

DACHSER magazine

The world of intelligent logistics _



School of life

School of life: "You can't teach an old dog new tricks," as the saying goes. But that's not true! Lifelong learning is among the most important survival strategies of social communities.

100 billion nerve cells and approximately 100 trillion synapses keep the human brain on the go. It's almost impossible to limit how much knowledge it can absorb. That's why neuroscientist Manfred Spitzer once called the brain a "paradoxical shoebox," saying: "The more

that goes in, the more that fits in." This also means people who have had training on how to learn find it easier to acquire new knowledge.



y a

96 Years and 55 days is how old Archie White from Strand Quay, England, was when he graduated from the University of East Sussex with a degree in Fine Art. In just under three years of study, the former lawyer, who didn't retire until he was 92, learned not only pottery and analog photography, but also how to use sophisticated image-editing software.

96 % of EU citizens across all age groups, fields of work, and education levels, and regardless of gender or origin, consider "lifelong learning" to be an important personal value. According to a recent study by the European Centre for the Development of Vocational Training, 84 percent of respondents expect the importance of taking part in education to actually increase in the near future as a way of improving their career opportunities.





1/2 a second is the length of what are known as "upstate" sleep phases, in which brain cells act in a coordinated manner. These phases alternate

with quiet, "downstate" phases of the same duration, where the brain cells are inactive. Researchers at the University of Bern have found that while we sleep, the subconscious engages in learning processes during the upstate phase. People with learning disabilities could potentially benefit from this knowledge—for example, through two-stage learning processes: first, unconscious absorption during sleep through exposure to learning content, reinforced by learning the same material while awake.

T,0000 is roughly how many living languages, i.e., those currently in use within a language community, there are around the globe. It's like a candy store for polyglots! Experts tend to assume that people with this gift can learn and understand up to ten languages in their lifetime. Anyone who speaks more languages than that is often known as a hyperpolyglot.



Message from the CEO

Dear readers,

Some things can't simply be decided and implemented by decree. Take, for example, something as abstract and yet so crucial to success as cross-company cohesion and enthusiasm for a common cause. At Dachser, this sense of unity has grown over the course of decades, and it is this famous "Dachser spirit" that has inspired me from day one. With many parts of the world gradually easing their pandemic restrictions, I was finally able to meet with several colleagues in person again. I had a chance to see their motivation and their drive for myself and draw inspiration from it.

In the cover story of this DACHSER magazine, three people from Dachser branches in Germany, Poland, and China talk about their day-to-day work and the challenges they face. These pages let you literally put your hands on the motivation and enthusiasm that lead to success on both a small and a large scale.

As CEO, I am committed to ensuring that this spirit thrives with a view to making Dachser one of the most attractive employers in logistics. "Dachser keeps logistics going even when nothing else works"—we've been hearing this a lot lately. In the end, it's always the people who make this happen. That's why they are the focus at Dachser. After all, "logistics is people business."

Kind regards,

Flig

Burkhard Eling, Dachser CEO



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Crossdocking Links to the digital world of Dachser

Additional management

Dachser has further expanded its management in Asia Pacific. The logistics provider has appointed two managers from its own ranks—Marcel Schmidt and Mario Morich to management positions in Hong Kong and Malaysia. https://bit.ly/DAmag_03_22_Management_Asia_Pacific



LCL is trending

In economically turbulent times, the demand for sea freight groupage containers skyrockets. Michael Kriegel, Department Head DACHSER Chem Logistics, explains the benefits of "less than container load" (LCL) shipping. https://bit.ly/DAmag_03_22_LCL_Chem



Aid for war victims

Dachser and terre des hommes support families in Ukraine. Since August 2022, children, teenagers, and their families have been receiving therapeutic help to work through the trauma inflicted by the war. https://bit.ly/DAmag_03_22_Support_Ukraine



Sought-after expertise

What exactly does a DENO, DENAS, or DEWO do? Fascinating insights into the global network of some of Dachser's expert operatives and a look at their impressive results after ten years of training.

https://bit.ly/DAmag_03_22_Experts



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Rifat-Can Sönmez is making his dream profession a reality at Dachser

DAHSER

Ball Lager Flow who

Passion wins

Eingang

When it comes to moving things in a big way, logistics has many interlocking factors that must work in unison. At the end of the day, people and their personal commitment and sense of cooperation make all the difference. At Dachser, logistics remains a people business—especially in difficult times.

There are many ways to broaden your horizons. You don't have to climb the highest mountain or wander into the vastness of the desert. But sometimes that's exactly what you need to do, as Elton Yuan, Department Head Air Freight North China in Shanghai, knows from personal experience. The 46-year-old Air & Sea Logistics specialist became acquainted with Dachser in 2008 at an event for aviation experts—in the Namibian desert. "Out in the middle of nowhere, one of the participants told me more about Dachser, later asking me if I was interested in working for the company with its global network. Of course I was! And I haven't looked back since."



Dachser's unmistakable corporate culture is something you can always rely on, wherever you are in the world.

Elton Yuan, Department Head Air Freight North China

Dachser sees itself as a learning organization that is as stable as it is dynamic. Its employeeoriented corporate culture enables fast cycles of learning and decisionmaking at all levels. This means the company can guickly recognize changes in today's volatile, uncertain, and complex environment and not just respond to them but convert them into a competitive advantage, thanks to its innovative capabilities.

Today, Yuan looks after some 400 different customers and coordinates 60 departures and 90 arrivals a day from Dachser's Shanghai location, the North China Gateway. "Together with my team, I strive to always find the best solutions to meet the needs of our customers."

A logistics specialist through and through

A lot has changed in the logistics sector since Yuan first started at Dachser. While the pandemic loomed large in the past few years, digitalization has brought many innovations, making many things easier in the long run. "When world trade was at a near standstill, digitalization was enormously important in helping us check and manage complex supply chains. Our customers could still rely on Dachser even when our employees were forced to work from home for three consecutive months," he says.

He goes on to point out that most recently, the Othello transport software has made Dachser much faster and much more flexible. "Dachser's proprietary IT system is continuously updated, which has really paid off during the crisis," he says. "That way, we can keep getting better little by little. It's a real morale booster for everyone: for our customers, for the teams in Dachser's various divisions, and for me personally—that's why I went into logistics in the first place and why I feel right at home at Dachser."

