DACHSER
Intelligent Logistics

DACHSER magazine

The world of intelligent logistics

DACHSER & FERCAM Italia

A new era dawns
for logistics in Europe

03/2024

Year-end **sprint**

The turn of the year and the upcoming festivities around the world mean a surge in human interaction. High time to take a closer look.

9 billion

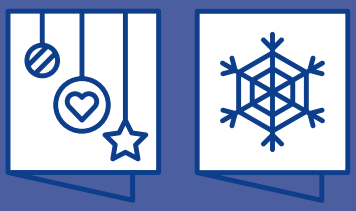
is how many individual trips China's Ministry of Transport expects more than 750 million people to take for the Lunar New Year on January 29, 2025. The country's population traditionally spends the 40 or so days around this holiday visiting family or going on vacation in what is considered the largest regular human migration in the world.

36.89 seconds

is how long it took the UK's Sharon Juantuah to decorate a Christmas tree with 100 lights, tinsel, and 15 baubles. This decorating sprint put her into the Guinness Book of Records.

1.1 billion

physical Christmas cards were sent by post in the US in December 2023, despite the rise of digitalization. For comparison, the UK's Royal Mail estimates that it delivers 150 million cards around Christmas. On average, each person in the UK sends and receives 17 Christmas cards.

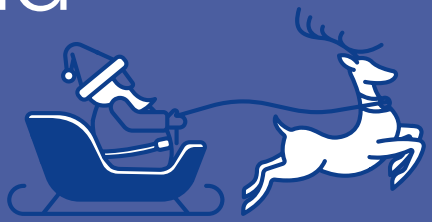


9.2 petabytes

of data rushed through Germany's three mobile networks just on New Year's Eve 2023, between 8 p.m. and 3 a.m. on January 1. That amount of data roughly corresponds to 2,051,600 films in HD quality. If each movie lasts about two hours, you could watch movies continuously for almost 466 years.

1,040 km per second

is how far and how fast Santa's sleigh would have to travel, according to tongue-in-cheek calculations by scientists at the Max Planck Institute. Only by traveling at 3,000 times the speed of sound could he manage to deliver presents to children all over the world on Christmas Day, which is 31 hours long due to the different time zones. With a calculated 91.8 million stops, Santa would cover a total distance of 120.8 million kilometers.



Message from the CEO

Dear readers,

“Things will be different from now on.” In times of landmark elections, promises about the future are booming—as is the rejection of supposedly outdated worldviews. But is it actually true that globalization has run its course? Has the idea of free trade and cooperation on the markets outlived its usefulness? And what role does Europe play?

One thing’s for sure: the world’s regions were, are, and will remain interdependent. In the face of pandemics, geopolitical crises, and trade conflicts over import tariffs, one reason that markets have remained stable is because logistics managed to set up and expand resilient networks—with uniform processes, smart IT systems, and above all, employee expertise.

As a leading logistics provider, Dachser has created a stable foundation for every twist and turn along the way. Our European network, which has grown continuously with the European market and the European idea, forms the core of that foundation. Our cover story on page 6 about the new joint venture DACHSER & FERCAM Italia serves as an impressive example.

What motivates us in all this? By taking action based on shared values, action that is geared toward the long term and yet has the necessary adaptability, we can achieve decisive change—even and especially in challenging times.

Kind regards,

Burkhard Eling, Dachser CEO

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Cover story

Forum

Expertise

Network

Good news

Crossdocking

Links to the digital world of Dachser

Simple store delivery

How can garments reach stores crease- and wrinkle-free? With the Retail Box. It's now been refined and optimized, offering promising applications not only for fashion but also for a number of other industries.
https://bit.ly/DAmag_03_24_Retail_Box

Report on a bright future

For almost 20 years, Dachser has been supporting the children's aid organization Terre des Hommes in giving disadvantaged children and youth new opportunities. The new annual report provides an overview of projects worldwide.
https://bit.ly/DAmag_03_24_Annual_Report

Long live (r)evolution!

Entrepreneurship and the courage to innovate are anchored in Dachser's DNA. But how does the family-owned company turn innovation into a driver of constant renewal? Dachser CEO Burkhard Eling provides insights and an outlook.
https://bit.ly/DAmag_03_24_Innovation

Sustainability excellence

Dachser received the Sustainability Excellence Award at the 12th Global Supply Chain Excellence Summit in Long Beach, US. The award is given by the Global Supply Chain Institute of the University of Southern California.
https://bit.ly/DAmag_03_24_Award

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DACHSER & FERCAM Italia

A new era dawns for logistics in Europe

Green light for a new chapter in groupage logistics to and from Italy

A real milestone: By establishing DACHSER & FERCAM Italia, Dachser is further expanding its high-performance overland transport network and strengthening its groupage and contract logistics business in Italy. Customers throughout Europe stand to benefit.

It adds up to 314 long and arduous kilometers: from Modena, Italy, the A22 motorway climbs ever more steeply up to the Brenner Pass, which straddles the Austria-Italy border at an altitude of 1,370 meters. The truck is loaded with pallets of espresso machines—recognized as the epitome of Italy throughout Europe and beyond. For Bernardo, a driver from Verona, the route via the Brenner Pass is familiar ground and yet special every time: “The view of the snow-capped peaks, the wide, sweeping orchards, all those rushing streams—che bello!” Bernardo has to have a great deal of patience to navigate the regular traffic jams that occur on this, the busiest road link between Austria and Italy, especially during the vacation season. He takes it all in his stride: “An Alpine pass is and will always be a challenge of nature.”

