

**The constant
of change**

How businesses
stay successful
in the long run

changes

What's driving the
process industry

#1/23



A flock of birds can change its flight formation in just a matter of seconds without causing chaos. Researchers still haven't found out exactly how they do it. But what they do know is that every bird continuously observes and monitors its neighbors in the flock and can quickly sense when the group changes course. They can adjust their behavior in the long term too. Should conditions change – like the climate, for instance – migratory birds will fly new routes, thereby securing their collective survival. So what can businesses learn from this?



Stronger together

Endress+Hauser is celebrating its 70th anniversary in 2023. From modest beginnings, across seven decades our company has risen to become a world-leading provider of process and laboratory measurement technology. We can be proud of our achievement together. Yet we also have to be thankful to our customers, colleagues and shareholders, who made this success possible.

We are taking these celebrations as an opportunity to think about how businesses can thrive over long periods of time. In business, just like in nature, the key is adjusting to changing environments. Some companies reinvent themselves and their business models and, following decades of change, are now barely recognizable from their origins. Others manage to remain ageless by constantly improving and developing their offering.

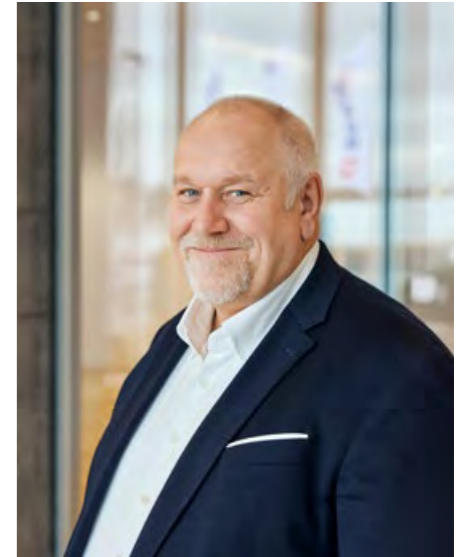
Whatever the chosen business strategy, only the people behind a company can drive change and rise to the challenge. They are the ones who develop innovative products and solutions. They are the ones who spot significant trends and technologies. They are the ones who open up promising markets and business areas. And, above all, they are the ones who build relationships and networks. Again, just as in the avian world, community is what keeps companies airborne.

Collaboration – that is, working closely together as partners – expands our scope of action as we share knowledge, skills, experience and perceptions. So collectively, we achieve things that we would not achieve individually, or not as well or as quickly. In this issue of *changes*, you will find many examples of how we join forces with customers to solve challenges together – and how we adjust so successfully to a changing world.

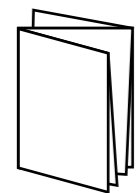
Here's wishing you a stimulating read!

Yours

Matthias Altendorf
CEO of the Endress+Hauser Group



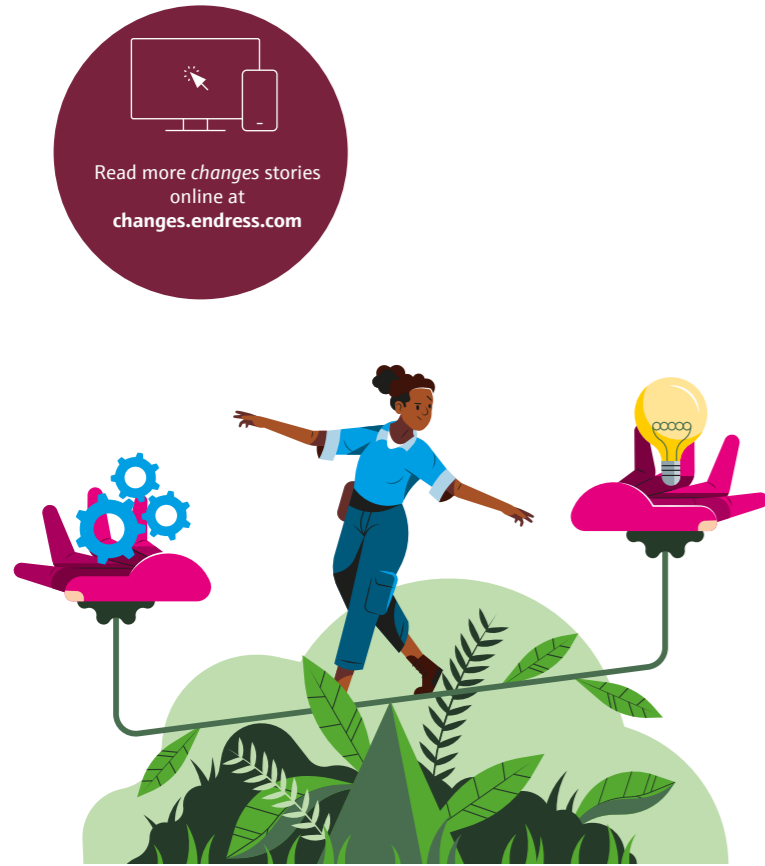
Only the people behind a company can drive change and rise to the challenge.



A brief journey through time
An insert celebrating Endress+Hauser's 70th anniversary. **In the magazine.**

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The long game

13.8 billion years

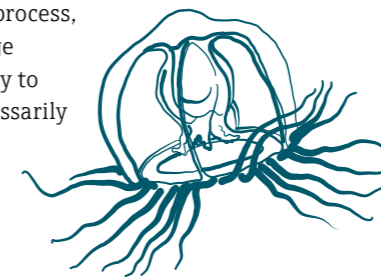
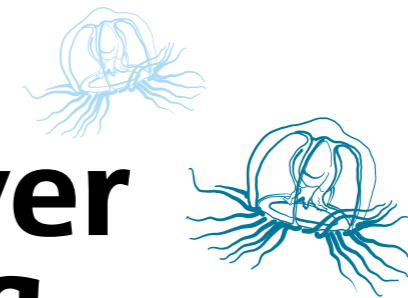
– that’s roughly how old the universe is. Nothing has been in existence for longer, nothing expands further. Looking into space is a humbling experience, if nothing else because it reminds us that our life is just a tiny part of the cosmic timeline.

What do the Simpsons, a tiny jellyfish and a view of outer space have in common? They all convey in their own unique way what it means to grow old and yet remain young. What seems an incredibly long time in popular culture is merely the blink of an eye by cosmic standards. Where can longevity be found on Earth and what are its limits? We take a look – a brief one, of course.

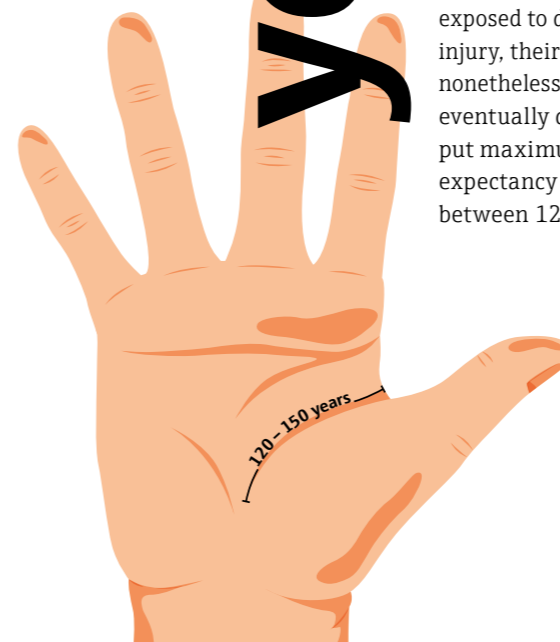
Text: Robert Habi, Anne Haas, Roman Scherer, Cornelia Theisen, Domenico Colucci
Photography and graphics: Shutterstock, Teresa Büngert

Forever young

Parrots, tortoises, fungi: they all grow old. Very old. But they’re no match for *turritopsis dohrnii* – an immortal jellyfish that floats around the Mediterranean Sea off the coast of Mallorca. Thanks to a genetic peculiarity, it can literally revert back to its immature self. The creature uses cells from its outer layer to create new stem cells, allowing it to make copies of itself. Another trick it has mastered is how to stop the aging process, thanks to having an unusually large number of genes with the capability to repair DNA. Yet all this doesn’t necessarily guarantee a long life: *turritopsis dohrnii* measures only four millimeters in diameter and is defenseless against predators.



150 years








The end comes eventually – at least for humans. This is what a team led by scientist Timothy Pyrkov at Singapore company Gero found in 2021. The researchers studied the speed of aging based on a large amount of health-related data from people in the US, UK and Russia. They concluded that even if people were not exposed to disease, stress and injury, their bodies would nonetheless become frail – and eventually die. The findings put maximum biological life expectancy somewhere between 120 and 150 years.

Are we more microbe than human?

In biological terms, the human body is more of an agglomeration than a single being. This theory, which is gaining more and more traction among researchers, says that humans are communities made up of their own cells and billions of microorganisms such as microbes, bacteria and fungi. The number of bacterial cells in and on the body easily outstrips the number of human cells. Humans would be in a pretty bad way without those countless communities of organisms. For example, processes such as our immune system can only be understood by considering the interactions between many symbiotic networks. Biologists are therefore starting to advocate a new concept of human beings – one that moves away from the individual toward a hybrid known as a holobiont, from the Greek words for ‘whole’ (*holos*) and ‘life’ (*bios*). For philosophers, that’s plenty of new food for thought as they grapple with the question of where the human body starts and ends.

The oldest company in the world

The five oldest companies in the world all hail from Japan, with the top four being family-owned businesses:

-  1 Kongō Gumi, founded in 578, active until 2006, construction company
-  2 Nishiyama Onsen Keiunkan, founded in 705, still active today, hotel
-  3 Koman, founded in 707, still active today, inn and hotel
-  4 Hōshi Ryokan, founded in 718, still active today, inn and hotel
-  5 Genda Shigyō, founded in 771, still active today, paper production

The construction company Kongō Gumi lasted for 1,428 years. It was founded in 578 and subsequently owned by 40 generations of the same family until 2006. It entered liquidation recently after falling on hard times.

“Fame comes and goes. Longevity is the thing to aim for.”

Tony Bennett, 96-year-old jazz singer, knows what he is talking about.

Guess who?
1 famous yellow family*
33 years on the air
730 episodes
16,000 minutes



*The Simpsons, one of the longest-running animated sitcoms

Illuminating

Early 20th century light bulbs lasted so long that hardly anyone needed to buy a replacement. On realizing this, the world's major light bulb manufacturers formed the Phoebus cartel in 1924 – and put an end to the longevity. They decided that a light bulb should last not more than 1,000 hours. The cartel existed until 1941, but the incandescent light bulb survived well into the 21st century until LED technology largely superseded it.



Failure is an essential step to success

Behind every great success story lie huge obstacles and determined heroes. For example, James Dyson supposedly built more than 5,000 prototypes before he found a buyer for his vacuum cleaner. Henry Ford went bankrupt five times before making his automotive breakthrough. And, as legend has it, Walt Disney tried 300 times before he convinced a bank to finance the first Disneyland in the US state of California. The rest is history.

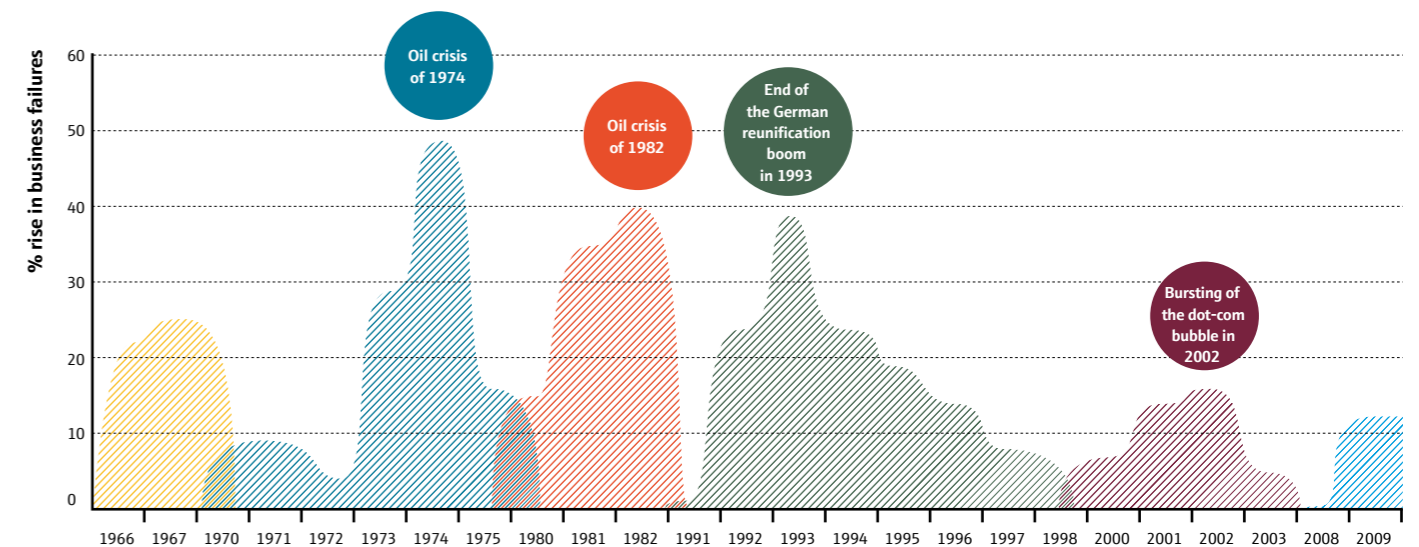
He just kept on rolling...

