivery on time

Virtual machine acceptance means that Optima can ensure that machines are delivered on time during the crisis. This is how the most complex virtual machine acceptance in the company's history was performed. Over 30 employees working for a customer in the USA tracked every step of the virtual factory acceptance test every day. This variation has additional advantages, besides prompt delivery.

The supply chain is assured

Many companies' supply chains have come under severe pressure as a result of the COVID-19 crisis. The new logistics center and special strategic measures have enabled us to safeguard the availability of our machine solutions and services.

For instance, the ongoing performance of risk analyses, even before the pandemic, in order to safeguard supply chains has really paid off. Parts that require a high level of expertise are purchased from within the Optima Group or produced by the extensive in-house manufacturing facility. Approximately 150 qualified employees and state-of-the-art machinery, including 3D printing technology, are available.

Setting the right direction even before the crisis hit

Long before the pandemic hit, the focus of procurement was already on Europe, which has now benefited Optima. Alternatives were developed for procuring single-source parts. We identified what are known as the 'long lead time parts'. This was carried out in a highly coordinated collaboration with colleagues in the technical departments of the business units within the Optima Group. "A specially appointed task force management team carries out daily monitoring and is constantly exchanging information with

potential bottleneck suppliers," reports Heiko Funk, the Managing Director of OPTIMA materials management GmbH. The right stock level was put in place for critical articles. Purchasing department staff were largely mobile in order to guarantee operational effectiveness. The operational areas of logistics and quality assurance worked in separate shift teams in line with the appropriate hygiene guidelines.

Social responsibility

As a contribution to tackling the crisis, Optima has assisted the company Wrapping Solutions, based in Rosengarten, Schwaebisch Hall, with respect to manual folding devices for the production of protective masks to cover the mouth and nose, and is advising Wrapping Solutions and other companies on developing automation solutions. The great efforts made by all our staff have helped to accelerate the completion of machine solutions for urgently needed products, such as potential vaccines. This is due to the guiding principle to which Optima is committed: We care for people. ●



MORE ABOUT THIS TOPIC

www.optima-packaging.com/fightcovid19

NEWS



Sustainability as a key issue

Optima is expressing its new strategy by setting up the "Sustainable Solutions" department. The company is focusing specifically on the issues of Flexibility, Safety, Digitalization and Sustainability, because more and more consumers appreciate packaging that is as environmentally friendly as possible. This is no small task. First of all, not everything that looks environmentally friendly actually is. Secondly, packaging that is genuinely environmentally friendly often brings new technological challenges along with it. That is why Ulrich Burkart (left) and Dominik Broelochs attach particular importance to "honest packaging". They head up the newly created "Sustainable Solutions" department and are well connected both internally and externally, including with research institutes. First significant successes: A packaging line for toilet paper rolls for Fripa, which produces very high quality packaging made exclusively from uncoated paper. There is also a "GreenLution" capsule system for portion packs made of a single material that can be completely recycled. This was launched with the cooperating partners Wipf and Saentis Packaging.

The Health & Beauty division has been set up

Optima Consumer has established the Health & Beauty division especially for its customers who process particularly sensitive ingredients and active substances. Particularly high standards apply to active ingredients from nature, over-the-counter (OTC) products and cosmeceuticals with regard to the cleaning and hygiene functions of the systems, which are even able to achieve pharmaceutical standards. The Optima experts deal with special technical solutions. These range from specific filling systems to automated inspections and serialization. Qualifications and validations are also reliably carried out. The processing of a wide variety of cosmetic products is in the best possible hands with Optima. In addition to Health & Beauty, the Fragrances, Decorative Cosmetics, Body Care and Hair Care Sectors are also united under the umbrella of Optima Consumer.



OPTIMA FM1 against COVID-19

Not only large-scale projects like research into vaccines can help fight the pandemic; there are also many smaller initiatives. The high level of consumer demand for disinfectants has resulted in a growing number of start-ups in this area, as Optima Consumer was able to report as from spring 2020. With the OPTIMA FM1, the company has the right filling machine as an entry into the fully automated filling of disinfectants in its program. It has become apparent that an important criterion for the start-ups is rapid availability. A machine was prepared and ready for operation at a new customer's production site just five days after the order was received. Moreover, the first ATEX version of this type has now been delivered. In Brazil, a young company has leased two machines. This may be the start of an entrepreneurial venture, while at the same time making a contribution to containing the pandemic.

OPTIMA is investing in its headquarters

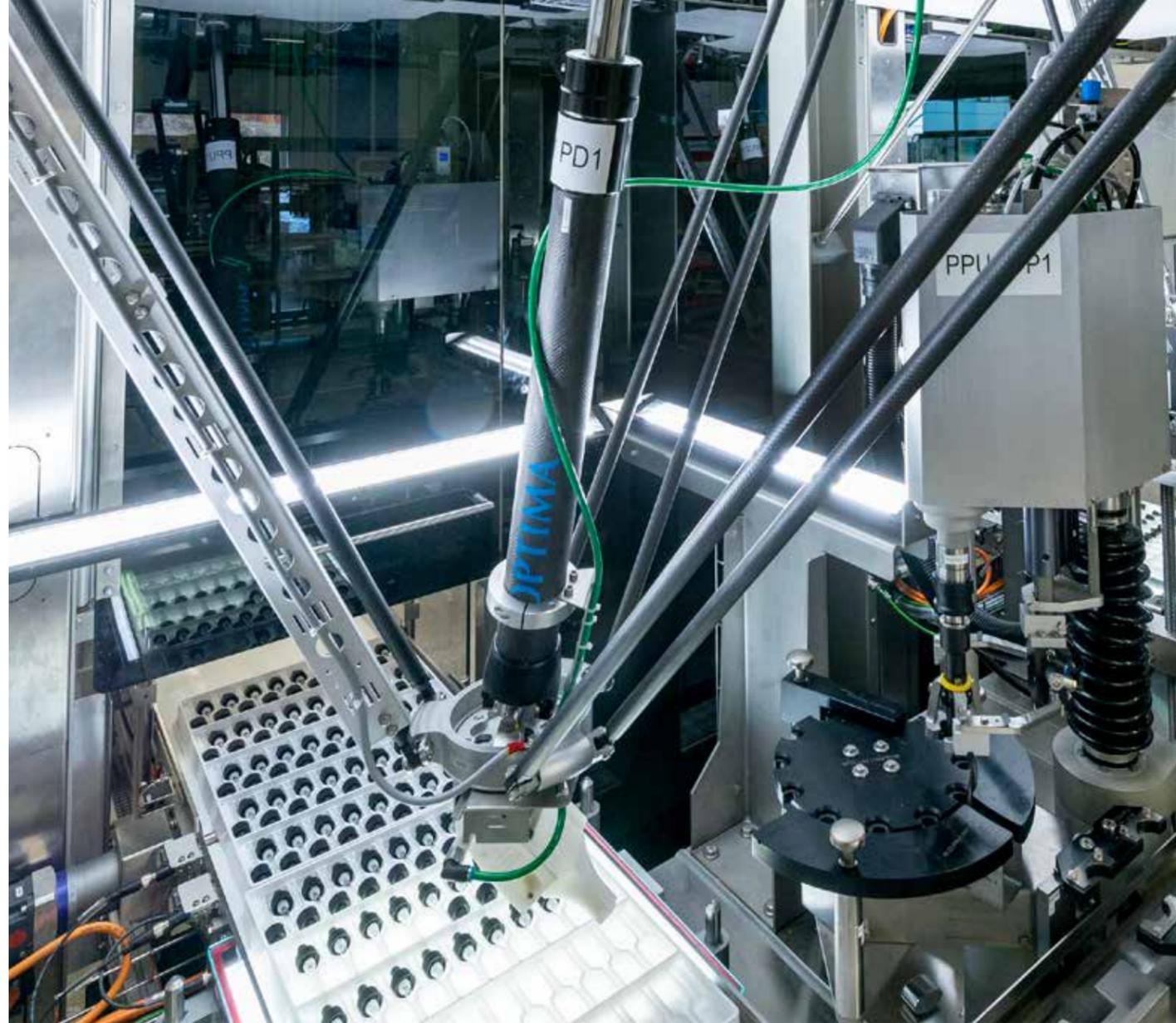
Optima Nonwovens has expanded its headquarters' assembly area by 1,600 m² to a total of 5,200 m². Around € 3.5 million has been invested in state-of-the-art gigabit cable connections, which will for instance facilitate virtual acceptance tests. Cranes capable of bearing loads of up to five tons make it possible to relocate assemblies and machine modules. Optimized climate conditions and LED light strips that can be dimmed create a pleasant working atmosphere. A catering area for the staff has also been included. The opening of the new central logistics building in 2019 and the space it has freed up has now made this follow-up investment possible.



Jan Glass, the new CFO of the OPTIMA group

Jan Glass succeeded Dr. Juergen Kuske as Chief Financial Officer of the Optima Group on May 1, 2020. As a result, working in collaboration with Hans Buehler, the Managing Director / CEO, he is taking over the management of the central departments. The industrial engineer has worked for Optima in a variety of management positions since 2016. Most recently, Jan Glass has been in charge of OPTIMA life science GmbH, in order to devote himself to the new, more wide-ranging job.

Flexible robotics for packaging cosmetics: Here, two five-axis robots take caps from trays and transfer them to the pick and place module.



ROBOTS MASTER COMPLEXITY

Robot systems are playing an increasingly important role. These reliable assistants are fully integrated into Optima's filling and packaging systems. All the divisions in the company are using robots in their systems – some of them "cobots", i.e. collaborative robots. However, the scale and utilization can vary greatly.

What about robots and packaging? Most of us will have the common palletizing robots in mind. Their strong arms have been in use for decades now, for stacking loads in the final stages of the packaging process. In reality, however, robots are required for several other process steps – usually much more intricate and agile kinds than those required for palletizing. Another special feature: Frequently, the robots cannot be identified at first glance when you look at the equipment in conventional packaging lines, some of which fill the entire space. When they are well integrated, they appear to be playing a secondary role, but appearances can be deceptive! It is impossible to imagine packaging technology without robots. They provide flexibility, increase the level of automation and make it possible to create individual applications that are tailor-made to perfectly meet customer requirements.

The same is true of Optima systems. For some time now, all of its divisions have been developing specific robotic applications. Which robot kinematics and systems are used, and the scope of their usage, depends on the respective applications. Depending on the product to be packaged and the packaging materials used, there can be considerable variations.

Robots bring order to chaos

Robots are becoming problem solvers, for instance, when products are manufactured in numerous different versions and the packaging materials are delivered in a chaotic or disorganized way. This is the case in the cosmetics sector. New shapes of bottles and closures are always being developed for shampoo, shower gel, etc. Immediately after it was founded in 2011, Optima Consumer took up this

challenge and developed its first robot application. A camera system detects loose bottles and a high-performance picker sorts them.

For cosmetics and toiletries, it is normal for over 20 different products to be filled and packaged on a single machine. Klaus Hahn, Head of the Optima Consumer Competence Center, says: "Here robot systems are making a significant contribution when customers have to make frequent format changes. This means that completely automated format changes are possible in the most advanced version.

An off-the-peg robot is not suitable for this task. Hahn is referring to the close cooperation there is with the robot manufacturers, who adapt the kinematics required to meet customer-specific needs. "This is how we can save on weight and interfaces, and customize special applications," says Hahn.



IMPORTANT FOR YOU

- In all Optima divisions, robots in primary and secondary packaging processes are integrated into the machines, including the control systems.
- Robotics mean that packaging systems are becoming more flexible and fail-safe approaches are supported.
- During the filling of cosmetics and personal care products, robots sort and feed containers etc. that have been delivered in an unorganized way.
- Frequent format changes can now be performed in a fully automated process using a robot.
- Cobots at Optima, for example, which replenish raw materials in the nonwovens area, require no additional safety systems and, if necessary, provide assistance for interactions with operators.
- In multi-product systems, such as those used in the consumer and pharmaceutical sectors, the combination of mechatronics and robotics offers maximum flexibility.

When no scratches can be tolerated

As well as the wide range of formats, the need for high quality is one of the reasons for using robots in consumer packaging lines, not just for feeding in components, but also for the core process. The same is true for operators in countries where feeding is still done manually due to low labor costs. Robots are superior to humans in situations where no scratches can be tolerated. This is why Optima Consumer has machines in its program where the main process is based exclusively on the use of robot kinematics. This also holds true for flexible sorting systems (OPTIMA RH2-5) for containers, caps, spray pumps, etc. in the cosmetics and chemical industries. Five-axis robots pick up vertical or horizontal products from different trays. These are modern delta pickers, which have two additional movements on the tool holder (turning and swiveling).



Optima uses 3D printing to rapidly adapt robotic systems to new formats. If required, new format sets can be printed out at the location where they will be used.

Optima Consumer frequently uses 3D printed parts to handle the variety of formats. Hahn points out the impact of 3D printing technology on time-to-market: "We are able to provide customers all over the world with a rapid new format pack by sending the engineering data for it directly to them or to a local Optima office."

