

# GROUP REPORT

We present ourselves in a sound operating condition and strategic setup. In the year under review, we made important decisions, from our successful entry into new markets and the continuing expansion of our production network to a strategic acquisition.

# VALUE THROUGH PROFITABLE GROWTH

How sustainability contributes to our corporate success.

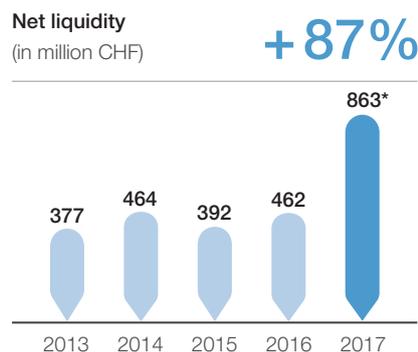
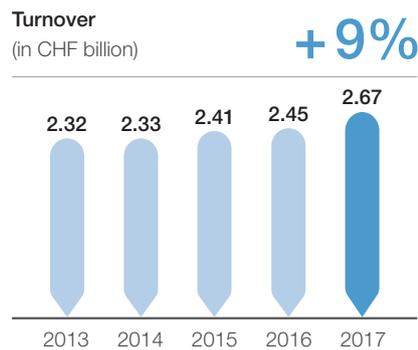
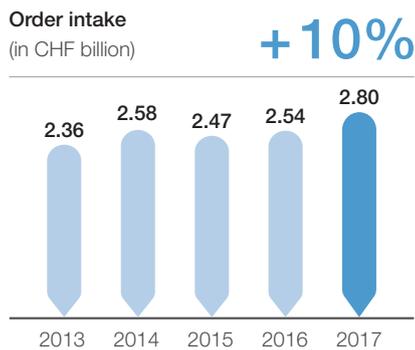
2017 was a successful year for Bühler. We succeeded in creating sustainable value for customers, employees, and the environment, in growing organically in almost all regions and business areas, and in making a strategically significant acquisition. Commissioning our newest production plant in China has helped us further expand our global production network. We also began modernizing our sites in Switzerland. Significant progress was made in the implementation of our sustainability goals through the market launch of new technologies and process solutions, such as manufacturing battery slurry and the industrial processing of insects.

Our collaboration with partners in industry, science, and business start-ups has played a key role in developing such innovative solutions. We therefore plan to continue our Networking Days and have started building the CUBIC innovation campus in Uzwil – a networking venue. This effort

includes remodeling our application centers. Digitalization is increasingly the focus of our innovations – not as an end in itself, but rather as a key technology to arrive at new, sustainable solutions in food manufacturing and materials processing. We are looking into the future with optimism and are confident that we will be able to further solidify our business development as we continue to work on improving profitability.

## Double-digit organic growth

The most important indicator of growth for Bühler is order intake. We were able to raise these by 10% to CHF 2.80 billion compared to the previous year. Turnover increased by 9% to CHF 2.67 billion, which resulted in an order backlog of CHF 1.73 billion (+9%). All three figures are at record levels. We have succeeded in setting a new, clear course of growth – benefited by the overall positive world economy.



\*Includes corporate bond of CHF 420m.

It is also gratifying to note that both businesses of Bühler have grown. Grains & Food (GF) increased its received order intake by 7% to CHF 2.1 billion and Advanced Materials (AM) by 21% to CHF 672 million.

GF turnover grew by 7% to CHF 2 billion, and AM by 19% to CHF 640 million. In terms of regions, Asia (+20%) and the Middle East & Africa (+12%) showed the strongest turnover growth. Even Europe saw a reasonable increase of 4%. In terms of turnover, our geographic range is thus broad and well-balanced: Europe 29%, Asia 28%, North America 16%, Middle East & Africa 15%, South Asia 6%, and South America 6%.

Structurally, our portfolio mix showed progress as well. In 2017 we decided to independently capture and strengthen the single machines business sector in addition to projects and plants and services. Since then, we have shown strong growth of 32% in this area. Our growth in turnover for projects and plants is 8%, and for services 4%.