A whopping 5.2 million kilometers! Or 130 times around the globe. This is the incredible distance traveled by the world's most-driven car by the time its owner, the American Irv Gordon, died in 2018. Loving care and more than a few replacement parts enabled the 1966 Volvo P1800 to live up to the Latin meaning of its name: “I roll”.



Historic ripple effects

The number of business failures in Germany has reflected the (global) economic situation over the years. The oil crises weighed heaviest on company longevity.



Onward

Companies constantly have to adapt to their environment, overcome crises and seize opportunities. These days, many of them fall by the wayside much earlier than a few decades ago. What is it that long-lived and successful businesses do right? Or what do they do differently? Time to consult the survival manual.

Text: Sonja Hausmanns
Graphics: Anton Hallmann

Dominating the list of the world's oldest companies are a number of Japanese enterprises. Those include Hōshi, a hotel located an hour's flight from Tokyo in an idyllic mountain setting. Established some 1,300 years ago, it is famous for the hot spring nearby, which supposedly heals almost anything, from psoriasis and high blood pressure to world-weariness. Protecting this spring is the prime responsibility of the Hōshi family, who have run the traditional Japanese inn since it was founded in 718. "That's why we have to bear many things and endure it all," they told the makers of a 2014 documentary.

This mission sounds like a tale of sweat and tears, and could explain why so many companies around the world do not last anywhere near as long as Hōshi. Might they have less capacity to endure suffering? Whatever the case, businesses in the US disappear from the market after 10 years on average. Publicly listed ones survive for longer, but even their life expectancy is declining. In the late 1950s, S&P 500 companies existed for an average of 60 years. Today, the consultancy Innosight puts this figure at less than 20 years – a trend that is also apparent across Europe. For example,



less than two percent of all German companies make it past their 100th anniversary. According to a 2019 study by credit reference agency Creditreform, the average business lasts eight to 10 years before it is closed down, merged or taken over.

The fact that companies run out of steam more quickly today could also be a sign of a functioning economy. It can be seen as economically beneficial when old businesses fail because they cannot compete with innovative newcomers. We know this thanks to the Austrian economist Joseph Schumpeter, who introduced the key principle of ‘creative destruction’ in 1942. However, problems arise if too many established players disappear from the market, leading to permanent loss of capital and expertise. In his book *The Living Company*, former Shell manager Arie de Geus says that across all industries, too many firms suffer an untimely death at the hands of ever-faster capital and innovation cycles, as well as economic downturns and mismanagement.

If the criteria for failure are unrelated to any particular business model, might not the same apply to criteria for success? This makes it worth taking a closer look at the strategies employed by long-lived companies and the contents of their survival kits.

FIRM GOAL – FLEXIBLE ROUTE

Like Hōshi, a number of very old establishments essentially stem from local hospitality businesses: breweries, wineries and creameries that have maintained their regional niche and whose business model has stayed constant for centuries. Then there are international enterprises with a long history that show the viability of a different approach. Take Swedish company Stora Enso, for example. It is considered the world’s oldest joint stock corporation and was founded around 700 years ago as a copper mining enterprise. Today, it is a leading manufacturer of paper, pulp and chemicals. Or look at Mitsubishi, established as a marine shipping company in 1870 and now Japan’s flagship corporation with activities in energy, building materials and automotive. According to de Geus, all of the 27 major long-lived companies he analyzed have completely changed their portfolio at least once in the course of their history. “Such companies are willing to scuttle assets in order to survive. To them, assets – and profits – are like oxygen: necessary for life but not the purpose of life,” he writes in his book. This means that flexibility is just as important as endurance, along with the business owners’ willingness to fund this long-term evolution.

Reinvention as a means of survival is also the recipe behind the success of Haniel, a company based in Germany’s Ruhr area. After starting out as a colonial goods store in Duisburg and then turning into a global mining group, it pivoted its portfolio again in the mid-1960s by investing in the retail giant Metro. Today, Haniel positions itself as an investor in sustainable business models with the goal of creating ‘value for generations’. “Our advantage has always been that we don’t drive ourselves crazy by thinking in terms of quarterly figures, unlike many companies with outside shareholders,” says Haniel employee Jutta Stolle, who for more than 30 years has acted as a link between the far-flung family of owners and their company. She praises Haniel for its tremendous resilience and its willingness to forgo short-term profits in favor of long-term success: “Change is part of Haniel’s DNA, and I don’t know any other family business that is so



“Such [long-lived] companies are willing to scuttle assets in order to survive. To them, assets – and profits – are like oxygen: necessary for life but not the purpose of life.”

Arie de Geus,
author of *The Living Company*

consistent in its approach.” Of course, she adds, there are people at Haniel who advise caution and express doubts, whose voices are listened to for good reason. Stolle recalls one example from the 1990s, when level-headed numbers experts dissuaded Haniel from investing in the dot-com bubble that would later burst.

BECOMING AMBIDEXTROUS

Another typical attribute of long-lived companies is their embracing of change, but not as an end in itself. According to a Harvard study from 2018, successful firms are radically traditional, with a stable core but a disruptive edge. Being risk-averse, these companies create safeguards by acting with both hands, or ambidextrously. They optimize what they currently have while also working hard to develop future products and business models.

One of the sectors in which this model has proved itself is pharmaceuticals. “Many of our active ingredients are 100 years old and remain the go-to choice, like aspirin,” says Dr Hans-Georg Feldmeier, Chairman of the German Pharmaceutical Industry Association. “At the same time, there are a large number of indications for which we are constantly developing new drugs.” The pharmaceutical industry has always been a front-runner in research and development spending, which is seen as a measure of a company’s innovative strength. However, what counts is the success rate, such as the returns that innovations yield over the years. Feldmeier describes a



“As companies, we are all confronting the same challenges, so it’s vital that we work with each other to find solutions.”

Dr Patrick Wouters,
Vice President of the European Hygienic Engineering & Design Group

holistic approach: “You have to take into account production efficiency even when you are developing pharmaceutical products. That’s why I advocate having process engineers in the team from the outset, to ensure feasibility.”

The sector does not see it as contradictory to hold onto the tried and true while also attempting new things. That means it is open to new entrants and ideas. “In the past 10 years, we have welcomed a great many new players that have carved out new niches with highly innovative products,” says Feldmeier. He is referring to the high-profile example of Biontech, creator of the world’s first coronavirus vaccine to be approved for clinical use. “Biontech’s success was due in no small part to their partnership with Pfizer, an established company, as well as to a network of experienced firms around Europe that handled the production,” he adds.

TRUST IN THE TEAM

Networks are a success factor in other industries as well. A growing number of companies are joining forces to cope with the plethora of challenges they face. The pandemic led to the collapse of global supply chains; the energy crisis caused by the Russian invasion of Ukraine has brought entire sectors to their knees. At the same time, climate policies are increasing the pressure to innovate while reducing the ability of businesses to plan reliably. “As companies, we are all confronting the same challenges, and it’s vital that we work with each other to find solutions,” says Dr Patrick Wouters, Vice President of the European Hygienic Engineering & Design Group (EHEDG), a network that connects food producers, food processing companies, equipment manufacturers and research institutes worldwide.



“This dialog is extremely valuable to us, because it helps us gain a better understanding of the market environment and current trends,” stresses Wouters, who is also the global hygienic design lead for Cargill, a food producer and commodities trader. “It wouldn’t do for companies to look just at their own products and production processes. Instead, we need to focus on the entire supply chain, keep on learning and respond quickly where necessary.” In view of the varied crises taking place today, staying adaptable is the most important task for experienced managers. Wouters also believes that trust plays an important role: “Whether you are dealing with colleagues, communicating with customers or working together with partners, I think honesty and transparency are crucial factors for long-term success.” His employer, Cargill, is a family business that has held its own on the market for 150 years.

TRAIN FOR ENDURANCE

Ultimately, the formula behind the success of long-lived companies is as simple as it is obvious: adapt to your environment in good time, don’t fixate on quarterly figures, think in terms of networks and stay true to your values. However, keeping on the right track day after day, year after year, takes a lot of perseverance in the face of cost pressures, skills shortages and multiple crises. Endurance pays off, though. According to a McKinsey study from 2017, companies that stick resolutely to a long-term view generate 47 percent more revenue and 36 percent more profit than their industry peers. In the end, long-lived companies may also be able to put their faith in the Lindy effect, which says that the mortality rate of technologies, companies and ideas decreases the longer they exist. Good things last – just like the spa at Hōshi.

1,300

Japan’s Hōshi hotel is 1,300 years old, making it one of the five longest-lived companies in the world.

Adaptability



1

From beginnings in coal mining to present-day interests in health, nutrition and biosciences, Royal DSM has shown it has the courage to change while remaining true to itself. The pending merger with Firmenich marks a continuation along this path, while Endress+Hauser is also in demand as an innovative partner.

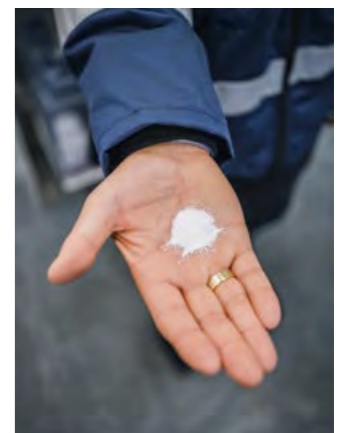
Text: Robert Habi
Photography: Christoph Duepper

At first glance, it is a rather unassuming material that emerges from the hopper mixer in hall 61 at the DSM site in Grenzach, Germany: a white, odorless powder resembling ground limestone. And yet everyone present knows the significance of this substance they call Bovaer. After more than a decade of research and development, DSM was able to prove that the feed additive suppresses the last enzyme step in a cow's first stomach, the rumen, which is responsible for methane production. This reduces enteric methane emissions, contributing to a smaller environmental footprint for meat, milk and dairy products. Site manager Martin Häfele explains: "If a farmer feeds each animal a quarter teaspoon per day, the effect is a 30 percent reduction in enteric methane emissions from dairy cows and 45 percent from beef cattle. Feeding Bovaer to three cows is like taking one family-sized car off the road."

The effectiveness of Bovaer is raising international hopes for climate protection. The EU approved the additive, noting the contribution made to its sustainable "farm to fork" strategy. Australia, Brazil, Argentina and Chile have also given Bovaer the green light. And among the first pilot customers is Arla Foods, one of the world's largest dairy cooperatives. In order to meet the demand, in December 2022 DSM began investing more than 100 million euros in construction of a new plant in Dalry, Scotland, which is scheduled to start operating in 2025. According to Sjef Arets, Vice President of Manufacturing & Technology at DSM, Endress+Hauser is the main instrumentation vendor for the Bovaer project. Arets and his team are responsible for manufacturing and technology development within DSM's Animal Nutrition & Health division at locations in Europe, China and Latin America. He too is very enthusiastic about the feed additive. "Bovaer looks to have real game-changing potential for the world's net zero ambitions," he says. At the same time, he emphasizes that "there is a lot more to DSM than this specific project".

Marketing of Bovaer has only just begun, with sales still at an early stage. However, the feed additive exemplifies the strategic foresight that goes into decisions made at the company's headquarters in Heerlen, the Netherlands: when research into Bovaer began more than 10 years ago in Kaiseraugst, Switzerland, hardly anyone in the world was concerned about methane emissions from livestock. Another example of what Arets calls a "revolution" in the field of animal nutrition is Veramaris. A joint venture with chemical company Evonik centers on harnessing algae to produce omega-3 fatty acids. These are an indispensable feed additive in aquaculture, which currently uses omega-3 sourced from fish oil. According to DSM, Veramaris can produce amounts of omega-3 equivalent to that obtained from 1.2 million tons of wild-caught fish – more than the annual catch from the Mediterranean Sea.

2



1
Vitamin production at the DSM site in Grenzach, Germany.

2
Great hopes rest on this unassuming powder: DSM's methane-reducing feed additive Bovaer.

3
A quarter teaspoon of Bovaer daily per animal reduces methane emissions from dairy cows by 30 percent and from beef cattle by 45 percent.