Robot and machine as a single unit

Typically for robot applications by Optima Consumer, the robot and machine are almost completely merged together, which means that the entire system remains compact. The control system is also integrated. The robot motion is generated in the superior machine control system. Additional servo movements are integrated into the robot tools from a molding, effortlessly integrating movements with those of the robot kinematics. This integrated control and operating concept transforms the machine operator into a process engineer. He or she can directly enter the positions and movements of the various kinematic systems via a single HMI screen, so enabling them to

fully concentrate on the specific filling or packaging process. In modern machines, there are no specific programming environments for individual robot suppliers. Robotic systems are well established in autoloaders for producing coffee capsules. They are able to fully automatic load coffee capsules from the transport cartons into the magazines of the filling and closing machines. The six-axis robots that have been deployed pay for themselves, especially in three-shift work patterns. They can also be mounted on a linear axis, which triples the working area and keeps the machine's footprint to a minimum. Even though this task is still performed manually by operators at some medium-sized manufacturers, cobots (collaborative robots) are gaining ground here. Another future area of use for cobots is in the consumer sector with processes related to what is known as decoupled production. Hahn says: "The technical solutions already exist for this kind of optimization of logistics." For example, shampoo bottles are filled, then first stored, then labelled and packed in a second stage. The required tasks can be performed by a combination of Cobot and AGV (Automated Guided Vehicle).



The OPTIMA MultiUse Filler combines numerous robotic systems. These include a de-nesting robot that supplies various containers to the filling and closing process.

Special applications for hygiene products

At Optima Nonwovens, robot technology will probably never be more important than it already is today for filling and packaging cosmetics, personal care products, coffee capsules and so on. The division relies on high-performance mechatronic systems, especially for the primary packaging of diapers, feminine hygiene products, etc. Global Account Manager Markus Urich explains: "There is a clear cost-benefit to using robots in secondary and tertiary packaging, especially in situations where flexibility is required when grouping individual product packages in cardboard boxes. This is the case for example with panty liners, which are available in various sizes of packaging and a wide range of alignment options. It is much more difficult to cope with the resulting range of variants when they are placed in the shipping carton with mechatronic components than with a robotic system. Customers who include small gifts like wet wipes, CDs, booklets, promotional flyers and bonus point systems into the primary or secondary packaging are increasingly using automated processes assisted by robots.

More areas of application for new robot applications are emerging in the nonwovens sector, in conjunction with the trend towards increasing automation, for example to assist with or fully automate a format change. In most cases, a single operator can replace certain mechanical components, which can be done in ten to 15 minutes. A robot solution developed by Optima Nonwovens would be able to do this in a fully automated manner and faster and, above all, with no errors. Together with the latest digitalization techniques, the software in parallel checks compliance with the recipe, the product and the desired packaging medium in order to ensure optimal pre-packaging. Urich explains: "Even the best worker can sometimes make an error that leads to a machine stoppage. That's just human. Our new solutions can provide customers with support with their fail-safe approach."

Cobot replaces flexible fingers

There can also be strategies for digitalization and high levels of automation where operators are often still feeding in raw materials such as pre-made bags. The choice of a

Fail-safe refers to the principle whereby a system will not fail in the event of an error, or will cause as little damage as possible.



Robots manage fine movements, for example removing the Tyvek foil that protects sterile containers.

cobot is one where "flexible fingers and cognitive abilities" are being replaced, but where it can involve or consciously interact with humans, says Ulrich. Optima Nonwovens has developed an extremely efficient solution for this application that requires no additional safety systems like scanners or safety sensors. The entire safety technology is embedded in the Cobot and the intelligent application execution. A first system of this type is already in operation, and several other projects are currently underway. "This is where we distinguish ourselves clearly from our market competitors in terms of safety and efficiency," says Ulrich enthusiastically, adding, "and we can make the best possible use of the tight production space without any restrictions for our customers."

out – the OPTIMA MultiUse Filler. It combines several different kinds of robotics.

The aim was to create a system capable of filling very different high-quality medicines (including highly active ingredients) in three kinds of container and in six different formats. For this purpose, several six-arm robots and an oval conveyor from Optima Pharma were combined, among other things. With an output of 100 objects per minute, the system is more in the lower performance range than what is typical for pharmaceutical applications. Zimmermann emphasizes: "It is not used to produce quantity, but quality, and this is done with maximum flexibility. Robotic solutions are exactly right for this." The machine processes vary depending on the shape of the objects to be processed and the conveyors.

Multi-product systems for pharmaceuticals

Optima Pharma excels with numerous robot-assisted solutions. Again, it is worth weighing up strengths of the robot, such as flexibility, against those of mechatronic systems, especially speed in standard processes. Project Manager Cyrille Zimmermann oversees a project that really stands

Combination of oval conveyor and robotics

For example, a robot removes what is called Tyvek foil, which protects the sterile containers to be filled in their collection container (tub). It can handle the fine movements required for this effortlessly. What is known as a



The trend towards fully automated systems is creating new areas of use for robots, such as placing stacks of bags on the bag conveyor. Optima Nonwovens' extremely efficient solution requires no additional security systems like scanners or safety sensors.

multi-axis de-nesting robot picks up the empty containers with vacuum suction cups and places them in the conveyor system. Another robot passes the containers on. There are various tools that compensate for the differing distances between the various types of containers. Another robot removes the containers from the oval conveyor belt at the end of the process and places them back in the nest. The result of all this is a lean system layout that can be easily adapted to meet existing space constraints. The fact that there are so many different types of processes and the variety of products and containers to be filled means that the robot systems are seamlessly integrated into the control architecture. "All we get from the robot manufacturer is the hardware," Zimmermann explains: "It's our software that controls each robot arm. This enables us to reduce the control system to the bare minimum needed and to make extremely fine adjustments to movements." Centralized programming ensures high efficiency and error-free operation, and it makes it easier to adapt multi-product systems like these in the future. In the future, the pharmaceutical manufacturer will have just one contact person: the one from Optima.

Robots + Process Knowledge = Perfection + Flexibility

Whatever the special features are that characterize Optima's various areas of robot use, they all have one thing in common. The particular expertise of the division in its areas of use, the in-depth knowledge of the processes and the needs of the users make it possible to create systems that do much more than simply combining robotics and mechatronics. Primarily, it is the control integration of robots, as well as the targeted use of cobots for defined tasks, that offer packaging processes which are unequalled. ●

Oval conveyor and robot, perfectly adapted to each other, eliminate empty spaces in the magazines for pre-filled syringes.





← Together, the OPTIMA CFL (left) and the OPTIMA CBF (right) make a powerful combo for filling and packaging coffee capsules.

FAST, FLEXIBLE AND SUSTAINABLE

The issue of sustainability is becoming more and more important. Recyclable aluminium capsules are very popular. Ahold Delhaize from the Netherlands has also observed this. Consequently, a plastic capsule production line currently under construction has been quickly adapted to meet the requirements for producing aluminum capsules, and this offers a lot of technical features.

Ahold Delhaize is the Netherlands' largest food retailer and is one of the largest food groups in the world. The company describes itself as a "leader in the sustainable retail sector". Ahold Delhaize employs 380,000 people worldwide in nearly 7,000 local food, small-scale and specialty stores in the USA, Europe and Indonesia.

A leader in technology

The company is planning to meet the high demand for aluminum capsules that are Nespresso-compatible, by means of a filling and packaging line sourced from Optima. This had to include a filling machine and a cartoner. It had to be able to process different capsule formats and box sizes. "This line was to be combined with both an existing grinding plant and newly-developed degassing silos," says Marleen Winkelaar, Manager Innovation, R&D at Ahold Delhaize Coffee Company, about the challenges of this colossal project. For Ahold, this is their first capsule line from Optima. Optima soft pad systems are already in the factory.

An OPTIMA CFL capsule filling machine carries out the filling and closing process, while an OPTIMA CBF cartoner handles the final packaging into boxes. Describing one of the machine's most important innovations, Andreas Dreschner, the Technical Sales Manager who oversaw the project for Optima, says "This system allows any setting pattern to be generated without having to change formats." This is made possible by a state-of-the-art linear motor system that not only makes the system fast and highly flexible, but also reduces the entire production line's footprint. "Each capsule has its own controllable shuttle that facilitates individual groupings, called gap closing." The system's gap closing ensures that the desired number of capsules are conveyed continuously to the cartoner.

With comparable machine solutions, in order to alter the setting pattern, market competitors have to carry out format changes. With the Optima system, conventional format changes are only necessary when making changes to the final packaging, which takes around 15 minutes. Marleen Winkelaar also stresses this point. "We benefit in particular from the flexibility of formats. The production line can easily be switched to other carton sizes." The capsules are currently packed in ten and 20 pack sizes.



^ Optimum material utilization is assured because the film for sealing the capsules is fed in at an angle and with a punched offset.



^ Engineering at its finest: gap closing is the key technical innovation in the system. It means that any setting pattern can be generated without having to change formats.

Turnkey is key

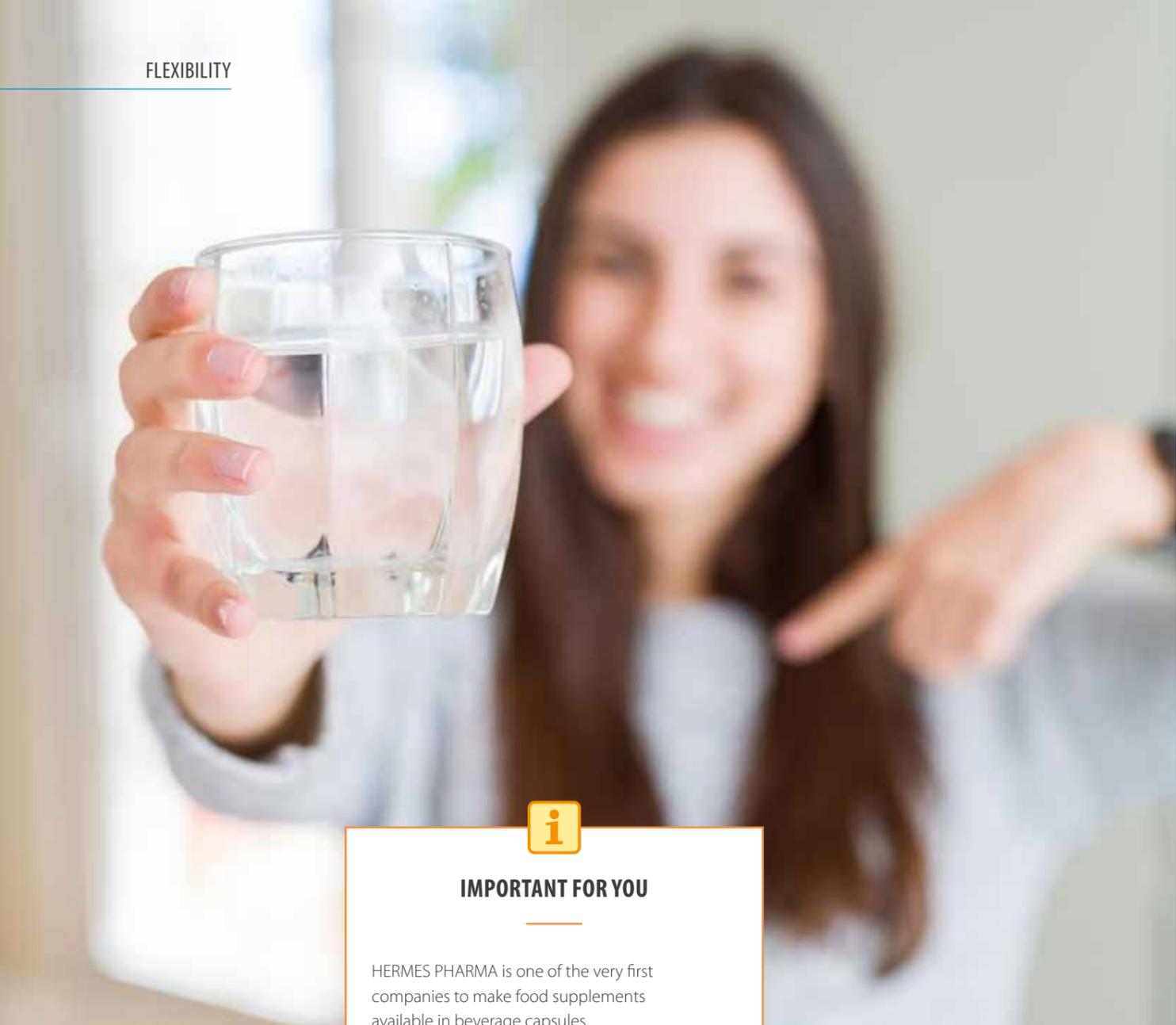
For Winkelaar, what is it about this line that makes it unique? Clearly it's the turnkey aspect. The fact that both the filling process and the cartoning are made by Optima is crucial, says Winkelaar. "Harmonizing interfaces via integrated acceptance tests and stable processes are particularly important for fragile products such as aluminum capsules," explains the Innovation Manager.