Unsurprisingly, Yuan finds it easy to convince other people or potential employees of the benefits Dachser offers. For him, the most convincing argument is Dachser's corporate culture, which is based on values, innovation, and inclusive responsibility. "The unmistakable corporate culture of this family-owned company is something you can always rely on, wherever you are in the world." And with a smile, he adds: "Even in the desert."

A living network of people

Dachser CEO Burkhard Eling also regards this special corporate culture as one of the familyowned company's core qualities. "Above all, our strength lies in our network of people who share a passion for logistics and are alive to this strong corporate culture, which creates a circle of loyalty." This sense of belonging to the Dachser family, Eling continues, makes the company a steady professional home: "This enables us to plan, shape, and operate the global Dachser network over the long term with prospects for further growth."

Bringing people and ideas together

Magdalena Jamroziak, HR Manager at Dachser Poland, also regards the people at Dachser as central to the company. The trained economist became interested in business psychology during her studies. "Creative solutions for standard processes depend on the people who literally animate those processes. That's what led me to go into HR management more than 20 years ago, and I've been passionate about working with and for people ever since," she says. Her life motto is inspired by Winston Churchill: "Attitude is a little thing that makes a big difference."



I like to gather people around ideas, and our corporate culture provides the ideal foundation for my work in human resources.

Magdalena Jamroziak, HR Manager at Dachser Poland



"When I joined Dachser, I felt particularly drawn to the company's values. What immediately impressed me was that these values don't just exist on paper but are actually applied in a broad variety of ways," Jamroziak says. "That's why our approach to HR is based on our values and builds on the natural potential of our employees. I like to gather people around ideas, and our corporate culture provides the ideal foundation for my work in human resources."

Answering the big questions of our time

Jamroziak reports that in Poland, as well as in other European countries, the biggest challenge is finding good sales professionals, qualified dispatchers, and logistics operatives. A special internship program launched by Dachser some ten years ago has been a great door opener, and this year, an employee recommendation program is providing additional support for recruitment. "I believe in our employees—they're the company's best spokespeople," she says. "They facilitate recruiting by being sincere and convincing when recommending Dachser to their friends and families."

"Finding motivated employees is only the first step," she explains. "An equally important question is how to keep them motivated over the long term. That's why we're constantly training our managers. We support their flexibility and develop their emotional intelligence so they're able to create an inclusive work environment and – with the support of HR – build a culture that fosters motivation."

An attractive industry with many prospects

The logistics industry needs creative, solution-oriented approaches to staff shortages, not just in Poland but around the world. For example, at the beginning of August 2022, the \rightarrow

Magdalena Jamroziak brings people and logistics together

Passion breeds success



The e-truck is really fun to drive. It's easy to operate and stress-free.

Rifat-Can Sönmez, trainee truck driver at Dachser Kornwestheim

Deutsche Verkehrszeitung trade newspaper reported that two-thirds of German warehousing and storage companies and over half of overland transport companies are experiencing a shortage of skilled workers. According to a quarterly survey conducted by Munich's ifo Institute, in July, 52.2 percent of companies reported problems finding qualified staff. This is the highest percentage since the survey began in 2009.

However, logistics is an attractive field of work. It's considered an industry that will remain viable well into the future and offers sustainable prospects to service providers, their customers, and their employees. Vera Weidemann, Head of Corporate Human Resources at Dachser, agrees: "The only way to get functioning value chains in logistics is by having people who are qualified and motivated to create them. That's why, at Dachser, putting our employees center stage is just as essential as focusing on our customers. We invest in fast, transparent, and understandable communication, in attractive compensation and working arrangements, in ergonomic work tools, in technology, and in the quality of education and training."

A driver gets off to a flying start

For a good example of a motivated employee, take Rifat-Can Sönmez. The 25-year-old is currently completing his professional truck driver training at the Dachser branch in Kornwestheim just outside Stuttgart. He's in his second year of training—and looks forward to every new workday.

"Originally, I wanted to drive a massive 40-ton truck. But things didn't work out that way—fortunately," he says. His branch was the first Dachser location to add the battery-electric eActros truck from Mercedes-Benz to its fleet. In Stuttgart, this zero-emission 19-ton truck is a key component of the DACHSER Emission-Free Delivery city distribution concept, which is currently being rolled out in eleven European metropolitan regions. "It's great to get the opportunity to do my part for sustainability," Sönmez says. Today, with several months' experience under his belt, he's glad about his decision. "An all-electric truck is in many ways preferable to a diesel truck. For one thing, it's great fun to drive. Other drivers as well as customers are often astonished when they see my truck. It's so quiet and accelerates incredibly fast—it's something you have to experience for yourself."

Technology isn't everything

Many of the functions of the eActros are digital and easy to operate. Even so, Sönmez is confident that drivers will still have a role to play in the future. "It's a question of making intelligent use of the technology and keeping an eye on the battery range. Driving in downtown Stuttgart, for example, is a real challenge. While there are many steep, energy-guzzling uphills, there are just as many downhills where I can let the battery recuperate energy, thus increasing its range. This kind of anticipatory driving is almost like a game; it's a lot of fun!"

It's no wonder, then, that Sönmez says: "Dachser is training me for a really great career, and I'm over the moon that I get to drive the eActros." It's not just this "work tool" that he appreciates, however, but also the work environment at his branch. "We're a young, fantastic team—and not just at work. I've made many friends since I first started at Dachser." He also values the trust his trainers have placed in him: "Dachser promotes independent work and responsibility. I like that."

Examples like these can be found at all levels of the family-owned company. Dachser CEO Burkhard Eling sees this both as an affirmation of the company's strong employee orientation and as a duty: "We show everyone who works at or for Dachser just how much we appreciate them." This goes hand in hand with the values and culture of the company and meets the demands of today's working world. For Eling, this implies a clear mission for top management: "We will prioritize our employees even more than before, both in how we think and how we act. It is precisely what each and every Dachser employee experiences on a daily basis that makes our company an attractive and recommended employer. For a company to thrive in the logistics industry, it has to find the right people and hold on to them over the long term." M. Schick Appreciation for indispensable employees: Dachser provides an attractive work environment for professional truck drivers. The family-owned company gives them access to health management plans tailored to their needs, professionalizes training, and invests in additional parking facilities for trucks at the branches.