3



UNIQUE TRANSFORMATION

Today DSM has more than 1,200 scientists driving the search for such innovations. The quest for new paths is firmly inscribed in the corporate DNA. Starting as Dutch State Mines in 1902, the company established a chemical division early on that manufactured fertilizers and other products. Diversification was pursued more vigorously after 1945. When the last mine in the Netherlands closed in 1973, DSM was already operating as a chemical and petrochemical company. The acquisition of Roche's Vitamins and Fine Chemicals division in 2003 shifted the focus to health, nutrition and sustainable living. In 2022 DSM divested its materials business to fully focus on health, nutrition and bioscience and announced its upcoming merger with Firmenich. The deal is expected to close during the first half of 2023 to form DSM-Firmenich.*

Sjef Arets experienced and helped to shape the company's transformation. "I was born in the south of the Netherlands where many people used to work in mining for Royal DSM." At the time he joined the company more than 30 years ago, none of today's business segments existed in their current form. "Today we are growing with a strategy directed at sustainability. We're improving the lives of many people." Consumers use hundreds of DSM products on a daily basis, such as ingredients in food and beverages, dietary supplements and infant and medical nutrition. "Our products reach around 2.5 billion people, although few are really aware of that," explains Arets.

CLOSE PARTNERSHIP

DSM would be happy to see this reach extend further still. The company is seeking growth through new products – and improvements to established ones. "That's what makes evolutionary improvements to processes in our existing plants equally important," says Arets. "Partners like Endress+Hauser play a vital role here." The evolution of a process established for decades is evident in Grenzach, where every processing step of the recently modernized vitamin D3 production runs with instrumentation from Endress+Hauser. From reliable level switches to high-precision Coriolis flowmeters, the entire portfolio is employed. Martin Häfele, Managing Director of DSM in Grenzach, explains from the perspective of his location: "I'm happy that we are buying not only measurement instruments but a solution that makes our processes better overall. That helps us to offer our quality at a competitive price."

* The interviews were held in December 2022.



"What we ultimately look for in partnerships is something that goes beyond the pure transactional value of the supplied product."

Sjef Arets,
Vice President of Manufacturing & Technology Animal Nutrition & Health at DSM



1



2

Key to this is a special partnership. Endress+Hauser sees DSM as a strategic customer, as Michael Sinz, Director of Strategic Business, explains. "We aim for close relationships with customers who are leaders in their sector and who are open to collaboration. What we seek here are opportunities to learn and generate long-term growth. Ideally, there should be a good fit in terms of brand values, commitment to quality and corporate culture. And that's the case with DSM. We have similar mindsets, we are strongly driven by innovation and oriented toward sustainability." From an operative standpoint, Endress+Hauser supports DSM and all of its worldwide locations with a global network that includes services and engineering.

DIRECT TIES

In an internal evaluation of key suppliers, DSM gave Endress+Hauser a top mark of 100 percent. One person pleased with this result is Markus Schmitz, who manages DSM's account at Endress+Hauser together with his teams. His trump card is close proximity to the customer – in more ways than one. His home office is situated just 30 kilometers from DSM headquarters in Heerlen. Schmitz and his counterpart at DSM, Ronald Diederling, represent the close connection between the two companies. As Global Senior Category Manager, Diederling holds worldwide responsibility for the business side of process control. In this role he develops and manages strategic supplier relationships, such as the one with Endress+Hauser.

"You can't place enough value on this partnership," emphasizes Markus Schmitz. "There is a dedicated steering committee, which regularly discusses strategic issues, as well as cross-company management meetings." Regularly sharing information and asking questions provides Endress+Hauser with a deeper understanding of the processes,

1
In the midst of state-of-the-art production technology, personal relationships are still essential.

2
DSM uses a wide range of measurement technologies from Endress+Hauser, including pressure instruments.

DSM AT A GLANCE

Founded in 1902

Employees: 20,682 (2022)

Sales: 8.4 billion euros (fiscal year 2022, continuing operations)

DSM is a global leader in health, nutrition and bioscience. The Dutch-Swiss company specializes in nutritional ingredients for food and feed with proven world-leading bioscience capabilities and an international network of high-quality manufacturing sites. In June 2022 DSM and Firmenich announced plans to merge and become the leading nutrition, beauty and well-being partner. The deal is set to close in the first half of 2023.



Mining



Petrochemicals



Nutrition, health and sustainable living



Health, nutrition, bioscience

1902

2022

which in the best case leads to further added value for DSM. “For example, we established a dedicated electronic order management system with all of the technical information related to our portfolio,” explains Schmitz. “DSM employees can use it to select, size and order products at contracted prices.” Solutions like that are not a given in the B2B sector. Sjeff Arets values how the system simplifies his staff’s daily activities. “What we ultimately look for in partnerships is something that goes beyond the pure transactional value of the supplied product.”

CONNECTED IN THE FUTURE

In terms of process measurement technology, the cooperation between DSM and Endress+Hauser is bearing its most recent fruit in Sisseln, Switzerland, where the partners installed a Raman analyzer in a chemical plant. “This technology’s biggest advantage is that we can monitor the process directly and in real time, which enables us to respond immediately to changes,” explains Sjeff Arets. Making this possible are measuring probes that use a laser light-scattering technique to determine the chemical properties of a substance – all without detouring through the lab. Compared to other technologies, Raman spectroscopy supplies more comprehensive process data, operates more reliably and requires less maintenance.

The partners also hold regular discussions on future technological challenges. One of those is digitalization of the production environment, which DSM aims to accelerate in the coming years. Production expert Sjeff Arets is confident about one thing: “We will further automate processes and increase connectivity in our plants. For this we need enabling partners to help us generate new added value from digitalization.”



“We aim for close relationships with customers who are leaders in their sector and who are open to collaboration. What we seek here are opportunities to learn and generate long-term growth.”

Michael Sinz,
Director of Strategic Business at
Endress+Hauser

3 questions for Ronald Diederling



Ronald Diederling

has been with DSM for 34 years. As Global Category Manager he is responsible for spending on process control. In this role he develops and manages strategic supplier relationships such as the one with Endress+Hauser.

Strategic partner

The business relationship between DSM and Endress+Hauser goes well beyond supplying instrumentation. Ronald Diederling explains what the partnership is all about and why Endress+Hauser is important for DSM.

To what extent does DSM utilize measurement technology and knowledge from Endress+Hauser?

We use instruments from Endress+Hauser in various production environments and often through every step of a process. One example of a process we standardized with Endress+Hauser technology is the production of vitamin D3. In the Bovaer project too, Endress+Hauser is one of the main instrumentation vendors as well as a consultant on appropriate measurement technologies. Thus we will have the optimal process design when large-scale production starts in Dalry, Scotland.

What’s important when working with key suppliers?

We qualify suppliers based on multiple criteria, the main ones being impact on our business in terms of value creation, global reach, technology portfolio, innovation and sustainability potential. Endress+Hauser is well positioned on all of these fronts and thus enables us to standardize our measurement solutions across the company. It’s important for DSM to have reliable partners for our process measurements that not only supply high-quality products but also have the capability to support the operations side of our digital journey. Endress+Hauser has long proven its reliability and indeed achieved a 100 percent score in the 2021 supplier evaluation.

How would you describe the collaboration in this special partnership?

DSM and Endress+Hauser already have a long history together, going back to the early years when Sjeff Arets and I joined DSM. I would characterize our collaboration as professional, informal and respectful, due in particular to close personal contact. I would further say that the arrangement with a global account manager from Endress+Hauser and a global counterpart at DSM supports and simplifies our close dealings at regional level. This two-way street means we can increase the quality of measurement standards and positively influence both the products and services delivered, as well as our general business relationship.



“New ideas emerge at the interfaces”

What do companies need for long-term success? What should guide their progress? And what is the key to continued success through changing times? Dr Ronald Gebhard, Vice President of Biosciences & Process Innovation at DSM, and Matthias Altendorf, CEO of Endress+Hauser, work for companies that are worlds apart. And yet, in conversation, they soon find that they have a lot in common.

Questions: Laurin Paschek
Photography: Andreas Mader

Mr Gebhard, over the course of a century DSM has evolved from a mining company to a global leader in health, nutrition and biosciences. What were the crucial factors that made this a successful transition?

Gebhard: At DSM, we follow a simple strategic approach to avoid losing our way in the change process. First, we focus attention on consumer trends and global challenges. From there, we deduce market opportunities – for example changing diets, population growth and climate change. Then we examine ways to translate such shifts



“Long-term growth matters more to us than short-term profit. After all, building something new that is solid and stable takes time.”

Matthias Altendorf,
CEO of the Endress+Hauser Group

into innovation and see whether we need new scientific and technological capabilities to get us there. New ideas often emerge at the interfaces of disciplines and companies.

Are there any core elements that DSM has kept faith with over the years that have been important to the transition?

Gebhard: In my view, the most important success factor is that we never lost our confidence in the power of science and innovation, even when we were not successful. We have always held the firm belief that our innovative strength will lead us to the necessary solutions for the challenges facing society. Acquisitions have been an important part of our evolution. Having new teams on board expanded our expertise and enhanced our corporate culture. Those teams have grown in diversity, and our values have evolved over time. To give you an example, there are now six different nationalities represented on my process innovation management team. My personal experience is that diverse teams with strong shared values can unlock huge creativity and innovation.



“Measuring means knowing. Measuring generates the data we need for process innovation and improvements to manufacturing.”

Dr Ronald Gebhard,
Vice President of Biosciences & Process Innovation at DSM

INNOVATION MINDSET

Dr Ronald Gebhard is Vice President of Biosciences & Process Innovation at DSM. He studied chemistry at Leiden University in the Netherlands and earned his PhD degree in organic chemistry. After spending 10 years at Dutch pharma company NV Organon, he joined DSM in 2002. Based in Switzerland since 2010, he currently holds overall responsibility for process research projects as well as DSM's competences in chemistry and analysis, synthetic biology and formulation.

Mr Altendorf, Endress+Hauser has achieved outstanding success in process instrumentation over the past 70 years. What kinds of qualities do companies need in order to hold their own in the market over decades? What helps Endress+Hauser to keep on being successful?

Altendorf: Maintaining a close relationship with our customers is pivotal. We understand where they are heading. When DSM looks at megatrends and comes up with new product ideas, at some point those ideas will need translation into process engineering – and that's where we come in. We recognize the challenges our customers face and use our innovative strength to help them get things moving. Another point is that, just like DSM, we firmly focus on the human element of business. People make the difference. It is people who get the best out of an environment or a system. This approach provides solid ground for lasting success and is deeply rooted at Endress+Hauser. It's a good fit for us, as a family-owned business. Families are there for each other, take responsibility for each other and think across generations. A third important quality is our capacity to change and welcome new ideas. That opens the door to opportunities we might have missed otherwise. Our diverse, interdisciplinary teams create things that are always raising the bar on existing technology.

What are the greatest challenges for Endress+Hauser at the moment? What will it take for the company to continue into a bright future?

Altendorf: It's imperative to create an economy that consumes as few resources as possible. This is a challenge both to us as a company and to our customers. Measurement technology can help our customers minimize their impact on the environment, which is an area where we have significant leverage. We also need to remain attractive as a business so that customers, employees and external partners never lose that desire to work with and for us, to collaborate. This means all of us working toward a goal that is only achievable if we pull together. And finally, we must maintain that proximity to customers – both in the physical and the virtual world – in order to anticipate what challenges may be around the corner in process engineering.

Gebhard: Sustainability drives us both! Endress+Hauser's high-precision, reliable measurement technology plays a pivotal role in driving the efficiency of our chemical and biotech processes. Measuring means knowing. Measuring generates the data we need for improvements to manufacturing: digital twins is a nice example, where we mimic the plant in the lab.

What are the major forces driving DSM's business?

Gebhard: The main driving forces are the challenges of the global food system. Let me give you an example. We cannot afford to overfish our oceans any longer. Did you know that four to six kilograms of fish go into producing every kilogram of cultured salmon? It's high time for a totally new approach to the food chain. DSM has the capability to bring about change. And we see this as our responsibility. Hence our Veramaris joint venture with Evonik to make omega-3 fatty acids from natural marine algae. Cultured salmon can thus be fed algae-based omega-3 oil derived from sugar, rather than fish oil from wild-caught fish.

Altendorf: Approaches like these are vital because we have to feed and care for an ever-growing and increasingly aging world population. But at the current scale, this isn't viable. So, one solution is to change the way in which we produce proteins; another is to improve the quality of nutrition through personalization. People are healthier if their diet is tailored to their specific needs. At the same time, this makes food production more efficient.

What role does process innovation play?