It was by no means a foregone conclusion that the project would be a success. As Winkelaar reports, the deadline was a challenging one, and connecting the production line with other components that at the start of the project were still under construction also made the project a very complex one. "Optima was also confronted with several challenges over the course of the project, for example the switch to aluminum capsules, but the staff did their best to keep the project on track and always weighed up all potential options," Winkelaar stresses. The installation also went according to plan and was "very professional". Even the COVID-19 pandemic could not disrupt the timetable. "We really appreciate it, that Optima sent us a systems expert as quickly as possible," says Winkelaar.

Reduced consumption of resources

In terms of sustainability, the system particularly scores points for its reduced consumption of energy and materials, explains Dreschner. Optimum material utilization is assured because the film for closing the capsules is fed in at an angle and with a punched offset. As well as this, the vacuum consumption of the OPTIMA CBF cartoner has been reduced by around 30 percent thanks to the special nozzles.

And what's the final conclusion from Marleen Winkelaar? "Ahold Delhaize is very pleased with the production line. We are convinced that this was the right investment for us. Besides, the experts at Optima have demonstrated that they are real partners and are always there to give us a helping hand when we need one." ●



IMPORTANT FOR YOU

HERMES PHARMA is one of the very first companies to make food supplements available in beverage capsules.

There were several factors that prompted HERMES PHARMA to purchase the OPTIMA CFR capsule filling machine:

- Compact size
- Fast commissioning
- Ease of use
- Cost efficiency
- With rapid exchange of information, quick reaction to queries and individual recommendations, HERMES PHARMA is extremely pleased with the progress of the project and the cooperation with the experts at Optima.



HERMES PHARMA is one of the very first companies to make food supplements available in beverage capsules. HERMES NutriCaps offer consumers numerous benefits.

FOOD SUPPLEMENTS REDEFINED

A food supplement dosage form committed to health and a positive lifestyle – this was the mission of HERMES PHARMA when presenting its HERMES NutriCaps at the Vitafoods trade show in Geneva in May 2019. These capsules will revolutionize the dietary supplements markets. For the market entry, HERMES PHARMA chose the OPTIMA CFR as its filling machine.

Nutritional supplements aren't particularly known for their special appeal of being "sexy". "More than half of the population has a hard time swallowing tablets and capsules," says Dr. Detlev Haack, Head of Innovation at HERMES PHARMA. Not really a good starting point for manufacturers of food supplements, as nearly all of their products are available in exactly these formats. Well, that is about to change.

HERMES PHARMA, a division of HERMES Arzneimittel GmbH from Pullach, Germany, has developed a simple yet ingenious way of making food supplements a natural part of everyday life – in fact, just as natural as making a simple cup of morning coffee. Food supplements are now also available as HERMES NutriCaps in what is called the beverage capsule design. This is compatible with Nespresso coffee machines. As a contract developer and manufacturer (CDMO), HERMES PHARMA has been producing user-friendly dosage formats for healthcare businesses around the world for over 40 years – from product idea to approval and manufacture.

The term CDMO (Contract Development and Manufacturing Organization) refers to companies that provide services at one or more stages of the value chain in the development of pharmaceuticals and food supplements.



Focus on process safety: When the capsules are stacked, an optical presence check ensures that all transport plates are loaded.

The OPTIMA CFR capsule filling machine means that capsules reach the marketplace safely and quickly. The trade journal Process awarded the machine the title "Top Product of the Year 2017".



The cover foil protects the food supplements from moisture, contamination and degradation.



Food supplements are more sensitive and more finely-milled than ground coffee. The dispenser is also able to precisely portion these into the capsules.



MORE ABOUT THIS TOPIC

www.optima-packaging.com/singleserve

"The cooperation with Optima is distinguished by openness and transparency."

A simple, safe and quick way to take food supplements

"HERMES NutriCaps make it easy, safe and quick to take food supplements," explains Haack. "They eliminate the time-consuming task of boiling water, which can also result in burns. And having the right dosage, which is important when it comes to food supplements, is extremely convenient. For Nespresso machine owners, this is another way of putting their existing machines to good use," adds the Head of Innovation. There are also many different flavors available, and most importantly, the bothersome issue of having to swallow tablets is gone. "This makes taking your food supplements easy and fun, and can be incorporated into your regular daily routine," says Haack. The end consumer is also already familiar with using capsules like these, which will certainly boost the adoption of this new product.

HERMES PHARMA can scientifically prove that there is no carry-over effect between coffee and food supplements – whether or not the end consumer accepts this is an entirely different question. However, the company was also able to provide a positive answer to this issue in a consumer study – a basic requirement in the success of the new dosage form.

"We believe that HERMES NutriCaps will usher in a new era of food supplements – and open up a highly promising market for our B2B clients," says Haack.

More information on the new dosage concept can be found at www.hermes-pharma.com/nutricaps.

For the filling HERMES opted for tried Optima tech-

Helmut Jakolat, Head of Production Engineering, HERMES Arzneimittel GmbH

OPTIMA CFR capsule filling machine, the company's first machine from Optima. "The project was outstanding," reports Helmut Jakolat, Head of Production Engineering at HERMES Arzneimittel. He was particularly impressed with the swift exchange of information, the response to queries and individual recommendations. Thanks to the well-prepared, knowledgeable Optima technicians, the system was set up within two days, so the test runs and operator training could be started out right away.

and packaging, PHARMA has and trusted nology, the

OPTIMA CFR: compact, quick to set up, easy to operate

The main reason for HERMES PHARMA choosing Optima as its partner was the compact size of the OPTIMA CFR. Its compact design means the machine fits perfectly into the new production area. The simple handling and fast installation also impressed Jakolat. Jakolat states that the intelligent system made it possible to train machine operators and technicians in the shortest possible time. The machine is the perfect solution, especially for a quick market entry where the success of a new product cannot be predicted. ●



IMPORTANT FOR YOU

- With fully automatic packaging systems for nonwovens products, you can face rising labor costs.
- With the OPTIMA DS1, Viet Sing cut their operating staff in half, significantly increasing productivity and capacity.
- Only two months passed from order to shipment.
- The packaging machine is one of five machine models that Optima has designed specifically for the Asian market.
- Optima's field service teams in Asia have been strengthened and have specialized knowledge of culture and government issues in Asia.



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Viet Sing was faced with the challenge of increasing capacity for the production and packaging of the "Jo" brand of baby pull-up diapers in sizes S to XXL.

HIGH-TECH PACKAGING FOR BABY DIAPERS

The young company Viet Sing produces high quality diapers. Happily, the demand for these diapers is increasing. To increase its capacity, the company invested in state-of-the-art German technology, the basic model OPTIMA DS1 from Optima Nonwovens for diaper packaging. The system, which was delivered two months after ordering, is extremely stable and reduces personnel costs by 50 percent.

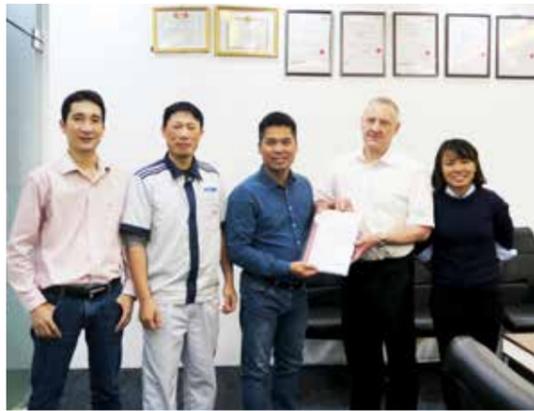
Established in 2014, Viet Sing International Production and Trading Co., Ltd. is a member company affiliated to DND Brothers Group, founded by Nguyen Dang Dung – Chairman of the Board. The company is specialized in the production and trading of paper hygiene products. These include baby diapers, diapers for adults and sanitary napkins. As a member company of the Health Investment and Essential Consumer Goods Corporation, the Vietnamese company has a particularly high level of expertise in the hygienic and safe manufacturing of products. This resulted in numerous satisfied customers. The demand for Viet Sing's diapers grew steadily, as a result, the company faced the challenge of increasing their capacity to manufacture and package the "Jo" brand of baby pull-up diapers in sizes S to XXL.

Increase in capacity with constant personnel costs

In order to stay competitive, this needed to be done primarily by increasing capacity without significantly increasing staff costs. Under no circumstances should the packaging quality be affected.

So far, Viet Sing has used semi-automatic packaging machines. The transfer of the filled packages into the closing machine was carried out by employees. This manual process was the bottleneck for the necessary capacity increase. With increasing output, staff costs were also impacted accordingly. In search of machines that provided higher productivity, Viet Sing evaluated several suppliers. The Rieckermann company supported Optima during the initial phase of the project and provided sales support.

Viet Sing's production facility in Bac Ninh, Vietnam.



Nguyen Duc Vinh (Factory Manager, in the middle), Nguyen Van Lang (Deputy Factory Manager and Head of Research and Development Dept., on the left) and Tran Van Phuc (Technical Manager, second from left) of Viet Sing, Andreas Rothbauer (Optima Nonwovens, second from right) and Nyguen Ngoc Thao Uyen (on the right) from the Rieckermann company are pleased with the signed contract in November 2018.

Factory Manager Nguyen Duc Vinh shows Andreas Rothbauer the OPTIMA DS1 in production. He is very satisfied with the results during operation.

Space-saving, easy to operate, and quick to use – these are the features that convinced Viet Sing of the OPTIMA DS1. Less than two months elapsed between ordering and loading.



Viet Sing Factory Manager, Nguyen Duc Vinh, explains the decision to invest in Optima technique: „Optima is an established manufacturer in the world of packaging machines and has a very good reputation. With its focus on diaper packaging, it meets our requirements. In addition, Optima is known for its ultramodern technology and excellent service.“ The German supplier develops machine technology that specifically meets the needs of Asian nonwovens producers.

Not only should that benefit Viet Sing, but it will also increase the work force of Optima in Asia in recent years. The largest field service team in the entire company is Optima Shanghai – and that team was used in the project with Viet Sing.

Upgradable packing machine for diaper processing

The choice of Viet Sing fell on OPTIMA DS1, a moderate, space-saving, and flexible packaging system. The basic model for diaper packaging with three semi-automatic

packing stations can be upgraded into a fully automated packing machine that can be fed with prefabricated bags. In addition, the system is available with a bag making machine. The OPTIMA DS1 can be synchronized with manufacturing equipment and it can manage up to 600 products / minute in the infeed as well as up to 50 packs / minute.

Half operator number, high system capacity

The schedule of Viet Sing was ambitious, six months from first contact to delivery were the expectations of the Vietnamese producer. Optima Nonwovens accepted the challenge and in November 2018 Viet Sing's order followed. At the end of January 2019, the machine left the headquarters in Schwaebisch Hall in Germany – an Optima record. After arriving at Viet Sing, it only took two days for the OPTIMA DS1 to take over and pack the first products from the manufacturing system. Nguyen Duc Vinh, Factory Manager at Viet Sing, praised the machine's stability and

high productivity. „With the OPTIMA DS1, we were able to cut the number of operators in half“, said Vinh, clarifying: „This helps us to both reduce labor costs and increase system capacity.“

Vinh praised, „We were very impressed by the professional and precise working methods of the Optima team.“ Well-founded knowledge, such as that of Andreas Rothbauer, Key Account Manager Asia, was instrumental in the project's success. „In addition to time management, this project was a great challenge for communicating and creating the documents required by the authorities.“ Here, Optima's strong presence in Asia paid off.

Long-term relationship from Viet Sing and Optima

For the Factory Manager, it is already clear that the current project will lead to a long collaboration between Viet Sing and Optima. „Our goal is fully automatic production lines“, said Vinh. Soon Viet Sing will take the purchase of other fully automatic packaging machines into consideration. „If the

OPTIMA DS1 is stable and hassle-free over the next three to four months, then we will order more packaging machines for our remaining baby and adult diaper production lines“, Vinh announced. ●



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The new OPTIMA FS1 can accept up to 1,000 products per minute in the infeed.



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Another representative of the Optima family of machines for Asia is the OPTIMA Lophura. The first expansion level involves a basic closing machine for baby diaper packaging. Expansions are available for this at any time.



IMPORTANT FOR YOU

- The needs of the emerging paper hygiene producers in Asia require specific machine designs that Optima offers.
- The OPTIMA FS1, as the newest addition to the machine platform, covers the packaging of feminine hygiene products.
- Starting with just a basic closing machine, the fully-automated systems can be expanded with integrated packaging and stacking functions.
- The service provided by Optima in Asia is well-proven: Fast availability and technical backup with German experts included.
- Further development: The machine platform for Asia is continuously being expanded.