### Profitability

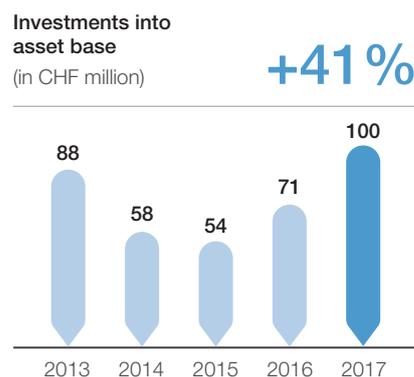
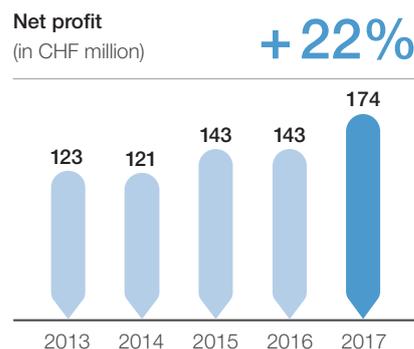
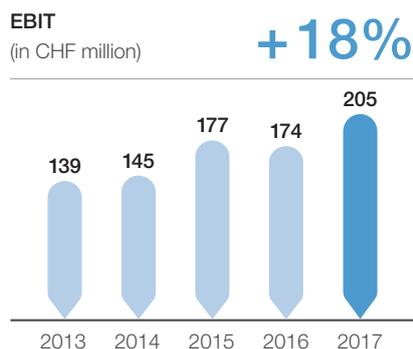
Our increase in profitability shows that we have established solid, profitable growth despite a challenging cost situation. EBIT increased in absolute terms by 18% to CHF 205 million, which represents an EBIT margin of 7.7% (previous

year: 7.1%). Supported by a good financial result of CHF 13 million (previous year: CHF 6 million), net profit reached CHF 174 million (+22%).

Already at a solid level, Bühler's financial situation continued to strengthen. We had a strong increase in investment into the asset base of CHF 100 million (+41%). The operating cash flow dropped slightly to CHF 158 million. Net liquidity jumped to CHF 863 million (+87%) as a result of the cash inflow from the corporate bond of CHF 420 million. Despite this gain from external financing, the equity ratio remained high at 44.8% (previous year: 47.0%). The capital performance indicator RONO (return on net operating assets) grew from 19.5% to 21.0%, indicating the efficient use of given resources and an ongoing high financial flexibility.

### Corporate bond successfully launched

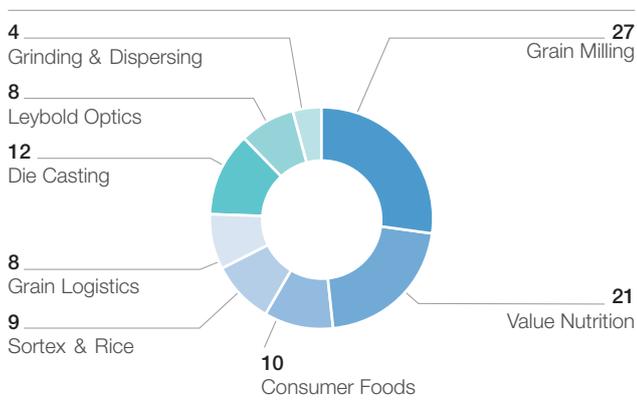
In order to finance our many strategic initiatives long-term, we decided to obtain capital from the financial market for the first time. The company bond of CHF 420 million is divided into two tranches with terms of five and nine years – CHF 180 million (Tranche A), and CHF 240 million (Tranche B). The bond gives us the needed company flexibility at favorable conditions to invest in modernizing our locations, our innovation centers, and the digital transformation of our company, in addition to acquisitions.



## STRONG OPERATING BUSINESS

Both Bühler businesses contributed to the positive result for the year, and Advanced Materials once again stood out with strong growth rates and record results. Both businesses were able to gain additional market share despite somewhat saturated markets.

Turnover by business area  
(in %)



## GRAINS & FOOD

The food processing business increased order intake by 7% to CHF 2.1 billion and, with that, its turnover by 7% to CHF 2 billion. An important factor in our success is the ability of Grains & Food to offer sustainable, integrated, complete solutions, which we demonstrated at our booth at Interpack, in Düsseldorf, Germany where we held our Networking Days @ Interpack event. To continue promoting this approach of providing integrated solutions, we decided in 2017 to refocus Grains & Food. This involves the renaming and further development of the business areas. These changes took effect at the beginning of 2018. The business areas and results shown in this report reflect the structures from 2017.

### Grain Logistics (in 2018: Grain Quality & Supply)

Grain Logistics continued to expand its leading position in the beer market and was able to win globally significant malting projects. Five of the newest plants in Holland, the US, Australia, China, and Vietnam were put into operation. The rice business was equally successful. Bühler secured its position as the global market leader with large orders, primarily from Nigeria and Angola. To achieve this, the close collaboration with the individual business areas was crucial. The conveying system TUBO, launched in 2016, was very well received on the market and was launched for other raw materials such as coffee and rice. In contrast, challenging conditions in the grain storage market led to postponement of large investments in Asia.