Gebhard: Chemical and biotech processes convert small molecules into the molecules we want. Process innovation aims to make this conversion more efficient and to minimize loss. Increasingly we can decide whether to go with a chemical process, take the biological route, combine both into one or use renewable raw materials. The goal is to convert as much as possible of the raw material into product, using the minimum amount of energy and resources. That's where the technology from Endress+Hauser comes in, to provide real-time insight into these processes.

How exactly can Endress+Hauser support DSM in this?

Altendorf: We get together with our customers to investigate how we can engineer processes to be as energy- and resource-efficient as possible and ultimately integrate them into a cycle. The more accurate, robust and connected the measurement technology is, the more successful the result. Our measuring instruments also contribute to plant safety. And when it comes to efficiency, we don't ignore our own devices. Earlier ones consumed an average of one to three watts of energy, compared to the latest generation that operates on just 30 milliwatts. New measurement and analysis technologies are important too, but developing them requires a lot of patience: the journey from measurement principle to production readiness takes 10 years on average. So it helps to be a family-owned business with a long-term approach to planning and investment.

DSM is a strategic account of Endress+Hauser, and Endress+Hauser is part of the DSM key supplier program. What is the value of such partnerships?

Gebhard: Strategic supplier relationships within our Sourcing Technical Goods and Services department are managed under the leadership of William Davis, our Director of Sourcing Technical Goods and Services. He told me, when we launched our key supplier program, we had 12,000 suppliers. We chose around 200 and invited them to have a deeper dialogue on developing a closer relationship. Going in, we knew that we weren't Endress+Hauser's largest account, and they were not our biggest supplier. However, we both saw strategic opportunity along with common goals for a better planet. Mr Altendorf's example of the measuring instrument is a good illustration of that. When we operate a field instrument, it uses our energy. And if Endress+Hauser cuts energy consumption to a fraction of what it was previously, they are on the same wavelength as us. They aren't only looking at the next quarterly results, with the aim of selling as many units as possible. They are thinking about their customers, their costs and their carbon footprint. They care about us. Thinking ahead, sharing common goals and values: that's how future ecosystems of likeminded companies will succeed in tackling the greatest challenges of our time!

Altendorf: When we decide to make a customer a strategic account, it also means that we want to understand their business and their needs. I think we have succeeded in that with DSM. Long-term growth matters more to us than short-term profit. After all, building something new that is solid and stable takes time.

Note: In June 2022 DSM and Firmenich announced their merger to establish a leading nutrition, beauty and well-being partnership. The deal is set to close in the first half of 2023. The interview was held in December 2022.

For long-term success, companies must build on proven strengths and press forward with new ideas. Endress+Hauser is a reliable partner on both counts – with a passion for innovation and a thorough understanding of customers' needs.

In with the new

Staying in business entails embracing change. So how is Endress+Hauser working to keep its innovative edge through the decades to come? An interview with Dirk Neirinck, Corporate Director of Business Development.

Questions: Kirsten Wörnle
Photography: Andreas Mader

INNOVATION

Mr Neirinck, what do you think is the secret to corporate longevity?

I can illustrate that based on the example of Endress+Hauser: the company began in 1953 as a pioneer in the field of electronic sensors. Today, it is the world's leading provider of process and laboratory measurement technology, automation solutions and services. Over the course of seven decades, appealing products have kept Endress+Hauser as a constant on the market. Accompanying this, the company translated its innovations into profit that was reinvested in research and development. So the secret to longevity lies in the ability to keep on innovating and to capitalize on new ideas in order to continue offering value to customers.

Endress+Hauser's customers come from the process industry, a sector with a rather long-term mindset.

Indeed. The process industry has product cycles sometimes lasting 20 to 30 years and demands the utmost in safety and reliability. Our customers count on us to maintain their installed base and continue adapting the existing portfolio to a changing environment. Some good examples are the energy transition and digitalization. At the same time, we must keep our eyes open to breakthrough developments.

Who's in charge of that at the company?

Our culture of innovation has two main focus areas: on the one hand, some 1,200 R&D employees at the product centers look at ways to improve and advance our existing portfolio. The inspiration for these incremental innovations, as they're known, often comes straight from customers who tell us their pain points and sometimes join forces with us in codevelopment agreements. At the same time, we want to explore the unknown for ourselves by using technology radars and agile development methods. Such experimental innovation hinges on having freedom outside our core business.



DIRK NEIRINCK

Dirk Neirinck (59) has been Corporate Director of Business Development since 2016. An electronics engineer specializing in chip design, he started his career at Endress+Hauser in 2001 as Managing Director for Belgium and Luxembourg. In 2012, he transferred to the company's headquarters in Switzerland to lead the Group-wide sales support team.

What approaches are you pursuing here?

One example is the University of Freiburg, where there is an on-campus innovation center at the engineering faculty known as FRIZ for short. Here we have brought together various small business units with experts on sensors, optics, biosystems, microsystems and the Industrial Internet of Things, all performing their respective research in close proximity. They inspire each other with innovative ideas and collaborate on sensor solutions for the future, such as sensors that mimic human senses. Our center of competence for level and pressure measurement has an innovation lab that deploys agile methods in its work on novel product concepts. Then there are predevelopment teams, likewise based near universities, that investigate how new technologies can become products.

Are development clusters like those unique at the company?

They play a special role indeed. It can be hard to understand what the signs on the doors at the FRIZ mean (*laughs*). What matters is the correct ratio of incremental to experimental innovation. Too much freedom means we'll never arrive at marketable applications. But sticking too closely with the tried and true might cause us to miss potential game changers. We're creating a healthy balance through open innovation.

What does open innovation mean, exactly?

Open innovation means focused receptiveness to people and organizations outside the company in the collaborative search for innovations. Alliances with customers and partner companies are part of that, alongside joint development projects with universities and research institutes, as well as start-up scouting, acquisitions and joint ventures. As an example, targeted acquisitions were how Endress+Hauser tapped into the business area of laboratory analysis and amassed new expertise in Raman spectroscopy and laser-based gas analysis. The same approach is also behind our expanded know-how in sensors and biosensors.

Is open innovation on the up?

Yes, because our world is constantly accelerating. We have more basic and applied research than ever before, just as we have more technologies. For a company facing such complexity, the only workable response is to open itself up. Going it alone no longer works in this world. When you share your ideas, you get more ideas back in the end.

INNOVATIVE

The Swiss business magazine *Bilanz* ranked Endress+Hauser seventh in its 2022 list of Switzerland's most innovative companies, just behind major customers such as Roche, Novartis, Lonza and Nestlé. An R&D ratio exceeding 7 percent, 8,700 patents and patent applications, and over 1,200 people working in research and development bear witness to a firmly enshrined culture of innovation. At its annual Innovators' Meeting, Endress+Hauser acknowledges the creativity and dedication of its in-house inventors.

New paths

What happens when measurement technology experts are granted abundant creative freedom to explore fields far removed from everyday business? They develop innovative products for new markets – like a flood early warning system.

Text: Christine Böhringer
Graphics: Teresa Bungert

HOW THE FLOOD EARLY WARNING SYSTEM WORKS



1

The system keeps track of the local situation using sensors that collect data within a specific area. Sited directly by creeks, rivers and on the surrounding land, the sensors detect rainfall as well as measuring water levels and ground moisture.

2

Sensor measurements are transmitted via the mobile phone network to Endress+Hauser's Netilion cloud, where an AI algorithm from start-up company Okeanos correlates them with weather conditions. Based on these values, along with other data such as rainfall forecasts, the AI technology can predict how a local situation will develop.



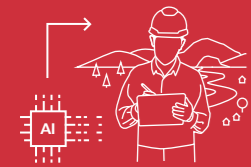
3

If the system detects an elevated risk of flooding, it automatically pushes an alert to the smartphones, tablets and computers of the responsible authorities with a precise overview of the present situation in their area and how it is expected to develop.



4

The algorithm learns over time, thus gaining an increasingly better understanding of a given area. This allows local communities to fine-tune their flood protection schemes over the long term – for example by introducing safeguards to protect critical locations.



PRODUCT DEVELOPMENT

The summer of 2021 was catastrophic in Europe. Continuous heavy rains led to flash floods and deluges that claimed more than 200 lives and caused damage costing billions of euros. "In weather conditions like these, smaller and mid-sized watercourses quickly transform from trickles to raging torrents," explains Florian Falger, Business Model and Market Manager at Endress+Hauser. With personnel sparse on the ground, these waters are rarely monitored – or not at all. But now there is an alert watchdog for this task: an early warning system that operates with little effort in the background and predicts danger.

That doesn't sound like a traditional product development activity at Endress+Hauser – because it isn't. The system was conceived in the innovation lab at the center of competence for level and pressure measurement technology, where a small team tinkers with products and solutions for realizing smart city concepts and bringing laboratory-type measurements into the field. "We're an incubator of sorts for new approaches and business models," explains Falger. But rather than being technology-centric, the focus is on the user. "We ask ourselves, where does concrete demand exist in market segments that are new for us?" Development activities are founded on Endress+Hauser's extensive knowledge and broad portfolio.

Cross-functional collaboration along with customer-centric, agile innovation approaches such as scrum, design thinking and lean start-up methods make for a fast-moving team. A successful one, too: they have already brought to market a multi-sensor system that allows breweries to track their beer fermentation process in real time. The QWX43 fermentation monitor is making a splash in the industry and has already garnered a prestigious innovation award.

Many communities have expressed interest in the flood early warning system, which analyzes the local situation, saves precious time in the event of an emergency and requires little installation effort. The system combines level measurement technology with a cloud platform, artificial intelligence (AI) and ground moisture sensors. While Endress+Hauser developed the AI technology in collaboration with hydrology start-up Okeanos, the moisture sensors came from IMKO, a subsidiary of Endress+Hauser. "Water levels alone are insufficient predictors of flooding," says Florian Falger. "The state of the soil is important as well. If it's already saturated, or completely dried out, heavy rains will just run off and cause waters to rise rapidly."

Pioneering green spirit

Long Ridge Energy is one of the world's first power plant operators to blend hydrogen with natural gas at scale. Measurement technology plays a critical role in paving the way for the decarbonization of the energy industry.

Text: Christine Böhringer
Photography: Endress+Hauser

GAS ANALYSIS

The energy transition is not making things easy for gas-fired power plants. On the one hand, they are supposed to ensure a steady supply of electricity and heat when there is no wind or sunshine. On the other, by burning a fossil-based source of energy, the plants themselves release harmful CO₂ emissions. "Operators therefore want to get their facilities ready for hydrogen, gradually blending more of it into the natural gas, to lower the overall carbon content of the fuel," explains Cory Marcon, Power & Energy Industry Marketing Manager at Endress+Hauser USA.

A trailblazer on this road to climate neutrality is the combined gas and steam cycle power plant operated by Long Ridge Energy in Hannibal, Ohio. The 485 MW facility is the first in the world built with the goal of utilizing pure hydrogen mixed in with natural gas. The conversion requires first and foremost a good process control system: hydrogen has different physical properties than natural gas, so it combusts differently. It also has a lower volumetric energy content. For these reasons, the mixture must be precisely controlled to ensure safe and efficient operation of the plant.



A Raman analyzer (cabinet on the right) enables precise monitoring and control of the hydrogen injection process.



1

A solid bond

Raffinerie Heide and Endress+Hauser have been business partners for more than 20 years. What unites the companies is the resolve to continuously develop themselves and find ever-better solutions for even the most complex processes.

Text: Christine Böhlinger
Photography: Heide Raffinerie, Endress+Hauser

PARTNERSHIP Board a plane in Hamburg and you can be fairly confident that it will take off with kerosene produced by Raffinerie Heide. Based not far away in Hemmingstedt on the North Sea coast, each year the company converts four million tonnes of crude oil into fuels and petrochemical products for customers across northern Germany. Although the refinery site is more than 80 years old, it is one of the most advanced and flexible in Germany today. “We keep investing heavily in plants and processes as we adapt to innovations, plus we continuously improve our processes,” say Klaus Behrens, Head of Engineering at the refinery.

Raffinerie Heide set a course for the future in 2000 by completely modernizing the site and installing a new hydrocracker, which is the heart of the refinery. The hydrocracker converts crude oil into intermediate fuel products, helped by hydrogen and catalysts under pressures of up to 200 bar and temperatures as high as 430 degrees Celsius. Compared to other European refineries, the process used in Hemmingstedt achieves an especially high product yield.

Some of that achievement comes down to Endress+Hauser. “As part of the modernization project we installed several thousand measuring points, in particular for flow, pressure and level,” says Torsten Hoppe, a technical sales representative for Endress+Hauser who manages the Raffinerie Heide account. In 2010 Endress+Hauser played a further part in the hydrocracker by supplying multipoint thermometers. “Endress+Hauser was still new to the temperature measurement business at the time the hydrocracker was installed,” says Sönke Lahann, instrumentation engineer for the hydrocracker. “That’s why we didn’t get them involved until later. Another decisive factor was that Endress+Hauser offers support in our region.”