People & markets

From crank to winner

"Imagination is more important than knowledge, for knowledge is limited," said Albert Einstein, one of the greatest geniuses of the twentieth century. That implies humanity should always use its imagination to increase its knowledge: a process known as creativity. The term derives from the Latin "creare," meaning "to make something new." Another related term is "crescere," which is Latin for "to grow" and points to the potential for growth that creative innovators bring to companies in particular. As Mark Twain noted, however, there is a catch: "A person with a new idea is a crank until the idea succeeds."





Open to everything

Originality and creativity are a matter of personality. Gregory Feist, Professor of Psychology at San José State University in California, identified the characteristics of creative minds in a meta analysis. One of his study's findings is that people involved in science or the arts are generally more open to new experiences but are also more introverted and self-confident.
Take Konrad Zuse, for example: in 1941, the construction engineer, inventor, and advertisement painter developed a machine for calculating, a task he found to be a chore. His fully functional and programmable Z3 calculator heralded the digital age, which has revolutionized virtually every sphere of life. Or take Steve Jobs: on January 9, 2007, the Apple CEO with a talent for staging introduced a novelty: "An iPod, a phone, and an internet communicator. An iPod, a phone ... are you getting it? These are not three separate devices; this is one device. And we are calling it iPhone." That was truly a technological turning point. Suddenly, the internet fit in your pocket.

Creative and savvy

A celebrity is turning 70: Gyro Gearloose, Duckburg's foremost engineer and inventor. In his efforts to build a perpetual motion machine, he has repeatedly made the cartoon world a little better with his numerous inventions. One of them is a head-scratching apparatus. This automaton takes care of the time-consuming task of massaging one's scalp while in thought. The creativity-boosting effects of head-scratching may not be scientifically proven, but from a behavioral science perspective, head-scratching is nevertheless worthy of attention. This displacement activity may indicate a stalling for time when it comes to fight-or-flight decision-making.





Upside down

Sometimes we have to turn our world upside down to get fresh, new thoughts. It's this principle that underlies a special creativity technique known as the headstand method or reverse brainstorming. This technique is based on the fact that people tend to find it easier to recognize mistakes and problems than to come up with great ideas offhand. For this purpose, the original question is turned on its head. Instead of asking "How can we make sure that the customer will choose us again in the future?" the question becomes "How can we prevent the customer from seeing us as the best solutions provider?" The answers are then reversed as well. If negations such as "no" or "not" are avoided, clear and concise statements will quickly create a basis for solving the original problem.

Making a dark star shine

Our brain works around the clock—but much of that work doesn't register in our consciousness as it takes place in the background. That explains how we're able to find our way to work every day or operate a coffee machine while half asleep in the morning without even thinking about it. Researchers are now studying whether these automatisms involve actual thinking below the level of consciousness, and whether aha moments entail a kind of give and take between conscious and unconscious processes. "Finding a creative solution for a problem is like trying to see a dark star at night. You've got to look at the problem out of the corner of your eye, as it were," says neuroscientist Mark Beeman of Northwestern University. Flashes of genius typically hit us after we've pondered a problem for a while and then put it aside. Once a conscious cognitive effort has set the ball rolling, Beeman says, then a walk, a nap, or a distracting activity can enable a creative breakthrough.



Panorama

The power of the **sun**

1//

A life-giving star that harbors a ruthlessly destructive energy: humanity's special relationship with the sun dates back to prehistoric times.

In 1859, there was no shortage of events for the history books: ground was broken in Egypt for the Suez Canal, an oil well in Pennsylvania laid the foundation for the petroleum industry, and Charles Darwin published his theory of evolution. But nothing moved people that year as much as the strange events on the night of September 2. The aurora borealis streaked the sky as far south as the tropics with red, green, and purple. Compass needles went crazy. The telegraph network, still in its infancy, collapsed—and in some places, the paper on the receiving sets actually caught fire.

With emotions swinging between panic and fascination, people initially suspected the cause might be volcanic eruptions, high-altitude lightning, or meteorites. An English astronomer's chance observation helped put scientists on the right track. In his private observatory, Richard Carrington had turned his attention to the sun the day before. For a few minutes, he was able to make out unusually bright flashes of light over a group of sunspots. Carrington suspected that this activity, nearly 150 million kilometers away, was directly related to the events on Earth—a hypothesis that was to be confirmed much later. Some see Carrington's observation of what was then the strongest solar storm ever recorded as the dawn of modern astronomy. In any case, it changed (once again) our view of our central star.

Setting the pace of life

Humankind developed a special relationship with the sun back in the earliest of times. After all, the sun set the rhythm of everyday life: its rising brought light and warmth, its setting darkness and cold. Back in the Neolithic Age, the famous stone circle at Stonehenge was created as a place of observation. Early advanced civilizations worshipped and feared sun gods. In ancient Egypt, for example, it was believed that the god Ra traveled from east to west in a barque every day and made the return journey at night through the waters of the underworld. The Aztecs had a similar view of the power of their sun god Tonatiuh, to whom they even offered human sacrifices for strength.

The philosophers of ancient Greece sought a more rational explanation. They realized that celestial bodies orbit around each other; however, influential scholars such as Aristotle believed the Earth was at the center, in what they thought was a fixed position surrounded by the sun, moon, and other planets. Doubts about this theory existed even in antiquity, but it was Nicolaus Copernicus, Galileo Galilei, and Johannes Kepler who toppled the geocentric world view in the 16th and 17th centuries. Ultimately, it had to be acknowledged that it is the Earth that revolves around the sun, which is disproportionately larger (its diameter measures 1,392,700 kilometers, roughly 110 times longer than the Earth's).

In modern times, scientists have learned much about exactly how the sun affects the Earth. They began to understand that plants use photosynthesis to convert the energy of the sun's rays into usable chemical energy, and that the biomass produced this way had been deposited over millions of years as natural gas, oil, and coal. Once humans started to harness that pent-up solar energy for themselves, it unleashed an unparalleled surge in modernization. Steam engines made mass production possible, and internal combustion engines revolutionized transportation. Compared to the difficulties of life in earlier eras, industrialization seems like a decades-long party. Today, however, the hangover from that party is spreading thanks to the greenhouse effect fueled by combustion. The warmth of the sun, something normally so welcome, now threatens to turn up the heat on our ecosystems.