GROWING NEEDS IN ASIA

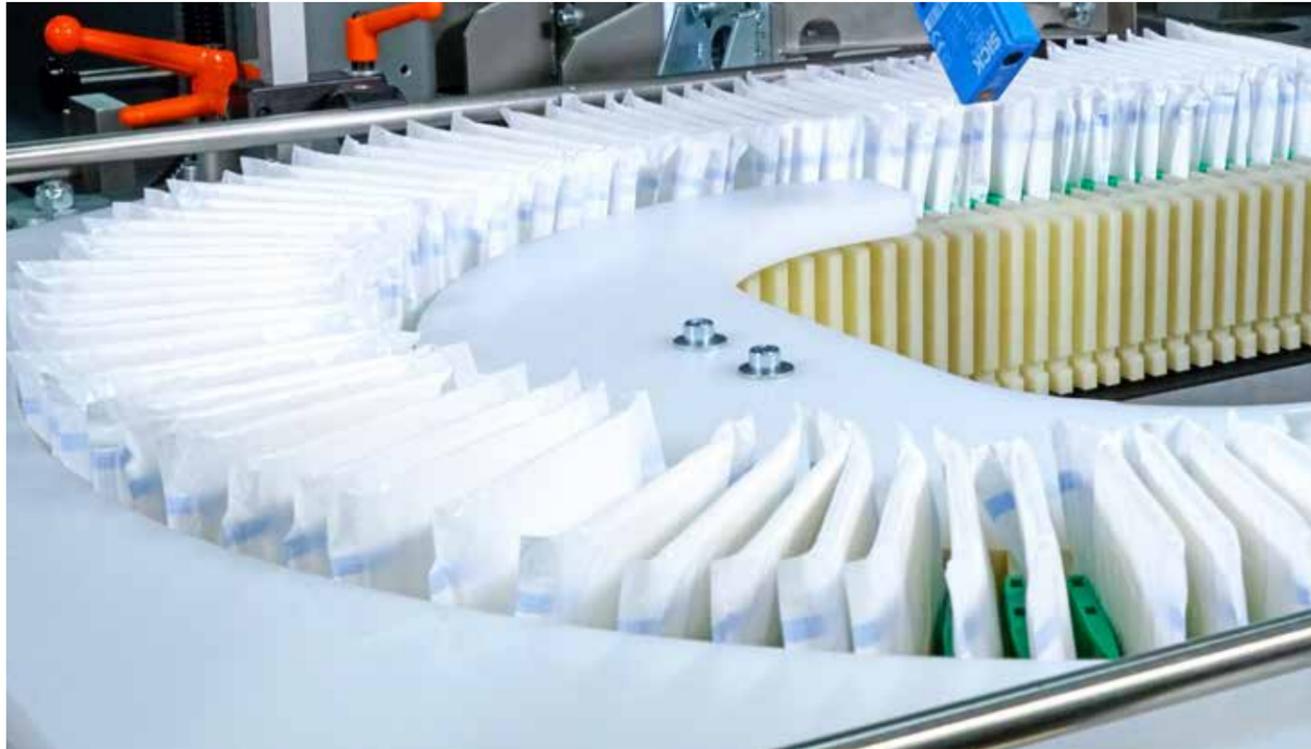
Optima offers a highly flexible machine platform for packaging paper hygiene products, starting with entry-level versions and specially designed for the Asian market. The latest version of this series – the OPTIMA FS1 – was exclusively developed for feminine hygiene products. A unique aspect of the machine platform is that entry-level models can initially run semi-automatically and later be upgraded to fully automatic systems.

The flexible expansion options for these packaging machines were developed specifically to serve the growing needs of Asian paper hygiene manufacturers. The newest member of this product family, the OPTIMA FS1, is used to package feminine hygiene products. The OPTIMA FS1 can handle a maximum of 1,000 products per minute in the infeed and outputs up to 100 packs per minute. Additional features include high-quality packaging and all-round format flexibility. The OPTIMA FS1 machine has a sturdy design and is a very cost-effective investment.

Family history with an eye on the future

The OPTIMA FS1 is just a part of an extensive family of machines for nonwoven products developed exclusively for the Asian market. The first model was the OPTIMA DS1, introduced in 2018, for packaging

baby diapers. This machine has proven itself time and again, and has been in use for many years in numerous companies in Asia. Models such as the OPTIMA Lophura and the OPTIMA Good can be used very flexibly and are easy to upgrade. Companies can start with a basic closing machine, then integrate an automated bag filling function and product stacking function into the overall process. This means that the user has the fully automated OPTIMA DS1 system after they have completed the final upgrade phase. Additional versions are available, like the OPTIMA Midnight which is ideal for packaging products such as adult diapers. Today there are models for packaging baby diapers, adult diapers, and feminine hygiene products in the product family. All machine models are distinguished by their sturdiness, low investment costs, and very high packaging quality. This mix of impressive “sure-fire” characteristics adapted especially for the Asian market is a success story that Optima will continue to build on.



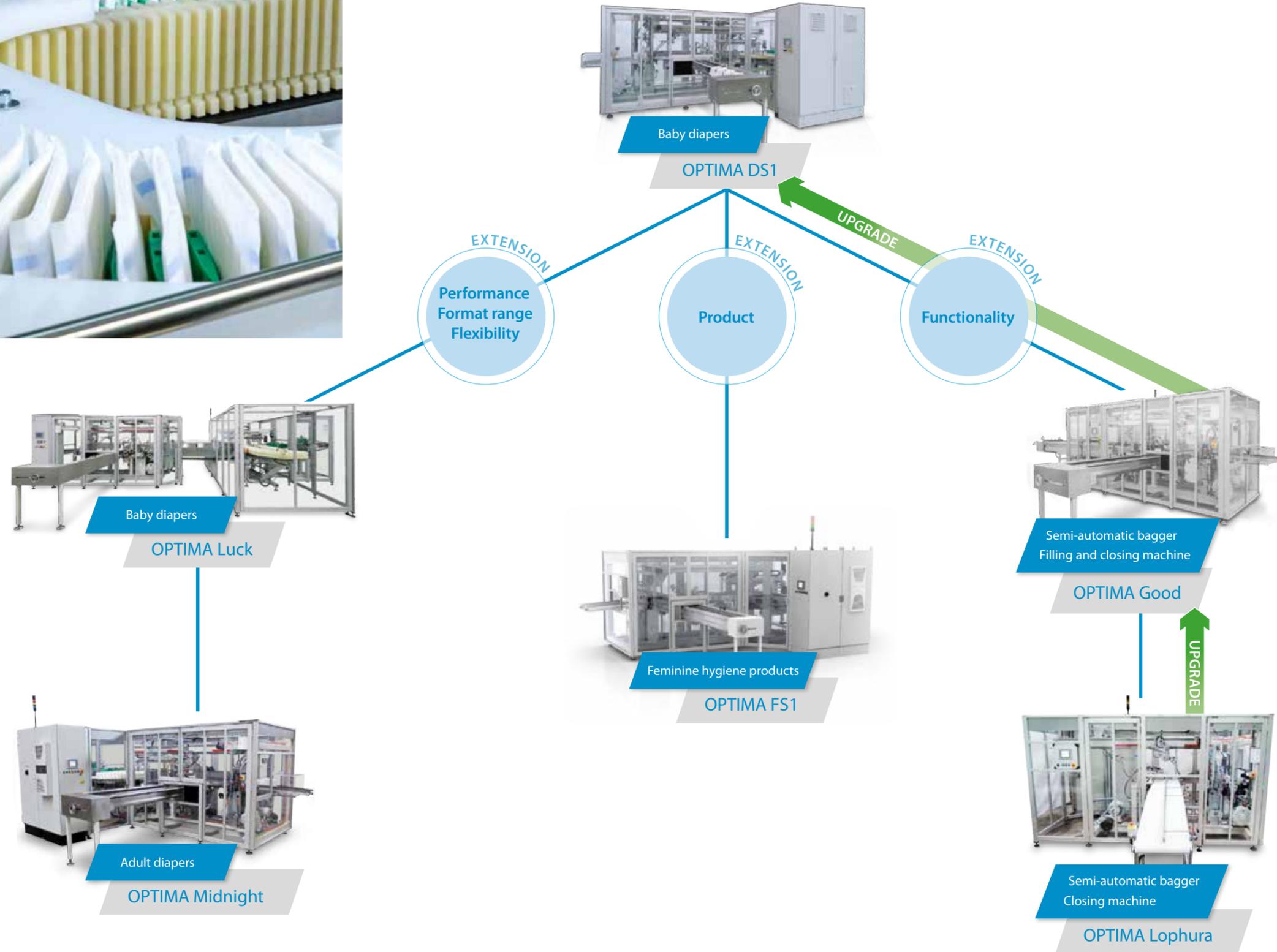
◀ The OPTIMA FS1 impresses as a flexible packaging machine for feminine hygiene products. It was specially designed to meet the needs of the Asian market.

Service without borders

Services which must be available quickly when needed are also critical for the success of the machines. Optima takes into account the great significance of the Asian market, with employee teams made up of local and international experts at the Chinese location and other Optima subsidiaries in Asia. This is also reflected in the fact that the largest field service team currently active for the Optima Group is based at Optima China in Shanghai.

In addition, native Chinese speakers also fluent in English or German work in the corporate headquarters in Schwaebisch Hall, the "hub" for the nonwovens experts. If a technical issue arises that cannot be clarified locally in Asia, this ensures there are no language barriers in the communication with the German experts.

The same Optima service organization benefits the international companies in the paper hygiene industry that produce their products on the leading high-tech systems from Optima in Asia. ●



MODULARITY WITHOUT LIMITS

Optima's new Zero machine platform is the benchmark for high performance, flexibility and modularity. The OPTIMA Zero L1 configuration is used, for instance, to package feminine hygiene and light incontinence products.



The real benefits are hidden inside. The new machine platform offers complete versatility: High performance, flexible formats and functional modules. The OPTIMA Zero L1 for feminine hygiene and light incontinence products.



IMPORTANT FOR YOU

- A new modular platform for packaging feminine hygiene and light incontinence products with what is currently the highest level of output - up to 160 packages per minute (dual-lane version)
- High flexibility processes for frequent changes of format: These are almost completely automated and can be carried out much faster than in the past.
- Future-proof: The modular process design can be retrofitted to meet new requirements by swapping modules.
- Optional special modules and custom solutions.
- Reduced delivery times

Around three years ago at the Index, Optima presented the "Zero" for the first time as a future-oriented technology platform. Since then, they have been continuing to develop this prototype into a comprehensive machine concept, which is particularly aimed at ensuring a future-proof investment. Today, Zero represents a new, completely modular machine platform. The machine's other key added features include format flexibility and a massive increase in output, as demonstrated by the OPTIMA Zero L1 version for packaging feminine hygiene and light-incontinence products. The dimensions of the previous top model were adequate.

The background to these innovations: The demands made on the packaging processes of the future are becoming more apparent than ever. Trends are also shifting more quickly in paper hygiene products, marketing is becoming more active and suppliers' stock levels need to be kept as low as possible. What this means in concrete terms is that, whether the product is to be triple-folded, packed

longways or in a medium or small package, this need only play a minor role in future packaging processes. One key development goal was the option of being able to provide an ever-growing range of products in a particularly economical and efficient way in one machine.

From high flexibility to high performance

The new Zero machine platform is constructed to be completely modular. There is no obligation to maximize process flexibility, as many systems will continue to produce all day long without any format changes. The platform simply opens up the option of achieving considerable time savings with motorized format changes and module shifting, as well as module changes. This is something entirely new in almost full automation. This versatility also has the advantage that the process can be perfectly adapted to

the product when changing the format. One example is the OPTIMA Zero L1 welding module: When processing long-shaped products first and then small ones, by selecting the new format, the sealing module moves closer to the stack. This makes the process more consistent and faster. During a format change, it is also possible to replace a standard product compression with a very strong compression or a rotary module in a much shorter time than was previously possible.