DUAL-PROTECTED SENSORS

Multipoints use individual thermo elements integrated into cable probes to perform three-dimensional temperature measurements in the hydrocracker’s reactor beds. This permits monitoring and optimal control of the process. But one year after installation, a problem arose: in one of the systems, process gas had seeped into the diagnostic chamber. “We were quickly on site,” recalls Peter Prokesch, Head of Marketing Technology Division at Endress+Hauser.

The two companies put their heads together to find an immediate solution, but they didn’t stop there. “We went on to develop another sensor design together with the refinery and installed the new system during the hydrocracker’s next scheduled downtime,” says Peter Prokesch. Close collaboration in this area continues to this day. Raffinerie Heide recently started using innovative iTherm ProfileSens technology after a field test lasting more than two and a half years. “The technology allows us to combine multiple thermo elements in a single cable probe and also provides them with a second protective layer,” explains Pietro Miceli, Product Manager at Endress+Hauser. Not only is there more space in the reactors for the catalytic converter, most importantly it improves sensor reliability.

Why is the refinery heading down this path with Endress+Hauser? “We joined together because Endress+Hauser was very interested in tackling the issues and finding solutions,” explains Sönke Lahann. “Measurements inside the hydrocracker are especially demanding given the difficult process conditions.” The partners are a well-coordinated team in other areas too. “Endress+Hauser is attentive, and we are always in close communication,” says Steffen Raabe, the instrumentation engineer responsible for tank storage and loading. “If a new or general question arises, we inquire as to whether a solution can be offered or jointly developed.” In addition, the salespeople are intimately familiar with the site and approach the refinery with ideas for further innovations. “We achieve the goals together,” says Steffen Raabe.

THE RIGHT SPIRIT

For Klaus Behrens, partnerships like the one with Endress+Hauser are crucial in helping to shape a successful future for the refinery. “Since our plants run continuously for years without downtime, the technology’s quality, durability, reliability and availability matter greatly. But there also has to be a good fit at a personal level. We expect our suppliers to provide us with expert advice regarding what is possible in terms of innovations – not only today, but in the future as well,” adds Behrens.

Digitalization and the energy transformation are the major issues currently occupying the minds of management at the refinery. “We want to make greater use of data from the field for further automation. To include more remote areas of the facility, we use field multiplexers and technologies such as Wireless HART to transmit information from the existing installation,” says Steffen Raabe. The location is also participating in *Westküste 100*, a project directed at establishing a regional hydrogen economy and financed by the German Federal Ministry for Economic Affairs and Climate Action. The plan is to set up a 30-megawatt electrolyzer powered by renewable energy on the refinery site to produce green hydrogen, which will then feed directly into the hydrocracker and take decarbonization of the heart of the refinery a step further. “Endress+Hauser understands our needs in this area too, and can provide optimal on-site support,” says Steffen Raabe with confidence.

3



2



- 1 Raffinerie Heide processes four million tonnes of crude oil annually in Hemmingstedt.
- 2 The heart of the facility is an ultramodern hydrocracker.
- 3 Endress+Hauser and the refinery jointly enhanced the multipoint thermometers in order to improve the process inside the hydrocracker. The system was installed during scheduled downtime.



SALES

“The essence of successful selling has stayed pretty much the same over the years: it’s still all about people building relationships, face to face. But so much else has changed dramatically. When I started out in 1988, I would travel up and down the country with measuring instruments like the Liquiphant point level switch, visiting seven or eight customers a day, five days a week. Along with finding buyers, we also had coffee together, chatted about sports and the weather. Those days are gone. The coffee is still fine, but expectations have increased tremendously. Customers not only want much quicker responses, they also expect professional, knowledgeable and experienced contacts who help them add value to their business. You need to be an expert, not just a box-shifting salesperson – someone who knows their industry, understands their processes and can suggest improvements that they might never have thought of.

For this reason, EMC is now building up a nationwide network to offer customers complete solutions and value-added services. This creates the necessity to train our own people in far greater depth than before, which is no easy task here in far-off New Zealand. Online seminars from Europe are almost always after hours, and even when there’s in-person training, Bangkok is still closer to Europe than to New Zealand. There aren’t even any direct flights to visit Endress+Hauser’s Asia-Pacific Support Center in Vietnam.

All of this notwithstanding, I chose to go with Endress+Hauser. Until the early 1990s, EMC acted as an agent for many manufacturers. But when the opportunity presented itself to me at EMC, I quickly dedicated my activities to Endress+Hauser. I actually worked for two years at Endress+Hauser, to gain knowledge and experience. My first job was at the Center of Competence for level and pressure measurement technology in Maulburg, the second at Endress+Hauser International in Weil, where I met my wife, then lastly at the flow measurement technology production center in Reinach. After that, things were very clear: I saw how dynamic the company was, as well as the importance given to growth, family values and new technologies. I also appreciated the open and direct lines of communication.

Although we have a signed contract to seal the partnership with Endress+Hauser, what matters most is our mutual trust. Today, Endress+Hauser instruments make up around 70 percent of our total sales. You could compare our relationship to a marriage: both parties can have their own activities – which in any case is essential for serving the local market – but we share the same goals and core values. It’s these core values that create a bond between our employees and Endress+Hauser. With only

“It’s all about trust”

With 49 years of partnership to look back on and around 18,000 kilometers between its offices and Reinach, New Zealand’s EMC Industrial Group is both the longest-serving and most distant representative of Endress+Hauser. Chris Gailer, Managing Director and son of the founder, shares his thoughts on a very special relationship.

As told to Kirsten Wörnle
Photography: EMC Industrial Group

30 people we may be just a small cog in the 16,000-strong company, yet we feel like we belong.

EMC has been in business for 52 years now, with long-standing customers of its own. These relationships are now really starting to pay off, especially with the rise and acceptance of digitalization and IIoT. I compare it to building a house: traditionally, measuring instruments were something like the curtains and the flooring that only went in after the house had already been built. But now, thanks to digitalization, we are helping the architect and client put the house together from a much earlier stage. It’s true that manufacturers who undercut our prices are also crowding onto the market. But I’m certain that these long-term relationships will ultimately tip the scales in our favor. Our strategy of fostering relationships while building trust between customers and suppliers is bound to result in lasting success. Digitalization in particular requires trust. And where trust grows, values can thrive.”

LONGTIME REPRESENTATIVE

Headquartered in Auckland, EMC Industrial Group was founded in 1971 by Heiner Gailer as a manufacturer of weighing systems. While visiting a trade fair, Gailer came across instruments he needed from Endress+Hauser. This led to a partnership between the two companies that has been growing strongly since 1974. Today, EMC is Endress+Hauser’s only representative in New Zealand.

Quality and care

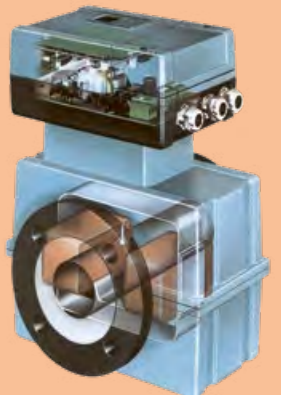
Endress+Hauser flowmeters last for many years, sometimes decades. One plant in Munich has several that have passed their 30th anniversary – and are still going strong. What’s the secret to their longevity?

Text: Christine Böhringer
Graphics: Endress+Hauser

RELIABILITY

Egon Schneider sees many familiar objects when he walks

through the hazardous waste management facility in Munich run by GSB Sonderabfallentsorgung Bayern. He has been with the company as an operations manager for 36 years – almost the same length of time as some of the plant’s meters that monitor processes and the resulting treated wastewater. “When the plant was built in the early 1990s, all the flow metering equipment was entrusted to Endress+Hauser,” says Schneider. “And a number of the Variomag and Pulsemag devices installed back then are still in service. They’re pretty much indestructible.”



That the instruments still work after such a long time is not a given, since hazardous waste disposal involves the chemical and physical treatment of organic and inorganic effluents such as oil-water mixtures, acids and alkaline solutions. “For this we use strong chemicals such as hydrogen peroxide, hydrochloric acid, sodium hypochlorite and limewater,” says Lara Peschke, team leader at the plant. Flow measurements regulate the dosage of these corrosive and abrasive liquids. Another challenge is that some of the chemicals inevitably leave deposits. “That’s why we need high-quality equipment that delivers precise measurements even under fluctuating process conditions,” she adds.

With this in mind, the engineers at the time favored electromagnetic flow metering, a robust technique that needs no moving parts and is totally reliable. In light of the facility’s strict requirements, many of the meters were coated with PTFE, a special plastic, and fitted with tantalum electrodes. GSB can also quickly spot when deposits are starting to form by analyzing chemical consumption or dosage figures. The in-house maintenance team then steps in and cleans the instruments. They also handle repairs – but calibration is left to Endress+Hauser. Internal and external expertise thus combine to keep the meters from showing signs of aging.

A small number of the measuring instruments have been replaced in recent years. “We chose Endress+Hauser again because we know from experience that their products are built to last,” says Peschke. The latest electromagnetic flowmeters are now in operation – with expectations for an equally long life.



Hand in hand: Fabian Dreier, Head of Supply Chain Management at Endress+Hauser Flow, values partnership and longevity in suppliers. Strategic purchaser Wenting Zhang-Kilian procures electronic components with her team and heads up a working group that deals with impending bottlenecks.

ABILITY TO DELIVER

Gaps on supermarket shelves, months-long delays on deliveries of household appliances and new cars: many consumers are getting the feeling that all is not well with supply chains. This exceptional situation is part of Fabian Dreier's daily work life too. In his function as Head of Supply Chain Management, he and his team at Endress+Hauser ensure that the materials needed for manufacturing flowmeters are always available.

Since the start of the pandemic, this has been a mammoth task: "Supply chains are faltering, while there is a boom on the demand side. Numerous sectors are growing, and the surge in digitalization is causing shortages of electronic components in particular," the 40-year-old manager explains. Consequently, scores of manufacturers have been forced to suspend production, he says. Endress+Hauser has always been able to maintain its ability to deliver. "There is more to that than good luck," Fabian Dreier emphasizes. "We have a stable global supplier network to depend on for our procurement process."

LONG-TERM RELATIONSHIPS

One of the cornerstones is risk mitigation. "To this end, we have been investing in the resilience of our supply chains for a long time," Fabian Dreier states. Crucial components are always procured from several independent sources in different regions of the world. There is also a smart warehousing system in place. "But the most important thing is having long-term, durable partnerships," Fabian Dreier says. "Many suppliers have been on board for more than 30 years. We share similar values, work together as equals and communicate openly."

Of course, Endress+Hauser is not alone in facing material bottlenecks. If manufacturers get into difficulties, for example because another supplier is in lockdown, delivery times are extended – or customers only receive partial deliveries. For this reason, working groups closely monitor the situation. "We check availability several times a week for critical parts like microcontrollers. This way we can catch changes even at short notice," Strategic Buyer Wenting Zhang-Kilian explains.

Shortages sorted

Raw material scarcities, intermediate product shortages, transport route disruptions: global supply chains are creaking and stuttering. How can customers still be supplied reliably?

Text: Christine Böhlinger
Photography: Andreas Mader

PULLING TOGETHER

If there are bottlenecks on the horizon, the purchasing department draws on a whole raft of measures. "In critical situations, we always try to talk with distributors and manufacturers directly. We put in queries to other suppliers on the market, our equipment partners and other competence centers in the Endress+Hauser Group," Wenting Zhang-Kilian says. One advantage is that Endress+Hauser has consolidated its electronic purchasing volumes for many years. "That gives us greater visibility and higher priority in manufacturers' eyes," Fabian Dreier adds. In addition, the research & development team checks whether other versions of a component can be used or if a redesign is possible. In the worst case, qualified component brokers also come into play.

The intensiveness of recent months has forged a bond between all involved. "We have established good processes internally as well as with external partners, and our suppliers are highly motivated to cooperate and keep things rolling." Fabian Dreier underscores the point: "This is a bond that will grow yet more important in the future. Global transport networks remain disrupted, component delivery times are gradually stabilizing, and rising energy prices and faster innovation cycles are exacerbating the situation. But we will find solutions for that too – together."

COMPLEX PROCUREMENT PROCESS

There are 30 million theoretical versions of Endress+Hauser flowmeters. Each device is manufactured to order in one of six production centers on four continents. This entails procuring 15,000 components from 700 suppliers. 150 employees look after the supply chain worldwide, 45 of them in purchasing.



As Corporate Director of Supply Chain, Oliver Blum and his team ensure that the three million sensors and systems supplied by Endress+Hauser every year reach customers around the world quickly and reliably.