A galactic power plant

That's why, when it comes to the energy supply, the race is on to avoid the fossil-fuel detour. Photovoltaics in particular as a means of electricity generation are experiencing an unprecedented boom because the technology has long been competitive on price. The potential is huge: researchers have calculated that if all the roofs in the world were fitted with solar cells, they would meet current energy demand entirely—provided <u>more electricity storage</u> was put in place.

The sun is actually a giant furnace capable of reaching up to 15,000 degrees Celsius. Scientists discovered the mechanisms behind this in the 1930s: Inside the star, hydrogen is compressed to such an extent that its atoms fuse to form helium. The heat that this process of nuclear fusion releases then slowly escapes through the outer layer of gas and radiates into space. Variations in the sun's magnetic field regularly cause coronal mass ejections, which are associated with solar flares, mostly near sunspots, as Richard Carrington observed in 1859. If these eruptions of material from within the sun head toward the Earth, as they did on that occasion, charged particles break through our planet's protective magnetic field and disrupt electronic equipment.

Even in our globalized, high-tech world, a strong solar storm would temporarily throw us back to a technological Stone Age. Power grids and telecommunications networks would be paralyzed, and supply chains would collapse. This past February offered a small taste of this destructive power: a relatively modest solar storm caused 40 of 49 Starlink satellites to burn up in the Earth's atmosphere after launch. Elon Musk's company SpaceX incurred damages of around USD 50 million. In order to one day be able to predict the distant storms, scientists have the sun under close observation with two satellites, Solar Orbiter and Parker Solar Probe. These are currently circling the glowing ball of gas that, for us Earthlings, gives life even as it threatens our existence. **S. Ermisch**

Everything flows

GF Piping Systems leads the world in flow solutions



A stable, organic connection: GF Piping Systems and Dachser have been cultivating their business relationship for almost two decades now. Most recently, they celebrated the tenth anniversary of their collaboration in Northern Europe, a milestone, in Jönköping, Sweden. The Dachser warehouse in Jönköping connects one of the world's leading manufacturers of safe and reliable piping systems with the Scandinavian markets.

Just turn on the faucet and out comes the water—for drinking, cooking, washing, or brushing your teeth. We often take this simple, everyday process for granted, but in fact it's a technological challenge. After all, the water is expected to flow from the tap in a clean, safe, and reliable way and with plenty of pressure. This requires sophisticated technology working in the background: hidden from view, pipes, fittings, pumps, sensors, and measurement technology for quality assurance make it possible. It is this sophisticated technology that GF Piping Systems, based in Schaffhausen, Switzerland, specializes in.

This division of Georg Fischer AG is the leading flow solutions provider for the safe and sustainable transport of water, chemicals, and gases. Employing 7,686 people worldwide and with annual sales of CHF 1,971 million (2021), GF Piping Systems offers over 60,000 products as well as complete system solutions. These include fittings, valves, pipes, automation, manufacturing, and connection technology.

For GF Piping Systems, working with Dachser made logistical sense—literally. The Dachser branch in Steißlingen, near Singen, is a mere 30 kilometers from GF's headquarters in Schaffhausen, which is also where all the global logistics of GF Piping Systems comes together.

An organic relationship

"It all started with individual groupage or partial load transports for GF Piping Systems to Italy or Austria," remembers Zlatko Boskovic, General Manager of Dachser in Steißlingen. "Step by step and country by country, we were able to expand our collaboration, including contract logistics. The key to this \rightarrow



The collaboration between Dachser and GE Piping Systems has grown "organically." It all started in Steißlingen, with various transport orders and a couple of additional services. This later grew to include warehousing with distribution to Central and Northern Europe as well as procurement logistics, primarily for the Schaffhausen manufacturing site. Today, Dachser runs warehouses in Steißlingen, Jönköping, and Singapore for this customer. It also handles additional transports at various other locations throughout its European network. Whenever necessary, the Dachser Air & Sea Logistics locations in Shanghai and Mumbai take care of air and sea freight shipments for GF Piping Systems.

was combining shipments from the warehouse with shipments from the production facilities of GF Piping Systems in Switzerland on the same day."

"Over time, this led to a trusting and mutually appreciative collaboration, which in the meantime has expanded to see many Dachser locations and employees performing different services for GF Piping Systems," explains Jonas Bettray, who as Key Account Manager European Logistics at Dachser is responsible for looking after the customer at the corporate level. "We're well aware of the extremely high quality and performance standards of GF Piping Systems—and our customer, in turn, appreciates what Dachser brings to the table." This is a solid foundation for a good and stable relationship.

About ten years ago, this spawned the Swiss piping experts' decision to set up a distribution center for Northern Europe in Jönköping, Sweden, together with Dachser. "Our goal was to be able to supply countries in the Nordic region—not just Denmark, Sweden, Norway, and Finland but also more 'exotic' places like the Faroe Islands, Iceland, and Greenland—quickly and directly," explains Andreas Jasko, Head of Global Supply Chain at GF Piping Systems in Schaffhausen. "For that, we needed professional solutions in the areas of warehousing, picking, and packing as well as in transportation."

Fredrik Rånge, Warehouse Manager at Dachser in Jönköping, was the right man for the job. The 50-year-old family man is a Dachser veteran and a dyed-in-the-wool logistics expert. Growing up, his parents ran a transport company. In three decades, Rånge says, he has done and experienced everything from transport and distribution to warehousing. "And my enthusiasm just keeps on growing," he grins. "Every day, I come into work with a smile on my face." This is in part because he knows that he won't be at his desk all day. "I like working with the warehouse staff."

Close collaboration

Rånge isn't the only one in Jönköping who's enthusiastic about work and customers' needs. "We always call our warehouse 'sun side' because people enjoy working here. And we're quite proud of that," Rånge says. This helps explain why the core team at this multi-user warehouse, which can accommodate 5,000 shelf spaces, 3,000 pallets, and over 500 pipes for GF Piping Systems, has remained virtually unchanged since the facility first opened in 2011. "Because we have very low workforce turnover, our processes are well oiled and benefit from our staff's deep mutual understanding and valuable experience," Rånge says. "We know and appreciate each other." In saying this, he is referring both to the products and the market of GF Piping Systems as well as to the people on both sides.

