



2018

2019

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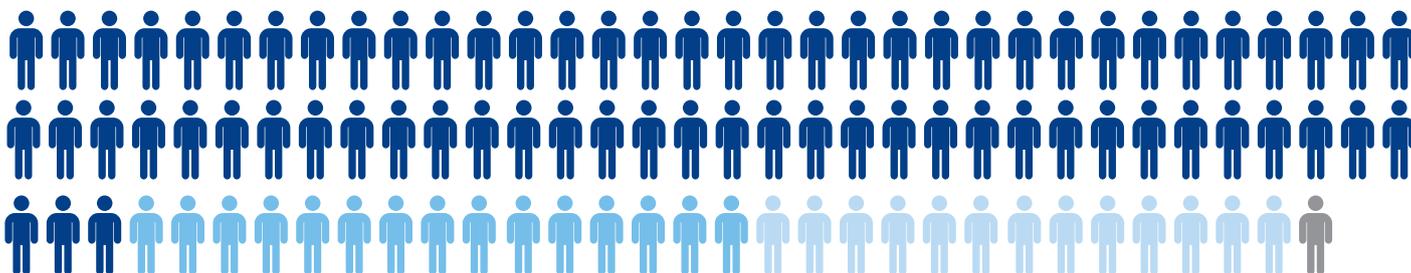
BEING AT THE FOREFRONT OF THE TECHNOLOGICAL AND DIGITAL DEVELOPMENT

Most industries are currently going through a transition where digitalisation plays a key role. Consumers prefer a more customised offer, where algorithms and data can create personalised experiences. Both in terms of products and services, but also, in our case, more personalised packages. The transition also entails an increasing opportunity for product traceability and to safeguard food safety. These are trends that both brand owners as well as the packaging industry and suppliers to dairy farmers need to consider and respond to. And indeed, technological development and digitalisation can support them with data, speed and precision to stay competitive in the current transformation.

In this Tetra Laval annual report 2018/2019 you will be able to read how we have advanced the technological and digital development to enhance our customers competitive edge.

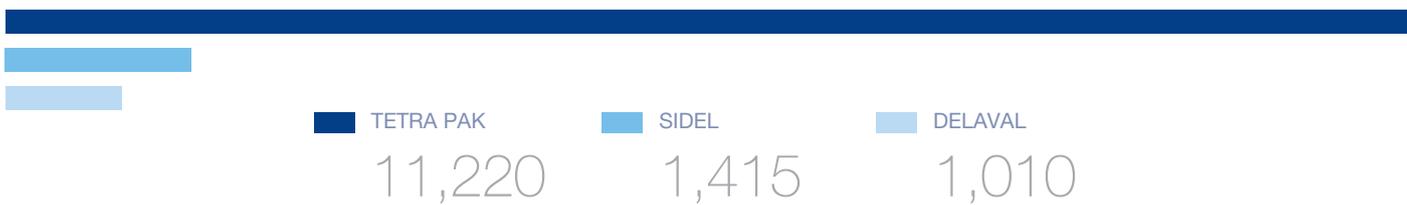
The Tetra Laval Group consists of three industry groups, Tetra Pak, Sidel and DeLaval, all focused on technologies and services for the efficient production, packaging and distribution of food. The head of each industry group has operational management responsibility for the respective industry group and reports directly to the Tetra Laval Group Board. The Group Board is responsible for the overall strategy of the Group and for controlling and supervising all of its business operations. The Chairman ensures the implementation of the Group Board decisions and the implementation of strategy and policy for the Group.

NUMBER OF EMPLOYEES, DECEMBER 2018



NET SALES 2018, MILLION EURO

TETRA LAVAL GROUP 13,635





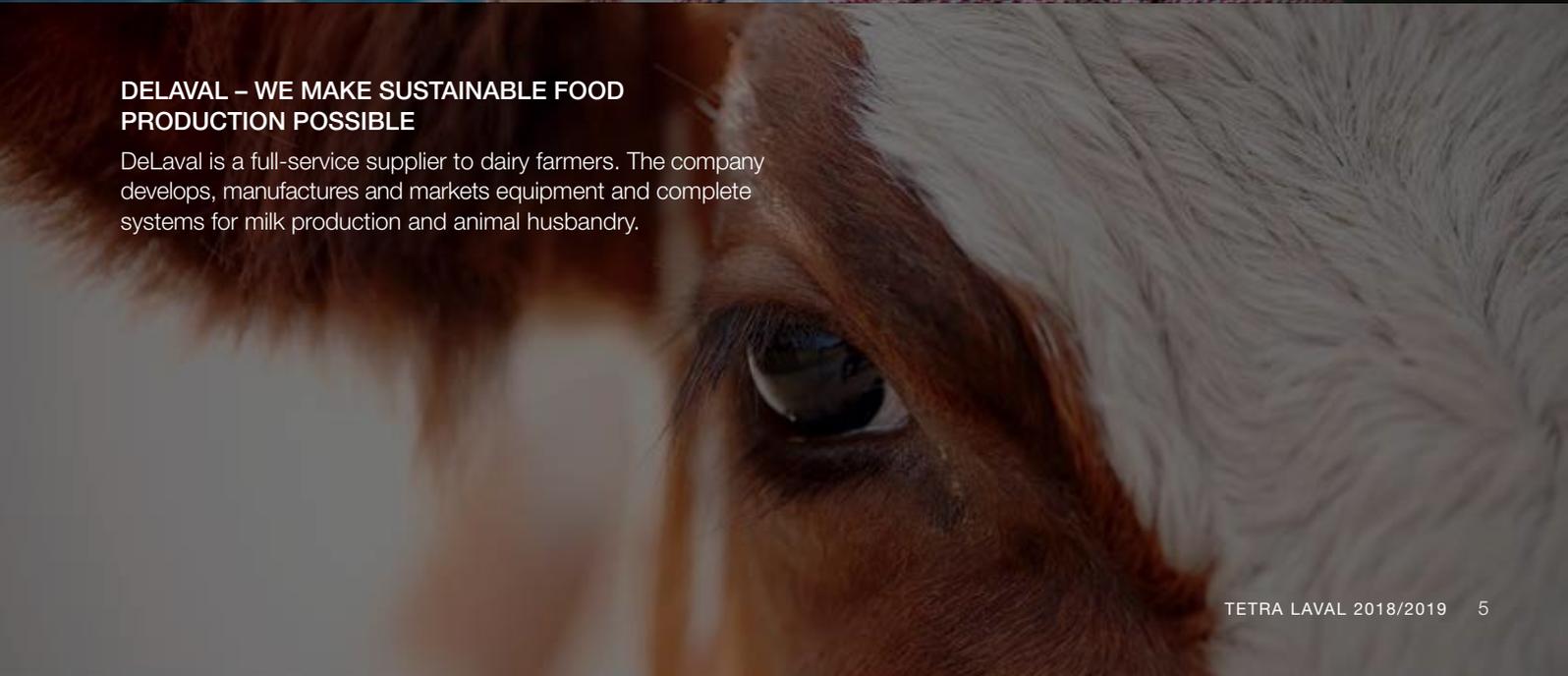
TETRA PAK – PROTECTS WHAT’S GOOD

Tetra Pak is the world's leading food processing and packaging solutions company. Working closely with customers across the globe, we provide a broad range of innovative products, technologies and services, helping to make food safe and available, everywhere.



SIDEL – PERFORMANCE THROUGH UNDERSTANDING

Sidel is a leading provider of equipment and services solutions for packaging beverages, food, home and personal care products in PET, can, glass and other materials.



DELAVAL – WE MAKE SUSTAINABLE FOOD PRODUCTION POSSIBLE

DeLaval is a full-service supplier to dairy farmers. The company develops, manufactures and markets equipment and complete systems for milk production and animal husbandry.

A challenging year with good prospects for the future

Tetra Laval Group's net sales amounted to €13.6 billion, a nominal decrease of 2 per cent compared with 2017. At comparable exchange rates, sales increased by 2.4 per cent. All industry groups successfully grew service sales while Tetra Pak and DeLaval also grew equipment sales. The Group reported a decrease in operating profit, mainly attributable to the adverse currency effects, competitive pressure, escalating raw material costs and tough economic conditions in some markets. I want to express my gratitude to our dedicated personnel for their commitment during a challenging year.

Digitalisation presents significant opportunities

All three industry groups are investing significant resources to secure they remain in their leading positions and develop new ways to improve their customers business. Digital printing is highly interesting to Tetra Pak and we are now making our first full-scale installations of digital printers in the clusters.

Tetra Pak wants to connect the food industry in areas that we know drive value creation for both our customers and for Tetra Pak. These areas will address smart factories, integrated supply chains and smart consumer engagement through connected packages.

DeLaval's opportunity is to offer global data management services combining data and sensors for different customer segments within the dairy industry and provide access for the farmers to high quality data, information services and data analytics.

The latest product development efforts in Sidel have a strong focus on performance, reliability and ease of use supported by machine connectivity tools. Delivering performance of the installed base is a key differentiator and a driver for customer loyalty, supported by continuous data-driven line monitoring.

Improved growth in our largest markets

In our two largest markets, China and Brazil, we have returned to growth. Economic volatility and sanctions continued to subdue sales in the Middle East and Russia. We also saw declining sales in Europe due to tougher

market conditions and customer dual sourcing strategies, while sales in the Americas remained basically the same as in 2017.

We experienced the strongest growth in South and East Asia & Oceania. The construction of a packaging material plant in Vietnam to support growth proceeded according to plan and will be operational in mid-2019.

Tetra Pak continued to grow in a challenging market

Total sales of Tetra Pak grew 2.5 per cent, excluding currency effects, in a challenging market. Growth of capital equipment sales in both Packaging and Processing contributed with 2.5 per cent and 13 per cent respectively. Sales of packaging material declined slightly, even though the unit number of packages grew by 1.5 billion to 190 billion. Sales of additional material, like caps and closures, grew 6 per cent thanks to the successful deployment of new packaging formats. The positive trend in service sales of recent years continued with a growth rate of 8.7 per cent. Service sales now account for more than 13 per cent of total sales.

Profitability declined due to adverse currency effects, competitive pressure, escalating raw material costs and tough economic conditions in some markets.

We launched a game-changing plant management service, Tetra Pak® Plant Secure, that covers all the equipment and systems supplied by us and others, for example in a dairy, delivering tangible profitability results for our customers.

Sustainability is at the forefront on Tetra Pak's agenda. We are committed to working with industry partners to develop improved recycling solutions and substantially increase the use of bio-plastics and recycled plastics once they are validated as safe and legally acceptable as a food material.

In 2018 Tetra Pak developed a paper straw for its portion-sized packages. The goal is to launch paper straws during 2019 that are fully functional, meet global food standards and satisfy volume demands.

We expect continued growth for Tetra Pak in 2019.

DeLaval – innovation at the forefront

Sales excluding currency effects grew 7.5 per cent and order intake had double-digit growth. We have grown faster than the market in favorable market conditions. The growth is mainly due to the launch of a full range of capital goods and after-market products. The innovations are the outcome of several years of intensive R&D activities. We launched the new DeLaval VMS™ V300, an automatic voluntary milking system to which farmers reacted very positively. At a time when farmers in many countries are finding it increasingly difficult to recruit the right staff, the work efficiency benefits of automatic milking are highly relevant. On the non-robotic milking side, we have revitalised our solutions to parlours and rotaries mainly used on large farms. These are among the innovations that build a base for profitable growth in the coming years.

Our activities in data management continued to develop positively and we are allocating significant resources in this area. With our ability to collect data on the farm, we can gather and analyse information – with the farmers' permission – to give more accurate recommendations that help them improve both food safety and farm profitability.

We are entering 2019 with a very solid order book and expect to see continued growth for DeLaval during the year.

Sidel – increased aseptic demand

Sidel's sales grew by about 1 per cent, excluding currency effects and despite challenging market conditions. The continued growth of services managed to compensate for the decline in capital sales. By keeping costs under control and progressing on strategic initiatives, we maintained the profitability level.

Sidel's sales of PET declined somewhat. Sales in Europe were, however, positive and continued to be strong for PET in all the categories we serve. There is a clear conversion trend to PET. China offered interesting opportunities for our ultra-clean and aseptic technologies for sensitive products in PET.

We have successfully launched new products for fillers, offering beverage producers active in the can and glass segments high-

quality products at an advanced performance level. We also introduced a new generation of labelling solutions for our Super Combi launched in 2017.

Packaging design with an attractive look and format is a key differentiator for our customers. Sidel has deep expertise in package design and to strengthen that offering further, PET Engineering in Italy was acquired.

We expect 2019 to be a year of further improvements for Sidel.

Growth, sustainability and innovation – our focus for 2019

Several of our customers struggle with subdued growth and profitability due to changing consumer behaviour. Our commitment is to support our customers to introduce more attractive products at competitive prices, thus generating growth for them. Through our expertise, we also contribute to improving our customers' operational efficiency.

For Tetra Pak, we are developing various solutions to optimise plastic closures, as well as potentially replace straws in some applications. Through packaging material development, we are determined to increase the renewable content and establish materials that are even simpler to recycle. For DeLaval, a prime target is to reduce methane (CH₄) emissions at the dairy farm. In Sidel's case, light-weighting of bottles and design of bottles for easier recycling further support our customers' environmental ambitions.

Internally, continued efficiency improvement in all parts of the Group is necessary. Finally, innovation is in our genes and recent product launches create significant opportunities.

We are addressing these focus areas with speed and determination and I am confident that the Group will deliver satisfactory results despite challenging market conditions in 2019.

Finally, looking into 2019, I have the pleasure to welcome Adolfo Orive and Monica Gimre as new CEOs of Tetra Pak and Sidel respectively. I also want to convey our gratitude to Dennis Jönsson and Sam Strömerstén for outstanding achievements for more than 30 years within the Tetra Laval Group.

Lars Renström



TETRA LAVAL GROUP BOARD



01. Lars Renström

Chairman of the Board since 10 June 2016.

Lars Renström joined the Board as non-executive director in 2013. Lars Renström was President and CEO of the Alfa Laval Group 2004 – 2016. He has previously held positions as President and CEO of Seco Tools, President and head of Atlas Copco's Rock Drilling Tools division and head of Ericsson's Telecom Cables Division. He is currently also Chairman of the Board of Assa Abloy AB.

02. Paul Conway

A non-executive director since 2014.

Paul Conway OBE. Former Vice Chairman of Cargill Inc and Chairman of Carval Investors Llc.

Vice Chairman of the US-China Business Council and board member of the US-India business council. In his 36 year Cargill career worked mainly in Food & Agriculture supply chain businesses in East & West Europe, Asia and the USA. He had Executive supervision of Asia-Pacific as well as Strategy & Capital allocation and approval. Paul has been a frequent external speaker on Food Security & Sustainability issues worldwide.

03. Nigel Higgins

A non-executive director since 1st August 2016.

As of May 2019 Nigel Higgins is Chairman of Barclays plc. Prior to that he was Deputy Chairman of Rothschild & Co having been Managing Partner and Chairman of the Executive Committee since 2010. He worked at Rothschild upon graduating from Oxford University in 1982. He was a member of the Advisory Board for the Commercial Directorate of the UK's National Health Service from 2002–2007. He is a member of the Trilateral Commission. He is Chairman of Sadler's Wells, the world's No. 1 venue dedicated to international dance.

04. Ola Källenius

A non-executive director since 1st June 2016.

Ola Källenius has been a member of the Board of Management of Daimler AG since January 1, 2015. Currently he is responsible for Group Research & Mercedes-Benz Cars Development since January 1, 2017. In his prior position he was leading Mercedes-Benz Cars Marketing & Sales.

He already served as a Divisional Board member for Marketing & Sales since October of 2013.

Before his assignment in Marketing & Sales, he was the CEO of the performance and sports car division Mercedes-AMG GmbH for three years after having led Mercedes-Benz U.S. International, Inc., the Mercedes-Benz production plant in Alabama, as its CEO in 2009. From 2005 – 2009, Ola Källenius was the Managing Director of Mercedes-Benz HighPerformanceEngines Ltd. in Brixworth, UK - Daimler's Formula 1 powertrain operation. He assumed this position after his role as Executive Director of Operations for McLaren Automotive Ltd. from 2003–2004.

05. Jorma Ollila

A non-executive director since January 2013.

Jorma Ollila was Chairman of Outokumpu 2013-2018. He was Chairman the Board of Directors of Royal Dutch Shell plc 2006 – 2015, Chairman of Nokia 2006–2012, Chairman and CEO, Chairman of the Board of Directors and Group Executive Board of Nokia Corporation 1999–2006, President and CEO, Chairman of the Group Executive Board of Nokia Corporation 1992–1999. He is Vice Chairman of the Board of Directors of Otava Books and Magazines Group. He is Advisory Partner of Perella Weinberg Partners as of 2014. He is Chairman of Militon as of 2015 as well as Chairman of the Board of Xinova LLC since 2016. Board member of TBG AG since 2016.

06. Dr. Bernd Pischetsrieder

A non-executive director since 1999.

He is Chairman of the Supervisory Board of Münchener Rückversicherung-Gesellschaft, Aktiengesellschaft in München Dr. Bernd Pischetsrieder has been Chairman of the Board of Management of Volkswagen AG from 2002 to 2006. He has been Chairman of the Board of Directors of Scania AB, Sweden from 2002 to 2007. Dr. Pischetsrieder is a member of the Supervisory Board of Daimler AG since April 2014.