3 questions for Oliver Blum

Despite mounting order volumes and unstable logistics chains, Endress+Hauser's delivery reliability remains comparatively high: in 2022, 84 percent of all shipments were delivered to customers at the agreed time. How did you manage that?

Customers benefit from systematic investments in our supply chain, particularly in IT and infrastructure. We have implemented standardized processes and have gathered global key figures since 2015. This analysis helps us to spot trends quickly and become better every day. In addition, regional distribution on many continents now runs through logistics hubs: they receive goods that are ready for dispatch, then algorithms steer final shipment and seek out the optimal logistics service provider for each delivery.

How has this setup been helping?

It gives us resilience and flexibility. For example, when we noticed that procurement was becoming more complicated for our production centers, we were able to upgrade all deliveries by making one simple entry into the system. Now the hub's algorithm always selects the highest service level and thus saves time on the last mile. And since we can choose from several logistics service providers for every transport route, we can also compensate for any capacity constraints or shortfalls among individual service providers.

How are you currently bolstering the supply chain?

To increase delivery reliability, we are expanding our logistics service provider portfolio to include local champions. Having built up a global transport network over the years, we can now move goods from one logistics hub to another and, from there, onward to regional distribution. Furthermore, operative control of worldwide logistics processes is now back in-house. This increases our agility and accuracy in decision-making – so we can achieve even more for our customers.

Riding the waves to success

Radar technology is often employed when reliable level measurement in containers is required. Ever since Endress+Hauser introduced this measurement principle in 1993, radar-based instruments have seen steady development. Let's take a look at a genuine jack-of-all-trades.

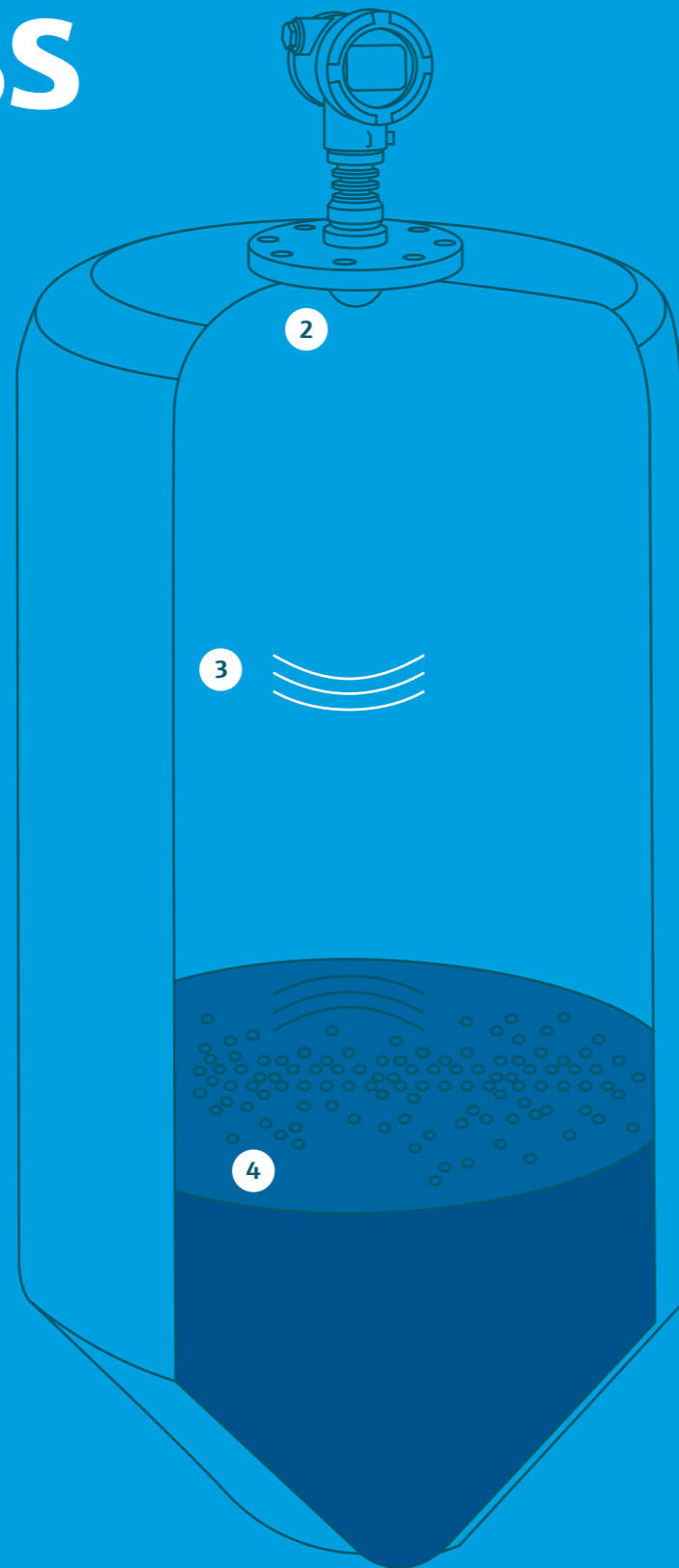
Text: Richard Backhaus
Graphics: Teresa Bungert

The requirements for level measurements are as high as they are diverse. Whatever the medium – pastes, bulk solids, liquids and more – precise measurement of fill levels forms the foundation for safe and efficient operation. Radar-based instruments utilize what is known as the time-of-flight measurement principle, where the system continuously emits radar pulses that the medium reflects back into a sensor. The time delay between emitted and reflected pulses is used to calculate the distance between the sensor and the surface of the medium. The distance value, taken together with the dimensions of the container, in turn yields the fill level.

How exactly the radar pulses are emitted depends on the operating conditions. If the signal flows to the medium along a rod probe, there is a high degree of reliability regardless of conditions at the medium surface. Instruments using free space radar waves provide contactless measurement and are often the first choice for critical applications in industries such as chemical, oil and gas, pharmaceuticals and food, since contactless measurement needs less maintenance.

TECHNOLOGY WITH A LONG HISTORY

Endress+Hauser has employed this radar measurement principle since 1993. Andreas Möller, Head of Product Management for Level Instruments, recalls the early days:



1

Variants

Depending on the requirement, radar instruments can perform contactless measurement or determine the fill level along a rod probe.

2

Time-of-flight measurement

Radar pulses are generated electromagnetically and reflected by the surface of the medium. The time delay between emitted and reflected signals is then used to calculate the distance between the sensor and the surface of the medium. This value, taken together with the known dimensions of the container, in turn yields the fill level.

3

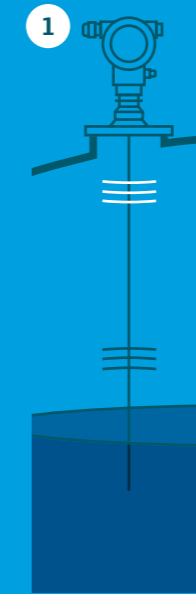
The right frequency

80 GHz models are universally deployable. A small beam angle makes them suitable for narrow containers or containers with internal fittings such as agitators, baffles or heating elements. 6 or 26 GHz instruments are still needed in certain applications, such as those with long standpipes.

4

For every situation

Radar instruments are well suited for challenging process conditions such as aggressive media or extreme temperatures, but also for simple applications. Moreover, the instruments can provide an additional layer of process safety by detecting unwanted foam or build-up.



Guided measurement



Non-contact measurement

“Our first radar-based level instrument was considerably larger than today’s systems and impractical for mounting on small containers. Furthermore, its high energy requirements always necessitated an additional power source.” Today’s instruments are highly compact and mountable on even the smallest of containers. For mobile applications, Endress+Hauser developed battery-operated instruments with wireless data transmission.

Engineers successively adapted the instruments’ functions for a closer fit with increasingly specific requirements. One example is instruments that operate at 26 or 80 GHz as opposed to the first models that used a frequency of 6 GHz. These later instruments are suited to media where the fill level is extremely difficult to measure by other methods, such as liquids with low relative dielectric constants (DC value) or liquids in reactors where material properties such as density change during the reaction process.

“Over the decades, radar-based measurement technology has evolved into a versatile solution. It delivers reliable and precise values, even in extreme conditions such as temperatures from minus 196 to plus 450 degrees Celsius, or pressure up to 160 bar,” says Philipp Walser, Level Portfolio Manager at Endress+Hauser.

DIGITAL EVOLUTION

One aspect of the instruments’ evolution is their increasing ease of use for customers. The latest-generation Micropilot is ready to operate in short order using a built-in assistant. “Thanks to a Bluetooth interface and our SmartBlue app, customers have convenient remote access to systems. That means instruments can be configured and monitored from a safe distance, which is especially relevant in hazardous processes,” explains Andreas Möller. Integrating the instruments becomes smoother still thanks to industry-standard communication protocols and technologies such as Ethernet-APL.

Taking a glance into the future, Philipp Walser adds: “With innovations such as the new generation of Micropilot instruments, we have improved radar-based level measurement technology even further. Thanks to the diverse portfolio, and with further innovations in the pipeline, there will be continued high demand for radar technology in process automation.”

Sustainable success

Acting ecologically, socially and ethically – Endress+Hauser considers this part of its corporate responsibility. That’s why the company’s investments are geared not only toward business growth, but also increased sustainability.

Text: Christine Böhringer, Kirsten Wörnle
Photography and illustration: 3st kommunikation, Aviatifilms GmbH, Endress+Hauser, Christoph Fein, Andreas Mader, Kristoff Meller, Stocksy, Leah Tribbett with Leah Trib Productions



76/100

76 out of 100 points scored in the 2022 EcoVadis sustainability ranking, giving Endress+Hauser platinum status for the second time.

2014

The year Endress+Hauser began issuing a sustainability report alongside the annual report.

95%

of Endress+Hauser’s CO₂ footprint accrues from upstream and downstream value chains.

Step-by-step into the future

As a family-owned company, Endress+Hauser has always maintained a generational mindset. This is becoming even more urgent in light of climate change, which is why Endress+Hauser used the past year to anchor sustainability deeper still within the Group. Actions included the creation of a new post, Corporate Social Responsibility Officer, which also monitors human rights aspects. The Executive Board now has a member responsible for sustainability matters. In addition to creating regional sustainability networks across the globe, sustainability managers were brought in at the individual unit level. Furthermore, the Group determined its CO₂ footprint along the entire value chain.

There are plans for more major sustainability advancements in 2023. Endress+Hauser is committed to developing a climate strategy in line with the Science Based Targets initiative. This has created an ambitious framework of best practices for companies to define their climate protection goals, helping them to set science-based reduction targets in support of the 1.5 degree target outlined in the Paris Accords. By once again placing at the top end of the EcoVadis sustainability rankings, Endress+Hauser demonstrates that it is on the right track: in 2022, the Group scored 76 out of 100 points for the second consecutive year. That puts Endress+Hauser in the highest percentile of comparable companies and brings platinum status once again.



3

questions for Julia Schempp



As the person responsible for corporate social responsibility and human rights at Endress+Hauser, Julia Schempp is accelerating the Group’s sustainability strategy and driving improvements in ecological, ethical and social matters of importance.

Last year, Endress+Hauser focused in particular on the issue of climate protection. What’s behind all of this?

Climate change is one of humanity’s greatest challenges, given its grave social and economic risks. As a family-owned company, Endress+Hauser pursues long-term goals and strives to effect positive change. That’s why we are shouldering responsibility in this area and making an effort to combat climate change.

Where does Endress+Hauser stand at the moment?

We are already on the path to extensive decarbonization. We are building energy-efficient and climate-neutral buildings, utilizing renewable energy sources, encouraging electromobility and starting to do our bit after joining the Carbon Disclosure Project in 2021. We want to continue vigorously down this path, especially given the growing demands from all sides. We are currently identifying emissions drivers along the entire value chain and developing a Group-wide strategy based on the findings.

Where do the challenges lie?

One of the biggest is collecting and standardizing the data from all Group companies. Furthermore, indications are that our carbon footprint consists largely of indirect emissions from purchased intermediate products and components. Hence, our future focus will be on working together with our partners to transform the value chain.