Order intake

CHF **2.1 billion** **+7%**

Turnover

CHF **2.0 billion** **+7%**

### Grain Milling (in 2018: Milling Solutions)

With multiple large projects, Grain Milling is again on a course of growth and was able to further expand its leading position in saturated markets. In Switzerland, the highly acclaimed Kornhaus in Zurich was completed through a close partnership between Swissmill and Bühler. In the US, we successfully put a new process for manufacturing corn flour into operation for our customer Plant Good Harvest. The Prime Masa reduces wastewater by about 90% using steam and increases yields at the same time.

In Rwanda, a plant for manufacturing fortified foods for expectant mothers and babies started operation with the goal of reducing malnutrition in the country. It was a community project within Bühler Milling Solutions and Value Nutrition and partner DSM (see pages 80–87). Bühler also received a large order to supply over 1,000 microdosing units in Pakistan. These have been placed with local milling operations as part of the British Food Fortification Programme and will have a positive effect on millions of people in this region.

### Value Nutrition

Value Nutrition recorded an excellent business year. The strategic focus on the feed business led to strong increases in market share in Europe, the Middle East & Africa, and Asia. After the delivery of the first five plants for the Philippine food group San Miguel, Bühler and the company reached an agreement on further expansions.

The close partnership with the pasta maker Barilla resulted in a new project in Russia and an expansion of the Bühler pasta business. Value Nutrition opened application centers in China to adapt end products even more to market demands: in Wuxi, it opened Pasta & Noodles, and in Changzhou, a center for the production of machinery and plants for animal feed, aquafeed, and pet food. With an order for the first industrial insect processing plant in Europe, Bühler

proved that it is possible to scale protein production from insects. The plant will serve as a blueprint.

### Sortex & Rice (in 2018: Digital Technologies)

Sortex & Rice recorded above-average growth in optical sorters as well as in rice processing. The newly introduced sorting technology for frozen vegetables and fruits grew faster than the market; at the same time, Bühler was able to reinforce its position in the recycling market. Sorting PET waste using the Bühler Sortex E PolyVision and Sortex A ColorVision machines creates bottle-grade recycled PET flakes at the highest yield in the market. The business area has now put the same technical capabilities to use for developing the first completely digital quality service for rice: TotalSense. This app allows processors to subscribe to a cloud solution that can reliably collect and document the quality of a rice sample in just a few seconds.

### Consumer Foods

Consumer Foods developed very well over 2017. Japanese customer Meito decided to build a new plant in Seto, north of Nagoya, and chose Bühler as their preferred full-scope provider. The order consists of a complete cocoa processing line, from cocoa bean intake to cocoa liquor, and a chocolate mass production line from ingredient handling to liquid chocolate mass storage.

The coffee business was also successful in the past year. The new coffee roaster ordered by Chicco d'Oro in 2015 was successfully commissioned. Bühler also signed a contract with its Norwegian customer Joh. Johannson to build a carbon-neutral plant. We demonstrated our competence in integrated and sustainable complete solutions with our Networking Days @ Interpack where we launched 20 product innovations, including a robot-supported plant for lower volumes (ChocoBotic) and DoMiReCo, a digital, self-controlled process.

## ADVANCED MATERIALS

The Advanced Materials business developed exceptionally and recorded a record year in 2017. Order intake increased substantially by 21% to CHF 672 million; and turnover rose strongly by 19% to CHF 640 million. This shows that Advanced Materials was the growth engine for the Bühler Group and, with the focus on mobility over the past years, it has become the second pillar together with the food processing area. About 60% of revenues for Advanced Materials stem from the automotive industry.

### Grinding & Dispersing

After multiple years of joint research and development with its Chinese customer Lishen, followed by a first pilot line in 2015, Grinding & Dispersing finally made a breakthrough in its new battery business in 2017 (see pages 66–71). The business area successfully launched a new process for manufacturing electrode slurries. The process enables maximization of the energy density of the batteries and is also more economical. Lishen successfully started up a total of 10 production lines and honored Bühler with its Best Supplier Award.

In addition, the business area also won contracts from other customers, which made the battery business into a robust and quickly expanding market for Grinding & Dispersing. The business area also continued to grow in other application fields, such as digital printing for personalized applications and, especially, color printing for the packaging industry – also driven by innovative technologies such as Macro-

Media and MicroMedia, along with integrated plant construction competences for efficient solutions in wet grinding.