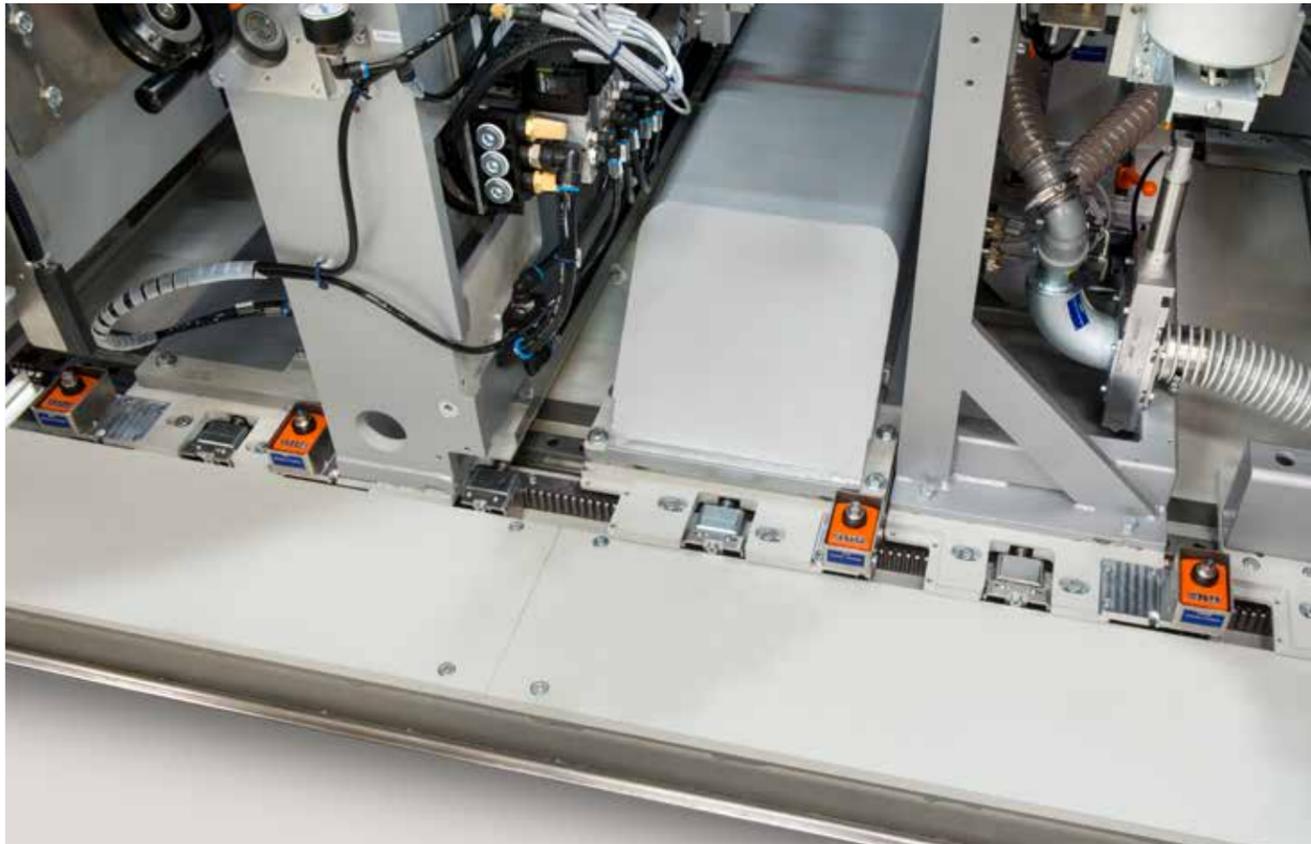
Likewise, with the OPTIMA Zero L1, there is the option to massively increase performance via a double extension, the "dual lane"; this is yet another innovation in the feminine hygiene and light incontinence sectors. The process can also be converted to being "highly flexible" with the platform by switching different modules, but without having to design a completely new process - the key word here is: future-proof investment.

Technical background, practical effects

The new machine platform is based on a new machine structure. This can be assembled and built up in a range of varying lengths, for example, two meters or five meters long, and can accommodate the modules in different positions. In the past, the mounting positions for each unit were fixed. Another key element is the software, which is also completely modular. The same applies to the programmable logic controller (PLC), which has a modular design similar to what is used in mechanical engineering, and it can to a certain extent be made up of modules. During the design phase, the process and the variants are subject to prior simulation and testing; for each project, a digital twin is created. For new, customer-specific solutions too, it is also possible to check in advance whether the functions will work together as desired.

Optima describes the simulation of the machines' interlocking functions and function sequences as a digital twin. This means that it is possible to see as early on as the design stage whether the mechanics, electronics and software are working together in the desired way.





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With the OPTIMA Zero L1, function modules can be adjusted. This allows modules to be added or the process to be adjusted optimally to the product and packaging formats.

On the new Zero platform, anything that could be designed to be modular was made modular. As a consequence, there is more configuration and less design - and nevertheless, this technology should provide customers with access to specific solutions more than has ever been possible in the past, because there is now more time available to develop individual function modules, and at the same time, less effort is required. Up to now, it would have been necessary to develop a specific process around a specific module. All that is needed these days is to design and test the specific module and make individual adjustments in the system. This means that Optima is also in line with what its customers need from us.

The new platform provides something that was hitherto unknown in terms of versatility, both for special solutions and for the regular production process. Zero is the ideal platform for customers, whether they are looking for equipment for a process capable of five format changes per day or a process that produces identical packaging at high speed for five weeks. Each customer is only investing

in the modules they need. With an OPTIMA Zero L1, in concrete terms, this can mean that a fully automated, motor-driven format and module changeover is cost-effective where changeovers are frequently performed. Conversely, if format changes are only occasionally required, a manual format change supported by adjusting wheels and counters will be adequate. Here again, a dual-lane version will probably be profitable by almost doubling the system's output. If, later on, the need arises for rapid format changes, this can be done using exchangeable modules.

Higher output and higher packaging quality

In the meantime, the first machines have already gone into operation on customers' premises. The first dedicated modular system has also been developed for the OPTIMA Zero L1. Shuttles are used to transport the feminine hygiene or light incontinence products right into the open bag.



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The OPTIMA Zero L1, based on the new Zero platform, makes it easy to implement different product formats and package sizes.

Previously, the products were inserted using a top runner. Shuttles are crucial for the dual lane processing of feminine hygiene and light incontinence products, and for doubling output. For the first time, an output of two times 90 cycles per minute can now be achieved, while at the same time increasing the quality of the packaging.

The following modules are currently being developed for the OPTIMA Zero L1; these modules are designed for processing particularly small formats and they are approaching production readiness: larger-sized products, two-layer package configurations, triple-folded products, etc., are now available much faster than previously with the new machine platform. On top of this, engineers anticipate that the overall length of the project will be reduced. As well as the fact that less design input is needed - the key word being "configure" instead of "design" - this is also due to the possibility of delivering non-specific parts of the modular construction kit, such as the machine frame, ahead of time.

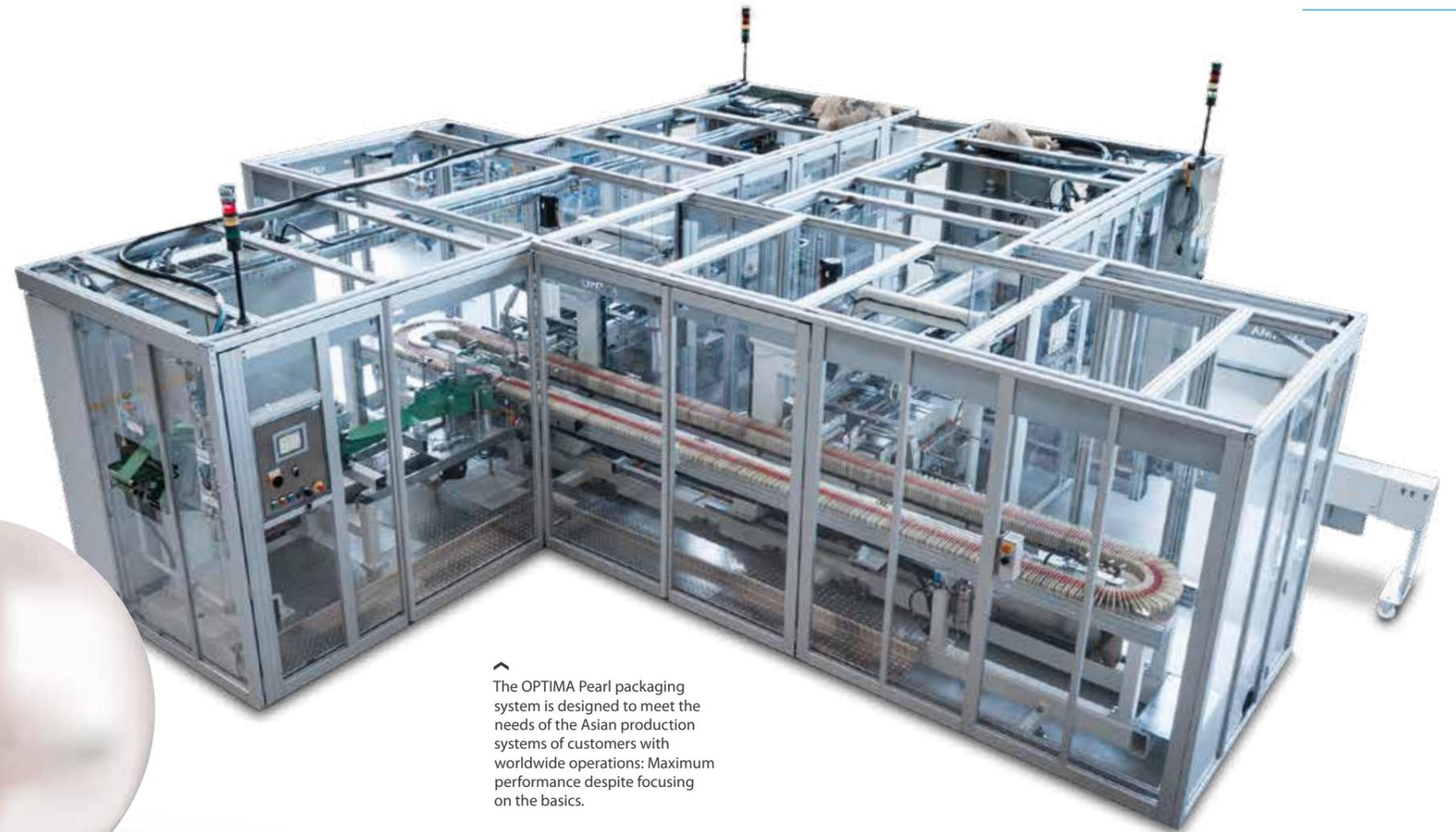
One advantage is that the dimensions of the lines or modules based on the Zero match the format of shipping containers. This means that they can be transported relatively quickly worldwide from the manufacturing facility in Schwäbisch Hall, Germany, without the need for any custom solutions. Ultimately, this also makes a contribution to short delivery times. The new machine frame can be a space-saving solution in cramped production environments. Depending on the machine configuration, it is possible to make savings of two meters in terms of the machine's length and more, because the modules do not need to be permanently installed in specific positions. The proven link between the manufacturing and packaging processes will continue to be maintained, as the manufacturing systems are increasingly meeting the need for flexibility. The OPTIMA Zero L1 and the Zero's multiple configurations are available right now. The platform is being continuously improved and extended. ●



IMPORTANT FOR YOU

Asia's requirements for sanitary towel packaging

- Manufacturers in Asia are meeting the demand for small package sizes.
- The level of automation is increasing – alongside rising labor costs.
- With its special edition "Pearl" machine, Optima Nonwovens has developed a packaging system that can be tailored to meet customer requirements.
- "Pearl" meets the requirements of operators working on a worldwide scale for maximum performance and an optimal price-performance ratio.
- Another machine, the FS1, is being launched for the Asian regional market.



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The OPTIMA Pearl packaging system is designed to meet the needs of the Asian production systems of customers with worldwide operations: Maximum performance despite focusing on the basics.

A PEARL FOR ASIA

Asian freshwater pearls are highly desirable. They have become the namesake of a new system for packaging feminine hygiene products. OPTIMA "Pearl" has been designed to completely meet the requirements of the global manufacturers producing in Asia, with high output packaging in small volumes, which is typical of the Asian market. What is not so typical is the exceptional price-performance ratio.

Asia is a specific market for feminine hygiene products. In many Asian countries they are virtually luxury goods. However, rising incomes mean that many Asian consumers can also afford panty liners and sanitary towels. In most cases, they prefer small packaging units. This makes less of a dent in the wallet.

The demand for smaller sized packaging has an impact on the type of high performance machines that are used there for packaging femcare products. Whereas in Europe packages typically contain at least twelve or more of the hygiene products, in Asia there are typically six to ten. High performance is now demanded, just like in Europe. This level of performance was demanded by a customer with international operations who manufactures feminine hygiene products for distribution at its Asian locations. Labor costs are rising in some Asian countries, so the teams in charge of production are progressively increasing the level of automation in manufacturing processes.

Both efficient AND cost-effective

Several years ago, the customer invested in a cost-effective packaging system from one of Optima's competitors, which was supposed to pay for itself as quickly as possible. However, it transpired that the supplier was unable to fulfill its promises. Despite several modifications, the machine never achieved the performance that had been anticipated and promised, so the customer contacted Optima Nonwovens, which he knew to be a reliable supplier in other international markets. The question was whether Optima Nonwovens would be able to supply a packaging system that can operate dependably with a high output – and at a price point that would ensure a reasonable payback period for the customer's investment. Although labor costs there have risen significantly in recent years, they are still comparatively low by European standards. This has to be borne in mind against the background of



◀ The dual-discharge system means that twice the output can be achieved with more stable packaging processes. For single-row packs, the product formation is transferred without stopping by the Robot Pusher on the web conveyor.

^ The newly-designed outfeed from the stacker is particularly cost-effective because there is no need for upper runners with chains and guides.



▶ The special edition Pearl contains many frequently requested functions as standard. Here is the main compression of the products, which can easily be exchanged for a rotating cassette. For example, the shortened web conveyor on the right saves costs and reduces the overall length of the system.



◀ The bag suction in the bag intake module was manufactured by 3D printer. With this process, parts can be produced quickly and flexibly. In addition, 3D printing technology has been used to optimize the airflow of the interior.

automation projects. It was also important to the customer's production manager, who values their anonymity, to have an effective security system, reliable on-site and after-sales service including the provision of spare parts, and a compact design that saves on floor space. Consequently, it was necessary to revise an existing concept for a high-performance system and adapt it to the specific Asian requirements. The usual systems cover a very wide range in terms of the potential packaging sizes. This high level of flexibility was not needed for the system under development, which Optima Nonwovens baptized "Pearl". As part of the customization process, it was designed to meet the needs of Asian customers – small package sizes and high output. "It was also important for all parts of the line to be as simple as possible," says the user's project manager, adding: "We also wanted the design to allow us freedom in terms of product orientation and quantity." The result was a Twin Bagger packaging system that is faster and more reliable than its competitors - and at a highly competitive price. This means that even users in developing countries who are anticipating rising labor costs can be sure of a return on their investment.