07. Finn Rausing

A non-executive director of the Tetra Pak Group Board from 1985 to 1989 and of the Tetra Laval Group Board from 1995.

Finn Rausing, who is the Chairman of the Audit Committee of the Tetra Laval Group Board, is also a board member of Alfa Laval AB, DeLaval Holding AB, EQT AB, Excillum AB and SwedeShip Marine AB. Mr. Rausing is also Chairman of the Stockholm Institute of Transition Economics (SITE).

08. Jörn Rausing

A non-executive director of the Tetra Laval Group Board since 1991 (an alternate director of the Tetra Pak Group Board since 1985).

Jörn Rausing is also a board member of Alfa Laval AB and DeLaval Holding AB and of Ocado PLC. He is the Tetra Laval Group's head of Mergers and Acquisitions. He is also the Chairman of the Remuneration Committee of the Tetra Laval Group Board. He is Member of the Board of Governors of the Museum of London.

09. Kirsten Rausing

An alternate director since 1985 and a non-executive director since 1991.

Kirsten Rausing is a Member of the Jockey Club and a Director of the British Bloodstock Agency. In addition, Ms. Rausing is the Hon. President of the European Federation of Thoroughbred Breeders' Associations (Paris), as well as a past Chairman of Thoroughbred Breeders Association of Great Britain. She was a Trustee of the newly formed Racing Foundation (UK) from 2012 to 2017; this Foundation handles the proceeds of the British Government's sale of the Totalisator Board. In January 2017 she was elected Chairman of The International Thoroughbred Breeders' Federation, a worldwide organisation with over 40 members states.



PROTECTS WHAT'S GOOD

Tetra Pak is the world leader in food processing and packaging solutions. For more than 65 years, we have worked with customers across the globe to help make food safe and available, everywhere. Continually building on our heritage of innovation, our deep market knowledge and our commitment to sustainable development, we focus on enabling them to deliver products of outstanding quality and consumer appeal, while maintaining the highest standards of food safety and operational performance.

CUSTOMER VALUE GOES BACK TO ITS ROOTS

Tetra Pak was built on delivering customer value. Dr. Ruben Rausing, who founded the company, believed that a package should save more than its costs; that greater efficiency, better quality, increased differentiation and business growth should more than offset what customers pay for packaging. That principle continues to guide our business today, with our goal to deliver outstanding performance and quality to our customers at lower comparable cost, and with higher value, than anyone else in the industry.

PRODUCTS

Tetra Pak is uniquely equipped to provide solutions that meet our customers' complete needs. We provide solutions for processing, packaging and distributing a wide range of food products. We are experts in minimising raw material and energy consumption during manufacturing and distribution, thereby maximising operational and environmental performance.

Our portfolio is broad, and includes:

- Carton packages
- Processing equipment
- Packaging equipment
- Distribution equipment
- Automation solutions
- Services

MARKETS & CUSTOMERS

In 2018 Tetra Pak sold products and services to customers in more than 160 countries, employing around 25,400 people.

Our customers come from across the food industry, providing consumers with a broad range of dairy products and dairy alternatives, beverages, prepared foods, cheeses, ice creams, wines, spirits and powdered products.

SUSTAINABILITY

At Tetra Pak, our approach to sustainability is shaped by our brand promise: PROTECTS WHAT'S GOOD™.

That means protecting food, through our processing, packaging and service activities. But it also means protecting people, both inside and outside the company. And it means protecting futures: our planet's, our customers' and our own. At the core of our approach to sustainability is a recognition that our future success depends on our ability to provide safe, secure and sustainable products to consumers, as well as a commitment to being socially responsible in the way that we operate across the value chain.

NET SALES 2018

€11.2

BILLION

SALES IN

>160

COUNTRIES

NUMBER OF EMPLOYEES
DECEMBER 2018

25,488

CUSTOMER INNOVATION CENTRES

6

TECHNICAL TRAINING CENTRES

11

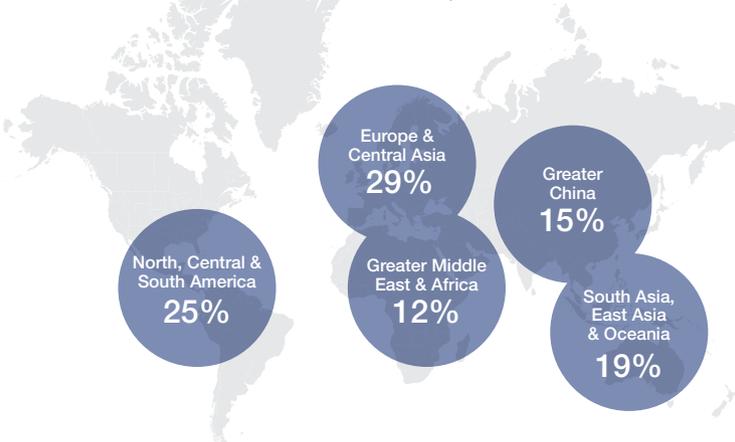
RESEARCH AND DEVELOPMENT CENTRES

5

PRODUCTION PLANTS

56

TETRA PAK NET SALES BY GEOGRAPHY, 2018



TETRA PAK SALES SPLIT BY MARKET SEGMENT, 2018 (EXCLUDES SERVICES)

Dairy 37%		Prepared food 6%	
Beverage 15%		Cheese 17%	
Ice cream 8%		Powder 16%	

Other 1%

HIGH-PERFORMANCE PACKAGING PRODUCTION SOLUTIONS

Sidel helps package beverages, food, home and personal care products in PET, can, glass and other materials. We are passionate about providing complete solutions that fulfil customer needs and boost the performance of their lines, products and businesses.

PERFORMANCE THROUGH UNDERSTANDING

When beverage, food and HPC producers work with Sidel, the end result is a solution that enables them to optimise their product packaging and grow their business. They need to consider that consumer trends are changing at a very fast pace, combining a focus on safety, quality and health benefits with a desire for increased convenience, transparency, authenticity and personalisation. Now more than ever, our customers need strong, consistent performance that provides the flexibility and agility needed to cater to different packaging, product and manufacturing needs. Performance that minimises resource consumption and environmental impact – while achieving customised production at a lower cost. Delivering this level of performance requires us to truly understand our customers’ products, consumers, supply chains and production needs. All so that we can create tailored solutions that consistently deliver the exact performance they seek – no more, no less.

That is what we promise. That is what we deliver. We call it *Performance through Understanding*.

MANY MARKETS. ONE PURPOSE.

With over 40.000 machines installed in more than 190 countries, we have nearly 170 years of proven experience, with a strong focus on providing our business partners with the advanced systems, line engineering and innovation that they need to reach their goals.

As a complete solutions provider, Sidel serves brand owners, manufacturers and co-packers, active in the soft and alcoholic drink business as well as in the food, home and personal care industries. We are a leading provider of blowing, filling, labelling, material-handling, end-of-line and engineering solutions for multiple applications.

Our more than 5,400 employees work to deliver all types of equipment and services within primary and secondary packaging, and we also offer processing equipment, supplied by Tetra Pak, enabling customers to work end-to-end with one partner.

Novembal is a specialist in plastic cap design and injection, and a leading supplier of closures for the bottled liquid food market with over 50 years of experience. Predominantly based and operating in North America, Novembal is an independently managed business unit of the Sidel Group.

NET SALES 2018

€1.4

BILLION

SALES IN

>90

COUNTRIES

NUMBER OF EMPLOYEES
DECEMBER 2018

5,487

TECHNICAL TRAINING CENTRES

13

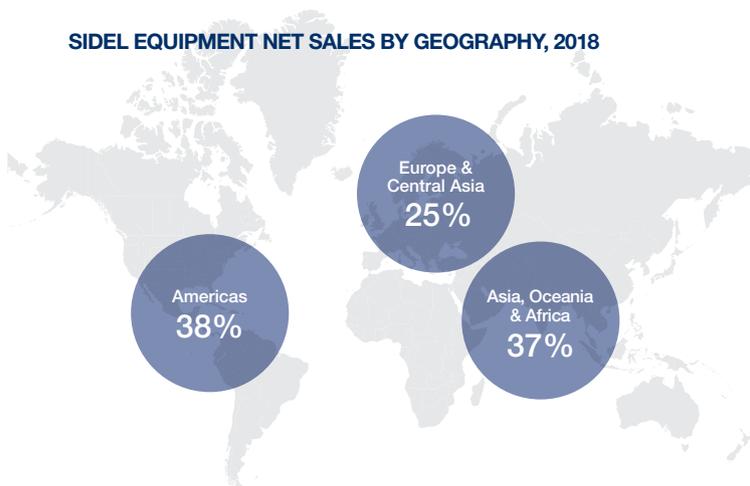
RESEARCH AND DEVELOPMENT
CENTRES

9

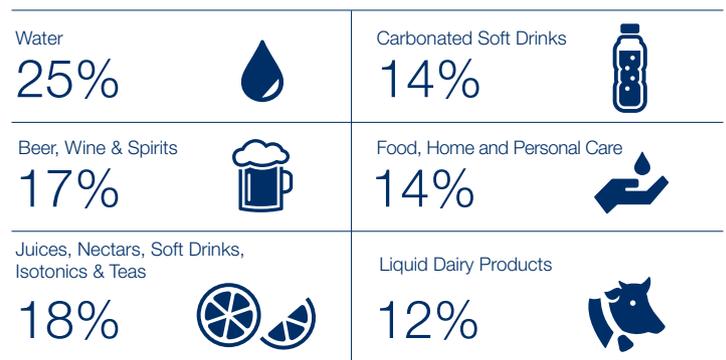
PRODUCTION PLANTS

21

SIDEL EQUIPMENT NET SALES BY GEOGRAPHY, 2018



SIDEL EQUIPMENT NET SALES BY MARKET SEGMENT, 2018



WE LIVE MILK

DeLaval is a market leader and trusted partner for thousands of farmers around the planet, providing integrated milking solutions designed to improve dairy farmers' production, animal welfare and overall quality of life. The company develops, manufactures and markets equipment for milk production and animal husbandry worldwide.

OUR SOLUTIONS

DeLaval offers highly efficient system solutions for milking, farm and herd management, animal traffic control, feeding, cooling, manure handling, ventilation and energy recovery. DeLaval customers can also choose from a wide range of services and consumables: liners & tubes, farm supplies, services & original parts, and milk quality & animal health.

OUR CUSTOMERS

Every time we help a farmer find a way to produce more milk from the same herd, we're making food production more sustainable – by introducing a new working method on the farm, a new parlour, better liners, better hygiene, better data to make better decisions, by cutting disease and keeping cows healthier, by increasing their milking lifetime. Every time we do that, we help farmers do more with less.

Every time we do that, we're moving on the road to more sustainable food production.

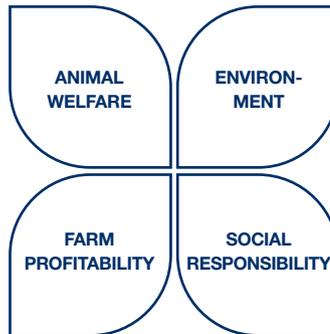
RESEARCH AND INNOVATION

Research and innovation are central to the continued success of DeLaval supporting our customers and

we have seven R&D centres around the globe. We work closely with a worldwide network of farmers, academics, dedicated research facilities, scientists, sales teams and authorised dealers.

Innovation is in our blood. It's been in our blood since Gustaf DeLaval patented the centrifugal cream separator back in 1878. That is 140 years of continuous knowledge, accumulating year after year and changing how we do things, innovating to make them better.

In short, we live milk.



NET SALES 2018

€1.0

BILLION

SALES IN

>100

COUNTRIES

NUMBER OF EMPLOYEES
DECEMBER 2018

4,637

TECHNICAL TRAINING CENTRES

6

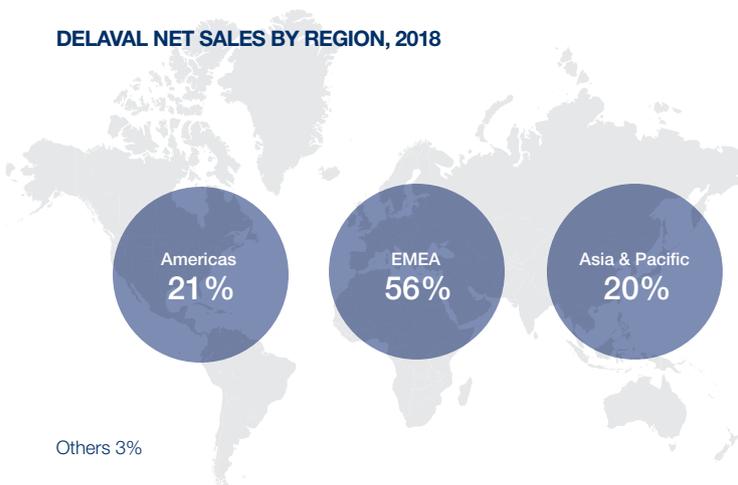
RESEARCH AND DEVELOPMENT
CENTRES

7

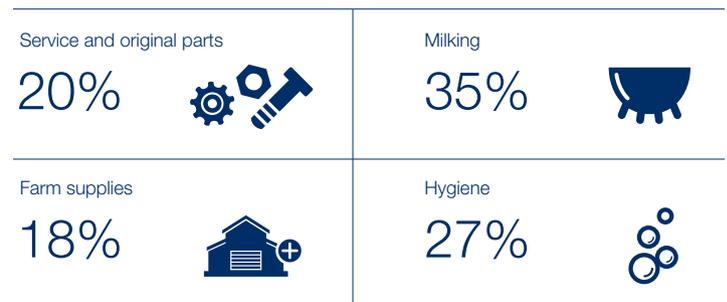
PRODUCTION PLANTS

17

DELAVAL NET SALES BY REGION, 2018



DELAVAL NET SALES BY PRODUCT SECTOR, 2018





Tetra Laval world trends

– an overview

TETRA PAK

SHIFTING CONSUMER PREFERENCES

Consumer interest in healthy living and alternative lifestyles fuel the demand for new categories of beverages such as plant based drinks. Negative perceptions of sugar content in juices and nectars drives the shift to plain and flavoured water. Other strong trends include cultural adaptations, such as halal and kosher, in new growth markets, and the development of value-added and differentiated products, such as premium ice creams and yogurts.

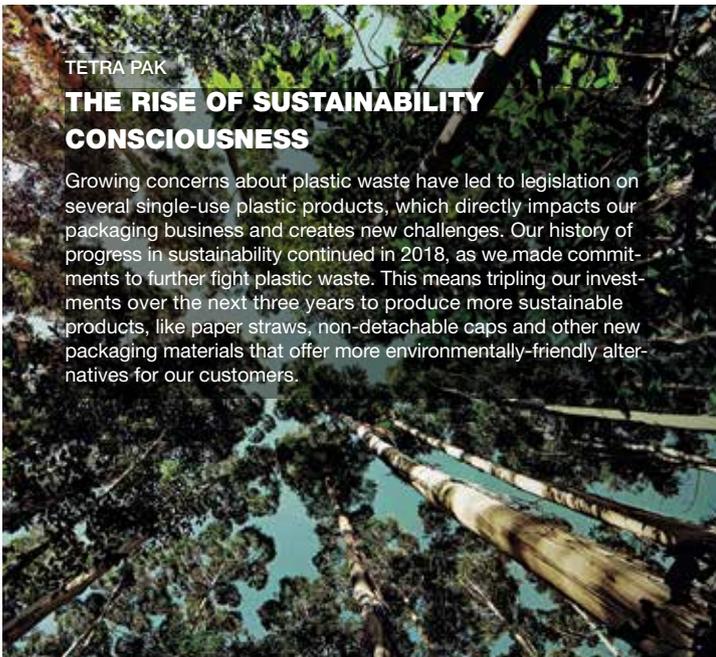
We are addressing consumer needs in fast-growing categories in our existing business, such as organic, high-protein and lactose-free products. We also support our customers with initiatives to develop new categories, product formulations and packaging communication, while assessing the manufacturing requirements for packaging materials that comply with religious and environmental directives.



TETRA PAK

THE RISE OF SUSTAINABILITY CONSCIOUSNESS

Growing concerns about plastic waste have led to legislation on several single-use plastic products, which directly impacts our packaging business and creates new challenges. Our history of progress in sustainability continued in 2018, as we made commitments to further fight plastic waste. This means tripling our investments over the next three years to produce more sustainable products, like paper straws, non-detachable caps and other new packaging materials that offer more environmentally-friendly alternatives for our customers.



TETRA PAK

e-COMMERCE AND THE FUTURE OF RETAIL

e-commerce is rapidly capturing market share in the food and beverage retail industry and reaching a critical level, with 10 per cent of all food expected to be sold online by 2021. This shift to online retailing is transforming food distribution and posing a tremendous operational and commercial challenge to the value chain that encompasses retailers, brand owners and packaging companies.

Tetra Pak supports retailers and brand owners by adapting to the online retail shift and developing new and tailored solutions that this channel requires. We also seek advantages in building commercial frameworks with leading e-commerce players and exploring growth opportunities beyond our existing business.