### Die Casting

After several years of strong growth and moving up to become the global market leader, Die Casting increased its order intake to a high level and revenues rose considerably again. The Ecoline machine series was a particular growth driver, with more than 100 orders logged. Three factors are decisive in addition to leading technical solutions. First, Die Casting is the only supplier in all three relevant production regions of the automotive industry – Europe, America, and China – and has its own assembly plants, service and application centers. It can thus support internationally active processors globally.

Second, the business area has extensive application knowledge about structural aluminum components and can assist its customers with this demanding application. Third, Die Casting is also benefiting from the rapid growth of e-mobility, because more and more parts are being made of light alloys to cut down on weight for these vehicles.

With more than 400 Carat machines installed for large and complex components as well as over 400 installed Ecoline machines, Bühler has the strongest global presence. To continue this growth curve and increase service quality for customers, Die Casting opened a global parts center in Alzenau, Germany. The business area also commissioned an application and technology center in China in order to

Order intake

CHF **672 million** **+21%**

Turnover

CHF **640 million** **+19%**

offer training as well as customer-specific application development in the region. In the US, Die Casting installed the largest-ever die-casting machine built by Bühler with a locking force of 4,500 tons for its customer Mercury Marine.

**Leybold Optics**

Leybold Optics was the most successful business area of the Group in 2017 in terms of growth. After its big turnaround and a very promising 2016, Leybold Optics was able to organically increase its incoming orders by more than 50%. Plants for large-scale architectural glass coating, for which Leybold Optics now has a global market share of about 60%, decisively contributed to this.

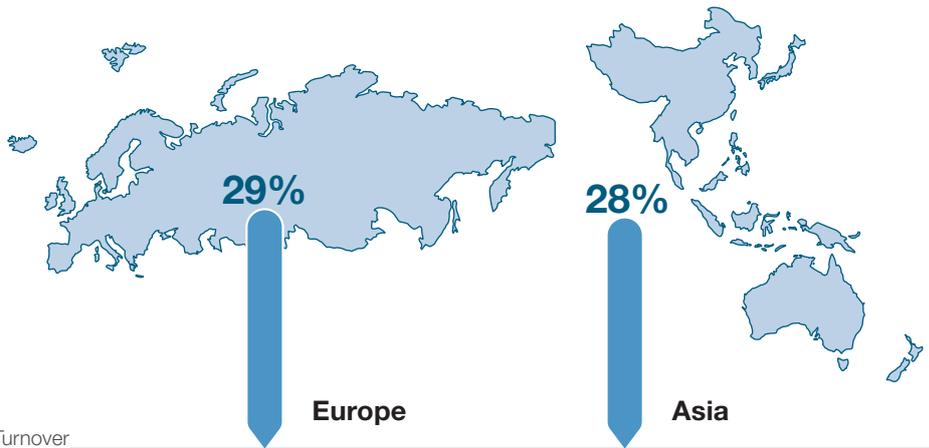
More intense market cultivation and extensive service offers based on innovative technologies led to success. Solutions for precision coating of sensors, camera lenses, and screens for the automotive industry and entertainment electronics were also significant. The increasing emergence of driver-assisted systems, mobile devices, and devices equipped with sensors and IoT solutions is generating a demand that Bühler can exploit with its ultra precise and economical machines for coatings on the nanometer scale.

To further respond to current trends, Bühler opened an application center at Leybold Optics in Alzenau, Germany. It offers different vacuum-coating machines, ranging from small to large rigid substrates; to plastic films; to deposition, such as evaporation with various types of plasma assistance; to sputtering, including ion-beam sputtering.

# REGIONAL PRESENCE

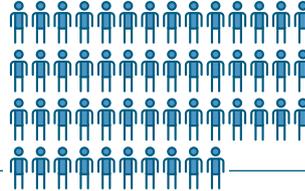
Bühler enjoyed growth in all regions, with Europe and Asia as front-runners.

Following its strategy of “in the region, for the region”, Bühler has become a true global player with a balanced presence of production sites, service stations, research and development facilities, and application and training centers around the globe.