Just how close GF Piping Systems and Dachser have grown can be seen from the fact that Rånge doesn't have to go far to reach the customer. The office of Thomas Hammarback, DC Manager at GF Piping Systems, is just one door down the hall. Rånge explains the extraordinary degree of collaboration between customer and service provider with the following words: "Every day, we work together to deliver 100 percent of the service level all over again." Jasko sees this as yet another sign of particularly close and mutually appreciative collaboration in this customer/service provider relationship: "Fredrik



Rånge can put himself in our shoes as if he were a GF Piping Systems employee himself to achieve the optimum in service and speed. In other words, everything that describes the ideal warehouse logistics manager. So for us and also for the GF Piping Systems companies on the ground in Northern Europe, he's an essential part of our joint success story."

Today, Dachser supplies the entire Scandinavian market for GF Piping Systems from the distribution center in Jönköping: Sweden, Finland, Norway, and Denmark. "We keep most GF Piping Systems items in stock—anything needed for building and maintaining water, gas, and fluid pipes," Rånge says. The portfolio of some 10,000 products range in weight from ten grams to heavy loads of up to five metric tons.

To handle these products, Dachser has built a stable supply chain from GF Piping Systems factories throughout Europe to Sweden. For the most part, however, shipments go directly from Schaffhausen to Sweden via the Dachser branch in Steißlingen. This means between six and ten full northbound truckloads per week.

Reliable under pressure

"Piping systems and the many related products always put a lot of pressure on the supply chain," Rånge says. Time pressure is common at building sites, and maintenance work or leak repairs typically require fast, on-time delivery of materials. "If there's a leak, for example, fitters need the right tools and replacement parts ASAP—sometimes every minute counts."

This is why most shipments in Jönköping consist of pick and pack items. "Scandinavia is far less densely populated than Central Europe. For us, this means smaller batches, especially with flexibility in distribution," Rånge says. "Everyone at Dachser understands that delivering this kind of contract logistics relies on us maintaining our high standards of punctuality and maximum reliability. This way, the customer enjoys the full benefits of the extremely effective and well-balanced Dachser network." To keep everything flowing whenever a tap is turned on and supply commences. As a matter of course and with all necessary precautions in place. **M. Schick**



Opportunities in logistics

Alexander Esters

believes in safety first

A safety professional

It's Alexander Esters's job to ensure work processes at Dachser become even safer. This challenge calls for a lot of organizational talent and communication.

For the Esters family in Kempten, "Dachser" used to be no more than a familiar company name. This is back when Alexander Esters was working as a training manager in a medium-sized heating, air-conditioning, and plumbing company. Occupational safety was already an important topic for him then. Despite already holding two master craftsman's diplomas and a degree as a certified technician, he completed part-time training as an occupational safety specialist.

When Dachser offered him the position of Consultant Work Safety at the Head Office in Kempten, Esters jumped at the chance. "I've always been incredibly interested in occupational safety, and it's something that's close to my heart. That's why I was only too happy to accept the new challenge at Dachser," the 55-year-old father says. This is not the only reason why the family-owned company is now a hot topic at home: after graduating from secondary school, his son has now started an apprenticeship at Dachser as a digitalization management agent.

Two family members at Dachser

"It was really a coincidence—but now we have two members of our family working for Dachser at once," Esters says, laughing. You can sense that he delights in his task. At the Head Office in southern Germany, he is part of a four-person team and the first point of contact for the Road Logistics branches in Germany on all aspects of occupational safety.

"One important task at the moment is to further standardize our processes," Esters says. This includes, for example, the introduction of uniform HSE software (HSE stands for Health Safety Environment). First and foremost, however, it is the experienced safety expert's skills as a communicator that are most in demand. Direct, face-to-face meetings with colleagues in the network are immensely important, but for a long time, communication could take place only by telephone and video conference due to the pandemic.

Thankfully, in-person meetings are back on the agenda now. Most recently, Esters spent a week in nearby Memmingen to discuss how to optimize process flows in occupational safety terms with the location's occupational safety specialist. "After all, it's also about making sure we don't obligate our branches to adopt processes that, in the worst case, can't be integrated efficiently enough into day-to-day work. Instead, we want to find the optimal solution for everyone and also draw on synergies between branches. That way, everyone gets to benefit from the shared knowledge," Esters says. In the future, for example, we want to record data and measures for the successful prevention of work accidents from the individual branches in one central place so that the shared wealth of experience can be used even more effciently.

The heart of occupational safety measures is generally the STOP principle. S stands for substitution of risks, T for technical measures such as traffic routes, O for organizational measures such as process rescheduling, and P for personal and behavioral measures such as suitable protective equipment. The primary goal of technical safety measures is to keep people as far away from danger as possible. It is always important to keep all information and internal regulations up to date. To this end, Esters recently completely revised the templates for occupational safety guidelines, risk assessments, and operating instructions, to which all employees have access.

Esters and his colleagues also support experts at the branches in the inspection of workplaces and in the acquisition of new work equipment. And he presents the main KPIs to management.

A joint effort

In organizational terms, Esters is part of the Dangerous Goods Management and Occupational Safety team in the Container & Dangerous Goods Management department. "The safe transport of dangerous goods and warehousing of hazardous materials in accordance with regulations are essential for the safety of everyone involved, but also for the environment," Esters says. That's why the department cooperates closely to keep tabs on these two topics. The department is part of the Network Management Organization division, which also includes topics such as load securing, packaging management, quality management, and environmental and waste management.

"My job is full of variety every day. All the inquiries coming in from the branches about occupational safety are always different and interesting, and some of them are unusual," Esters says. One example is the regulations and authorizations that customers must follow when using Dachser's own forklift trucks. It's a question that probably doesn't arise day after day but does involve safety-relevant aspects.

"In addition to the normal day-to-day work, however, I also try to provide new impetus," Esters says. For example, a group of experts is currently being put together to deal with the subject of occupational safety, drawing on the best specialists from all branches. The idea is for this body to answer questions submitted from around the Dachser world—a world that Esters has also quickly come to feel at home in. L. Becker



The digital twin in groupage handling

The digital twin creates a digital representation of what's going on in the transit terminal

No and



Together with Fraunhofer IML, Dachser continues to advance the level of innovation in groupage logistics. In two digitalized transit terminals, a new system is generating a digital image of all packages, assets, and workflows. The resulting process improvements benefit customers, employees, and service partners alike.