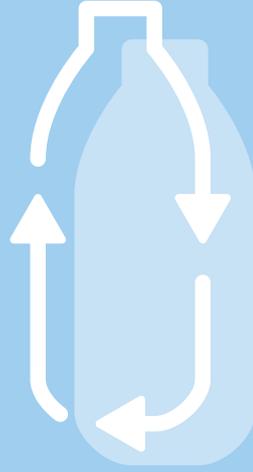


SIDEL

PACKAGING SYSTEMS AS A RESOURCE

Nowadays, consumers are embracing the concepts of re-using, repairing, recycling therefore fueling daily discussions about the value packaging should create.

Sidel is applying the principles of circular economy in packaging design by joining forces with industry partners active in the PET value chain. PET is strong, unbreakable, light, transparent and safe, offering virtually endless design opportunities. Above all, it is 100 per cent recyclable. And the environmental advantages are obvious – a lightweight material, PET allows for significantly lower transport costs and reduced fuel emissions.



SIDEL

HEALTHY LIVING DRIVES INNOVATION

The healthy living trend has accelerated the growth of water, juices, nectars, soft drinks, isotonic and tea's as well as liquid dairy products. Consumers are looking for products sourced from natural ingredients – such as preservative-free beverages with a low sugar content and drinks with extra nutrition. This trend drives innovation in coconut water, infused teas, plant-based drinks, flavoured and functional waters, premium juices, as well as milk-based products fortified with vitamins, proteins, probiotics or fruit. Sidel is responding to this tendency by offering solutions that keep flexibility and sustainability at the core.



DELAVAL

MORE AUTOMATION TO SOLVE LABOUR SHORTAGES

Dairy farmers in many countries face difficulties in recruiting the right staff to their farms, therefore farm automation is generally on the rise because of the labour shortages in the industry. The work-efficiency benefits of automatic milking systems are obvious when compared with traditional methods.

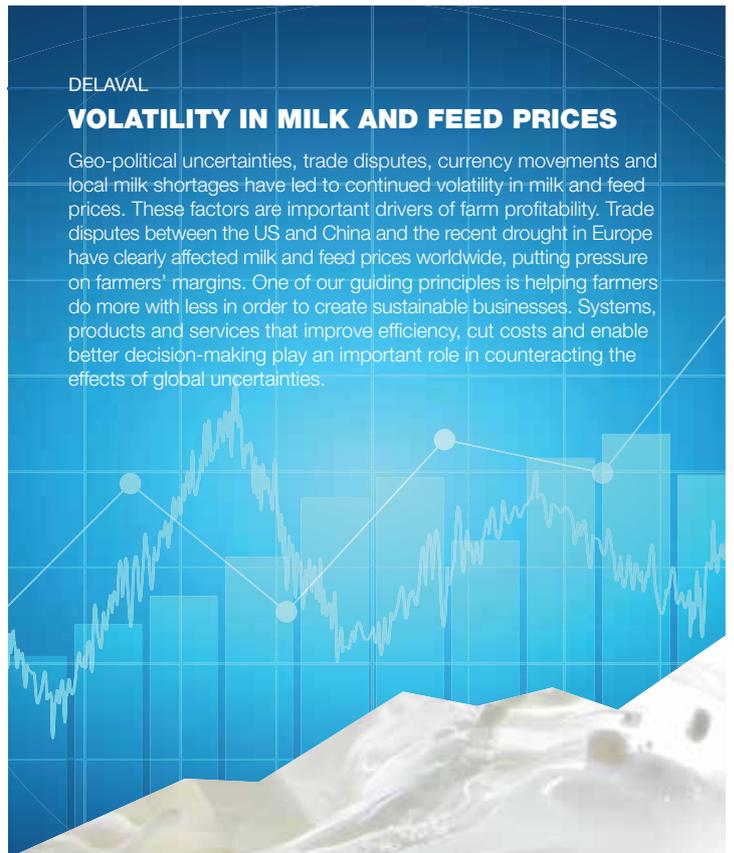
DeLaval has addressed these challenges by launching several innovative new products that enable a fundamental change in milking. The new DeLaval VMS™ V300 is a significantly upgraded milking system that is more efficient than its predecessor and easier to work with and manage. The work-efficiency advantages increase further when combined with the new DeLaval Eanza™ milking cluster. The Clover™ cartridge improves milking performance and the liners last twice as long as conventional liners, with service time that is three times faster. Cartridge exchange is effortless and doesn't require specialist skills.



DELAVAL

VOLATILITY IN MILK AND FEED PRICES

Geo-political uncertainties, trade disputes, currency movements and local milk shortages have led to continued volatility in milk and feed prices. These factors are important drivers of farm profitability. Trade disputes between the US and China and the recent drought in Europe have clearly affected milk and feed prices worldwide, putting pressure on farmers' margins. One of our guiding principles is helping farmers do more with less in order to create sustainable businesses. Systems, products and services that improve efficiency, cut costs and enable better decision-making play an important role in counteracting the effects of global uncertainties.



A year of growth and changes

Growth and changes were the hallmarks of 2018 for Tetra Pak. Growth in terms of business success and new solutions. Changes in terms of our external environment and internal organisation.

Pleasingly, growth was achieved in all three businesses, Packaging, Processing and Services. Overall, total net sales were €11.2 billion at prevailing exchange rates. At comparable exchange rates, net sales growth was 2.4 per cent compared with last year.

Let's look now at 2018 in more detail.

Business results 2018

Packaging

Packaging Solutions business grew 0.5 per cent, landing at €9.3 billion net sales at prevailing exchange rates.

The growth came from the Services and Equipment business streams. Packaging Material net sales decreased 0.6 per cent despite a volume growth of 1.5 billion packs, while additional material net sales grew 6 per cent, supported by a strong growth of caps. The number of filling machines commissioned was lower than last year (463 versus 477 in 2017). Packaging Equipment net sales nevertheless increased 2.5 per cent mainly due to a favourable mix (more cash sales, less rentals) and the further deployment of external financing solutions.

Processing

Processing Solutions achieved €1.9 billion net sales at prevailing exchange rates, the highest in the history of the company with a growth rate of 12.8 per cent at comparable exchange rates. From a category perspective, almost half of the growth came from Dairy. Processing orders increased 6.2 per cent versus 2017 and reached €1.3 billion.

Services

2018 was another strong year for Services with net sales hitting €1.5 billion at prevailing exchange rates, up 8.7 per cent from the previous year at comparable exchange rates. All categories and all clusters contributed to

the growth. Maintenance net sales increased 9.2 per cent driven by organic growth across processing and packaging, and preventive maintenance, as well as further deployment of predictive maintenance and digitalisation.

From a geographical perspective, growth has been seen in four out of five clusters, with South Asia, East Asia & Oceania leading the growth at 7.9 per cent, mainly driven by Equipment and Services. In Greater China, net sales increased 5.0 per cent, with growth in all business streams.

These results have been achieved despite significant challenges as well as high volatility, uncertainty, complexity and ambiguity in the market. Economic volatility affected sales, especially in the Middle East. Competition continued to increase across several geographies. In the longer term, digitalisation and sustainability, as well as increasing competition, will continue to present both challenges and opportunities for our global businesses.

One company

Our success lies in our ability to support customers to deliver products of outstanding quality and consumer appeal, while maintaining the highest standards of food safety, operational performance and sustainability.

In February we announced plans to change our organisation in ways that will

make us easier to work with for customers and bring value to their business.

We are One Company with three businesses and we need to operate that way. In 2018 we restructured to increase efficiency and strengthen unity, collaboration and consistency across the company, ensuring our three businesses are all part of One Company, presenting a united face to the customer.

One powerful One Company enabler is the new Customer Experience (CX) programme which started in 2017. This is a vital check designed to collect instant feedback at the customer touchpoints that matter most and ensure that we respond quickly and in the right way. In CX, we now have a powerful tool that we can use to mobilise the whole organisation towards a One Company, Customer First mentality.

More initiatives were driven in 2018 to help establish a One Company mindset and enable collaboration across the organisation. The biggest, perhaps, is Smart Sales, which combines new customer relationship management (CRM), customer front-end, product configuration and marketing automation systems in a way that will revolutionise how we interact and share knowledge with customers. We believe this will facilitate collaboration and transparency, and drive standardisation.

“Industry 4.0 and the idea of connected manufacturing is becoming increasingly pervasive. Over the next five years, food and beverage companies will seek to gain greater control of their respective supply chain to achieve full traceability of their products, increase efficiency and cut costs.”

Digitalisation

Industry 4.0 and the idea of connected manufacturing is becoming increasingly pervasive. Over the next five years, food and beverage companies will seek to gain greater control of their respective supply chain to achieve full traceability of their products, increase efficiency and cut costs.

The digital transformation of our company and business is well underway and touches every operation and process of our organisation.

We have made a significant investment upfront and are prepared for the digital transformation, working with partners such as Microsoft, Siemens, Rockwell, Beckhoff, Avenade, and others.

In October 2018, we launched Tetra Pak® Plant Secure, a game changing plant management service that covers all the equipment and systems supplied by us and others, delivering tangible profitability results for the customer.

The new service starts with a detailed audit of all the equipment and systems across the customer's value chain. This analysis, combined with our deep knowledge of the industry and benchmark data on food manufacturing, enables our specialists to identify opportunities, implement improvements across the customer's entire operation. The results are tangible operational expenditure reduction and capital expenditure optimisation for the customer.

By launching this new service, we have the all-important first-mover advantages in the new territory of a connected food industry. We are determined to remain a leading partner of choice for the food and beverage industry, and we look forward to working with our customers, our colleagues and other stakeholders so that together we adapt to the changes in our industry and Protect What's Good.

Environment

During the last year sustainability has risen higher than ever on the public agenda. Tetra Pak has a hard-earned reputation as an environmental leader, and we are committed to enhancing our leadership and supporting our customers' sustainability agenda.



- We were among the first companies to pledge support for the European Commission's Plastics Strategy. We committed to work with industry partners to ensure that by 2030 recycling solutions are in place for all components of the beverage carton so they can be fully recycled across Europe; substantially increase the use of plastics made from renewable feedstock; and use recycled plastics, once they are validated as safe and are legally acceptable for use as a food contact material;
- We have joined forces with global resource management company Veolia to enable all components of used beverage cartons collected within the European Union to be recycled by 2025;
- We developed a straight paper straw and will launch a straw that is fully functional and meets global food standards. Our wider ambition is to supply the global market with more sustainable drink-from solutions while not compromising our strict food safety and ease-of-use requirements. Innovations in the pipeline include tethered caps and other integrated drink-from systems;
- We were nominated for the third time on the CDP Supplier Climate A list and recognised for our contribution to sustainable forest management and supplier engagement to tackle climate change;
- By mid-2018, half of our global electricity supply is sourced from renewable sources. This means we are firmly on course to meet our RE100 commitment of using only renewable electricity across all global operations by 2030;
- Moreover, our packages are adding value to the customer's environmental profile. In 2018, using our Tetra Top® package, JUST Water received the "Best Packaging Solution" award at the 2018 Global Bottled Water Congress.

Our way forward

We are determined to remain a partner of choice for the food and beverage industry. We believe now is the time to proactively embrace change, with speed and agility, and to strengthen our customer relationships, ensuring that we play a leading role in society as well as in the food industry.

With this intent, in October we hosted "Inside Tetra Pak". In total, 327 customers from 149 companies in 63 countries attended. Over an intensive fortnight, we showcased our end-to-end expertise as one company, and how we are committed to adding value to their businesses.

At the same time, we are working on our long-term strategy, which will help us focus and accelerate critical success factors, both in the short and long term, supporting our ambition to meet the sustainability challenges, thrive in a digital economy and grow with our customers.

There is one final change I would like to mention. After 14 years as CEO I will step down as President & CEO of Tetra Pak on April 1, 2019. The Tetra Laval Group Board has appointed Adolfo Orive, previously our Cluster Vice President for North, Central and South America, as the new President & CEO. This is a timely moment for me to thank you, our customers, employees and partners, for our fantastic relationships over the past four decades.

I depart our company secure in the knowledge that our future is in safe hands. Adolfo has worked around the world in executive positions for us since joining in 1993, and brings a wealth of knowledge, experience and expertise to his new role. He is well respected by his colleagues, and well placed to support them and our customers in the years ahead.

I will continue to look out for news about Tetra Pak's innovations and customer successes (old habits are hard to lose). With that, I thank my colleagues and the Board for their continued commitment, engagement and support, and wish Tetra Pak a very successful 2019.

Dennis Jönsson



Adolfo Orive appointed President & CEO for Tetra Pak

The Tetra Laval Group Board has appointed Adolfo Orive, currently Cluster Vice President North Central and South America, President & CEO of Tetra Pak effective April 1, 2019. Adolfo Orive succeeds Dennis Jönsson who has decided to step down as CEO and will leave the group on April 30, 2019.

Adolfo Orive joined Tetra Pak in 1993 as Key Account Manager. He was appointed Managing Director of Colombia in 2000, and of Tetra Pak Spain in 2005. Four years later he was appointed Cluster Vice President South Europe, and in 2012 Cluster Vice President North and Central Europe. In 2014 Adolfo Orive was appointed Cluster Vice President Europe and Central Asia and became a member of the Group Leadership Team. He took his current position in January 2015.



TETRA PAK GLOBAL LEADERSHIP TEAM 2018

- 01. Dennis Jönsson – President & CEO
- 02. Monica Gimre – Processing Solutions
- 03. Michael Grosse – Development & Service Operations
- 04. Nicholas Bloch – Corporate Communications
- 05. Pål Lunning – General Counsel
- 06. Phil Read – Human Resources
- 07. Adolfo Orive – North, Central & South America
- 08. Steve Yin – Greater China
- 09. Christopher Kenneally – South Asia, East Asia & Oceania
- 10. Amar Zahid – Greater Middle East & Africa
- 11. Charles Brand – Product Management & Commercial Operations
- 12. Charles Héaulmé – Europe & Central Asia
- 13. Eric Baudier – Supply Chain Operations
- 14. Bruce Burrows – Finance & Business Transformation



Digitalisation always with the customer in mind

Digitalisation is a prevalent trend in all companies and industries today. The common denominators are that digitalisation is technology-driven, it's rapid, and it enables predictability based on historical data and artificial intelligence. The differences lie in what companies want to get out of it. At Tetra Pak, we have three main focus areas – all of equal importance – that encompass our objectives and the initiatives we are taking to achieve them.

How we work as a company

The first has to do with how we improve our processes and become more efficient, and how customers experience these improvements. For example, when it comes to Industry 4.0, we use a programme in our packaging plants called Smart Factory that optimises production processes. By connecting several data sources to improve the output of our factories from the perspectives of time, cost and quality, we gain better control and predictability.

Augmented reality is another area that enables our factories to connect with one another to solve various challenges. If technicians in one plant have experienced a particular problem, they can help another plant solve an issue remotely and much faster using this technology.

If we are selling a product or solution to a customer, such as a new type of production line, we can use visualisation technology con-

nected to the design software to “walk around” and see the end result on a tablet or laptop. The customer can visualise the actual machines and their placement in the plant before the agreement is made. This changes the entire sales process.

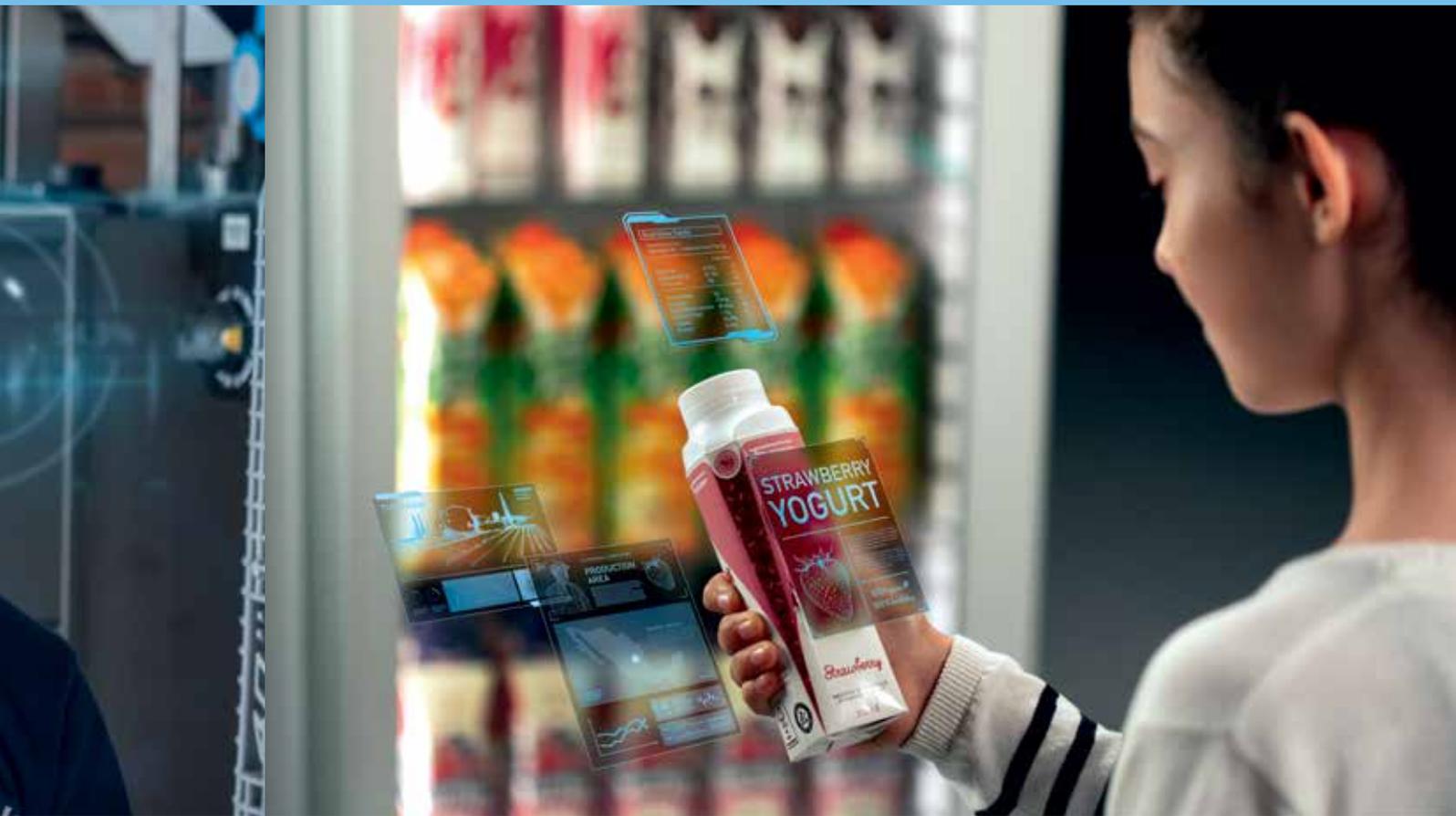
Outcome-based solutions

How can we transform our current business models for frequently sold items, such as parts, packaging materials and service hours,

in a way that guarantees availability and functionality and moves away from unpredictable and ad hoc customer orders? By using outcome-based business models, for parts for example, we assume full responsibility for a machine's functionality, providing customers the right parts at the right time to fulfil our agreement.