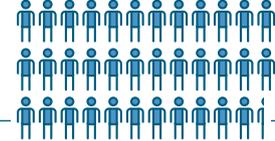


Turnover share by region

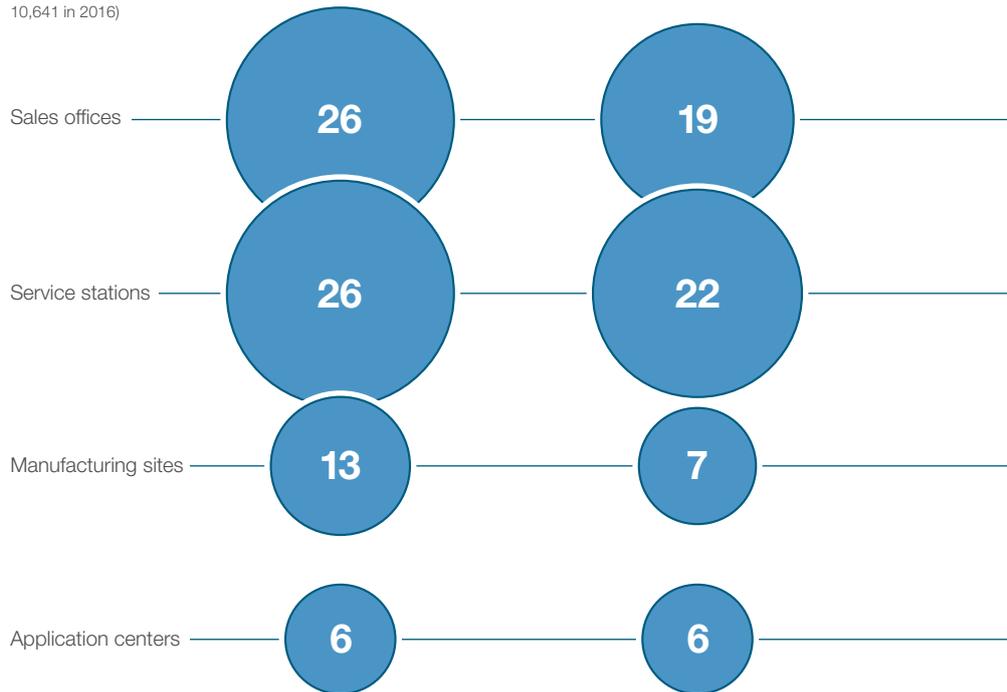
5,205 (+3.1%)



3,535 (+3%)

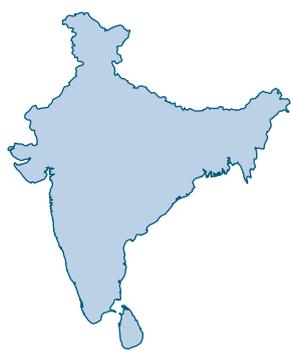


Employees 2017 (10,972 compared to 10,641 in 2016)



Highlights

- Networking Days @ Interpack Düsseldorf boosts Consumer Foods Europe
- Well-performing markets for Advanced Materials
- Strong growth of optical sorting triggered by innovations for fruits and vegetables
- Important strategic projects won: GoodMills Germany, Coffee Norway, Malteries Soufflet Bulgaria, Barilla Russia
- Record order intake
- Rapid growth with aqua-feed solutions
- Started first continuous mixing process for electrode slurry with more orders from other customers coming in
- Established Bühler Insect Technology Solutions and signed first full-plant contract
- Strong growth of our Customer Service business, especially in China and Southeast Asia



**6%** South Asia



**15%** Middle East & Africa



**6%** South America



**16%** North America

**590** (+3.7%)



**470** (+4.4%)



**399** (+1%)



**773** (+3.6%)



5

14

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15

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4

- Successful market entry in aqua feed
- Speciality Milling continues to grow with new applications in maize
- Market leadership for optical sorting
- Growth in the Advanced Materials business, with an exceptional year for Die Casting

- Strong order growth in plants and projects, single machines, and in Customer Service
- Successful diversification from Grain Milling to other business areas
- Substantial growth in Rice and Grain Logistics
- New orders for glass coaters from Turkey
- Biggest single-machine order to improve nutrition in Pakistan with over 1,000 microdosing units

- Strong sales performance of Colombia, Peru, Ecuador, Chile, and Argentina
- Good order intake in Customer Service with growth of nearly 20%
- Successful sale of more than 50 oil-processing machines for Renova, and ship loaders and conveyors for port terminals AGD and Terminal 6 in Argentina
- Sale of a 20 t/h rice mill to ORF in Colombia
- ISO 9000 accreditation

- Introduction of a new optical sorter for fruits, vegetables, and tree nuts
- Successful commissioning of 120,000-tonne malting facility commissioned for Great Western Malting
- Banco de México places largest order in the region for Grinding and Dispersing
- Die Casting increased market share to 50% for new structural castings
- Regional apprenticeship program enhanced

## STRATEGIC INVESTMENTS

We made considerable investments for the future in 2017, including the Haas acquisition, the development of new digital technologies and process solutions, the modernization and expansion of our production network, and breaking ground for our innovation campus.