Special edition "Pearl" with high-grade equipment as standard

Optima Nonwovens is able to offer this competitive performance ratio with "Pearl", as technologically the developers did not have to break new ground at all. Well-established procedures like stacking and packaging can be performed with tried and tested technology. Some of the functions that are not absolutely necessary for the needs of Asian users have been left out. For example, the usual full modularization was dropped. This concept is comparable to what Asian car manufacturers do. They provide a well-equipped standard model with attractive terms, unlike European brand suppliers. As a rule, they prefer a basic model, which is then customized by the buyer by adding various optional extras. That comes at a price. With the new "Asian model" Pearl from Optima Nonwovens, too, the customer can only choose from a few optional features - but the version contains everything needed for the purpose specified, in particular the ability to combine it with fast-running converters. It also benefits from partial modularization, which opens up a certain degree of freedom. This will satisfy even customers with a global presence and demanding maximum performance.

The project manager makes it quite clear why the company chose Optima Nonwovens as its supplier: "Over the past few years, we have tested various providers and what we have learned is that Optima is still the best and will always strive to do its best". Optima wants to secure orders by providing the best machines that are available. This applies to machine reliability just as much as to safety and quality. He is particularly full of praise for the "Think Customer" mindset: "The Optima Nonwovens management always listens to us, no matter what the problem is. Unfortunately, our experience with other suppliers has not been the same. These are the values that led us to be part of the Pearl pioneer project."

Double track for worldwide and regional operators

There is another machine that does not quite match the performance of the Pearl described above, called the FS1. It has also been developed for the Asian market and could be seen as the Pearl's "stepsister". In its case, the developers have completely done away with modularity. For many customers with regional operations in Asia, FS1 will meet all their

requirements. It is scheduled to come onto the market in early 2021, whereas the first deliveries of the "Pearl" were completed in September 2020. "Pearl", as a special edition, will appeal to the widest possible range of customers, in the same way as car manufacturers' special models, thereby helping to meet the growing demand for feminine hygiene products in the Asian market of the future. This was pioneering work on the part of Optima Nonwovens and its customer, Pearl's first user. The role of the customer should not be underestimated. Ultimately, his demands were what triggered the initial spark to develop a product which will benefit future users and hence end users in Asia too. ●



IMPORTANT FOR YOU

Optima expertise in fuel cell production

- The cut system cuts key components for the fuel cell at one-second intervals.
- Manufacturers can switch from clocked to continuous production.
- Next-level systems cut, clean and inspect the components to meet even higher quality requirements.
- Removal of cut gas diffusion layers (GDLs) either manually or by robot
- Synergistic effects: cutting, assembly, stacking and pressing GDL, CCM, frames etc. using technology and expertise from inside the Optima Group

AT THE HEART OF THE FUEL CELL

For many people, fuel cell vehicles are one of the modes of transportation of the future. This is a market that is developing rapidly right now and has great potential for new innovations. This is also true for the production process of the so-called MEA (Membrane Electrode Assembly), the heart of the fuel cell. The demand for higher production capacity is growing, along with higher levels of maturity and demand. Optima has been developing systems that cater to this.

Sooner or later, electric vehicles will replace ones with conventional combustion engines. China is forging ahead – with generous support and preferential treatment in the form of permits and traffic. A number of US cities have already drawn up their "Electric Vehicle Roadmap". For example, in Los Angeles, from 2050 onward, only electric vehicles will be allowed on the road. From as early as 2035, all delivery vehicles there will have to be emission-free. Numerous European cities and countries are also planning to ban internal combustion engines – from Amsterdam and Paris (from 2030 onward) to Norway (new gasoline and diesel engines in 2025) and Scotland (2032). Within the framework of its COVID-19 economic stimulus package, Germany is using a higher incentive premium to promote the replacement of its motor vehicles with climate friendly and environmentally friendly vehicles.

In the case of passenger cars and two-wheeled vehicles, electric-powered vehicles powered by lithium-ion batteries appear to be dominating the market. It is an entirely different story with buses and trucks. Many hybrid buses have been installed with fuel cells to generate electric power. They are able to significantly increase the range of an electrically powered vehicle. Furthermore, the refuelling process is considerably faster than charging a lithium-ion battery. This is particularly beneficial for vehicles that are operated over long periods of time with few breaks, for example autonomous transport systems and industrial trucks in large logistics centers.

MEA components from rolled goods

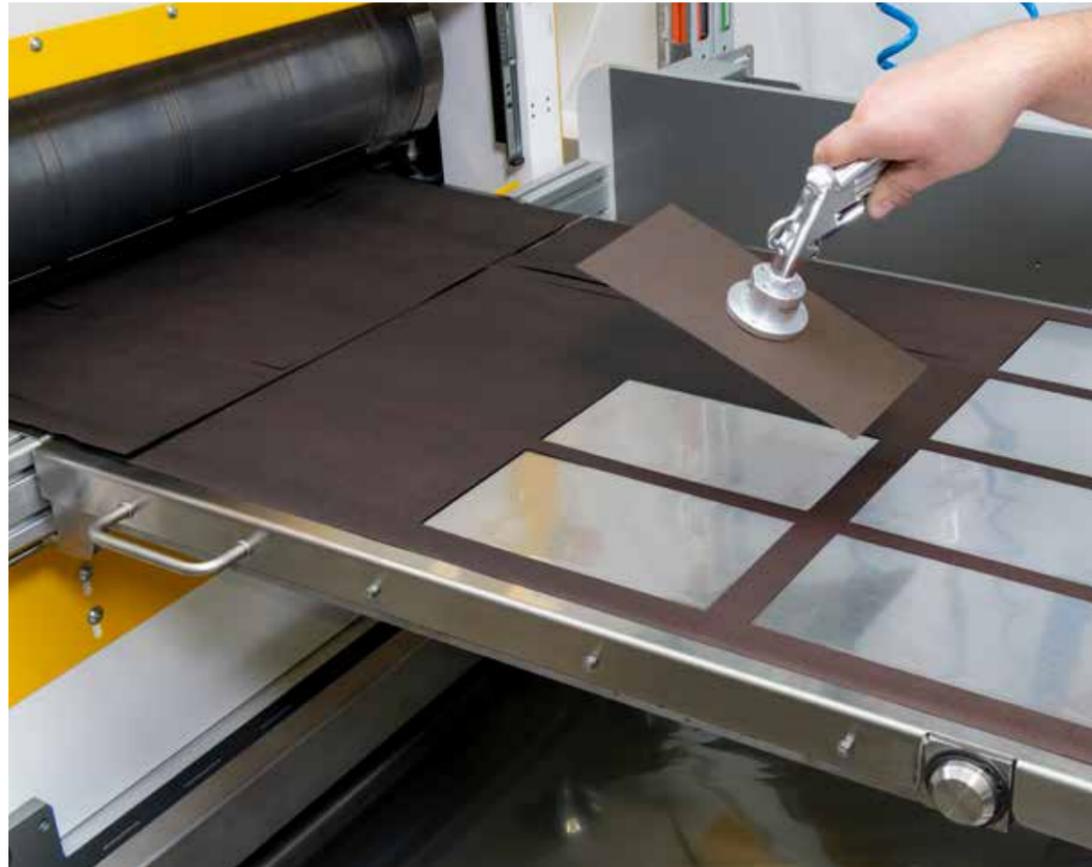
Greater use increases the need to produce fuel cells and thus the demand for faster production. Numerous operations in synchronized production used to be carried out manually, whereas now manufacturers are increasingly moving towards automating them. At the heart of the fuel cell is the Membrane Electrode Assembly, or MEA for short. This is permeated by hydrogen and oxygen, which react with each other within the MEA. The electric power required for propulsion is generated electrochemically (see also box on page 43).

An MEA essentially consists of an ion-conducting electrolyte membrane with a catalyst layer on the anode and cathode side (Catalyst Coated Membrane, CCM) and the gas diffusion layers (GDLs). These layers are produced separately and delivered to the fuel cell or the MEA manufacturer as rolled goods or produced by the manufacturer itself. They have to be cut out, combined and fixed there in the size required. Optima is able to provide assistance with many of these manufacturing steps by

using technologies that have up to now been used for manufacturing and packaging processes in the medical technology, consumer goods and paper hygiene industries. Supported by these technologies, the original micro-factories that produce MEAs in relatively small quantities can make the transition to automated mass production.

Gas diffusion layers are cut with care

The first project of this kind that Optima was involved in as the machine developer and manufacturer involved cutting out GDLs. This came as no surprise to the Optima developers. Two years earlier they had put out feelers directed at fuel cell production and carried out preliminary testing and project planning with a vehicle manufacturer. The size of the components incorporated in an MEA corresponds almost exactly to the size of large wound dressings. Optima has developed the expertise required to design and manufacture systems in the wound care sector



Using the cut system developed by Optima, gas diffusion layers (GDLs) are cut out which, along with other components, form the MEA, the heart of a fuel cell.

for many years. Analogous to wound dressing production, MEAs are cut from rolls of film that are then combined and stacked. However, the physical properties of the materials that have to be handled are quite different. The cutting process and the processing of the individual materials are dependent on very specific properties, such as low tensile strength and extremely sensitive surfaces. Machines need to be flexibly designed for these requirements. High cutting accuracy, clinical cleanliness and high output are essential. Single track wound care machines can output up to 600 products per minute.

An example of wound dressing manufacture

By contrast, fuel cell manufacturers have up to now been operating on a smaller scale of production. They cut the individual parts and place them manually one on top of the other or use robots in the best case scenario. It takes up to one minute to complete an MEA. Optima relies on a fast, continuous process, which the company has been using for many years in a wide range of industries.

Gas diffusion layers of different sizes are cut in seconds with the first machine supplied by Optima for fuel cell production. "GDLs are not particularly easy to deal with," reports Werner Volk, Optima's Director New Applications/Concepts. "In addition, manufacturing GDLs creates dust, which must not be allowed to affect the rest of the process."

From entry-level machines to fully automated solutions

Strictly speaking, this cut machine is an entry-level machine, with product inspection and tray loading performed manually. In a more fully automated machine that is currently under construction, specific air cleaning methods similar to those used in clean rooms will ensure even lower dust levels.

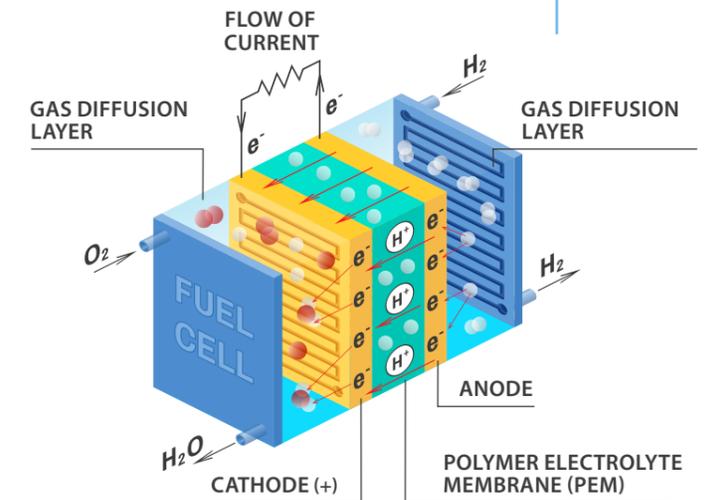
Both machines are designed based on the roll-to-piece principle that is standard at Optima Life Science. The GDL fleece is delivered on rolls, is unwound, and in a rotary process, it is cut in the cutting station. The cutting itself is done by a cutting plate, which is held in place by a magnetic roller. With this design, it is possible to produce a different contour on the same cutting station if necessary. Only a new cutting plate must be manufactured and inserted. The format can be changed both quickly and flexibly.



MEHR ZUM THEMA

How a fuel cell works

A **hydrogen-oxygen fuel cell** is a galvanic cell that converts the chemical energy of hydrogen and oxygen into electrical power. The key components are the gas diffusion layers (GDL) and a proton exchange membrane (PEM, also known as Polymer Electrolyte Membrane) that conducts protons but not anions, electrons or gases. The PEM is loaded with a catalyst (usually platinum). This creates the **CCM** (Catalyst Coated Membrane). Together these layers form the rectangular **MEA** (Membrane Electrode Assembly). The gases are fed via channels in the surrounding metallic bipolar plates (BPP) and are delivered to the CCM in finely distributed form via the GDL. Protons from the hydrogen side pass through the PEM to the oxygen side. Here the protons react with the oxygen in the air to form water. This generates electrical energy that can be used in an external circuit.



The simple cut machine allows an operator downstream of the cutting station to remove the finished parts with the aid of vacuum grippers and place them into a transport container. On the machine with a higher level of automation, this is supplemented by a robot gripper arm that picks the finished parts from the conveyor and places them into transport trays.