This is all possible thanks to connectivity. Today, about 60 per cent of the packaging lines we have installed worldwide are con-

“Today, about 60 per cent of the packaging lines we have installed worldwide are connected, delivering data on a daily basis. By understanding this data, we can monitor the wear and tear on parts and accurately predict when they need to be replaced.”



nected, delivering data on a daily basis. By understanding this data, we can monitor the wear and tear on parts and accurately predict when they need to be replaced. And we will offer this type of solutions to entire plants, not just on our equipment.

Another area where the use of artificial intelligence will add substantial value is in securing package quality. By understanding how packaging material and equipment work together to produce consistently high-quality packages, we can reduce waste in manufacturing.

Creating new value for customers and new business

We believe that we can enter new areas that create unprecedented value for our customers and new business for us by using Industry 4.0 to solve challenges, improve processes and connect with end users.

For example, we can help customers reduce waste or product spillage by using sensors to detect the source of the problem in the value chain, and harnessing the data to make improvements.

Connected packages is another area with enormous potential. Each package can be printed with a unique QR code for product

traceability throughout the value chain to keep track of stock or of sales. This can also be deployed in consumer engagement solutions towards end users, in which case aggregated data is used to ensure integrity of the user's personal data. By creating relevant offers and employing data the right way, new business opportunities are created.

Digitalisation is also used to help make our customers' factories paperless. Paper-based reports and charts are still commonplace in production environments, which is not optimal for accuracy, consistency and archiving. The possibilities available today include reminders, measuring devices and recording tools on smart devices. We adapt these solutions to each customer and production situation.

Industry knowledge at the core

Our greatest differentiator in the global packaging landscape is that we thoroughly understand the food and beverage industry. By cutting through the digital hype and focusing on what we know about our customers' challenges and requirements, we can offer digital solutions that take them – and us – into the future.



Protecting what's good on our planet

At Tetra Pak, we commit to making food safe and available, everywhere. We provide safe, secure and sustainable products to our customers and consumers. Our packages are recyclable, low-carbon and made from renewable materials.

Tetra Pak has committed to supporting and working to achieve the UN Sustainable Development Goals (SDGs). Improving our equipment utility consumption and reducing our waste generation, are just some of the ways we do it.

At Tetra Pak, we have a long history of progress when it comes to using sustainable materials in our products in order to contribute

to a low-carbon circular economy. We are focused on making packages with the lowest possible environmental impact and are committed to reducing the use of fossil-based plastics, while increasing the use of renewable materials.

In 2018, there were mounting concerns about plastic waste in the world. This has led to legislation on certain single-use plastic products that affect and challenge the consumer goods business, and the packaging business in particular. We are combatting the problem of plastic litter by developing a new generation of caps and closures, paper straws on portion packages, as well as caps that are

tethered to our packaging.

Our vision is that all beverage packages be collected for recycling, with no cartons sent to landfills or turned into litter. We are therefore accelerating efforts with partners across our value chain to develop scalable solutions and establish effective collection systems for recycling.

Our sustainability approach is grounded in our brand promise: PROTECTS WHAT'S GOOD™. This means of course protecting food, but also protecting our people and the communities we engage with, our business, our customers' businesses, and the planet we all share.



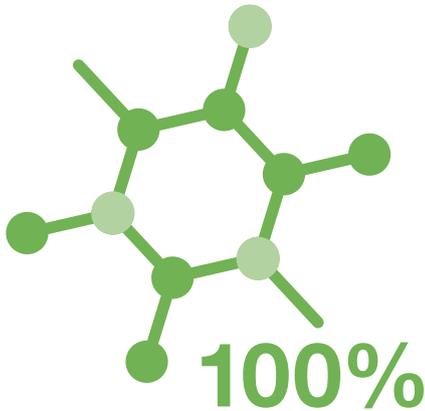
Tetra Pak is committed to contribute to a low carbon circular economy by improving all the environmental profile of its products. During 2018, Tetra Pak's latest generation of homogenizers, Tetra Pak® Homogenizer 250, was launched to increase cost efficiency and reduce environmental impact, without compromising food quality.



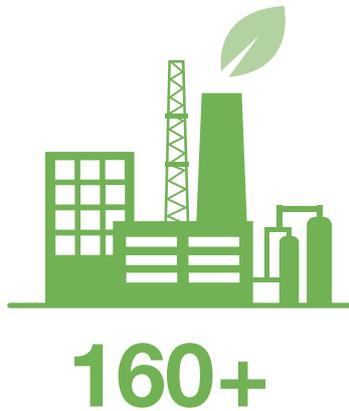
Tetra Pak now obtains 50% of its global electricity supply from renewable sources, putting the company firmly on course to meet its RE100 commitment of using only renewable electricity across all global operations by 2030.



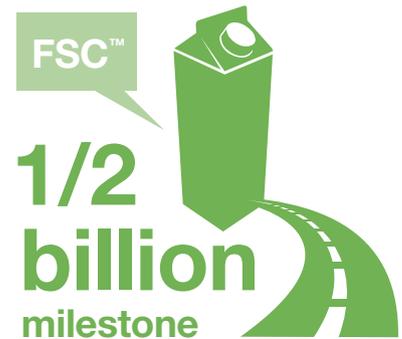
Between 2012 and 2018 Tetra Pak invested more than €20 million in recycling infrastructures and built a worldwide network of collaborative partnerships with recyclers and customers.



In 2018 we partnered with Veolia to attain 100% recycling by 2025 of our polymers and aluminium (PolyAl) from recycled used beverage cartons in Europe.



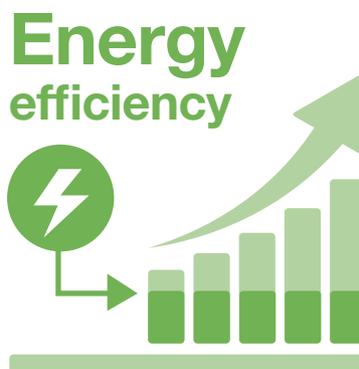
Since 2010, the number of facilities recycling beverage cartons has increased from 40 to more than 160.



Tetra Pak delivered more than half a billion Tetra Rex® Bio-based packages, the world's first beverage carton made entirely from renewable materials. The landmark event was announced at the Museum of Brands in London, where the package is featured in a new sustainability display.



Through governmental school feeding programmes, we have teamed up with our customers to bring nutritious products to 66 million children in 59 countries where we operate. Nine billion Tetra Pak packages were distributed through these programmes.



Tetra Pak's factories and sites worldwide have maintained about the same energy consumption level (1100 GWh) over the last 14 years, despite a 29% growth in business over the same period and an increase in net sales.



CDP is a major platform for external environmental reporting, with four programmes; Climate, Water, Forests and Supply Chain. In 2018, for the third year in a row, Tetra Pak was awarded a sector leadership position for Climate. For the second year in a row, Tetra Pak received an A List rating – the highest score – for Forests and Supply Chain. These results reflect the fact that Tetra Pak has implemented a range of actions to manage climate change and prevent deforestation.



Partnering service that boosts customers' profitability

A new plant management service, Tetra Pak® Plant Secure, is a game-changer when it comes to delivering profitability improvements for customers. It starts with a detailed audit of all the equipment and systems across the customer's value chain. Tetra Pak then applies its unique industry expertise to identify opportunities and implement improvements throughout the entire operation, based on clear financial and production targets. Pilot projects have been carried out in the Americas and Europe, delivering results that exceeded expectations. An US-based dairy producer reduced operational costs by more than 10 per cent in the first year and the project continues to deliver savings. Tetra Pak® Plant Secure is being rolled out to all food and beverage companies worldwide.



Half of Tetra Pak electricity consumption now from renewable sources

In only two years, Tetra Pak has increased its use of renewable electricity from 20 per cent to 50 per cent. This achievement was possible through a combination of initiatives, including the purchase of International Renewable Energy Certificates (I-RECs) and solar power installations at our own facilities. Tetra Pak factories in Sweden, Denmark, Finland and South Africa use electricity from 100 per cent renewable sources and 17 major sites now run exclusively on renewable electricity. Mario Abreu, Vice President Sustainability at Tetra Pak says, "Renewable energy is an important step on our journey to reduce the carbon footprint of our operations and help tackle climate change."

JUST Water brings home award for best packaging solution

The successful US-based water brand JUST Water was awarded "Best Packaging Solution" at the 2018 Global Bottled Water Congress in Evian, France. JUST Water uses the Tetra Top® carton bottle made from 82 per cent renewable resources: primarily FSC™ certified paperboard and renewable plastic derived from sugar cane. "This package allows us to provide our customers with a better solution, while fulfilling our global mission of reducing plastic pollution," says Ira Laufer, CEO of the producer JUST Goods.



Tetra Pak® Homogenizer 250 reduces total cost of ownership

The newly launched Tetra Pak® Homogenizer 250 was designed to meet the need for a mid-range capacity and high level of automation. It offers efficient homogenization of both low- and high-acid products, including pasteurized milk, ESL milk and other beverages. In a comparative trial, the Tetra Pak® Homogenizer 250 can render the same flow rate at a lower speed than the competitor model tested. This reduces the strain on movable parts and thereby the cost for spare parts and maintenance by up to 32 per cent, and increasing equipment uptime in the process. Results of the trial indicated that total cost of ownership of the homogenizer were at least 10 per cent lower than the leading competitor.



Ice cream sticks with large inclusions create new opportunities

The Tetra Pak® Extrusion Wheel has a patented new design that produces stick ice cream products with large inclusions, such as whole nuts, real fruit segments or cookie dough chunks, while doubling the capacity. The wheel can be added to existing lines and uses an innovative vertical rotating design that is synchronised to produce up to 12,000 products per hour and lane. In addition to smoothing the surface of each stick, it also reverses the process by filling the ice cream around the stick rather than inserting it at the end, which renders a more uniform result. With the Tetra Pak® Extrusion Wheel, producers can respond faster to growing consumer trends for novel and high-quality ice creams.



Optimising use of space in transportation and storage

Kara, the market-leading coconut cream in Indonesia produced by PT Pulau Sambu, was the first to launch the Tetra Classic® Aseptic 65 Cube in the Indonesian market in 2019. This launch was also a worldwide premier. The archipelago nation often has massive logistical challenges, especially beyond Java island. This packaging format supports distribution to remote areas, saving 20 per cent in distribution and logistics costs. Better storage and shelving possibilities with the Tetra Classic® Aseptic 65 Cube are also expected to reduce rejects from leakages by up to 50 per cent.



Tetra Pak in Turkey recognised for manufacturing excellence

Tetra Pak packaging material plant in Izmir, Turkey, has received the world's top award for manufacturing excellence. Appraised by the Japan Institute of Plant Maintenance (JIPM), the World-Class Total Production Maintenance award is bestowed on facilities that have achieved outstanding levels of production quality, reliability, efficiency and environmental performance. Upon receiving the award, Tetra Pak Turkey Factory Director Selami Ulusoy said, "The commitment we show to outstanding product quality, while maintaining the highest standards in operational performance and sustainability, is truly reflected in this achievement. In the last five years alone, we have invested more than EUR 60 million in this plant, and will continue to do so, especially in digitalisation and new technologies."





Special effects in packaging help brands attract attention

Tetra Pak has launched a suite of new packaging material effects, known as Tetra Pak® Artistry, that enable food and beverage producers to revitalise the look and feel of their products. These effects help brands attract shoppers' attention without switching to a new packaging format or investing in new equipment. The suite includes: Tetra Pak® Reflect with holographic effects, Tetra Pak® Metallized to create a metallic look, Tetra Pak® Sculpt with an embossed surface texture, and Tetra Pak® Craft with the natural look of bare paperboard with wood fibres. The whole range will be available for the majority of Tetra Pak® packages formats and offered to customers worldwide.

Global launch of new package with PepsiCo in Russia

PepsiCo in Russia has introduced an innovative package from Tetra Pak for their juice and nectar brand, Fruktovy Sad, to enhance shelf visibility and product sales. Tetra Brik® Aseptic 1000 ml Ultra Edge was successfully field tested with PepsiCo in July 2018. The project scope includes the re-building of four Tetra Pak® A3/Flex lines at the Lebedyan plant in Russia. With a capital investment of more than € 2 million, annual packaging material sales are expected to reach 100 million packages.



Major installation for cheese production in Russia

Tetra Pak has equipped one of the largest cheese plants in southern Russia, with investments totalling € 78 million. Agrokompleks is a major Russian producer of raw milk and the plant's expected annual capacity is 575 tons of milk per day, with the possibility to extend up to 675 tons. This is a strategically important project for Tetra Pak and the biggest processing contract ever signed in the region. The installed Tetra Pak® equipment will produce semi-hard, mozzarella, fresh and pasta filata cheeses; butter, whey and skimmed milk powder.

New separator technology slashes energy consumption

Tetra Pak has cut the energy use of its separators by 40 per cent by incorporating Encapt™, a breakthrough pressure management technology, into the systems' design. The Encapt technology lowers the atmospheric pressure around the spinning bowl and the system is supervised by sensors that keep air friction to a minimum – and less friction means less energy required. Tetra Pak® Separators with Encapt™ technology coupled with Air-Tight technology offer customers operational flexibility for different speeds and flow rates, lower operational costs and a smaller environmental footprint.





HEROES OF RUBY VALLEY



MILK BOARD	
HEROES	VALLEY
TECH	BOARD
DATA	ANALYSIS

MILK BOARD



- DESIGNER
- ANALYST
- YOUR DATA



MILK BOARD



Connected packages create new opportunities



Tetra Pak's ambition is to connect the food and beverage industry through digital solutions, including connected packages. Central to this idea is to make every package unique and identifiable throughout the entire value chain, from the converting factory all the way to recycling. Today, Tetra Pak can print a unique two-dimensional, machine-readable code (such as a QR code) on each package, either in the converting factory or in the customer's production line.

During 2018, Tetra Pak launched the limited deployment of the Connected Package Platform in seven customer pilot projects around the world. A secure, modular and scalable

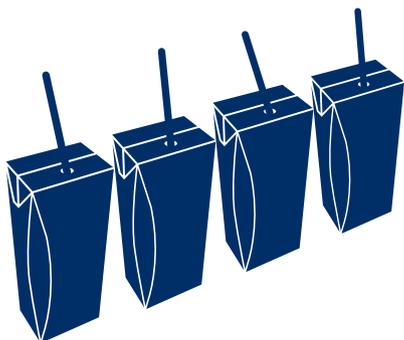
solution, it consists of a number of advanced technologies that include code printing, reading solutions, code generation, data management and real-time analytics. The platform is built on open protocols to secure eco-system and third-party service integration. Packaging with unique codes unlocks value for customers and their users, as each product is transformed into an information and interaction channel. The codes enable a range of powerful solutions, such as Track & Trace and within consumer engagement. Our pilot projects have confirmed the value of the Connected Package Platform, as one promotional campaign boosted a dairy producer's sales by more

than 15 per cent, attracted new buyers and increased the re-purchase frequency.

Our focus for 2019 is to scale up Tetra Pak Consumer Engagement solutions to between 30 and 40 campaigns, as our technical capabilities increase and the interest from our customers is growing. We will also develop and expand our Track & Trace solutions, starting with customer plants and expanding to cover the entire value chain, including raw material, transportation and logistics, retail, consumer product information and recycling.

The technology behind a paper straw

Planned legislation to limit the use of single-use plastics, have led to a number of initiatives at Tetra Pak. We have developed a straight paper straw that will be launched in 2019 with the Tetra Brik® Aseptic 200 Base and Tetra Brik® Aseptic Crystal packages.