### Haas joins the Bühler Group

A high point of 2017 was the announcement of the takeover of the Austrian Haas Group. The transaction closed in January 2018. The Haas family decided to put the company under the Bühler Group umbrella after long-term strategic considerations. Haas is a highly regarded manufacturer of plants for wafers, biscuits, and confectionery and a clear market leader. None of the machines or solutions of either company overlap, and they complement each other superbly. It also became clear that many customers use products from both Bühler and Haas at the same time.

This step has opened great perspectives for Bühler and Haas to jointly take a leading position in the consumer food market and also to offer customers integrated solutions along the entire value chain from a single source. For the

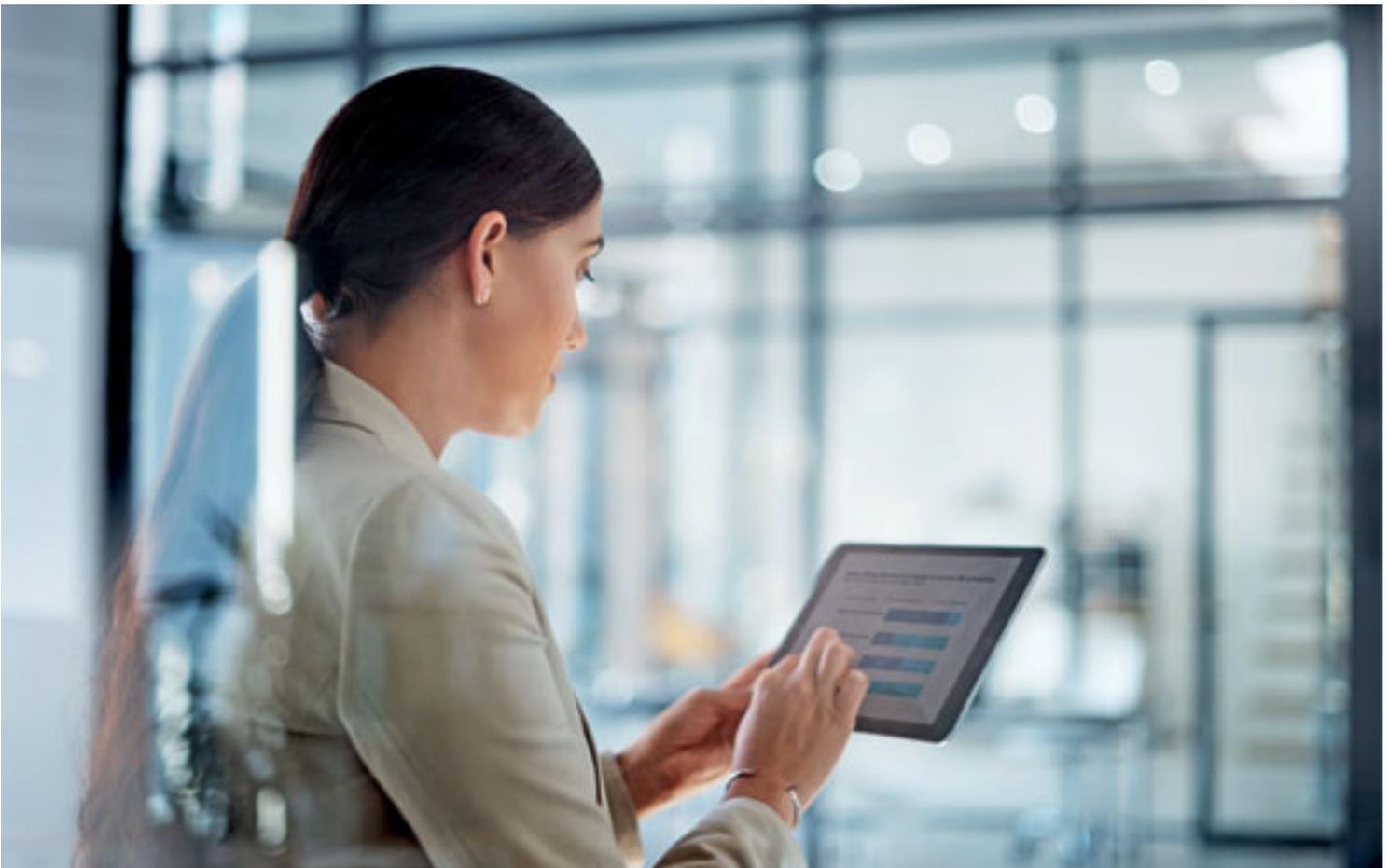
time being, Haas will be managed as an independent unit. Because of similar corporate cultures as family companies, and identical customer orientation and quality standards, the conditions for successful integration are optimal.