Solutions for the complete workflow

Optima also has solutions for the next steps in fuel cell production. A machine for producing MEAs is currently being developed. Optima is also involved in the next step of merging GDL and CCM. The machine that will be able to do this is currently in the design phase. And stacking, i.e., the production of "fuel cell stacks" from numerous individual cells, can also be solved by Optima. Clocked solutions are currently used for this purpose. However, the robots used in this process limit its speed. The high-speed stacking solutions developed by Optima's Nonwovens division are much faster. The principles used in this process can also be applied to the high-speed stacking of fuel cells. A suitable

machine is currently in the planning stage. In contrast, machines that are able to compress and clamp the stack have not yet been rolled out. At the same time Werner Volk points out that Optima would not have to reinvent the wheel in technical terms, because it can rely on tried and tested high-speed solutions.

Stacking just like paper hygiene products

In the future, technologies and expert knowledge from Optima Life Science, Optima Pharma and Optima Nonwovens will be used to sustainably accelerate fuel cell production. Volk is optimistic that he and his colleagues will soon be acquiring more new customers. "In contrast to lithium-ion batteries, German companies could well become technological leaders in fuel cell development and manufacturing", Volk says. Optima is a global company that can also supply on an international scale machine solutions and the support required by producers who are interested in increasing their capacity. If you are looking to switch from clocked, unit-based production to continuous processes with higher outputs, then Optima is the right partner for you. ●

The Genuss-Molkerei Zott is an independent family company with 3,090 employees and is headquartered in Mertingen, Bavaria. (Source: Zott/Eckhart Matthäus Photography)



Genuss-Molkerei Zott's most well-known dairy products include Monte, Sahnejoghurt, Jogobella, Primo and Zottarella. This is the 100 gram version of Monte MAXI. (Source: Zott)



Conversion projects have very special challenges, Olaf Tauber (left) reports. These include time pressure and difficult space conditions.



IMPORTANT FOR YOU

- Maier Packaging from Bergen am Chiemsee specializes in the conversion of forming, filling and closing systems and has its own in-house design and production facilities.
- With around 3,000 employees, a consolidated net group turnover of nearly 1 billion euros and 890 million kg of dairy processing conducted in 2019 alone, the Genuss-Molkerei Zott is one of Europe's largest dairies.
- The challenge: to retrofit the filling machine and bring it up to the current state of the art level without causing major interruptions in operation
- The solution: a four-stage conversion program created by Maier Packaging
- In around nine months Maier Packaging brought the Zott forming, filling and closing system up to the latest state of the art.
- The advantages: better product and cup quality, improved processes, higher output and efficiency, more accurate and faster dispensing, lower noise levels, easy maintenance, lower energy consumption, lower spare parts and storage costs, cost savings compared to buying a new system.

MISSION RETROFIT ACCOMPLISHED

How do you ensure dairy industry filling systems are ready for the future? Maier Packaging has been answering this question since 1985. In a project at Zott, the company from Bergen am Chiemsee has proven its know-how for retrofitting pre-existing forming, filling and closing systems.

Maier Packaging has been a full subsidiary of the Optima Group from Schwabisch Hall since July 2018. Since 1985, the company has been increasing the efficiency of pre-existing forming, filling and closing systems in the dairy industry, as well as building components for these systems and providing product development support.

The challenge

One of Europe's largest dairies, the Genuss-Molkerei Zott, headquartered in Mertingen, Bavaria, sells its products in more than 75 countries. The family company's most well-known products include Monte, Sahnejoghurt, Jogobella, Primo and Zottarella. Because of the lengthy shipping distances involved, increased demands are placed on the packaging of the internationally sold dessert product Monte. The resulting requirements had to be implemented.

After implementing a number of optimization measures that provided improvements, at least in the short term, Zott decided to carry out a general overhaul in order to significantly improve performance. Monte is filled for example in an aseptic forming, filling and closing system that has been used for many years. The single or double-layer Monte dessert is produced in six-piece containers weighing 55 grams each and four-piece containers weighing 100 grams each. Maier Packaging has now converted this filling system.

The system first unwinds a plastic sheet from a roll which is thoroughly heated by means of contact heating plates. The cups are then thermofomed from the heated sheets. Each cycle simultaneously forms 60 cups. Afterwards they are filled, closed and punched out. The project was particularly challenging because the conversion needed to be carried out on site at Zott, and cause the shortest possible interruptions of production operations. After all, these systems are among the most heavily used at Zott.

›
Martin Lechner (left),
Project and Process
Engineer of Production
Weiß at Zott, explains
which technical
parameters have been
improved by the retrofit.



"Thanks to their extensive expertise, Maier Packaging always provided us with shrewd advice and pointed out constructive changes and let us know what effects they may have."

*Martin Lechner, Project and Process Engineer of Production Weiß,
Zott SE & Co. KG*



"What we needed was an agile, flexible partner with its own in-house production systems who could react quickly to design adjustments," says Martin Lechner, Project and Process Engineer of Production Weiß, who managed the conversion project on behalf of Zott. This is why Zott sought out Maier Packaging, a company that specializes in exactly these type of retrofit projects

Four steps to success

To increase the quality of the products and cups, both systems need to be upgraded to the latest state of the art technology. The focal points included converting the drives from hydraulic to safer servo technology, overhauling the heating plate configuration to optimize cup sheet heating prior to the thermoforming process, as well as optimizing the forming air, pre-stretcher, forming station, draw frame and station control. Another important aspect was of course to increase output and energy efficiency.

The extensive conversion project was carried out in four steps and implemented in only nine months. These phases each lasted around two to three weeks, including production support. "First we replaced the control cabinets and integrated servo drives," explains Alexander Breier, who managed the project at Maier Packaging. "The fact that we had no drawings at all and had to first design the systems was

particularly challenging," says Breier. The conversion also had to be carried out on site and within a very short time frame. In the second step, Maier's experts renewed the heating plates, changed their positioning and installed servo drives. The forming station and the pre-stretcher were also retrofitted with a servo drive. In addition, an optimized forming air inlet valve was installed. In the third conversion phase, additional servo drives replaced the three-phase drives of the filling pumps, including the lever and cam mechanism. In the fourth step, the sealing station, die cutter, station rejection and draw frame were rebuilt.

Product and cup quality enhanced

The conversion measures had an immediate effect. "Because the heating plates remain in contact with the plastic sheet for a longer period of time, they are more thoroughly heated; thus the cup quality has improved considerably," states Martin Lechner. Efficiency has been considerably increased, and the number of defective parts has been significantly reduced. Thanks to the servo drives, the processes can now be better coordinated. The dispensing process has also been optimized and now runs faster. Since there are now less mechanical parts, the system is more maintenance-friendly overall.

A positive side effect of servo motors is that the system now operates much more quietly. The conversion also makes sense in terms of



‹
Martin Lechner of Zott summarizes
the most important improvements
resulting from the system
conversion. These include better
product and cup quality, improved
process sequences, higher output
and efficiency, more accurate and
faster dispensing, lower noise levels,
easy maintenance, lower energy
consumption, lower costs for spare
parts and storage, cost savings
compared to the purchase of a new
system.

sustainability. Martin Lechner estimates that energy consumption has fallen by around 200,000 kilowatt hours per year. Zott has also reduced spare parts and storage costs, thanks to Maier Packaging designing the same parts for similar applications and movement sequences within the machine.

Responsive partner

In addition, the system's output has also experienced a ten percent increase in performance, Martin Lechner is pleased to report. However, with these types of projects, you cannot expect everything to run smoothly at all times. "Thanks to their extensive expertise, Maier Packaging always provided us with shrewd advice and pointed out constructive changes and let us know what effects they may have. We greatly appreciate this transparent, cooperative and honest approach," says Martin Lechner. Maier Packaging was very responsive, he added, since the company has its own in-house design and production systems. The contact partners were easy to reach at all times, which also added value. "Together we have found the right solution for every challenge, even though we sometimes had heated discussions beforehand," says Lechner with a laugh. ●



MORE ABOUT THIS TOPIC

MAIER Packaging GmbH is a fully-owned subsidiary of the OPTIMA packaging group GmbH. Maier Packaging produces components for filling and production systems in the dairy and food industry. Therefore, Maier has a particularly close partnership with Optima Consumer. The company also specializes in converting and optimizing current forming, filling and closing machines. Its customers are mainly from the dairy and food industry. Founded in 1985 by Stefan Maier, the company currently employs 44 people at its site in Bergen am Chiemsee. The Managing Director at Maier Packaging is Alban Hutter.



IMPORTANT FOR YOU

Do you need to successfully process cosmeceuticals? There are solutions available.

- Not compulsory (by regulation) but reasonable: Cosmeceuticals normally contain active and sensitive ingredients that require very careful processing.
- Pharmaceutical technology has contributed hygiene functions in areas such as the laminar flow and the 3.1 certificates.
- Given the expensive ingredients, maximum dosing accuracy is a major factor for profitability.
- The cosmeceuticals segment often involves two-phase products, many of which are dispensed into one container using special dosing technology.
- The specifically coordinated combinations of ingredients and substances usually result in a very wide range of products. Highly flexible systems are specially designed to meet this need.

PIERRE FABRE COSMECEUTICALS: WITH A TOUCH OF PHARMA

Pierre Fabre's slogan is "From health to beauty". Applying this guiding principle demands a lot from the manufacturing and packaging processes. The quality and hygiene standards for processing cosmeceuticals are extraordinarily important. In keeping with this, Optima Consumer has established a "Health & Beauty" product division. The division has now successfully implemented a filling and closing machine for two-phase products.

The French company, Pierre Fabre, develops and manufactures cosmeceuticals as well as oncological and dermatological drugs. A great deal of time and money goes into researching plant-based and synthetic active ingredients. According to the company's own figures, Pierre Fabre reinvests approximately 14 per cent of its pharmaceutical sales into pharmaceutical research and development.

Pierre Fabre is therefore very familiar both with the very high pharmaceutical standards for aseptic processing as well as the requirements of the cosmeceuticals themselves. Pharmaceutical and cosmeceutical ingredients have a great deal in common (see text box on p. 51). Many of the active ingredients in cosmeceuticals are very expensive to obtain and require careful processing. The hygiene requirements for filling and packaging are equally high. Technologies from pharmaceutical engineering can be used as a paradigm for processing cosmeceuticals but cannot simply be reproduced.





Over 20 product formulations – including numerous two-phase products – are processed with the flexible packaging system.

Two-phase products are designed to work in an enhanced or intensive way. For example, one ingredient cleans the surface of the skin so that a second ingredient can then penetrate into the skin and ensure a particularly deep and thorough cleaning of the pores.

Two modes of action with one cosmeceutical product

The two-phase products from Pierre Fabre require exacting standards for the filling process. These dermatological cosmeceuticals are intended to both cleanse and nourish the skin. The Moduline is able to process liquids ranging from free-flowing to highly viscous and foaming liquids, including lotions, water, gels, oils, and milky products. A special technical solution is required when products with such different properties need to be combined in one container.

One segment in Pierre Fabre's successful cosmeceuticals division is body care products. In order to meet the special demands for filling and packaging these products, Optima has developed a customized machine design using the OPTIMA Moduline. The OPTIMA Moduline offers maximum flexibility for filling and closing different containers. For André Raynaud, who is in charge of the project at Pierre Fabre, the fact that the Moduline was a standard and well-proven modular machine was an important factor in the investment decision.

To this end, Optima has developed a specific filling module with a separate filling nozzle stroke for the first three and the second three filling stations. Each two-phase product is filled in two stages. The first three filling stations dispense the first phase and the second three filling stations dispense the second phase.

This continuously linear process brings together oily and aqueous liquids, for example. These two-phase products are shaken shortly before applying the cosmeceutical. The ingredients are mixed together for a short time and then separate out again immediately after use.

Since the ingredients are expensive, maximum filling accuracy is essential. The OPTIMA Moduline currently achieves a filling accuracy of 98 percent on the production line at Pierre Fabre. To check the filling accuracy, Human Machine Interface operators can request product samples using the sample mode. According to André Raynaud, these samples can be transported to the discharge point without stopping production. The operators can choose to send containers filled with the first-phase product, the second-phase product, or the complete mixture into the sampling track.



MORE ABOUT THIS TOPIC

Cosmeceuticals – still without clear definition

What are the characteristics that distinguish cosmetics, medications, and cosmeceuticals? Legislation has not yet provided any binding regulations or definitions. Like cosmetics, cosmeceuticals are simply subject to the EU Cosmetics Directive and must be safe and skin-compatible. This leaves room for interpretation.

The manufacturers themselves and market research institutes refer to the fact that cosmeceuticals are characterized by having active ingredients that pass through the skin barrier but are not allowed to enter the bloodstream. They produce health benefits but must not promise to relieve or cure illness.



➤ A filling system that can handle both single- and two-phase products.

Quick changeover

The Moduline can process four formats ranging in size from 20 to 50 milliliters. André Raynaud explained that the effective output was between 80 and 120 containers per minute. An immense variety of products is possible due to the many different ingredients. According to Raynaud, "We originally filled two container formats with 20 different formulations. In September 2018, we added two more container formats for shampoos."