Paper is an ideal material from an environmental perspective because it is both renewable and recyclable. However, there were challenges to overcome when developing a new straw, in that paper has very different physical properties compared with plastic. A paper straw needs to be stiff enough to be able to puncture the package, and be safe to use for consumers. Because paper interacts with liquid differently compared with plastic, surface coatings must be used without compromising the straw's environmental friendliness.

While plastic straws are extruded, paper straws are produced using completely different technologies and machines. We appointed a project team and teamed up with external partners to engineer the best straw that not



only is compatible with our packages, but also works in our customers' filling machines. Further development will include fine-tuning the production speed and developing other straw formats.

Opportunities for growth across all businesses

Tetra Pak's global markets are mainly characterised by macroeconomic stability, with a few exceptions. Population growth in India and certain countries in Africa and Asia are expected to have positive effects on both consumption and economic growth.

An important factor that has generally impacted the food and beverage industry is sustainability. More stringent legislation in, for example, the EU and awareness of climate change has generated media and societal attention. A tangible consequence is that global brands have released new sustainability targets and packaging policies, putting pressure on the value chain upstream to deliver viable solutions. Tetra Pak, having a packaging solution mainly built on renewable materials is well positioned to meet those demands.

The effects of market trends on Tetra Pak's businesses can be viewed in light of the different product categories.

Liquid dairy products



Both the Tetra Pak processing and packaging businesses are focused on liquid dairy consumption, a category that continues to grow. Milk consumption has increased by an average of 1 per cent year-on-year. The competition in ambient liquid packaging is intensifying, affecting our market share in the white milk ambient packaging segment.

Processing is benefitting from continued growth of the milk powder market and is leveraging the intensification of the value-added dairy chilled business globally. The challenge will be to manage channel sales to system integrators, as two main competitors are increasing their focus on component sales and related services.

Juices, nectars and still drinks



The ambient juice and nectar category continues its decline and value loss, mainly driven by price, sugar debates and health trends that motivate consumers to select other options. In Brazil for example, high-end consumers are switching to fresh-squeezed juices, while low-end consumers are opting for juice powders. In France, there is a heightened preference for infusions and flavoured bottled water, with a strong growth of organic nectar and juice trends driven by private labels. North American consumers are shifting from 100 per cent juice to 50 per cent juice due to sugar concerns.

Cheese



This category continues to drive growth in the processing business. The main opportunities are in Europe and the US, but there is emerging interest in China as well as in the Middle East. The processed cheese segment is growing and represents an opportunity for all businesses. Customers are looking for product diversification and added-value cheese products, therefore flexible production solutions are important to enable this diversification. This is valid for both traditional and "new" cheese-making businesses, such as liquid filled cheese (white cheese, queso fresco, etc).

Other beverages



In beverages, the focus on water continues. The current volumes of 352 billion litres have been augmented with a segment for flavoured and functional water, adding another 15.3 billion litres. Processing continues to focus on expanding and strengthening the entire still-beverage segment to prepare for growth in carbonated beverages.

Ice cream



The main trend among customers will continue to be the premiumisation of ice cream to appeal to the diversifying demands of consumers. As incomes rise, consumers are seeking niche products with higher value, and improved flavour and quality. In the bulk ice-cream segment, private label continues to take market share and is now investing in their own production units.

Food



The food category also shows strong growth potential, both in the solid and viscous segments and across all businesses. Shelf-stable and pet food represent a total of 25.7 million tons of opportunity for Tetra Recart® packages, while tomatoes, soups, broths and sauces add 39.5 million tons of opportunity for both packaging and processing.

Protecting future growth



Innovation, customer support and marketing services will help secure Tetra Pak's future growth. The programme called Global Market Growth Initiatives promotes new product opportunities that leverage consumer trends and market dynamics. Within the dairy segment, products such as cheese and spoonable yoghurt offer great potential for all businesses, while packaging is developing opportunities within plant-based beverages, as well as baby and toddler's milk.

Driving our strategy in a challenging market

Despite challenging market conditions, Sidel maintained sales of EUR 1.4 billion in 2018. After a weak start of the year, our order intake regained normal levels during the second half, particularly in our PET and aseptic business. By keeping costs under control and continuing our strategic initiatives, we ensured that our profitability remained stable – despite the difficult market environment. The strategy we defined three years ago and the steps taken in 2018 have positioned ourselves well to continue our *Performance through Understanding* journey with our customers. We provide advanced solutions and services for PET, can and glass packaging equipment and lines – and contribute to the improvement our customers' performance. Sidel also launched several product innovations in 2018 that were very well received within the industry.

Increase in packages consumption, flat investment in equipment

In 2018, the beverage, food, home and personal care market segments reported sales of more than 3,000 billion units of consumer-packaged goods – an increase of approximately 2 per cent compared with the previous year. PET continues to grow, clearly representing the packaging material of choice. It accounts for about 20 per cent of total consumer packaged goods, while the development for glass and can is relatively flat. While the total number of packages is growing, customer investment in bottling equipment is much more reserved. The reasons for this are twofold. First, technological advances make new lines more efficient and faster, thereby absorbing the increased production of packages. Second, packaging producers try to fully exploit their current assets.

Mixed market development

From a geographical perspective, we had mixed performance. In North America, we

captured less business in PET equipment. The same trend applies to can filling equipment in South America. Our sales in Europe continued to be strong for PET in all the categories we serve: beverages, food, home and personal care products. These positive figures do not apply to the brewery business, a very concentrated market that has shown low investment levels in 2018. Sidel enjoyed growth in Asia. China in particular offered interesting opportunities for our ultra-clean and aseptic technologies for sensitive products in PET. In the Chinese market, liquid dairy products (LDP), soy-based drinks, natural juices and nectars are increasingly requested by consumers. Finally, in Africa, the CSD (carbonated soft drinks) category shows a positive trajectory, and we are perfectly positioned to serve our customers active in this market, particularly via our Actis™ system - the unique plasma coating solution that extends the shelf life of beverages bottled in PET, while enabling package lightweighting.

Successful product launches

In 2018, we also strengthened our fillers portfolio with the new EvoFILL Can and EvoFILL Glass, offering high-quality products at an advanced performance level to beverage producers in the can and glass segments. We also introduced the EvoDECO labelling portfolio. This re-design of the labelling process within our Super Combi – launched in 2017 – helped us to combine total flexibility and unmatched performance, for efficient and high-quality label application. Although it is still early in the life cycle of these new solutions, they have been greatly appreciated by our customers.

Packaging – a key differentiator

Packaging remains a key differentiator for our customers. From the beginning, Sidel has had deep expertise in packaging design and industrial solutions development. This has an impact both in the way we deal with new capital equipment sales and the way customers invest in new production capabilities. A key

“PET offers clear advantages, particularly compared to other plastic packaging materials. Its lightweight potential, virtually unlimited design flexibility, and – of course – recyclability make this packaging material a very sound choice.”

quality of PET is that it allows for changes in packaging design according to market trends and developments. We continued strategically leveraging our strength in packaging with our acquisition of PET Engineering in 2018. We can now channel a wider set of competencies when it comes to design aspects, thereby addressing a broader spectrum of customer needs.

Circular approach to packaging

The total number of packages in the global market is growing. Analysts forecast that an additional 237 billion packages will be sold by 2021, representing an annual growth rate of 2 per cent. This development is related to population growth in urban areas and the fact that average spending power is increasing, fuelling growth of fast-moving consumer goods and thus, the total packaging market. However, environmental aspects are becoming more important for legislators as well as consumers, which is why a circular approach to packaging is key and provides Sidel a large opportunity.

PET offers clear advantages, particularly compared to other plastic packaging materials. Its lightweight potential, virtually unlimited design flexibility, and – of course – recyclability make this packaging material a very sound choice. The current discussion regarding single-use plastics and higher recyclability targets will undoubtedly support positive PET development. Conversion to PET is currently a visible trend in Europe, and is gaining momentum in other parts of the world.

Healthy living benefits from our expertise in aseptic packaging

The search for a healthier lifestyle also benefits Sidel. Consumers are looking for healthy and nutritional products, sourced from natural ingredients and bottled through processes that help maintain the quality of the ingredients. The growing demand for drinks with higher nutritional content and without preservatives



“The search for a healthier lifestyle also benefits Sidel. Consumers are looking for healthy and nutritional products, sourced from natural ingredients and bottled through processes that help maintain the quality of the ingredients.”

also gives good growth opportunities for Sidel in selected segments, such as LDP and juices, nectars, soft drinks, isotonic and teas (JNSDIT). Customers active in those markets increasingly turn to Sidel, trusting our extensive experience in aseptic PET packaging.

Industry 4.0 in our offering

As part of Sidel's strategy to improve our customers' performance, we have made considerable progress in integrating Industry 4.0 to our offering. This digitalisation trend is a true enabler of performance in our customers' plants. We want to take a very practical approach and use our technology to support daily operations as well as to analyse trends and propose upgrades adapted to our customer's needs. Using data collected from production lines and combining it with our built-in-machine intelligence, we can offer our customers better visibility and accuracy for improving their performance.

One of several good examples is our market-leading data acquisition and plant intelligence system, EIT® (Efficiency Improvement Tool), which continues to be a success. It is ideal for maintaining and improving performance throughout the life cycle of the packaging line, and is designed to ultimately decrease unplanned downtime. This reduces waste and costs and increases plant output, giving real-time access to relevant and actionable information about production-related issues.

Our focus for 2019

As 2019 started slightly better than last year, I expect further positive development of our business this year. I am also confident that the continued implementation of our strategy, and the fact that our organisational setup is now well aligned with this implementation, will help us perform better. Greater emphasis on our clients' agendas through larger representation of customer-facing staff within our Global Leadership Team will help us deepen

customer understanding and improve our agility when adapting to their requirements. By acting as one team, our customers gain more-direct access to our full portfolio of solutions across categories and products, and have more-aligned points of contact.

Moving forward, we will continue to leverage our leadership in aseptic PET applications to pursue favourable market demands, while gaining further traction in the food, home and personal care (FHPC) segment. Another clear objective is to continue growing our Services offering, by further supporting our existing customers with their installed base and by increasing the range of service products to enable our customers to adapt to changing market needs. As always, we remain dedicated to the continuous improvement of our cost structure, driving productivity in our industrial base as well as with our suppliers. Therefore, 2019 should be a year of continued improvement for Sidel.

There is one final change I like to mention. After 35 years in the Group, I have now decided to step down as per 1 July 2019. I am very pleased that the Tetra Laval Group Board has appointed Monica Gimre as my successor. I know Monica very well as we have been colleagues for many years. Her extensive experience from Tetra Pak Processing Systems is highly relevant to the Sidel business.

I am looking at my time in Tetra Laval with gratitude and pride. Working in a Group where you can always be proud about what we do and how we do it. Working with highly competent and committed colleagues and having the benefit of interacting with our customers, established companies securing the continuation of their success as well as entrepreneurs building world class companies.

You cannot have a better working life than that. My sincere thanks to my colleagues and to the Board for allowing me this experience.

Sam Strömerstén



Monica Gimre appointed President & CEO for Sidel Group

The Tetra Laval Group Board has appointed Monica Gimre, currently Executive Vice President Processing Solutions & Equipment in Tetra Pak, as President & CEO of Sidel Group effective July 1, 2019. She succeeds Sam Strömerstén who will retire and leave Sidel effective June 30, 2019. Monica Gimre will join the Sidel Group May 1, 2019 and be based in Parma, Italy.

Monica Gimre started her career with Alfa Laval Food Engineering in Lund in 1983. Monica has since held multiple positions in both Alfa Laval and Tetra Pak, including Head of the Asian R&D centre in Singapore, Commercial Director for Tetra Pak Processing Business Unit Beverage, Dairy & Food, Vice President Marketing and Portfolio Management, Managing Director Processing in the UK and Cluster Leader Processing North Europe, Vice President Technical Sales and Service, and Vice President Business Unit Tetra Pak Processing Components and Supply Chain. Monica Gimre assumed her current position in the Tetra Pak Global Leadership Team in 2016.



SIDEL GLOBAL LEADERSHIP TEAM 2018

- 01. **Sam Strömerstén** – President & CEO
- 02. **François Lejard** – Customer Management – Region Europe and Central Asia (ECA)
- 03. **Marc Aury** – Customer Management – Region Americas
- 04. **Clive Smith** – Customer Management – Region Asia, Oceania and Africa (AOA)
- 05. **Pavel Shevchuk** – Services
- 06. **Andrea Forzenigo** – Product Supply and Industrial Base Management
- 07. **Frédéric Saily** – Product Management & Development
- 08. **José Luis Yécora** – Sourcing
- 09. **Marina de Barros** – Marketing, Communications and Commercial Practices
- 10. **Juergen Voss** – Finance, IT and Strategic Planning
- 11. **Christer Carling** – Legal Affairs
- 12. **Deepak Kumar** – Human Resources



From smart equipment to digital performance

Ever since the steam engine revolutionised manufacturing, our means of making what people need has continually evolved – from linear manufacturing to the introduction of robots and most recently to the way we use data and automation to make manufacturing smarter. Frédéric Saille – Executive Vice President Product Management & Development, Sidel – talks about how these developments of Industry 4.0 are affecting the food, beverage, home and personal care packaging industries.

What is the main challenge for manufacturers to meet the demands of greater product differentiation?

In the past, the goal of most manufacturers was to achieve high volume performance with high efficiency, paying attention to a kind of product standardisation. When change was required, switching the set-up to meet the new needs generated long periods of downtime or could even result in another piece of equipment being added to the line.

While this increased flexibility, it came at the cost of efficiency. Today's challenge is to reverse this trend. By combining high versatility with efficiency we can help our customers meet end users' demands for greater product differentiation. This goal can be achieved by

building machine intelligence into equipment in the form of features such as prediction, aided guidance and self-adjustment. The latter one for instance lets the machine correct itself independently of human intervention when data shows that its production values are out of range, as well as when manufacturing parameters should change based on new production needs.

Built-in intelligence also means machines and lines capable of long production runs in full autonomy, with none or very limited human involvement, as well as capable to capture opportunities for late customisation, for faster time to market and mass personalisation. All in all, this creates a smoother process and a much higher level of consistency, which translates

into product quality, enhanced productivity, minimal downtime and greater asset intensity.

What is the value of Industry 4.0 in liquid packaging?

Industry 4.0 means digitising the entire value chain – eventually linking the manufacturing site to the point of sale. This provides four main benefits.

First of all, the optimisation of the initial investment: for instance, by using virtual reality and simulation tools, manufacturers are reducing the time and costs involved, while anticipating any challenges the equipment might face when in action. Second, the reduction of the running costs: this is typically achieved through connectivity and built-in machine intelligence, both avoiding downtime by predicting maintenance tasks and optimising resource consumption. Third, the possibility to continuously meet demands for long-term efficiency, driven by increased product customisation and tighter time-to-market. Last but not least, maintaining a high-performance, high-flexibility line, in a world where demand volatility is extremely high.

“By combining high versatility with efficiency we can help our customers meet end users' demands for greater product differentiation. This goal can be achieved by building machine intelligence into equipment in the form of features such as prediction, aided guidance and self-adjustment.”

How would you like to describe the connectivity throughout the value chain?

Industry 4.0 solutions are leveraging connectivity for significantly optimised efficiency and TCO – Total Cost of Ownership. By connecting upstream to supply and downstream to logistics, it links the manufacturing site with all the steps in the value chain.

The advent of data produced by the line enables other developments, such as serialisation and traceability. This advance can be used to protect against counterfeit products and guarantee safety in liquid packaging. This is critical especially for manufacturers working with aseptic production of sensitive products.

The data gathered from the line can also be used to monitor line values, meaning scrutinising a manufacturer's sustainability profile and identifying potential areas for improvement. How does electricity consumption compare for different production runs? Is water being used efficiently or can this be improved? This helps producers reduce losses, reach production objectives and set priorities for future business goals.

How do you combine ever-changing consumer demands with close control on operating costs?

This is where digital twin comes into play. It is a virtual representation of a physical object or system. It includes also complex systems that data scientists can use to run simulations, thus predicting performances. As more complex “things” become connected with the ability to produce data, having a digital equivalent gives data scientists the chance to optimise deployments for peak efficiency and create other “what-if” scenarios. This way production time is expanded and operator's intervention can be planned in advance. Additionally, we are investigating opportunities offered by Artificial Intelligence. For instance, based on the data as collected by the line, we can propose the best sequence of changeovers in order to increase the overall uptime.

How does Industry 4.0 facilitate problem-solving and minimise downtime?

Through a meaningful use of data, the line knows in advance when it is short of material or if a spare part is showing signs of wear and tear, for an easier, faster and more efficient product delivery to consumers.

Maintaining performance is also possible thanks to the support of machines guiding the operators when intervention is necessary. They do that through very intuitive and simple interfaces or via a set of software and applications, autonomous root cause analysis and step-by-step guidance. The machines communicate with big-data repository in total cyber security to refine its root cause analysis capabilities, drastically reducing the downtime.

“The advent of data produced by the line enables other developments, such as serialisation and traceability. This advance can be used to protect against counterfeit products and guarantee safety in liquid packaging.”





Moving forward with purpose and responsibility

At Sidel, we believe that sustainable practices and good business is a winning combination that benefits everyone. We understand that we need to play an active role in protecting the environment and, by extension, our future.