### Expansion of digital services

Bühler achieved a milestone in its digital transformation and development of new, service-oriented business models. Digitalization creates new possibilities to control the quality of processes, enhance transparency along the value chain, and improve efficiency of machines and systems worldwide, thereby achieving Bühler's sustainability goals. Bühler developed a new global platform for digital services in collaboration with Microsoft, and also created a new business area, Digital Technologies, as part of the Grains & Food business refocus. The first digital services



The Bühler factory in Changzhou, China, specializes in processing equipment for animal and aqua feed and pet food.



Bühler's secure, Internet of Things technology solutions enable customers to remotely access production data.

have already been launched, for example, TotalSense. For the first time, Bühler sold not only hardware, but also an app that is installed on a smartphone. TotalSense enables rice producers to determine quality online. Until now, especially with smaller processors, the rice was controlled manually. This approach is slow and prone to error.

The user takes a photo of the rice sample using an Android smartphone, uploads it to the Bühler cloud, and within a few minutes it has been analyzed according to the parameters the user has set. This low-cost solution gives rice processors peace of mind with consistent, reliable feedback on the quality of their rice. Currently, there are about 50 such new digital services under development, and about 10 of them will be put on the market in early 2018. Bühler is investigating how to further expand its growing portfolio of digital services.

#### Modernization of the global production network

With regard to investments in Bühler's global production network, two projects stand out: the opening of the new factory in Changzhou, China, and the modernization of the Swiss sites. The new plant in Changzhou was put into operation in September and now serves as a global center for the manufacturing, research, and development of feed machines and plants. The focus is on process solutions and complete

systems for the processing of feed for farm animals, fish, and pets. In terms of production capacity, Changzhou is one of Bühler's three largest production sites. In terms of production methods, manufacturing standards, and quality, the plant sets a new standard within the Bühler Group.

Work on the modernization of the Swiss sites is on schedule. The goal of the five-year project in Uzwil is to develop it into one of the world's leading production sites using Industry 4.0 technologies. In this way, the competitiveness of Switzerland as a location should remain strong. The first phase, which is largely completed, was to refurbish production and logistics for mass-produced parts.

#### Construction of innovation campus begins

Bühler broke ground for its new innovation campus in Uzwil (CUBIC) in 2017. The CUBIC comprises two elements: the modernized application development lab and the new innovation building. The building is slated for completion in the first quarter of 2019. The considerable investment of about CHF 50 million over a period of three years is a symbol of Bühler's dedication to innovation, technology, and Switzerland as its headquarters. This investment will strengthen the company's market leadership, and it contributes to the goal of innovating to improve the world in collaboration with partners from industry, science, NGOs, and start-ups.

## FACING THE FUTURE WITH OPTIMISM

With our collaborative innovation model, we are developing sustainable technologies and solutions – and are well positioned for the future.

### Innovation

In 2017, Bühler already achieved its 2020 sustainability target of running 50% of its research and development (R&D) projects in collaboration with our business partners. We invested around 4.5% of turnover into R&D (CHF 119 million), and are expanding our collaboration network with customers, suppliers, start-ups, and leading academic institutions to drive innovation and help meet our sustainability goals.