A typical Dachser groupage transit terminal handles several thousand pallets a day. To ensure smooth onward transport, employees manually scan the barcodes on the packages, over and over again—quite normal everyday work in cargo handling. But recently, this process changed at Dachser's transit terminals in Unterschleißheim (north of Munich) and in Öhringen (near Heilbronn, north of Stuttgart): each package that arrives at one of these locations also bears a new data matrix code measuring 9.5 x 9.5 centimeters.

This data matrix code forms the basis of @ILO, a research project from the DACHSER Enterprise Lab, which the logistics provider operates together with the Fraunhofer Institute for Material Flow and Logistics IML in Dortmund. @ILO, which stands for Advanced Indoor Localization and Operations, is the new digital twin: in the future, it will provide real-time data, generated fully automatically, on every palletized shipment in Dachser's European transport network. The innovative project is part of the Dachser Future Terminal, a research and development program with which the company is driving forward topics of digitalization and sustainability with its own innovations. "Digitalizing our core processes offers the greatest opportunity for further improving our business-not only by using stateof-the-art technologies, but also by involving and engaging our employees in the digital world we're creating," explains Dachser CEO Burkhard Eling.

"The @ILO terminal has the potential to be a milestone on the path toward more efficient and more sustainable logistics by providing a whole new level of transparency in transit terminal operations." \rightarrow

Scanning units in the ceiling area of the building facilitate warehouse management

Fully automatic identification

In the @ILO terminals, packages are identified fully automatically whenever they enter and leave the transit terminal as well as during their stay, and are recorded in Dachser's own transport management system. Manually scanning the barcodes on inbound and outbound goods is no longer necessary. The technological basis is provided by data matrix codes on the top of each package as well as by several hundred optical scanning units in the facilities' ceiling area, which capture the entire floor. Together, they efficiently supply the data required to create a digital image of the transit terminal that is up-to-date at all times: the digital twin.

"When you're dealing with several thousand pallets a day, you need a simple and thus environmentally friendly package tracking system," says Andre Kranke, who as Head of Research & Development oversees the research partnership with Fraunhofer IML. "We also tested radio-based solutions such as RFID (radio frequency identification) and BLE (Bluetooth Low Energy), but they can't meet the requirements of groupage logistics."

All the information collected flows into the core of the digital twin, the @ILO software, which the DACHSER Enterprise Lab developed. New custom Al-based algorithms interpret the data that the optical scanning units capture every second; this way, they can ensure the automatic identification, location, and measurement of all packages in real time.

Accurate tracking down to the meter

One innovation in the @ILO terminal is how it can locate, down to the meter, all pallets throughout the transit terminal building, which can often be the size of a soccer field. This significantly shortens search times and, in turn, loading processes, which is of particular benefit to drivers in short-distance transport. With the use of computers, smartphone apps, e-ink displays, or 3D visualizations, it's possible to illustrate both the locations of shipments and the position of ground conveyors in real time.

Logistics operatives check special displays for instructions on internal transport. These can also be supplemented with additional information such as dangerous goods warnings, prioritized loading instructions, or a photo of the package, all of which increase the quality and safety of the handling processes.

Another innovation is the automatic "wedding" of the ground conveyors and packages. The @ILO system automatically detects when a ground conveyor picks up a pallet; it then transmits the information on each package in real time. As soon as the conveyor vehicle picks up and registers a package, the system retrieves the stored information and displays it on a screen on the vehicle. That way, the employee always has an overview of where the pallet is to be transported and receives an alert if the pallet has been put in the wrong place.

Enhancing efficiency

One more technological highlight of the @ILO terminal is in the pipeline: the fully automatic and constant measurement of all packages. The digital twin can determine the length, height, and width of different packages with high accuracy thanks to the image processing approach of the @ILO software, which was developed on the basis of artificial neural networks.

In the two pilot plants in Unterschleißheim and Öhringen, the large number of measurement points and data leads to



The @ILO terminal has the potential to be a milestone on the path toward more efficient and more sustainable logistics by providing a whole new level of transparency in transit terminal operations.

Burkhard Eling, Dachser CEO

higher measurement accuracy, yet without disrupting the transport processes in the terminal or involving measurement stations. If this process, which at the moment is probably one of a kind, can be made practical for everyday use, then the volume data it obtains on each package could be fed to intelligent algorithms in the future. These could, for example, assist drivers and employees in the transit terminal with loading and route planning and could also further increase the capacity utilization of swap bodies, trailers, and local transport vehicles. The result would be a reduction in transport kilometers and thus also a reduction in avoidable CO₂ emissions.

Potential for a quantum leap

"The results so far make us very confident that we can achieve a new level of supply chain visibility with the @ILO terminal," says Stefan Hohm, Chief Development Officer (CDO) at Dachser. "In the future, we also plan to give our customers and partners access to this new type of transparency on all goods movements in the transit terminal, plus the associated optimization options."

The key to developing this innovation, which is unusual for groupage logistics, is the close collaboration in the DACHSER Enterprise Lab. Experienced Dachser logistics experts and creative Fraunhofer scientists worked together on the digital twin for over four years. "I'm delighted that we were able to develop this extraordinary





digital twin together," says Professor Michael ten Hompel, Managing Director of Fraunhofer IML. "Our approach employs state-of-the-art algorithms based on artificial intelligence to make the internet of things and the vision of Industry 4.0 and Logistics 4.0 a reality—even in the challenging area of groupage logistics, with its marked heterogeneity, wide range of package volumes, and high pallet weights."

For Alexander Tonn, Chief Operations Officer (COO) Road Logistics at Dachser, @ILO holds enormous potential for logistics operations: "@ILO is a highly promising innovation within the Dachser Future Terminal. Initial tests have already clearly demonstrated the advantages: the system saves our employees valuable time and lets them organize processes in the terminal even more efficiently. In the future, we'll also be able to further increase truck utilization by measuring the packages and using appropriate, Al-supported preliminary load planning. All this has the potential to trigger an innovation leap in groupage logistics." M. Gelink

Digital twins are digital representations that depict the current state of a system, provide uniform interfaces to data and services, and run simulations to predict a system's response to change. They enable virtual testing and shorten development times, and thus the time to market, of new products. The focus here is not on monolithic data models but on the various aspects of digital representations. functions, models, and interfaces. When intelligently linked, digital twins also open the door to previously unimaginable innovations and to unique, potentially even groundbreaking processes

Scan this QR code to learn exactly how @ILO works.