A GREAT PLACE TO WORK

We recognise the diversity, development and well-being of our people as essential to both society and our success as a company.



HEALTH AND SAFETY

Good health, safety and a sustainable environment are essential for the development and success of our company and our people. We adhere to the seven Sidel Group safety principles in all our working environments worldwide, goal being ZERO work-related illnesses and accidents.



ISO 14001

SITES ENVIRONMENT AND COMMUNITIES

We are committed to protecting the environment in everything we do. We are engaged in ISO 14001 certification programme to cover all Sidel sites, while investing at all of our plants so that we can gradually implement initiatives allowing us to better manage natural resources.



SUSTAINABLE SOURCING

We aim to create shared value together with our suppliers and external partners, via close collaboration and dialogue.

MINIMISING ENVIRONMENTAL FOOTPRINT WHILE ENHANCING FOOD SAFETY



SUSTAINABLE PACKAGING AND EQUIPMENT

We have a huge amount of innovations across the line and beyond which champion our commitment to help producers reduce their environmental footprint.



FOOD SAFETY

Food and beverage safety is a fundamental requirement in the processing equation. From packaging design, through the whole manufacturing process, up to the eventual distribution of the finished product to the consumer, we ensure that a brand does not become high profile for all the wrong reasons.

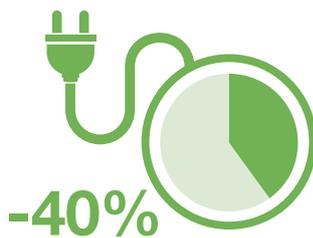


LIFE CYCLE FOR SUSTAINABILITY

Our Life Cycle Analysis tool helps customers design packages that protect the product while taking it safely and securely to the end user, with minimal impact on the environment. Our “Options and Upgrades” services are also helping our clients become “greener”, through solutions aimed at prolonging the lifetime of their equipment and reducing resource consumption.



Worldwide 46 billion bottles have been manufactured with the Sidel Aseptic Combi Predis™, contributing to the saving of 7 billion litres of water and 57,000 tons of PET.



On top of offering 40% less electrical consumption, the new Sidel EvoDECO labelling solutions minimise resource consumption via the new melter and glue control distribution.



Gebo AQFlex® offers 99.5 per cent efficiency at any speed, from 1,000 to 100,000 bph, yet delivering energy savings of up to 60 per cent.



With its new CO₂ pre-flushing system, the EvoFILL Can filler significantly reduces CO₂ consumption, while improving beverage quality and leading to greater performance.



With its new ergonomic, compact design – up to 30 per cent smaller than standalone equipment – and increased visibility of all blocks, Sidel Super Combi makes single-operator control possible.



Since its launch, SWING® pasteurisation system helped save 2,135 Olympic swimming pools of water, while cutting energy consumption by 25 per cent.



HEINEKEN partners with Sidel to boost beer production

HEINEKEN Vietnam was looking to quickly increase the beer production capacity of its Tiger brand at its Tien Giang site, located in the south of the country. Sidel supported this goal with a complete can line, featuring among other highly efficient and high-performing solutions, the new filler, EvoFILL Can. From line design, through installation and up to the commissioning phase, the Sidel team helped the customer take each step very quickly, which was instrumental in achieving a 40 per cent reduction of the time-to-market. The new complete line is now helping HEINEKEN Vietnam enjoy consistently high product quality and optimal energy and water savings, thus contributing to a very good return on investment.



Aseptically filling drinks in PET bottles unlocks Sokpol's success

Established in 1992 and employing over 400 people, the family-run company Sokpol is one of the top Polish co-packers. The company produces sensitive beverages like nectars, fruit juices and teas in carton, glass, and PET containers and serves mainly private labels. In 2008 they partnered with Sidel to launch PET-bottled sensitive drinks without preservatives in the Polish market. Today, more than 50 per cent of Sokpol's production is bottled in PET and this figure is constantly increasing. To meet this growing demand, the company leverages the production capacity, full safety, ease of operations and resource savings offered by three aseptic PET lines provided by Sidel during the past ten years, with the last one installed at the end of 2017.



Sidel helps Industrias San Miguel save energy, materials and cost

Peruvian company Industrias San Miguel (ISM) currently has seven lines producing PET bottles, five of which are equipped with blow moulding machines supplied by Sidel. The most recent ISM installation is a Sidel Matrix™ Combi, bottling still and flavoured water at a rate of 36,000 bottles per hour in the company's factory in the Dominican Republic. The energy savings of around eight per cent achieved by the new line are due to the greater efficiency of the integrated blower and the packaging lightweighting solutions proposed by Sidel.



Increased line efficiency for Rothaus brewery

Rothaus, the most well-known regional brewery in Germany's Black Forest, recently inaugurated state-of-the-art sorting and filling lines. Sidel's expertise in line engineering and integration was key in delivering maximum uptime and increased reliability. The company managed to install and orchestrate 30 different machines from more than a dozen different suppliers, creating new lines that can sort an impressive 3,200 crates per hour and bottle up to 76,800 bottles per hour.

Huanleja makes its first move to PET

Huanleja, well-known as a Chinese producer of food and beverages, recently started producing its coconut milk – formerly packaged in HDPE (High-density polyethylene) – in PET bottles. Its main objectives with this switch were to reinforce its brand image and increase production speed, while lowering manufacturing costs. In doing so, the company relied on Sidel's 40-year expertise in aseptic packaging. The new coconut milk PET bottle, already awarded by local consumers, is produced on two complete aseptic PET packaging lines, equipped with the Sidel Aseptic Combi Sensofill and running at 48,000 bottles per hour.



Start-to-finish high performance for Niagara Bottling LLC

Niagara Bottling LLC has recently upgraded its Salt Lake City facility with a Sidel complete PET line. In doing so, the company is surfing the positive trajectory shown by PET bottled water in the US, expected to grow three per cent annually between 2016 and 2020. The line features two Super Combis – integrating the innovative and compact ground-level preform feeder, EasyFEED™ and the easy-to-operate, highly ergonomic EvoDECO Roll-Fed labeller, both ensuring optimal efficiency at very high speeds. This line set-up allows for OEE (Overall Equipment Effectiveness) improvements translating to two million cases per year of extra productivity.

Yili invests in two Sidel dry aseptic PET lines

The world's number-one liquid dairy producer, Yili, recently invested in two aseptic complete PET packaging lines, including the Sidel Aseptic Combi Predis™ with its unique dry preform sterilisation technology. Yili is a strong believer in the potential of PET as a packaging material, as it is user-friendly, shatterproof, re-sealable, and recyclable. It also provides bottle design freedom to differentiate their dairy brand on the supermarket shelves. Perhaps more importantly, PET offers great benefits in terms of physical product and food barrier protection, thus preserving nutritional and sensorial properties of yogurts at all stages. All of these reasons supported the company's decision to partially switch their production from carton to PET bottles, with the aim of introducing innovative packages.

Yili's Ambrosial Greek Yoghurt was part of this change. Packaged in PET single-serve bottles, this premium drinking yogurt has been highly popular since its launch. The two aseptic PET packaging lines - the latest reconfirmation of the long-standing partnership between Yili and Sidel - helped the leading dairy manufacturer create the additional capacity needed to cater to this positive sales trajectory.



Rising to Unilever's skin cream challenges

Unilever's Dubai site is the largest personal care factory in the Middle East and Africa, producing hair and skincare products. There, Sidel has recently supplied a complete end-of-line solution, including one piece of the company's spearhead equipment, the Cermex WB46 wrap-around case packer, a smart "Industry 4.0" system designed for greater flexibility, hygiene, and ergonomics.

This project posed a unique challenge: Unilever's pots of skin cream are round and do not provide the counter-pressure required to attain the perfect sealing result, an issue that was amplified by the use of trays with short flaps. Thanks to specific adaptations and a close partnership between Unilever Dubai and the Sidel teams, this obstacle was neatly overcome and the end-of-line solution now covers all of the customer's specifications.

No compromise on performance and quality

It has never been more important to stand out from the crowd than in today's competitive beverage market. Precise application of high-quality labels contributes to an excellent brand experience. At the same time, a growing variety of beverage types and container formats have made filling more challenging. To meet these demands, Sidel has introduced the new EvoDECO labelling solutions and two additions to its filling portfolio: EvoFILL Can and EvoFILL Glass.

Designed for total flexibility

The new EvoDECO platform is built using the latest technologies, regardless of model or configuration. This gives producers the ability to choose solutions based on their specific labelling needs and output levels, without compromising on flexibility, efficiency or sustainability. These labelling solutions might either include several labelling applications in one multi-technology machine or a single labelling application through dedicated equipment, for optimised uptime, reduced footprint and low total cost of ownership (TCO).

Staying ahead with greater versatility

A broader number of SKUs (stock-keeping units) and numerous can sizes on the market call for higher flexibility, requiring swift changes between still and carbonated, as well as hot-, ambient- and cold-filled beverages. Sidel's new filler, EvoFILL Can, addresses top hygienic requirements and ensures an efficiency of 98.5 per cent. The solution can process a wide range of beverage temperatures, fill CSD (carbonated soft drinks) at ambient temperatures and still drinks in hot-fill, plus handle all possible can-end types and any varying can heights because the carousel adjustment is fully automatic.

High product quality and low TCO

The latest addition to Sidel's filling portfolio, EvoFILL Glass, is a technologically advanced

level probe filler for glass bottles. By combining the best hygienic conditions with greater sustainability and performance levels, it helps beer, CSD and JNSDIT (Juice Nectars, Soft Drinks, Isotonics and Teas) manufacturers eliminate any challenge linked to different speeds, bottle sizes, beverage and filling temperatures.



CoboAccess™_Pal wins prestigious award

The ultra-compact, fenceless palletiser recently introduced by Sidel is designed to perfectly match the needs of very demanding production environments, where reliability is imperative. In recognition of the smart use of robotics and software to increase productivity, reduce costs, and improve safety, the CoboAccess™_Pal was awarded as the Best Innovative Robotics Solution at the PPMA Industry Awards 2018.

Collaborative robotics, or cobotics, increase production line efficiency and reliability by improving working conditions and allowing operators to handle tasks with higher added value in a safe working environment. They also minimise mistake rates due to high automation. CoboAccess_Pal leverages the advantages offered by cobotic solutions in terms of com-

pactness and flexibility, ensuring full reliability, greater ease-of-use and operator safety.

Its industrial automation platform enables precise, better-controlled cobot trajectories, leading to ideal pallet quality and stability, which are instrumental for smooth pallet transportation through the supply chain. Additionally, it allows for immediate restarting of the machine in case of potential problems or emergency stops, thereby minimising downtime.

Marc Daniel, VP Sales Food, Home & Personal Care ECA - Europe & Central Asia, Sidel, comments, "We have been delighted to receive this prestigious award for our CoboAccess_Pal. This robust cobotic palletiser – particularly suited for low-speed applications – underlines our company's commitment

to help producers embrace Industry 4.0 opportunities. Moreover, the extreme safety of the equipment has also been objectively certified; all of that in addition to the equipment's full compliance with European Machinery Directive 2006/42/EC."



Offering market-tailored packaging solutions

The packaging market

In 2018, beverage, foods, home and personal care market segments have seen over 3,000 billion units of consumer packaged goods sold. Analysts from Euromonitor International forecast that approximately 237 billion additional units will be sold by 2021 (2 per cent compound annual growth rate – CAGR – from 2018 to 2021).

Within consumer packaged goods, beverages account for 53 per cent of the packaged units sold. Food is the second largest market, representing 41 per cent; the remaining 7 per cent are home and personal care products.

Fast-moving consumer goods (FMCG) are packaged using a large range of materials. The four most common packaging materials used are PET (20 per cent share of total consumer packaged goods), glass (14 per cent), can (13 per cent) and carton (12 per cent).

Soft drinks industry favors PET

In a market dominated by China (24 per cent) and Europe & Central Asia (20 per cent), the packaging material that is most widely adopted is PET, accounting for 35 per cent of the packaging units. PET is the packaging material of choice for carbonated soft drinks

and mineral water, and it is showing interesting growth opportunities also within tea and dairy segments.

The alcoholic drinks market is valued at €1.425 billion, with the wine and spirits segments showing dynamism in terms of packaging line investments, due to multiple packaging changes taking place at a fast pace.

FHPC is driven by innovation

Food is an innovative and growing market. PET is very attractive in this segment, mainly due to its transparency, branding opportunities, practical benefits (squeezeability) and cost-

efficiency, coupled with producers' incremental need to reduce their carbon footprint and weight of containers.

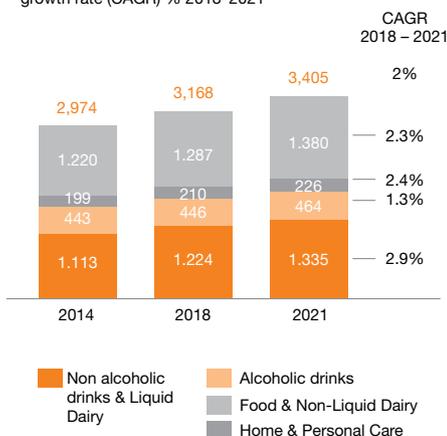
With the home and personal care market accounting for 210 billion units in 2018, the beauty care subcategory (61 per cent of the total) expects a 2.7 per cent increase in CAGR until 2021, mainly driven by the increasing adoption of functional, transparent packaging, "greener" and innovative formulations. Home care is also set for growth with a 1.9 per cent increase in CAGR by 2021, with Asia leading in population, production and consumption.



PACKAGING MARKET & CATEGORIES

CONTAINER DEMAND BY PRODUCT CATEGORY

Billion units, compound annual growth rate (CAGR) % 2018-2021

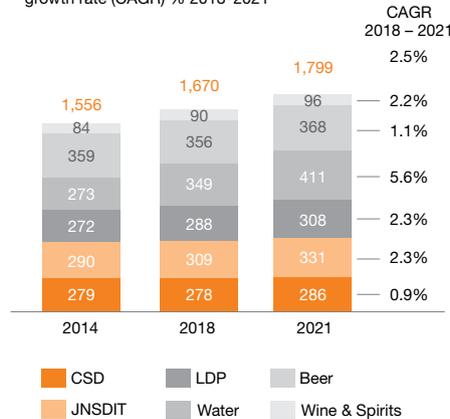


Source: Euromonitor

BEVERAGE

CONTAINER DEMAND BY PRODUCT CATEGORY

Billion units, compound annual growth rate (CAGR) % 2018-2021

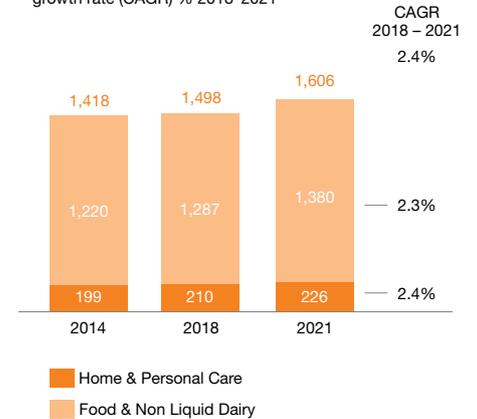


Source: Euromonitor

FOOD, HOME AND PERSONAL CARE

CONTAINER DEMAND BY PRODUCT CATEGORY

Billion units, compound annual growth rate (CAGR) % 2018-2021



Source: Euromonitor

A record year with a deeper customer focus

For DeLaval, 2018 was a record year. We have grown faster than the market and this is thanks to the launch of a full range of new products in both automatic and conventional milking. Furthermore, many innovative aftermarket products were launched, some with the potential to completely change dairy farming.

While some markets were hesitant at the start of the year, all markets were in steep growth by the end. More farmers are investing in automation due to the mounting difficulties in recruiting to the agricultural industry.

Customer focus

Our strategy is centred around the customer. We know that the way to meet customer needs is to ensure improvements in food safety, work efficiency, animal welfare and farm profitability.

These criteria are valid everywhere around the globe and help us focus our efforts in both R&D and sales. They are also important when we improve our internal productivity.

Successful market launches

When it comes to innovation, 2018 was a year that saw the outcome of several years of innovative R&D activities. We launched the new DeLaval VMS™ V300, an automatic milking system to which farmers around the world have reacted very positively. At a time when farmers in many countries are finding it increasingly difficult to recruit the right staff to their farms, the work efficiency benefits of automatic milking are highly relevant.

This means that a growing number of large farms are buying several DeLaval VMS™ systems instead of struggling to find the right personnel. Farm automation is generally on the rise because of the labour shortages in the industry. The new V300 is a significant upgrade compared with its predecessor: faster, more efficient, easier to work with and easier to manage.

On the conventional milking side, we have revitalised the approach to parlours and rotaries. The first examples of this are the new E300 Rotary, the new Rotary E100 milking system, as well as the new DeLaval parlour milking system P500.

We have also taken a new approach to feeding with the launch of DeLaval OptiDuo™. More than a feed pusher, it remixes the contents to ensure every cow in the herd gets fresh feed.



“Our strategy is centred around the customer. We know that the way to meet customer needs is to ensure improvements in food safety, work efficiency, animal welfare and farm profitability. These criteria are valid everywhere around the globe and help us focus our efforts in both R&D and sales. They are also important when we improve our internal productivity.”