Each product change involves cleaning the parts of the machine that come into contact with the product. A separate machine washes the parts at Pierre Fabre. It is therefore necessary to remove the dosing parts that have come into contact with the product. Optima provides a completely tool-free solution: With a few simple adjustments, the connections are released and parts such as the dosing needles are safely stored. A trolley takes the parts that have been in contact with the product to the cleaning station. A second set of clean dosing parts are waiting at the OPTIMA Moduline and ready for installation.

There are other special factors to consider when processing cosmeceuticals. "The machine is in an air-conditioned environment that is supplied with filtered air," Raynaud explained. Inside the enclosed machine, a targeted airflow carries any particulates past the filling and closing stations as well as the product itself. Raynaud added: "We comply with the ISO 8 classification inside the filling and closing unit." Pierre Fabre purchased the laminar flow unit from a French manufacturer and had it integrated into the machine under Optima's supervision.



^ Several components were integrated into the system under Optima management, including the laminar flow unit of a French manufacturer.

Verification and certificates are another very important aspect of processing cosmeceuticals. All materials that come into contact with the product must first have the necessary material certificate. Furthermore, certified welders must make any welded seams that come into contact with the product. For anything relating to the documentation, Optima Consumer was able to draw on the expertise of Optima Pharma, where these procedures and the 3.1 certificates are standard practice.

Working together successfully

The project and collaboration ran very efficiently, positively, and harmoniously. There were no design changes after the contract was awarded. Daily communication between Pierre Fabre and Optima and the close contact with other suppliers led to the joint factory acceptance testing in Schwaebisch Hall. Commissioning and the start of production in Soual (southern France) were then carried out as planned. André Raynaud was full of praise for the way schedules were maintained throughout the project. He also applauded Optima's customer focus and the excellent language skills of Optima project leader Kristina Koenig, which made communication and collaboration much easier.

When asked which factor was key in deciding to award the contract to Optima at the start of the project, Raynaud replied: "Most of all, it was the positive experience that we have had with our first Optima machine." The new line seems to be living up to expectations: "So far, we have produced about five million units on the machine. It has worked really well," concluded the French project manager. ●



› Experience digital products firsthand – that is what the new Optima Digital Innovation Center makes possible.

EXPERIENCE DIGITAL PRODUCTS FIRSTHAND

Optima has taken a major step toward becoming a digitalized company. The Optima Digital Innovation Center is up and running. The Optima Group's central digitalization center provides a firsthand experience of digital products and is available for all of its divisions. The facility sets new regional benchmarks for functionality, state-of-the-art technology and visitor-friendliness.



^ Touch screens explain the advantages of digital technologies.

Interpack – the most important trade show in the packaging industry – was to have taken place on May 7-13. As with all major events, it had to be postponed due to the COVID-19 pandemic. Optima had, however, laid a lot of groundwork for creating a unique experience for future visitors to Schwaebisch Hall even after the trade show. In mid-March, the new Additive Innovation Center – a development center for producing parts using 3D printing technologies – opened at the Steinbeisweg location.

At the end of April, the Digital Innovation Center in the Solpark industrial park in Schwaebisch Hall-Hessental commenced operations without an official opening event due to the COVID-19 pandemic. Just as the Additive Innovation Center will promote 3D printing technology, the Digital Innovation Center will play a significant role within the Optima Group as a think tank and in further developing and presenting digital solutions.

Focus on customer experience

Optima's own Smart Services will be presented in the Digital Innovation Center in addition to digital technologies and applications relating to augmented and virtual reality. The new showroom will make digitalization tangible for customers and visitors. Customer webinars will be an added feature in the future.



Proven virtual reality technology continues to be used in machine projects.

Experience digital products firsthand

"Our goal is to provide our customers around the world with an opportunity to experience Optima's digital products firsthand," explains Joachim Dittrich, Chairman of the Optima Consumer Division. Optima employees, customers and partners now have the opportunity to see, discover, experience and test Optima's new solutions on their individual way to becoming a digitalized company. The Digital Innovation Center will be able to impart and enhance knowledge. "Especially in the digital sector, it is important to understand the added value and then be able to communicate this to the customer," according to Michael Weber, Director Service at OPTIMA consumer GmbH.

Digital products and services will be presented in the innovation and exhibition area. The so-called Smart Services developed at Optima in recent years are part of the OPTIMA Total Care comprehensive life cycle management program. Smart Services effectively complement the so-called Basic Services, namely traditional services such as installation, calibration, spare parts service, training and retrofits. The digital services support all stages of the machine life cycle – from planning to commissioning to retrofitting. For example, at the beginning of a project during the design review, i.e. at the first inspection of the design, the system can be displayed digitally and in three dimensions on a virtual screen. On request, customers will be able to experience the system up close using virtual reality glasses. This will facilitate early corrections.

Augmented reality technology support

Customers will also receive digital support on all conceivable end devices, including augmented reality glasses, when resolving problems in production or when changing formats. Customers will be able to access these and many other Smart Services 24/7 via a central user-friendly Optima platform. The continuous availability of Smart Services means that agile, digital operation of machinery is becoming a reality. Customers will be able to test all products in the new center.



Using virtual reality technology, visitors will be able to maneuver through their system and identify changes at an early stage before the system is built.



At Optima, digital products are part of the OPTIMA Total Care life cycle management program. This includes, for example, a format change support.

"The Digital Innovation Center has been designed in such a way that visits – whether they are a customer's first visit, during the planning of a project or after commissioning – are based on the customer's needs," explains Holger Frey, who leads the Smart Services team there. The showroom can be customized for each customer visit within a few minutes.

The same building to house first co-working space in the region

"Collaborations have become even more important since the beginning of the COVID-19 crisis. We are therefore delighted that the same building also houses the first co-working space in the Schwaebisch Hall region. We will share the lobby as well as the common area with our new neighbors," Frey says. He sees great potential here: "In the so-called 'hello SPACE', freelancers and small start-ups will be able to develop new ideas. We are delighted to be part of an inspirational neighborhood."

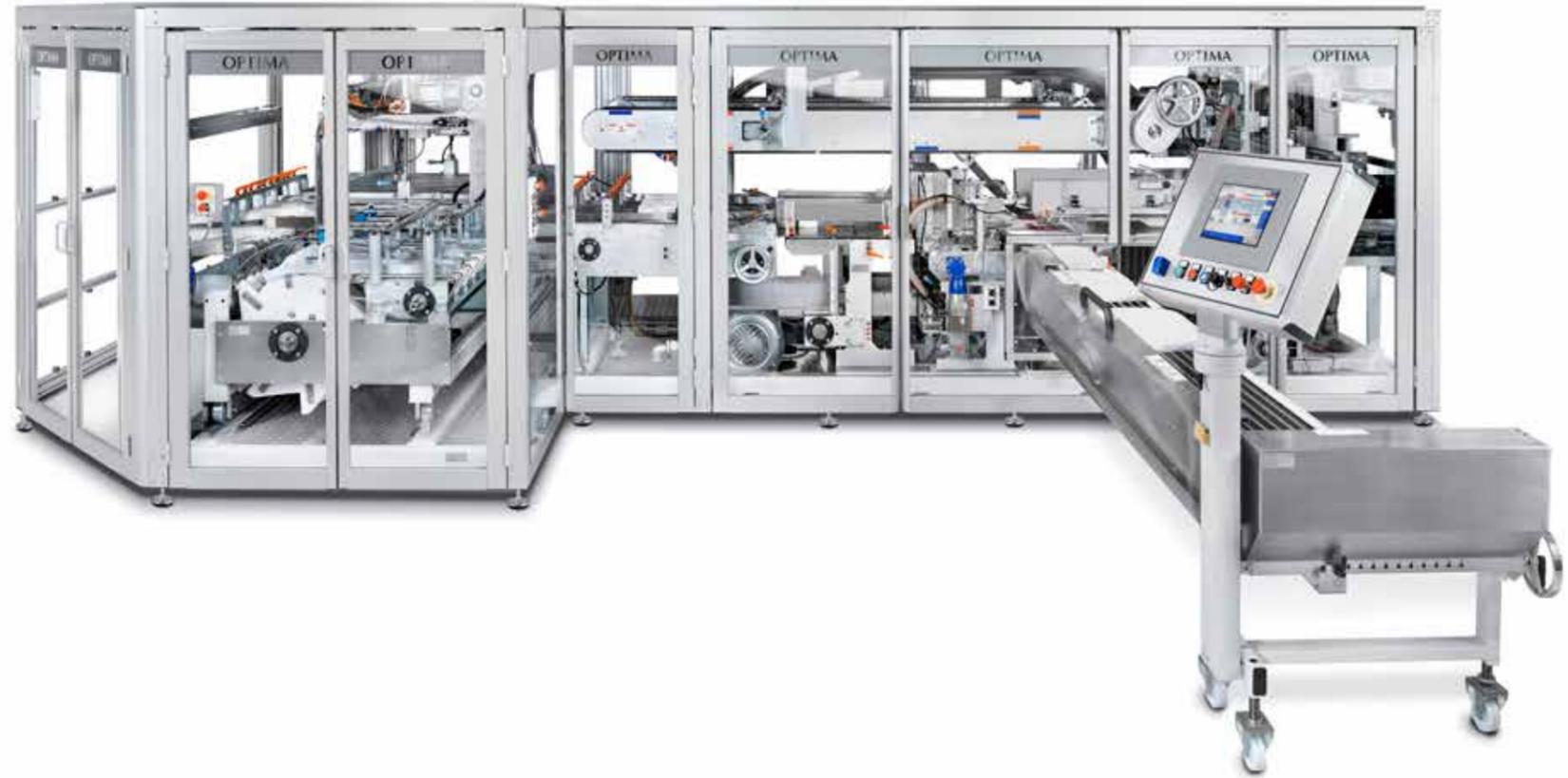
The new Optima Digital Innovation Center is located at Geschwister-Scholl-Straße 77 in the Solpark industrial park in Schwaebisch Hall-Hessental. [📍](#)



MORE ABOUT THIS TOPIC

www.optima-packaging.com/smartservices

Optima is currently implementing projects with paper packaging. For instance, this is possible with the OPTIMA OSR packaging machine (pictured) for toilet rolls. Systems like these can be adapted from film or paper packaging in a flexible way. Optima is working with pure paper, and no coatings are needed for this packaging.



FOCUS ON SUSTAINABILITY

The Optima Group has made sustainability one of its central tenets. To this end, a Sustainability Department has been set up to concentrate on developing ideas and solutions.

The issue of sustainability has become increasingly important. Discussions with major food and paper hygiene groups, and with partner companies, have confirmed the need for a comprehensive approach to the issue along the entire value chain. So for Optima, Sustainability is one of the four core issues, along with Flexibility, Safety and Digitalization.

The Sustainability Department is provided with support by project teams

The newly created "Sustainable Solutions" department also highlights the importance of this issue. From now on, Dominik Broellochs and Ulrich Burkart will be coordinating all of the sustainability initiatives for the Optima Group. They will be supported by project teams that are created on the basis of the expertise required and the specific issue.

This means that the "Sustainable Solutions" team has at its disposal the largest possible capacity and an extensive network. "We are shouldering the responsibility for the world of tomorrow," Joachim Dittrich, Chairman of the Optima Consumer Division, explains the new approach. "What will tomorrow's world need? What are consumers expecting and what will their purchasing behavior be like?" For Optima, these and other issues will be pivotal in the coming years. "Honest packaging" is particularly important to the team. After all, not everything that looks sustainable actually is sustainable. "Frequently, on first sight packaging may look highly environmentally friendly. However, when you compare the ecological assessment with other packaging materials, it soon becomes clear that appearances can often be deceptive," explains Dominik Broellochs. "Poorly designed packaging systems result in waste," says Broellochs. Comprehensive approaches to managing recycling prevent waste and make it possible to reuse or reprocess packaging in a sustainable way.

The honest, sustainable packaging of the future

This is why Optima has set itself the goal of developing the "honest, sustainable packaging of the future". Already today, there is considerable expertise being fed into machine development. The best solutions for the future are being identified, working in collaboration with customers, packaging material suppliers and material manufacturers. Safety still plays an important role, but always from the point of view of environmental compatibility. This is also regularly checked working closely with research bodies. Wherever possible, the use of new barrier solutions should ensure product protection as well as material degradability and recyclability. For example, cellulose and other materials that have been somewhat overlooked, like cellophane, are being tested.

Compliance with legal requirements is checked and validated

The implementation of legal requirements and guidelines in the company is checked and validated as part of its Corporate Social Responsibility. "We are pleased that we have been able to recruit two experienced Optima employees and pioneers for this challenging job – Ulrich Burkart and Dominik Broellochs. Their previous jobs mean that both have a good insight into the field of sustainable packaging," explains Joachim Dittrich. In the future, Optima will be reporting on the latest developments and solutions on a regular basis. 

Working together with Fripa, one of the first paper packaging projects was completed. Torsten Bahl (left), a member of the Fripa management board, and Dominik Broellochs from the Team Sustainable Solutions with the new paper packaging.



HOW YOU BENEFIT FROM ROBOTICS