Investing in the future

Dachser is setting new standards in the storage and handling of non-chilled food and food packaging thanks to fully automated, climate-neutral high-bay storage at its Memmingen location.

Dachser is continuously expanding its network. Last year alone, the company invested some EUR 100 million in its logistics facilities; in 2022, that figure will reach approximately EUR 200 million. One result of this investment in the future will open in Memmingen in October: a new high-bay storage facility for non-chilled food and food packaging. The logistics provider invested EUR 25 million in the warehouse, which will be the first climate-neutral facility in the Dachser network.

"Our new warehouse further expands one of the Dachser network's leading locations for our contract logistics customers," says Alexander Tonn, COO Road Logistics at Dachser. He adds that as this new facility is connected to one of Europe's best performing road networks, Dachser is once again setting the benchmark.

"The new warehouse is fully automated, and as such is designed to offer top performance while keeping pace with growing customer demand," explains Thomas Henkel, General Manager of Dachser's Allgäu logistics center. You will find all relevant details in the infographic on the following double-page spread.

Energy from clean sources

As a major step toward achieving climate neutrality, Dachser will generate most of the energy required to operate the high-bay warehouse using a photovoltaic system with a power output of approximately one megawatt. Whenever additional electricity is needed, Dachser will procure 100 percent renewable hydropower and wind power from the public grid. In addition, the warehouse is connected to the energy-efficient district heating system of a local power company, E-Con AG, from which it draws heat. "Starting in 2023, we will offset greenhouse gas emissions that can't currently be avoided in their entirety by way of certified climate action projects," says Stefan Hohm, Chief Development Officer (CDO) at Dachser.

Front building (warehouse pre-zone) High-bay storage ■ 2,700 m² Fully automated 22 docking bays: Height: 32 meters 16 for outbound goods 52,640 pallet spaces on 7,400 m² 6 for incoming goods ■ 10–30 °C warehousing of non-chilled 200 pallets each of incoming food and packaging and outbound goods per hour 8 aisles with one rack operator per aisle 2 storage units per shelf thanks Incoming goods to double deep storage 2 gates with 2 automatic unloading systems 4 gates with 3 conveyors for incoming goods (manual feed) Automatic palletizing station

Sustainability

- Climate-neutral storage
- Photovoltaic system with output of 1 megawatt
- 100 percent green electricity
- Rainwater is fed into the groundwater

Additional services

 2,450 m² mezzanine for picking and value-added services (esp. display-build)

Outbound goods

- De-palletizing system for removing
- 30 gravity-roller conveyors

Control booth

For controlling and monitoring the warehouse technology



Hydrogen drive in **practical tests**

Dachser continues to press ahead with practical tests of zero-emission drive technologies for trucks. In 2023, the logistics company will put two hydrogen fuel-cell (FCEV) trucks into service in Germany.

Next year, Dachser will put a zero-emission FCEV truck on the road in Magdeburg as part of a research project. The 27-ton Hyundai Xcient will be used for regional distribution as well as regular scheduled nighttime services to Berlin. Another hydrogen fuel-cell truck, a 19-ton Enginius Bluepower, is scheduled to start making deliveries for Dachser to Hamburg's city center in mid-2023.

These trucks will be driven mainly by two professional drivers, one man and one woman, who are completing their training at Dachser this year. While the FCEV truck will be tested in regional distribution to the Magdeburg area by day, by night it will be driving to Dachser's branch in Berlin-Schönefeld in system traffic. Facilities for the truck to refuel with hydrogen will be available near the two Dachser branches in Magdeburg and Berlin by the time the vehicle is delivered.

Emission-free in Hamburg too

Starting in mid-2023, Dachser will deploy a Bluepower 1938 FCEV truck from Bremen-based Enginius—a subsidiary of the Faun Group, a greentech company—for city-center deliveries in Hamburg. The truck will complement the DACHSER Emission-Free Delivery concept, which features zero local emissions and is scheduled to launch in Hamburg as early as fall 2022.

Gaining practical experience

"As part of now a total of two studies with Kempten University of Applied Sciences, we've already determined that there is considerable potential for hydrogen trucks in Dachser's European groupage network," explains Stefan Hohm, Chief Development Officer (CDO) at Dachser. "We're looking forward to introducing the first hydrogen trucks to the Dachser network, as this means we'll be able to gather valuable hands-on experience with them."

Focus on e-mobility

Dachser plans to develop its branches in Freiburg, Hamburg, and Malsch near Karlsruhe into e-mobility locations. This means they will put a special focus on climate-friendly technologies and processes as well as on the research and practical testing of intelligent power and load management. The long-term objectives are to increase the number of zero-emission vehicles throughout Dachser's European network and to achieve net zero greenhouse gas emissions.



New warehouse in France

Dachser France is opening a new warehouse in Pont-d'Ain. The new site in the Auvergne-Rhône-Alpes region, with its comprehensive contract logistics services, is a response to the sustained high growth there in recent years.

With floor space of 18,000 m², the warehouse has capacity for 21,000 pallets. In addition, by installing photovoltaic panels on the roof and LEDs with presence detectors indoors and outdoors, it already meets increasingly stringent environmental standards.



Zero emissions in Munich

DACHSER Emission-Free Delivery is coming to the Bavarian capital: the logistics provider will deliver all parcel and groupage shipments emission-free within a defined downtown area. The concept makes use of electric FUSO eCanter trucks. Along with Stuttgart and Freiburg, Munich is the third German city to benefit from emission-free city-center delivery, with Berlin and Hamburg soon to follow. In addition, DACHSER Emission-Free Delivery has already been implemented in Oslo, Prague, Strasbourg, Paris, Madrid and Porto.

Rolled out post code by post code, by 2023 the zero-emission delivery zone will cover about 1.6 square kilometers of the busy streets around Sendlinger Tor, Stachus, Odeonsplatz, Theresienstrasse, and Maximilianstrasse. "The proximity of Dachser's Munich branch to the city center provides the ideal conditions for operating a total of three all-electric trucks. Making deliveries with the quiet 7.5-ton electric trucks helps improve the quality of air and the quality of life in the city," says Ingo Zimmermann, Operations Manager at the Munich site.