In terms of food safety and animal welfare, the liner that attaches to the cow's teat is of utmost importance. The DeLaval Evanza™ cartridge liner improves milking performance and the liners also last twice as long as normal liners. Perhaps the greatest advantage, however, is from the work-efficiency perspective. It renders significant savings when changing liners and doesn't require specialist skills. This is a fundamental change in milking.

All of these new solutions and innovations and our delivery to the market are the result of dedicated work from our staff across the globe, not just in R&D and product development, but in our supply chain all the way to the customer.

Structural changes to meet customers

Our entire sales organisation was restructured a couple of years ago, the results of which we are seeing now. The team has taken on the change exceptionally well, moving more resources closer to our customers. We have also reorganised to become more productive and these changes have led to continuous improvements, ensuring that we all do more with less.

Sustainability

Doing more with less is the rule of thumb we all follow at DeLaval, regardless of where we work in the organisation. It's also our mindset towards our customers as we pursue our vision: To make sustainable food production possible.

We are certainly aware of the emissions created in dairy production, but we are also conscious of the nutritional value of milk and milk products. Milk is one of the most nutritious foodstuffs on the planet and we have a responsibility to ensure that our customers can produce milk as efficiently as possible. That means taking care of animals and farm work-



ers, which leads to the most productive and profitable farms.

Digitalisation

Digitalisation has been a strong trend in recent years and we are no exception to the constant digital development taking place. We often say that DeLaval has been digital since we put the first transponder around the neck of a cow in 1978. We have continuously developed since then and today, more than 3,000 of our customers are managing their farms from the palms of their hand with the DeLaval DelPro™ farm management app “Companion”.

With our ability to collect data on the farm, we can gather information – with the farmer’s permission – and give more accurate recommendations that help them improve their food safety and farm profitability.

We are undergoing an internal digital transformation to prepare us for the next phase of development. This has not been without its challenges, but is crucial to ensure we stay in the lead when it comes to digital development in the dairy industry.

“The continued trade dispute between the US and China has affected many industries and clearly affected milk and feed (especially soybean) commodity prices around the globe.”

“Digitalisation has been a strong trend in recent years and we are no exception to the constant digital development taking place. We often say that DeLaval has been digital since we put the first transponder around the neck of a cow in 1978. We have continuously developed since then and today, more than 3,000 of our customers are managing their farms from the palms of their hand with the DeLaval DelPro™ farm management app “Companion”.”

Volatility in milk and feed prices

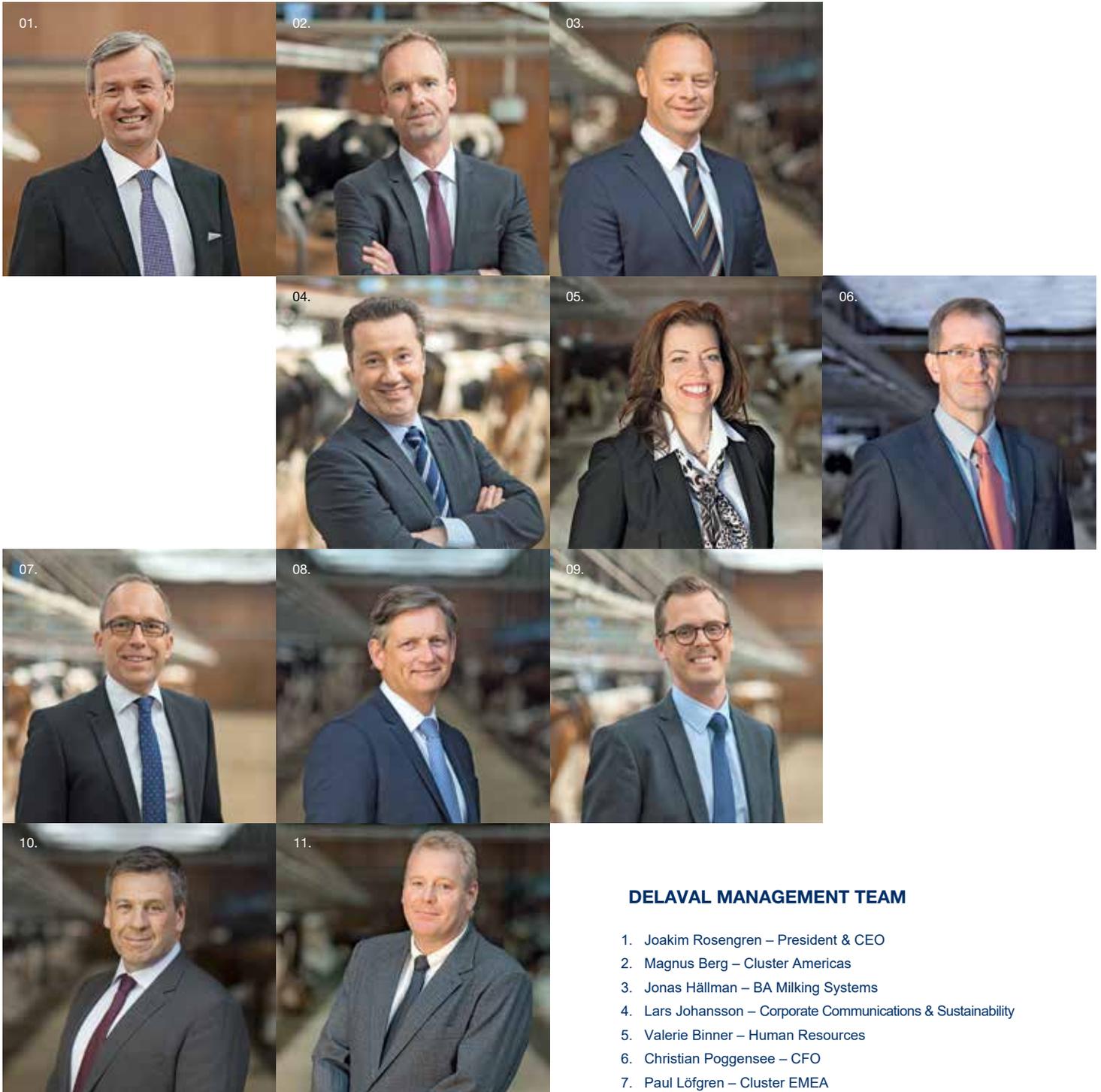
From a wider economic perspective, 2018 has been a challenging year in certain parts of the world and we see continued price volatility for both milk and feed prices. The volatility in 2018 was driven mainly by macro-economic challenges such as geo-political uncertainties, trade disputes, currency movements and local milk shortages. These issues have become more important drivers of farm profitability

than the overall direction of dairy and feed commodity prices. The continued trade dispute between the US and China has affected many industries and clearly affected milk and feed (especially soybean) commodity prices around the globe.

The renegotiation of the North American Free Trade Agreement (NAFTA) is another area of geo-political uncertainty. Until the new agreement (USMCA) is ratified later this year, the raised customs tariff on American cheese into Mexico, for example, is putting pressure on Class III milk prices in the US that negatively affects farmers’ margins.

Despite these uncertainties, we have experienced an increase in net invoicing of € 31.4 million in prevailing currency, up 3.2 per cent compared with the previous 12 months. Overall, the US continues to be our largest market, followed by Germany and Japan.

Joakim Rosengren



DELAVAL MANAGEMENT TEAM

- 1. Joakim Rosengren – President & CEO
- 2. Magnus Berg – Cluster Americas
- 3. Jonas Hällman – BA Milking Systems
- 4. Lars Johansson – Corporate Communications & Sustainability
- 5. Valerie Binner – Human Resources
- 6. Christian Poggensee – CFO
- 7. Paul Löfgren – Cluster EMEA
- 8. Tim Nicolai – BA Aftermarket, Services & Barn Environment
- 9. Johan Swahn – Legal Affairs
- 10. Johan Ledel – Cluster Asia & Pacific
- 11. John-Erik Hermanson – Supply Chain



Intelligence that adds value for our customers

Most of our products consist of hardware, but by building in more intelligence, we can improve not just our own efficiency, but our entire customer offering. We've started on a journey where we want most of our products to be coupled with some kind of managed service or intangible offering, such as advice or information. Digitalisation enables us to connect, predict and interact – and most importantly – add value for our customers.

FROM TANGIBLE PRODUCTS TO CONNECTED SERVICES

With the “internet of things” we can perform advanced diagnostics for customers, using the data they provide. The VMS milking robots already have many sensors installed that can provide feedback to both customers and service technicians. What we're moving towards is being able to predict potential problems that cause downtime and handle them before they even happen, such as replacing worn parts, or changing settings to improve performance of our VMS system. We can also solve many issues remotely, without having to visit the farm, which saves time and cost for both us and the customer. This benefits all farmers regardless of size, but particularly those with a high level of automation.

By harnessing connectivity, we can provide customers with advanced animal management tools to increase farm productivity. The DeLaval Herd Navigator™, for example, performs remote advanced diagnostics on the cows themselves to keep them healthy

and monitor their production. Coupled with DelPro™, the customer interface where they can regularly see their data, they can make more informed decisions about their herd – and their business.

KNOWING WHAT TO DO WITH THE DATA

Once we've delivered a product, we can use relevant data to communicate with the product and know when it needs to be serviced, upgraded or replaced. Digitalisation creates a true advantage when using large amounts of data in the right way – not just historically, but predictively. One example is providing customers what-if scenarios and suggesting changes that could affect their production. Taking customer data and delivering it to them in a more useful format creates a strong offering.

By monitoring our products better, we not only improve our service, we improve our product development in ways that truly benefit customers. R&D gets a boost since we can both use actual data in simulations and

reduce testing times, improving our internal efficiency in the development process.

Connectivity can also create new business opportunities for us as a company by offering it together with a product for a fee, when it adds value for the customer. Furthermore, selling managed services then doesn't require a face-to-face meeting, since relevant offers based on data can be offered at the right time.

Digitalisation isn't about the technology itself, it's about what we can use that technology for to help our customers improve their profitability and efficiency. Our people know what it's like to be farmers and our mission is to help them with their daily lives. Milk producers are pragmatic by nature and willing to use digital tools when they make sense. They value automation that reduces the need for manpower, and they value the use of data models to help make the right decisions for their farm and their business.



Predictions that give farmers peace of mind

DeLaval is in the final stages of developing the next step in strategic capability within online predictive maintenance: InService™ Remote monitors vacuum, pulsation, and temperature.

This monitoring system enables a whole new world of possibilities and creates added value for customers, from remote assistance and updates to current asset status and advisory services.

By storing the operational asset data on a cloud platform, it can be used to develop algorithms to predict upcoming needs for repair or maintenance in the future. For example, we can see that one milking point on a customer's farm will need service in order to avoid performance loss in three weeks' time. Or that the cooling system will need service within a month to maintain proper cooling levels.

EARLY ALERTS – IN REAL TIME

InService™ Remote monitors the system vacuum level to ensure that optimal conditions are met throughout the entire milking process. It also monitors pulsation to ensure that the operation of the liner is correct during milking and that any problems are flagged early. The main benefit of this system is that it runs in real time, so key members

of the service organisation, as well as the customer, get immediate notification when something isn't functioning properly. Issues can then be assessed and acted on quickly, minimising downtime and saving costs for the customer.

Even cooling can be monitored with InService™ Remote with a connection to

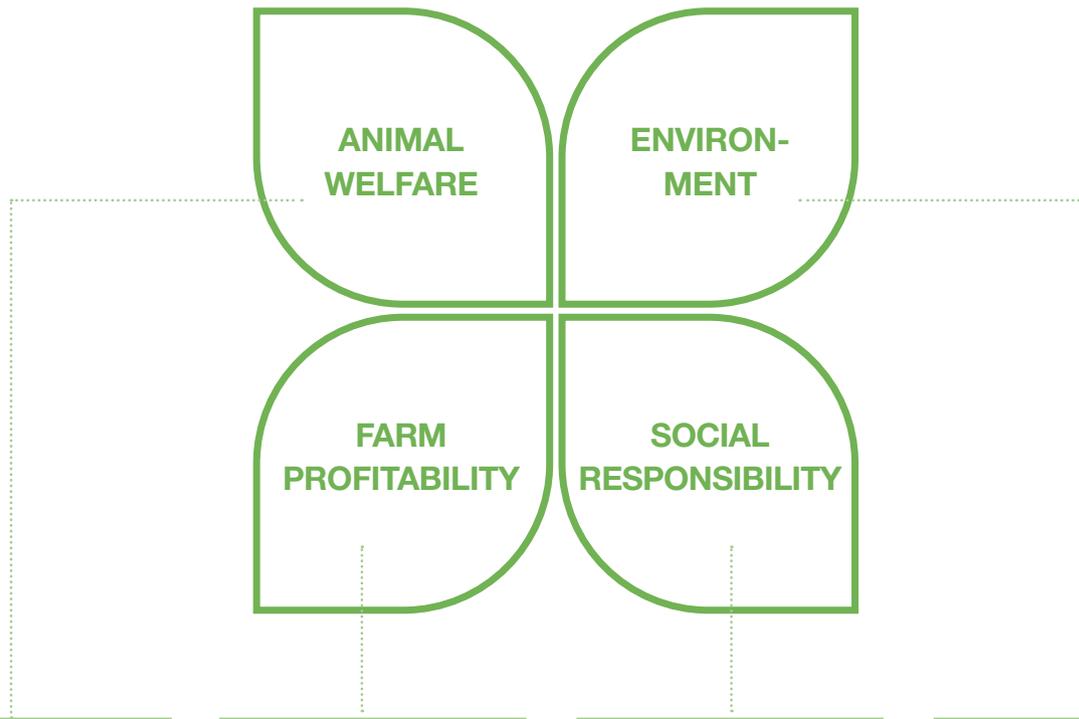
the DeLaval Milk Quality Auditor, a cooling product that can be added to nearly any cooling tank. The system stores cooling data in the DeLaval cloud and passes alarms and process parameters, such as temperature, agitator and detergent status, to key users.





Making dairy farming a sustainable business

Our vision is to make sustainable food production possible. This means finding ways to help our customers – dairy farmers – create sustainable businesses. We look at this from four main perspectives: animal welfare, environmental sustainability, social responsibility and farm profitability. At the same time, we continuously monitor and improve the sustainability of our own operations.

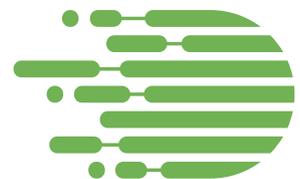
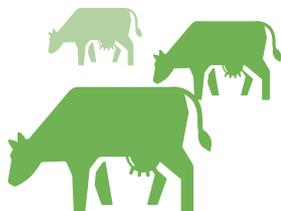


Animal welfare relates to extending the productive lifetime of the cow. By providing better conditions for animals, farmers can improve their milk yield and milk quality and reduce their environmental impact.

Farm profitability entails helping our customers maintain a profitable business in the long term through leadership and driving improvements. With a profitable business, farmers can implement improvements in productivity, social progress and environmental performance.

Social responsibility is about respecting and advancing human rights according to the UN definition. We particularly focus on creating sound working conditions for both our employees and farm workers.

Environmental sustainability involves taking a long-term perspective while using the latest scientific insights and technologies to improve the resource efficiency of not only our customers' operations, but also our own.



PRODUCTS THAT HELP FARMERS BECOME MORE SUSTAINABLE

During 2018, we launched a number of systems, products and services that assist farmers in improving animal welfare, social sustainability, environmental sustainability and/or farm profitability.

DeLaval Evanza™ milking cluster

The DeLaval Evanza™ milking cluster uses the Clover™ cartridge, which has a lifespan twice as long as conventional liners, reducing waste. They are replaced effortlessly, improving the working conditions of farmers. The cluster is light and easy to handle and the cartridges are made of 100 per cent recyclable materials. Milk flow in these clusters is up to 9.3 per cent higher on farms that have been tested.

DeLaval VMS™ milking system V300

The VMS™ V300 milking system reduces water consumption by up to 18 per cent and power consumption by up to 34.3 per cent compared to previous models¹. This is based on data gathered on several pilot farms. Fewer labour hours are now required, no tank milk is wasted and the milking robot can increase milking capacity by up to 10 per cent. It's also designed to be easier to service for farmers and technicians.

DeLaval OptiDuo™ robotic feed pusher

The new robotic feed pusher DeLaval OptiDuo™ does more than just push feed at the cows. It also remixes and repositions feed onto the feed table. This means less waste and makes life easier for the cows. Lower ranked cows no longer lose out in the competition for feed at the table. With DeLaval OptiDuo™ all cows have access to fresh feed, improving the welfare of the animals.

Up to



higher milk flow

Reduces water consumption by up to



Reduces power consumption by up to



MATERIALITY ASSESSMENT

We regularly analyse what is most important for us to focus on by using a materiality assessment. This entails interviewing both internal and external stakeholders to get their standpoints on which sustainability areas DeLaval should focus on. We performed our second analysis in 2018–2019.





New robotic feed pusher

DeLaval has launched a new robotic feed pusher, the DeLaval OptiDuo™. It makes sure cows always have access to refreshed feed and a well-mixed diet, with technology that allows remixing feed while moving it onto the feeding table. With its twin-spiralled rotating auger and adaptive drive function, all kinds of feed are repositioned onto the feeding table, filling any gaps and ensuring that the strands of roughage remain intact. This means that lower-ranked cows are not pushed to empty positions, reducing the competition at the feeding table.