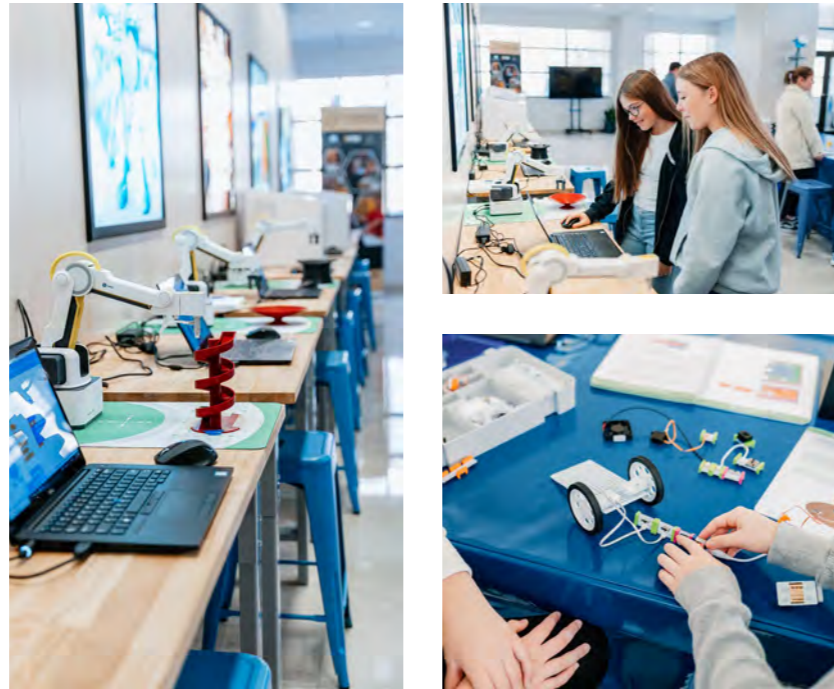


Room for more

Endress+Hauser continued to strengthen its sales and production network in 2022. Fueled by more than 100 million euros of investment, the company opened new buildings and extensions in Canada, France, Switzerland and Germany. Numerous other construction projects are underway across the globe. Largest among them is the development of the center of competence for level and pressure measurement technology in Maulburg in southwestern Germany, where roughly 75 million euros will be invested by the year 2030. 33 million euros is being invested in Greenwood, Indiana, in the US. Endress+Hauser subsidiary Analytik Jena is growing too, with the construction of a modern campus in Jena, Germany, for 50 million euros. And in Ilmenau, Germany, 27 million euros has been set aside for a new production facility.

100

young people – more than ever before – began an apprenticeship or work-study program during 2022 at six Endress+Hauser locations in Germany, Switzerland and France. This represents an increase of more than 30 compared to 2021. Endress+Hauser is currently training a total of 343 young people and aims to double the number of apprenticeship and internship spots worldwide in the coming years. The company offers virtually all trainees a permanent position once they complete their apprenticeship or studies.



Young researchers

Endress+Hauser has opened a design and innovation studio on the company's US campus in Greenwood, Indiana. Teachers from two school districts can bring their students, aged 5 to 14, to the lab to try out new technologies as a supplement to classroom instruction. Endress+Hauser employees at the Innovation Studio provide entertaining insights into robotics, 3D printing, programming, electronics and other topics. The youngsters can perform tasks such as programming a robot to throw dice or building their own circuits from snap-together electronic components. A similar educational center has been opened in Maulburg in southwestern Germany.



Emblems of loyalty

Endress+Hauser employees receive anniversary pins for every five years of service at the company. Those with 45 years receive the highest form of recognition: a platinum pin with three diamonds. Hundreds of these emblems of loyalty are handed out each year. Endress+Hauser has plenty of longstanding employees.

10.2 years

is the average length of service for Endress+Hauser employees

~1,300 people

have worked at Endress+Hauser for more than 25 years

700

new jobs were created by the Group in 2022

“At Endress+Hauser, training and education open up future opportunities for young people. Our goal is to develop and retain employees.”

Jörg Stegert, Chief Human Resources Officer at the Endress+Hauser Group

A family affair

Trained electrician Johnny Dencker worked at Endress+Hauser for 47 years before retiring at the end of 2022. What kept him loyal to the company for so long?

“I came upon Endress+Hauser by chance in 1976. The Danish sales subsidiary in Copenhagen placed a newspaper advertisement for a position in warehousing and shipping. I applied and became part of a small, ambitious company. There were just eight of us to begin with. To reliably supply our customers, we often worked weekends as the company grew. And we frequently got together for a chat after work. Endress+Hauser Denmark has grown a lot since those days, but the family atmosphere – this feeling of ‘we’ and commitment – remains. We were always a great team! I had good supervisors, was always treated well and felt appreciated. And I enjoyed my job. That’s why I stayed. What’s more, the years just flew by. I always enjoyed coming to work, right until the very last day!”

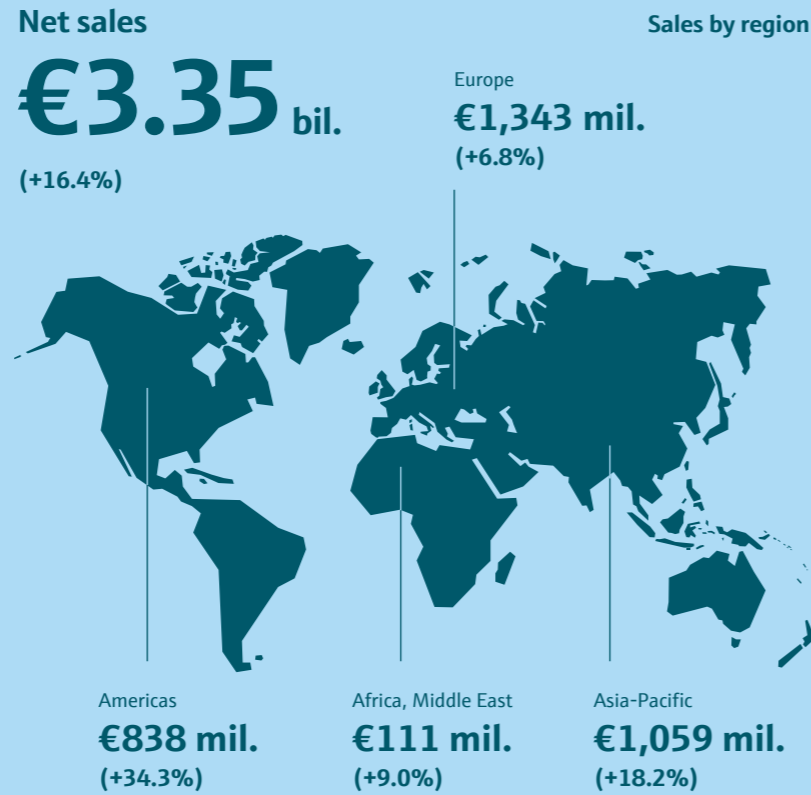


Fundraisers on a roll

In Reinach, Switzerland, and Maulburg, Germany, 230 employees got moving for a good cause and collected donations by running as part of the Endress+Hauser Water Challenge. The company matched the donations and used the proceeds to purchase 60 hippo rollers for families living near the Krüger National Park in South Africa. Hippo rollers are barrel-shaped vessels that are easily pushed along the ground to transport up to 90 liters of drinking water at a time. Without these, water must be carried in buckets over long distances, mostly by women and children. The runs were organized by the Endress+Hauser Women’s Integrated Network, a global networking initiative that promotes women within the Group.



Our sales developed particularly well in both the Americas and Asia, while growth was strong in Europe as well as in Africa and the Middle East. Around one third of these gains stemmed from the devaluation of the euro against the dollar, yuan and other currencies.



Our withdrawal from the Russian market notwithstanding, we created a total of 700 new jobs worldwide in 2022.



How did Endress+Hauser perform in the past year?

Extraordinary growth

For Endress+Hauser, 2022 was characterized by strong growth worldwide. A quarter of the sales companies generated a revenue increase of more than 30 percent. Even considering exchange rate effects and price increases, this performance is extraordinary. And more remarkable still is that we expect double-digit growth in 2023 as well, underpinned by a record volume of orders in hand and consistently good volumes of incoming orders. Although we also improved our operating profit in 2022, income came in below the previous year's figures. Losses from our financial investments, foreign exchange losses and higher currency hedging costs negatively impacted our income statement. Russia's war on Ukraine is also casting a shadow on our review. Because of the sanctions, we are withdrawing from the Russian market – 170 of our people are losing their jobs.

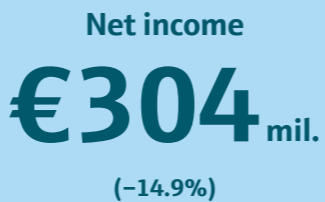
DR LUC SCHULTHEISS, CFO

2022

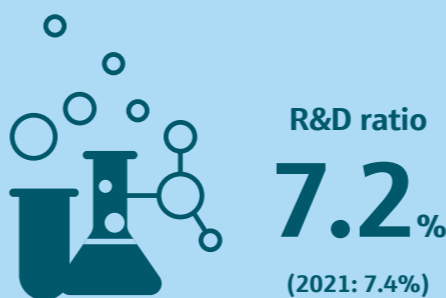
The financial year at a glance



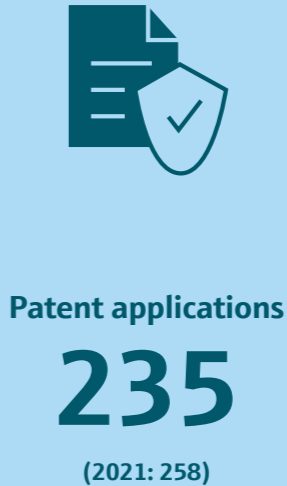
In 2021 our financial investments generated earnings – but after last year's slump on the financial markets, their contribution to income was negative.



Despite stricter requirements, we maintained our score in the EcoVadis sustainability ratings and once again achieved an outstanding 76 points. This places Endress+Hauser in the top percentile of the companies in the comparison group.



We substantially increased expenditure in research and development (+13.6%), but our sales expanded at an even faster pace.



Generational change



Dr Klaus Endress is ending his active involvement in the company after nearly 45 years.

Changes are taking place at the top of Endress+Hauser at the beginning of 2024. Klaus Endress will relinquish his duties as President of the Supervisory Board. He will be succeeded by CEO Matthias Altendorf. Taking over the reins of the Group will be Peter Selders, currently Managing Director of Endress+Hauser Level+Pressure.

Text: Martin Raab
Photography: Andreas Mader, Christoph Fein



Matthias Altendorf, current CEO of the Endress+Hauser Group, will follow as President of the Supervisory Board.

Dr Klaus Endress (born 1948) has repeatedly stated his intention to give up his responsibilities as President of the Supervisory Board when he reaches the age limit of 75. While he will continue to head up the Family Council, he will no longer take an active role in the company.

Endress, the second-eldest son of the company founder, has made his mark on Endress+Hauser for nearly 45 years. Much of the company continues to bear his signature. At the same time he has spent many years preparing a generational change in the shareholder family. Considerable thought and extensive discussions went into the decisions, which were made with the mutual agreement of the shareholders, the family and the Supervisory Board. The departing President of the Supervisory Board emphasized that “we have filled all of the positions with competent people we know and trust, and who embody our culture”.

INTERNAL SUCCESSION

Effective 1 January 2024, Matthias Altendorf will move to the Supervisory Board as President. The shareholders view him as the person best suited for the job, says Klaus Endress. “He has known our company for 35 years and has led the Group with prudence and success for nearly a decade. Mr Altendorf furthermore embodies our culture in an exemplary manner and stands for the values that define our company.”

IN FAMILY HANDS

Endress+Hauser was founded in 1953 by 29-year-old Swiss engineer Georg H Endress and 58-year-old Ludwig Hauser, a German banker. After his death in 1975, Hauser's heirs expressed the desire to be bought out. Endress became the sole shareholder. While still alive, he transferred equal shares (12 percent) of the company to his eight children. The remaining four percent is held by the Georg H Endress Foundation, a non-profit organization that supports training, education and science projects.

Dr Peter Selders will take over the reins as CEO. The 53-year-old executive, who holds a PhD in physics, joined Endress+Hauser Level+Pressure in 2004 and has led the product center since 2019. “Mr Selders has demonstrated that he can lead and inspire people, that he lives and breathes our culture and is capable of successfully growing a large organization,” says Klaus Endress.

He will be supported in his new role as CEO of the Group by Matthias Altendorf, who will make his full experience and knowledge available. The new CEO will also have the backing of the Executive Board, whose composition remains unchanged. Succeeding Peter Selders will be 49-year-old Dr Dirk Mörmann, currently Director of Technology and a member of the management board at Endress+Hauser Level+Pressure.

SECOND REPRESENTATIVE OF THE FAMILY

As before, the shareholder family will be represented on the Supervisory Board by two members. As well as Sandra Genge, who became a member in 2022, Steven Endress will have a seat on the board effective 1 January 2024. The 44-year-old grandson of the company founder has worked at Endress+Hauser since 2012 and took over as Managing Director of Endress+Hauser UK in 2016. As of 1 May 2023, the fortunes of the United Kingdom sales center will be in the hands of 51-year-old Iain Cropper, currently Director of Operations and a member of the management board.

Close relationships

Two non-members of the shareholder family will sit atop the Endress+Hauser Group in the future. The family will nevertheless remain linked to the company in diverse ways. One of the keys is the Family Charter, whose vision states: “Endress+Hauser shall remain a successful family company. The family will continue to have a formative influence on the company.” The charter creates the necessary framework. It strengthens solidarity within the family by means of clear principles and established institutions, regulates participation in the company and introduces young members of the family to the business.