Benefiting from digital standards

Dachser co-founded the nonprofit Open Logistics Foundation together with other companies in the logistics industry. In this interview, Dachser CEO Burkhard Eling and CDO Stefan Hohm talk about the background and objective behind this initiative, which aims to increase digitalization and standardization, as well as its limits.

To discover what "open source" is really all about, check out our "From the laboratory of the future" series.



Standardization lowers overhead—for us and the entire industry.

Burkhard Eling, Dachser CEO

Mr. Eling, Mr. Hohm: A nonprofit foundation to establish an open-source community—what's that all about?

Burkhard Eling: All the parties along the logistics chain are working very hard to digitalize their processes. Since there's no such thing as a self-sufficient logistics company, we work with many different actors, including customers and service partners. We can make this collaboration even more efficient by putting more and more common standards and building blocks in place. Together with the founding members of the Open Logistics Foundation, we have taken the first step. Now it is a matter of convincing the other market participants that those standards are useful. After all, the more companies that follow suit, join the initiative, and get involved, the greater the chance of instituting industry-wide accepted standards.

Stefan Hohm: Dachser has long been committed to common standards, an approach that has always paid off in the long run-for us and everyone in the supply chain. Take the EAN 128 barcode, for example, or the SSCC serial shipping container code: we committed ourselves to using these early on and, as a member of the GS1 standards body (formerly known as the CCG), really campaigned hard for rules applying them to make sure they spread across industries. Our commitment to the Open Logistics Foundation follows the same logic as our work in GS1-which itself is actively involved in Open Logistics e.V., the support association for the foundation, as well. Like GS1, the Open Logistics Foundation is a way to turn certain hardware and software components into de facto standards and-and here's the special part-provide users not only with recommendations but also with lines of code. This all builds on open source.

What do you mean by that?

S. Hohm: Open source is software whose source code can be seen and used by others. Web browsers such as Firefox and Chrome, or Linux, the world's most widely used operating system, work according to this principle. Dachser, too, has been using open-source software and components for more than 15 years. We currently do so in over 70 programs and applications. The open-source community relies on the collective intelligence of many, in a few cases on altruistic motives, and very often on the common goal of simplifying processes, sharing development costs, and gaining additional market share.

What does this special approach mean for the Open Logistics Foundation?

S. Hohm: There's a technical platform called the Open Logistics Repository, where software and hardware components, interfaces, and reference implementations are openly and freely available. We—and the other members—can access the platform free of charge,

call up the code for any standard application, and use it as a basis for, say, expanding our own applications or setting up new products and business models more quickly. It's entirely up to us which codes, concepts, or projects we import. And we're definitely not going to share anything that gives us an actual competitive advantage.

B. Eling: We care about standardization in particular because, when it comes to certain "all-purpose applications," standardization reduces overhead—ours and that of the industry as a whole. Today, what often happens is that mutually incompatible, insular solutions prevent pragmatic networking between partners and customers. We also don't want to waste limited and valuable development resources on programming every single line of code for a standard application. It makes much more sense for us to build on a standard and then create our unmistakable Dachser USP with our own data and approaches. This enables us to add real value for our customers.

S. Hohm: Intelligent logistics depends on capable IT systems. Dachser has adhered to this principle for many decades. We're known for our excellent in-house IT development, and that won't change. We will continue to orchestrate the architecture of our core systems ourselves, and we will, of course, continue to \rightarrow



Using open source reduces our dependency on commercial providers.

Stefan Hohm, Dachser CDO

program our own applications—but we will also incorporate solutions that are available on the market into our portfolio. And what's equally important to me is that using open-source software reduces our dependency on commercial providers open source doesn't get discontinued.

Mr. Eling, are there any examples of industry-wide standard applications associated with the Open Logistics Foundation? B. Eling: There is one application that the Open Logistics Foundation is actively developing, and for which some initial lines of code have already been published: the eCMR digital consignment note for cross-border traffic. On top of that, we've also submitted suggestions for standard applications, like a driver app. Logistics providers tend to have an isolated solution of their own for more or less the same functions, namely order information, routing, and rest time management. Standard applications like the one already mentioned don't give anyone in the industry a real competitive advantage. A common opensource standard, on the other hand, reduces Dachser's and everyone else's overhead, fosters cooperation, and frees up much needed development resources.



Doesn't this open-source community entail certain risks? After all, your competitors are also in the room.

B. Eling: I don't see it that way. Antitrust legislation explicitly supports the development of open-source programs that serve the common good. And again: we do not share any information, processes, programs, or applications that give Dachser a competitive advantage. Nor do we disclose any prices or sensitive customer data. In addition, compliance processes have been set up to enable cooperation between companies and prevent malpractice.

S. Hohm: We will continue to develop sustainable software and smart processes that will be available only to us and our customers. We will, however, share basic applications and lines of code in the future to reap the long-term benefits of industry standards established among customers and competitors. Transparency, accessibility, and compliance are top priorities in our day-to-day business.

What are the implications of the open-source approach you're describing for the logistics industry?

S. Hohm: Open source facilitates digitalization, making it a key success factor for the entire logistics industry. Digitalization means connectivity—and the only way to achieve that is through joint action. What does it take for open source to be successful in logistics? A creative approach, complete transparency, common applications, maximum usability, and an understanding of how to get all companies on board to set up the right business case as a beacon.

And what does that mean for Dachser?

B. Eling: Digitalization provides us with an opportunity to reconsider the way we operate our processes, organize our work environment, and work with our customers and partners along the supply chain. If we manage to think and act in more digital terms across the board, we'll be taking a big step toward accomplishing our mission of making Dachser the most integrated logistics provider there is. Open source and our commitment to the Open Logistics Foundation are an important part of that journey, as they let us deploy our valuable human resources in software development in a way that adds more value. By doing that, we not only enhance their work, but also secure our economic success. These are very good reasons to support the Open Logistics Foundation from the outset and commit to establishing industry standards.

DACHSER

Good ideas for the climate

In Dachser's global campaign to find ideas for boosting climate protection, employees from 38 countries submitted more than 2,000 suggestions. Many of these concern commuting, digitalization, electric vehicles, renewables, or lighting. The most active participant worldwide was Ralf Nobel from the Berlin Brandenburg logistics center, who sent in 23 ideas. "The campaign was very well received at our branch," he says. "Climate protection is an important task, and everyone can play a role."



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