Cool cows produce more milk

Avoiding heat stress during hot weather means that farms can maintain winter milking production levels and prevent a negative impact on feed intake, fertility and general cow health. DeLaval's system for automated cow cooling is designed for automatic milking systems and comprises sprinklers and fans, along with sensors and a smart control unit to cool by evaporating water on the cows' skin. The patented system of self-activation teaches the cows where they can find relief from the heat – which is where farmers want the cows to be. When cows feel warm, they go to the feedline, where they are rewarded with cooling and their appetite is stimulated. With increased food intake, they get the impulse to be milked and are rewarded again with cooling at the milking station.

World's first milking cluster with cartridge liner introduced

The DeLaval Eanza™ milking cluster has the world's first cartridge liner, offering twice the lifetime of conventional liners. The liner ensures teat condition and comfort and is easy to replace, with a twist-to-open and twist-to-close functionality. In farm tests, it was shown to have better working ergonomics and increase milk flow by up to 9 per cent, in addition to rendering a higher yield of up to 5 per cent and reduced milking time by as much as 7 per cent. The DeLaval Eanza is a sustainable product, with longer exchange intervals and 100 per cent recyclable materials used in the cartridge.



Farmers say hello to a new companion

DeLaval has launched the DelPro™ Companion, a farm management application developed to work with farmers to not only display animal information, but also to support work routines by recording important events as they happen throughout the day. DelPro™ Companion gives immediate access to information on a mobile device and synchronises events with the farm's server. Farmers appreciate the possibility to recall milking, feeding, body condition scores and activity without delay and in any location. This enables better and more timely decision-making.



Mind+ Summit in China impresses with robotic theme

In October 2018, DeLaval China hosted the second Mind+ Summit to discuss the hottest topics in the dairy industry and address customers' burning questions. The event attracted nearly 300 attendees from dairy farms, industry associations, academies, research institutions and local trade media. The topics included robotics, smart data, animal health, environmental pressures and milking system technology for next-generation dairy farms. With this annual event, DeLaval China aims to provide an open platform for communication and information-sharing, while taking a global perspective on the long-term development of dairy farms.

Collaboration improves Chinese dairy farm management

Tetra Pak and DeLaval are providing training to Chinese dairy farm managers, an initiative from both the Chinese and Swedish ministers of agriculture to increase co-operation in this area. Over the course of five years, the goal is to train 150 talents in scale-farm management to support sustainable development of the Chinese dairy industry. The agreement with the Dairy Association of China (DAC) aims to improve the overall skills level within dairy farm management.



Manufacturing capacity doubled to meet demand for new milking system

Following the successful launch of the DeLaval VMS™ milking system V300, DeLaval has ramped up production due to dramatically increased order intake. To meet the strong demand, DeLaval is making full use of its modernised facilities by increasing production personnel, adjusting supply chain planning, and securing deliveries from suppliers. The new LEED-certified DeLaval Distribution Centre in Germany supports the order intake with a larger, more efficient storage facility that will reduce lead times. Overall, the strengthened supply chain aims to ensure deliveries to partner dealerships and farmers once fully implemented.

Walking the talk in Texas

The DeLaval manufacturing site in Texas that produces teat dips, detergents and sanitizers was recognized for its 100 per cent compliance with environmental regulations for waste water. "The Environmental Compliance Achievement Award from the City of Grand Prairie is proof that working with performance indicators and environmental targets pays off, as we continue to make sustainable food production possible," says Tony Drake, Vice President Milk Quality and Animal Health. All manufacturing sites in DeLaval now have targets for environmental parameters that are challenged and monitored annually.



A new experience for cows and customers

In 2018, DeLaval introduced a new robotic milking system, the DeLaval VMS™ V300, which helps farmers reduce their dependence on labour availability while keeping them at the forefront of productivity, animal welfare and food safety.

The system directly addresses farmers' daily challenges by using technological advances that allow them to do more with less. It employs DeLaval InSight™, the latest in vision technology with a new camera and new software that enables superior attachment of the teat cup to the cow. Smoother, faster attachment means not only efficiency gains and reduced overall milking time, but also more relaxed cows.

SEEING IS BELIEVING

The InSight™ technology also enables a nearly-perfect teat spray hit rate, which avoids the waste of both disinfection chemicals and time, so that farmers increase productivity while safeguarding animal health.

DeLaval PureFlow™ is a new transparent teat cleaning and preparation cup that ensures the highest milk quality and food safety by keeping both water and air in a separate circuit, away from the milk.



The VMS™ V300 offers real-quarter milking, which means that each of the four teats, or quarters, are milked individually. The milking stops once each individual quarter is finished, which is better for the cow while saving both time and energy.

MORE CONTROL, HIGHER PRODUCTIVITY

The milking system comes with DeLaval InControl™, a new user experience that allows access to information and remote control of the system from either a smart device – phone, tablet or laptop – or right at the machine. The farmer can control all aspects of the machine, without compromising worker or animal safety.

The combined effect of all of the new features of the VMS™ V300 render a potential capacity of up to 3,500 kg of milk per day, which is up to 10 per cent higher than the previous model. Running costs are lower due to convenient location of the service parts within the machine, making service faster for technicians.

Furthermore, the DeLaval InService™ All-Inclusive customer programme offers service, consumables, and advisory services at a fixed price. This enables farmers to focus on the business of dairy farming, knowing that every time they milk, the system's performance is optimised.

Driving the industry forward worldwide



ASIA PACIFIC

The markets in this cluster are in very different stages of development and vary enormously.

Overall, the outlook is positive, with a projection for continued rapid growth in dairy consumption, along with good prospects for further investments in the dairy sector.

Japan has shown the highest growth, driven by investments in automation. We see development particularly in the automatic milking segment with the DeLaval VMS™ V300 and the automatic milking rotary, DeLaval AMR™, proving to be successful choices for the Japanese dairy farmers.

In developing markets such as India and in Southeast Asia, we see opportunities to work with Tetra Pak in market and customer development, such as small- to medium-scale investments in producer-distributors of mainly white milk.

Countries with mega farms but without a long history of dairy farming, like China and Russia, benefit not only from products like our heavy-duty rotary system, but also from

our advisory services to ensure that customers get the most out of our equipment. This continues to build long-term business relationships. We have a special focus on large multiple farm customers, with key account management and dedicated project planning.

We continue to work with dedicated teams throughout Asia Pacific to secure the aftermarket and services business (AM&S) with all of our milking, cooling and feeding customers. By providing our customers with a full system offering supported by service, advice and by maintaining a special focus on system performance, we have a sound base for our AM&S sales.

Mature farming regions such as Australia, New Zealand and Japan present opportunities to our existing distribution channels and we are actively working to provide new ways of servicing our customers, such as e-commerce. One of the greatest opportunities for us in the coming years is digitalisation – not only commercially on how we communicate with, sell to and advise our customers, but also in technical support and farm management areas.



AMERICAS

Overall, the Americas represent meaningful growth and brand-building opportunities for DeLaval. Some 180 million tons of milk is produced in the Americas

on an annual basis, equalling 25 per cent of worldwide milk production for the dairy processing industry.

In North America, the accelerating consolidation of dairy farms creates growth opportunities for DeLaval, especially in the automatic milking segment. In Latin America, where we are the market leader, the accelerating deployment of technology among dairy producers sets the stage.

Our priorities in the region include success in the high-growth automatic milking segment, especially as larger dairy producers (more than 1,000 cows) are considering milking robots.

Since more than 60 per cent of our current sales comes from the aftermarket, we are launching a number of actions to protect this position. One example is to always sell consumables and services contracts in conjunction with the sale of capital goods.

We are also focusing on channel management and development, such as replacing existing dealers to serve our customers better, or expanding the dealer base to ensure sufficient reach. We also need to expand our channels beyond dealers, such as with dairy co-ops in the region.



EMEA

EMEA (Europe, Middle East and Africa) is a region of very progressive farmers and high-tech solutions. Europe in

particular, with its family farms and where space is a factor, will continue to take the lion's share of the global market for automatic milking by looking at ways to get more from the same herd.

The shortage of skilled labour is a key driver of farm automation. It is clear that our farmers are increasing automation and seeking productivity gains through digitalisation and advisory services. At the same time, European farmers need to turn manure into an asset rather than an environmental problem. Thus, we are exploring the opportunities created by new environmental regulations. Dairy processors are raising their quality standards, which provides significant opportunities in the milk quality and hygiene areas.

Africa is experiencing a rise in large farms and more professional farming methods, even if they still are labour-intensive compared with European farms. We expect growth throughout the

continent from our stronghold in South Africa.

The production of fresh milk is growing in the Middle East, an area which is also experiencing a rise in professional farming methods. There is a rapidly growing young population who want to consume like Europeans, meaning dairy products above and beyond traditional yoghurt.



Further progress for Tetra Laval International

Tetra Laval International (TLI) is the financial support and control function for the Board. This includes responsibility for areas such as corporate governance, Group financing and treasury, financial planning and reporting, M&A, tax, internal audit, insurance, leasing and holdings administration. TLI manages the internal control aspects of these responsibilities by means of policies applicable throughout the Group. These policies are reviewed on a regular basis and further enhancements were implemented in 2018.

TLI manages Group financing, foreign exchange and interest rate risks of the Group within a mandate approved by the Board. This continues to be important in the context of continued major market volatility impacting the global economy.





TETRA LAVAL INTERNATIONAL MANAGEMENT 2018

- 01. Martyn Zedgitt – President
- 02. Robert Swan – Holdings
- 03. Robert Norris – Group Financial Planning and Reporting
- 04. Jörn Rausing – Mergers and Acquisitions
- 05. Antoine Jomini – Finance
- 06. Mark Masek – Audit
- 07. Tuomo Rautiainen – Tax
- 08. Maurizio Proietti – Operations



TETRA LAVAL GROUP SUPPORT FUNCTIONS

- 01. Jörgen Haglind – Public Affairs & Group Communications
- 02. Phil Read – Group Human Resources

These functions are responsible for their respective area throughout the Tetra Laval Group.

New Dairy Hub in Kenya improves productivity

Food security and nutrition pose significant challenges in Kenya. According to the WFP – World Food Programme, malnutrition levels remain high, with 29 per cent of children in rural areas and 20 per cent of those living in cities suffering from stunted growth. Even though Kenya has a well-established dairy industry, the productivity per cow is low at an average of four to five litres per day. Building on positive experiences in other countries, Tetra Pak and Tetra Laval Food for Development are implementing a Dairy Hub project together with Tetra Pak’s customer Uplands. The project has already started to see positive results.

Kenya has a well-established dairy industry with a production of 5.2 billion litres of milk annually. This production is mostly generated by smallholder dairy farmers whose population is estimated at 1.8 million. But the productivity per cow is low, which is mainly attributed to poor farm management, inadequate animal husbandry practices and lack of support services.

The establishment of a new Dairy Hub is an efficient way to tackle the problems. Tetra Pak and Tetra Laval Food for Development are supporting our customer, Uplands Premium Dairies & Food, Ltd. (Uplands), located in Kiambu County in Kenya.

Tetra Laval Food for Development is supporting Uplands with farm assessments and technical assistance. The project team is training a team of extension service officers (ESOs) at Uplands. The training focuses on feed and animal nutrition, milk hygiene, quality, animal health and reproduction. In addition,

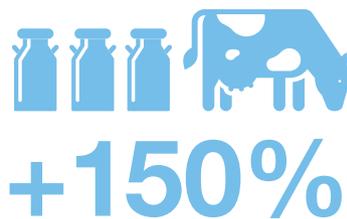
the project team has started building up capacity on reference farms to showcase best practices in dairy farming. With this knowledge, the ESOs are cascading best practice to more than 7,000 smallholder farms that deliver milk to Uplands.

“We are very happy about the joint work we have been developing in the Dairy Hub

project together with Tetra Pak and Tetra Laval Food for Development. This has contributed greatly to the strengthening of our relations with our milk suppliers,” says Francis Nganga, General Manager of Uplands.

The project has already produced positive results. The milk production yield per cow on the initial reference farms has increased 150 per cent from 7.5 litres per day to 18.8 litres per day. Overall, milk collection has grown by 16 per cent in the past year and Uplands’ milk collection cost has decreased by five per cent.

The project started as a private-sector initiative and is now looking for partners to scale up the training services. The objectives are to further increase milk quality, quantity and smallholder farm income. The dairy development initiative also aims to benefit child nutrition in the future by focusing efforts on producing milk for the Kenya School Milk Programme.



The milk production yield per cow on the initial reference farms has increased 150 per cent from 7.5 litres per day to 18.8 litres per day.

New school milk programme in Burundi for improved child health

A new school milk programme was launched in Burundi with the objective of contributing to the positive health of children, school attendance, and local dairy development. The programme is now reaching 37,000 children in central Burundi and has improved milk production by 43 per cent, with 3,000 new jobs created in rural areas.

UNDERNOURISHMENT AND LOCAL FOOD SOURCING CHALLENGES

According to the World Food Programme (WFP), only 28 per cent of the population is food-secure in Burundi and as many as 58 per cent are chronically malnourished. Children affected by undernourishment are more likely to perform poorly at school, drop out of classes and have poor health later in life. The sustainable model of locally sourcing food is still in the early stages of development. Tough conditions for smallholder farmers have made it difficult for them to be competitive in delivering enough quantities to supply the local demand for milk.

SUCCESSFUL SCHOOL MILK PROGRAMME

A new school milk programme was started with the objective of contributing to the positive health of children, school attendance, and local agriculture development.

The EU is providing funding of € 5 million for WFP to purchase up to one-third of the required food commodities from local smallholders in the Gitega province. The school milk programme is now reaching 37,000 children in central Burundi, partly by providing fresh milk in Tetra Fino® Aseptic 200ml packages from the newly founded local company, Modern Dairy Burundi.

“We are very pleased with our co-operation with Tetra Pak and Food for Development, which has helped us achieve our mission of providing safe and high-quality UHT milk to the school children in Burundi,” says Juma Mohamed, CEO of Modern Dairy Burundi.



CATALYST FOR LOCAL DAIRY DEVELOPMENT

The school milk programme in Burundi has served as a catalyst for local dairy development. The European Union and IFAD (International Fund for Agricultural Development) are now working with Modern Dairy to support 12 farmer co-operatives. The milk production has increased 43 per cent from 840,000 litres to 1.2 million litres in 2018. According to IFAD, the farmer revenue increased from USD 400 to 650 per year and now they have access to loans. The dairy development initiative is creating 3,000 new jobs in rural areas. The next step is to further develop the capacity of local stakeholders with technical assistance to scale up the programme and promote long-term sustainability.

The programme is now reaching

37,000 
children

+43% 
improved milk production

3,000 
new jobs created

School milk improves nutrition and attendance in Syria and Lebanon

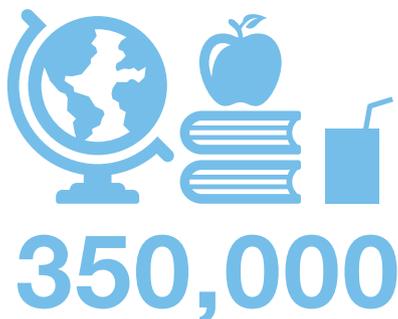
School milk plays a role improving enrolment and decreasing drop-out rates among refugee school children in both Syria and Lebanon. The school milk programmes aim to improve schooling for refugee children, in a situation where few have access to nutritious food. The school feeding programmes also attract more refugee children to attend school. Initial results from the programme show improvements in the children’s access to education, learning outcomes, health and well-being. The percentage of students missing school decreased from 8.4 per cent to 4.9 per cent. There was also a noted decrease in overweight prevalence among children.

The crisis in Syria has led to millions being displaced in Syria and in neighbouring countries. Over 40 per cent of 1.7 million registered school-age Syrian refugee children are not attending school. Retention rates are alarming; less than half of the children who start primary school complete it. Among refugee children, only two per cent attend secondary school.

The World Food Programme (WFP) was assigned to implement the Syria School Milk Programme. In a recent position paper, the WFP has acknowledged, safely produced and packaged UHT milk as an important source of vitamins, minerals and protein for distribution to older children in schools. Tetra Pak customers Glanbia in Ireland, Lactogal in Portugal and ILAS in Spain, supply milk in Tetra Brik® Aseptic 200 ml packages. The goal is to provide 350,000



“This, combined with reduced dropout rates, proves how the provision of a daily nutritious snack and milk can be for children to support their learning.”



The goal is to provide 350,000 children in Syria with UHT milk as part of a support package from European farmers.

children in Syria with UHT milk as part of a support package from European farmers. The European Union is funding the programme with €30 million. In Lebanon, Tetra Pak customer LibanLait is supplying locally produced UHT milk to Lebanese schools in two programmes: WFP in collaboration with the Lebanese Ministry of Education and the NGO Theirworld.

“Theirworld’s breakfast snack programme is underpinned by a robust research model,

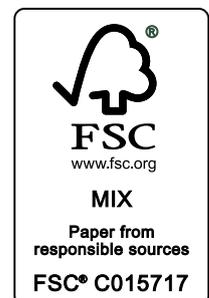
and we can see improvements in students’ diet diversity from previous years,” says Kimberley Green, Project Manager Safe Schools. “This, combined with reduced dropout rates, proves how the provision of a daily nutritious snack and milk can be for children to support their learning. We thank Tetra Pak for their continued support of Theirworld’s work to ensure all children have the best start in life.”

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