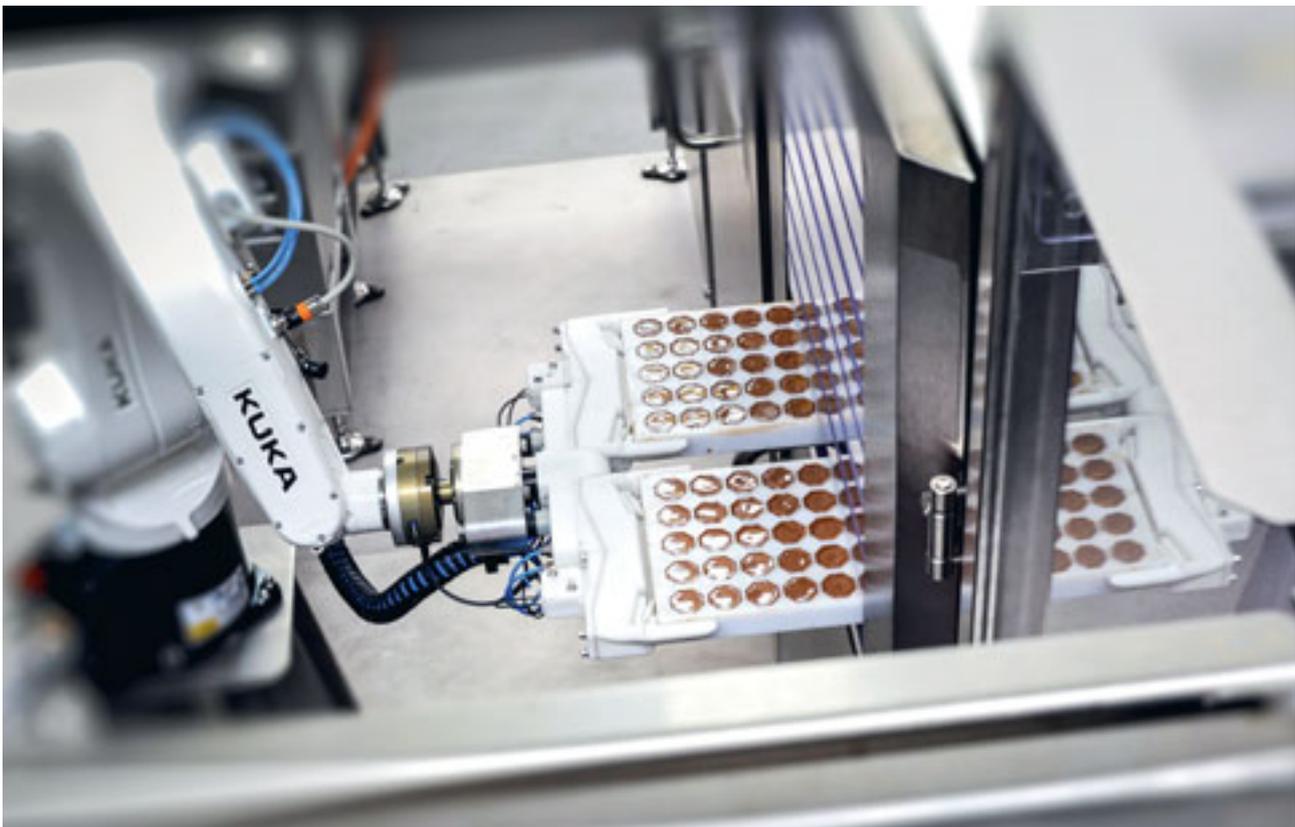
Bühler partnered with UNITECH to invite young people to participate in the Carbon Footprint Challenge 2017. More than 100 proposals to reduce carbon footprint came in, and the teams behind the five best ideas were invited to Uzwil to develop them further and pitch them to attending companies. The winners, Counting Carbon, from Trinity College Dublin, have a solid plan to change consumer behavior

with transparent labeling that features carbon footprint information. They are now working in the Bühler-supported Mass-Challenge accelerator.

### Sustainability

This has been a landmark year for Bühler as we continue to play our part in creating a safe, healthy planet for future generations (see pages 96–97). In 2017, we already exceeded our target to ensure 20% of our R&D projects focus on improved nutrition, and the number of R&D projects that increase yield and reduce waste have also risen to 39%, showing good progress toward our ultimate target of 50%.

The Bühler Supplier Code of Conduct, designed to help our suppliers as well as our manufacturing and logistics partners achieve greater sustainability, has been signed by



ChocoBotic reinvents the traditional moulding line with robotics.



**Bühler's process for manufacturing electrode slurries enables the maximization of the energy density of batteries.**

30% of our primary suppliers from a standing start of zero in 2016, when it was rolled out. We are pleased with the progress being made toward the goal of 100% by 2020.

### Outlook

Bühler is looking to the future with optimism. We are aware of the speed of change in the digital age and have kept the uncertainties of current world events in view – such as geopolitical, currency, and interest rate issues as well as trends contrary to free trade. However, in view of these factors, we are convinced that for Bühler the opportunities are significantly greater than the risks. 2017 was an important milestone for Bühler, including the acquisition of Haas, and securing the financial means needed to expand the company's investment and acquisition potential. We will continue to focus more sharply on this as we work toward our vision of "innovations

for a better world" and achieve our ambitious sustainability goals. Supported by new opportunities that have opened up thanks to digitalization, unique integrated process solutions, leading technologies, and its global presence, Bühler is well-positioned for the future.

We will use this positioning in 2018 to present two more Networking Days: in China, on the topic of "the future of mobility", and in Milan as part of the Ipack-IMA trade fair under the theme "feeling good about food". The official opening of the new factory in Changzhou, China, in the middle of this year will strengthen our position in Asia as well as in the global feed segment.

In fiscal 2018, Bühler is anticipating its growth course to continue with further improved profitability.