The most important institution in this context is the Family Council, an advisory body that serves as the link between the family and company and makes the major decisions regarding the relationship between the shareholders and the Group. One special role is supporting young members of the family who wish to work in the company. While the company is open to having family members work at any level, including internships or apprenticeships, they must compete on equal footing with other candidates. Family members who wish to lead one of the Group companies or the Group itself must exhibit the corresponding qualifications and experience.

NUMEROUS GATHERINGS

The more than 70 members of the family meet at larger gatherings several times a year. The Supervisory Board and the Executive Board report to the shareholders at the Annual General Meeting. The day before, the Family General Meeting deals with the development of the Group in a larger setting. Family Day, which is held at a different location each year, combines family get-togethers with insights into the business. At the Family Camp the younger generation gets to know one another and the company better. The family also celebrates Christmas together.



A family affair: departing President of the Supervisory Board Klaus Endress (left) with the two Supervisory Board members Sandra Genge (as of 2022) and Steven Endress (starting 2024).

A never-ending story



Endress+Hauser could still be flourishing in a hundred years' time. And the family could still bear responsibility without involvement in the day-to-day business. Klaus Endress, President of the Supervisory Board, and Matthias Altendorf, CEO of the Group, talk about the past and future of the family-owned company.

Questions: Martin Raab, Alexander Marzahn
Photography: Andreas Mader

Mr Endress, Endress+Hauser turned 70 this year. Does a company age like a human? Or is there an elixir for keeping it young and vital?

Endress: We humans will hopefully become old. But then we're subject to biological restrictions. Companies are different. I like to describe them as a collection of nice things. Buildings, like the one we're sitting in, machinery and equipment, products, processes, strategies – everything a company needs. But that's all those are: just things. They don't set themselves in motion, that is done by people: the customers, the employees and the shareholders. And when these groups work and interact well together, then the company will do well. Customers, employees and shareholders age too and other, younger people follow in their footsteps. This is an unfolding process, which is why a company has no inherent age limitations.

What does it take for this to happen?

Endress: Top of the list come the shareholders – the family. There has to be unity. And that means cultivating common ground and solidarity. That's why we created a Family Charter in 2006 with jointly defined guidelines for interaction within the family and its relationship with the company. Various institutions exist to ensure that our creation retains its zest and vitality.

Mr Altendorf, Endress+Hauser posted solid business figures for 2022 despite strained supply and logistics chains, energy shortages and a war in Europe, and in the face of inflation and rising interest rates in many countries. What underpins this success?

Altendorf: It's the same things that made us successful in the past. First, our employees who handled every challenge with dedication, skill and flexibility. Second, the efficient structures that we have built and improved over many years and decades. Combined, they enabled us to operate successfully and uphold our ability to deliver despite all the adversities.

What is necessary if the company is to continue developing well in the future?

Altendorf: Like any team aiming for success, we need to concentrate on the factors that we can influence: stay close to the customers, develop innovative products, maintain excellent production and logistics networks. Our corporate culture helps us do that. And today, with our experience from the pandemic, I would emphasize that we is more important than I. Cohesion makes us competitive.

LINK TO THE FAMILY

Dr Klaus Endress, born in 1948, earned a degree in industrial engineering from the Technical University Berlin. He joined his father's company in 1979, took over Group management in 1995 as CEO and moved to the Supervisory Board in 2014 as President. Klaus Endress is married and the father of two grown children. Whenever possible, the passionate horse rider and mountain biker heads outdoors and into nature, accompanied frequently by Maya, the family dog.



“The sense of responsibility, the spirit of Endress+Hauser, knowledge of the business and products, all of that has to stay alive in the minds of the Endress family.”

Klaus Endress,
Supervisory Board President of the
Endress+Hauser Group

If you look back 10 years, what has changed the most?

Endress: Back then our strategic focus on biotech was still new. It was the only industry that continued to boom during the financial crisis. But we were a nobody in this sector. That’s why we headed down this path. We strengthened the analysis business and reinforced our expertise in the field of advanced analyses. And we learned a lot about the industry and its processes. That took a lot of hard work. But it paid off, as became evident during the pandemic. Our products have a dominant presence in every plant manufacturing the Covid vaccine. Today we can claim to be someone in the biotech industry! We have also made considerable improvements in the way we collaborate within the company compared to before. This is where Mr Altendorf has accomplished things that I was no longer able to achieve...

Altendorf: ...and with me, there will be other issues I’ve been working on but cannot finish.

Endress: We were also still a long way from the goal of acting as a single company. Hopefully we can bring that to completion now. Yes, a lot has happened in the past 10 years – and that’s a good thing!

Endress+Hauser experienced strong growth during that timeframe.

What do you attribute this to?

Altendorf: We simply continued to improve the good things of the past. The essential structures have stayed the same. To some extent, much was already foreshadowed. I may have fine-tuned some things, rethought them or brought in other approaches. But the success factors remain the same.

And those are?

Altendorf: Being close to customers has always been a strength of ours. Digitalization broadened the perspective here, but the underlying principle remains unchanged. Our portfolio has always been characterized by high standards of quality and innovative products. We internationalized sales early on, then established sales support in important regions. We internationalized production beginning in the mid-90s – from the region, for the region. That’s certainly an important success factor. Moreover, despite the growth, we were good at integrating smaller business acquisitions into the Group. This comes down to putting our trust in people, and them putting their trust in us. You get that through excellence in leadership culture and the leaders themselves.

You just listed a lot of things... What sets Endress+Hauser apart from other companies?

Altendorf: You have to look at every company on its own merits, including the ecosystem in which it operates. But I’m convinced that an excellent corporate culture and practicing what you preach on customer closeness are always fundamental to a company’s success, regardless of industry or region. Here at Endress+Hauser, we have always put people first. A company is composed of people and it is they who make the difference. All of this has been rooted in the company for 70 years. And behind that are decades of work and extensive investments – in people, buildings, plants, networks... things that aren’t copied so easily. We can do so many good things at Endress+Hauser because we have shareholders who think long term. Shareholders who offer the company knowledge, warmth, values and protection. And who show respect for people’s achievements.

The people at the top are likewise important to a company’s success.

Mr Endress, you once said that you will only have done your job well when you have an able successor. Will that also be the case when you step down from the Supervisory Board at the end of the year?

Endress: Things continue to work out wonderfully with my successor as CEO. But it always brings up the question of what comes next. I’ve known for 10 years that I need a good successor when I reach the age limit of 75. Having given it a lot of thought, I found my ideal candidate: Matthias Altendorf. He has known the company for 35 years and for almost a decade has led the Group as CEO with prudence and success. Moreover, he exemplifies the values that define Endress+Hauser. We have gotten along very well over the course of many years and trust one another, which is why I’m pleased that he agreed to take this step and join the Supervisory Board as President.

But it wasn’t your decision alone...

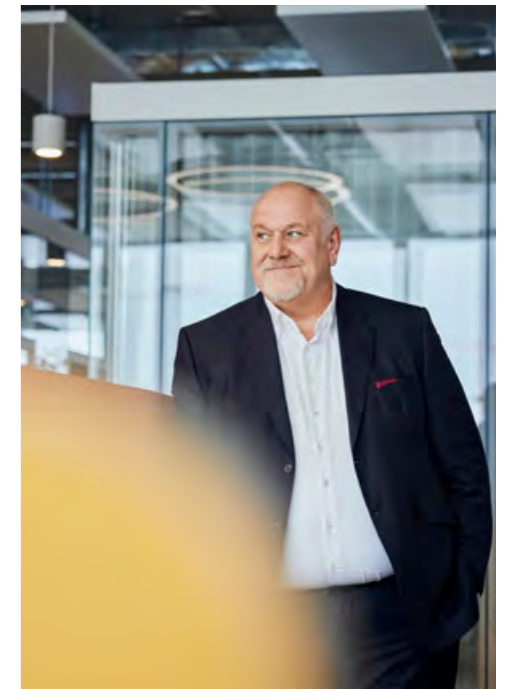
Endress: That’s correct – and it shouldn’t be. The decision was made in consultation with the Family Council and with the agreement of the shareholders, the Supervisory Board and the entire family. Considerable thought and discussion went into making this decision, which took shape over time.

That also means a new hole has to be filled...

Endress: Internal succession arrangements have the advantage that we know the people very well – often for many years. That lowers the risk. The downside is the need to fill the gaps that such changes open up. And Mr Altendorf’s move creates a big one. The CEO has operative responsibility. That’s a heavy load. Endress+Hauser is a technology company. For that reason, the CEO has to understand not only the business side but also our technologies and markets. After all, the CEO has to see where new opportunities are opening up and where we can find other customers. Growing into this role is demanding. But Mr Altendorf and I agreed that there was a person we could trust to do so: Dr Peter Selders, Managing Director of Endress+Hauser Level+Pressure. For years, he has done a great job overseeing one of our biggest worldwide operations. And he is up to the task.

Altendorf: I’m firmly convinced that the way we have arranged this succession is exemplary. We have examined these questions intensively time and again. If this most recent succession works as well as it did with the transition from Mr Endress to me, then we will have done everything right...

Endress: ...and done the company a lot of good.



“An excellent corporate culture and practicing what you preach on customer closeness are always fundamental to the success of a company, regardless of industry or region.”

Matthias Altendorf,
CEO of the Endress+Hauser Group

What does this decision mean for you, Mr Altendorf?

Altendorf: One important aspect for me is that, provided I stay healthy, I can apply all of my knowledge, skills and commitment to help guide this company for another 12 years into the next generation. Then hopefully the young members of the family and a new generation of management will carry this mindset even further forward.

What does the change in the Supervisory Board mean for the family?

Altendorf: Even if the President is not a family member, two people from the family should always be on the Supervisory Board. This allows the family to continue to have a formative influence on the company. No one can better represent the family on the Supervisory Board than the family itself.

Endress: Steven Endress, my eldest brother's eldest son, will hand over responsibility for Endress+Hauser UK and eventually join the Supervisory Board. It's a pity that he is leaving the operational side of the business because he has done a fine job. On the other hand, we're pleased that he is joining the board where he can contribute his operational experience.

What is the implication of no longer having a family member involved in the day-to-day business?

Endress: The shareholders must always bear responsibility for the company. They needn't necessarily be involved in its day-to-day business, but they should be active! The sense of responsibility, the spirit of Endress+Hauser, knowledge of the business and products, all of that has to stay alive in the minds of the Endress family. Along with Sandra Genge and Steven Endress, my daughter Sarah is heading down this path. All three are at different stages, with Sandra and Steven on the Supervisory Board and Sarah as President of the Georg H Endress Foundation. They should grow more and more into the company, participate in events, be visible and approachable figures for our employees and continue to carry the torch as ambassadors. And there will be further members of the younger generation joining the company. Perhaps someone from this circle will emerge to take an operative role. There is a lot of history yet to be written!

Then let us look forward again... Mr Altendorf, the news seems filled with crises. How confident are you heading into the anniversary year?

Altendorf: Personally, I am always confident. And collectively we have reason to be confident. 2022 was a good year for us. We have lots of orders in hand for the current year. Inflation and interest rate increases will of course cause the economy to cool. Much will depend on how quickly the Chinese market recovers from the effects of the pandemic and how strongly interest rate increases affect the American economy. As soon as these two engines pick up steam again, the global economy will follow. As for Europe, the war in Ukraine is hanging over us like a dark cloud. We must simply wait and see how this develops. We can only influence what lies within our own capability: customer closeness, innovative products, good logistics... We have invested heavily and will continue to do so. We're primed for growth!

ROOTS IN THE COMPANY

Matthias Altendorf, born in 1967, began his career at Endress+Hauser with vocational training as a technician, followed by studies, stints abroad and further education. He was appointed to the Executive Board in 2009 and became the Group's CEO in 2014. He balances his work life by sailing, playing chess, riding his motorcycle and spending time working in the woods. Travel, the arts and reading round out his hobbies. Matthias Altendorf is married and the father of a grown son.

Do you share this confidence, Mr Endress?

Endress: Absolutely! After so many consecutive years of success, of course we ask whether we can better it yet again. Other companies are not doing badly either... but few are doing as well as Endress+Hauser. That's something special! Orders in hand will certainly help us this year. And then, as Mr Altendorf points out, we have to stay flexible and customer focused and continue to build on what we have done well in the past. But this will not be enough over the long term. We need new customers – again and again, we just have to find them! In this regard there are many ideas and opportunities – of that I'm confident. In my presentations I always say that a hundred years from now we will still have work to do – well-paid work – just as long as we stay focused on the markets and customers and continue to improve. For me, it's a never-ending story!



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