Italy’s topography and geography make it both attractive and particularly challenging for logistics companies. The boot-shaped peninsula stretches almost 1,200 kilometers from the Alps in the north to the Ionian Sea in the south. Its coastline measures around 7,600 kilometers. With an area of 301,340 square kilometers and almost 59 million inhabitants, Italy is one of the largest countries in Europe. Over 70 percent of the population now lives in urban areas, especially in the conurbations around Milan, Naples, Turin, and the capital Rome. One fact has long characterized Italy and still does to this day: in the southern regions of Italy from Abruzzo to Sicily, an area called the Mezzogiorno, the per capita economic output is only half as high as in the north. Manufacturing has a correspondingly smaller presence in the south. →

> Our strength is that we can serve both the large industrial companies in the north and the smaller companies in the south.
>
> Dr. Gianfranco Brillante, Managing Director DACHSER & FERCAM Italia

The connection between rail and truck—that's what the name FERCAM stands for. As a combination of the Italian for rail, "ferrovia," and for truck, "camion," the word symbolizes the Italian logistics company's business model from when it was founded in 1949 in Bolzano, South Tyrol: the transportation of goods by rail and truck. The joint venture DACHSER & FERCAM Italia is now starting a new chapter in logistics history.

In this logistically challenging environment, Dachser and Fercam, a long-established logistics company headquartered in Bolzano, have developed and continuously expanded an intensive partnership in groupage handling since 2003. Fercam knows the Italian market inside and out and has a nationwide network of branches. It has reliably distributed groupage shipments from Dachser's European network in Italy for over two decades. Conversely, Fercam fed Italian goods, such as the espresso machines in Bernardo's truck, into Dachser's Europe-wide network—a solid, tried-and-tested team of network partners.

A milestone for Dachser and Fercam

In March 2024, the partnership reached a new level with the launch of the joint venture DACHSER & FERCAM Italia S.r.l. Both companies had signed an agreement months earlier under which Dachser acquired 80 percent of Fercam's groupage and contract logistics divisions. "This step was a significant milestone for us," explains Dachser CEO Burkhard Eling. "With this acquisition, we were able to close the last gap and round off our own groupage and contract logistics network in the major continental European markets. We're strengthening our network in Southern Europe and at the same time creating the conditions for further growth."

Hannes Baumgartner, Managing Director of Fercam, believes the new arrangement offers great potential: "Continuing the groupage and contract logistics business under the umbrella of the Dachser network is the right step to secure positive development and future growth in Italy and Europe." The trustful cooperation that these two family-owned companies, Fercam and Dachser, have enjoyed over the past decades underpins the fact that both plan for the long term and share the same values.

One thing that is constantly emphasized in these days of joint reorganization is how each side is familiar with and appreciates the other. "Mutual trust has grown over the years we've spent working together. We each know what the other brings to the table and how we can translate that into benefits for our customers and our network," says Alexander Tonn, who as COO Road Logistics at Dachser played a key role in supporting and managing the acquisition process from day one. DACHSER & FERCAM Italia will be managed by Dr. Gianfranco Brillante, who headed up distribution and logistics at Fercam for many years and now reports directly to Tonn.

Even though Fercam and Dachser have enjoyed a well-oiled partnership at all operational levels over the years, merging two logistics systems under the Dachser roof is a challenge. Roland Hillenbrand is all too aware of this; he was responsible for implementing and organizing the joint venture during his time in the Mergers & Acquisitions department at the Dachser Head Office in Kempten. "It was an incredibly exciting process that was delivered by many outstanding people on both sides," he recalls. Today, Hillenbrand is Head of Finance of the new European Logistics Italy business unit. "After Dachser and Fercam signed the contract in August 2023, everything happened in quick succession. The reorganization was carried out at breakneck speed—and with no interruptions to ongoing business operations. Achieving a feat of that magnitude is possible only if everyone is convinced it will be a success and pulls together."

When two become one

When Francesco Comerlati, Head of Sales in the joint venture, recalls the announcement of the acquisition, his eyes still light up: "In the middle of August, when it feels like all of Italy is on vacation, the news electrified everyone. Then things went from 0 to 100 in five seconds. There were of course a few skeptics, but even so, the enthusiasm for the new joint venture was palpable everywhere." He goes on to say there was always a

Two illustrious brands growing together

> Mutual trust has grown over the years we've spent working together. We each know what the other brings to the table and how we can translate that into benefits for our customers and our network.
>
> Alexander Tonn, COO Road Logistics at Dachser

bit of adventure involved: "In our teams, we immediately saw the great potential of DACHSER & FERCAM Italia for customers, but we didn't know how to calculate it. We just knew it was really, really big."

Preparations for integrating Fercam's Distribution and Logistics divisions into the Dachser network began back in November 2023. This carve-out phase required both sides to move closer together. "It wasn't just about transferring locations and employees to the new joint venture, but also about preparing the systems and processes for a successful launch," Hillenbrand says. "Above all, this calls for many in-person meetings and discussions." Since August 2023, the 263 kilometers between the Dachser Head Office in Kempten and Fercam's headquarters in Bolzano have seen a lot of back-and-forth traffic, in addition to numerous meetings, information events, and video conferences. "Because we'd been meeting with the same group of people for years, representing levels from top management to operations, a real exchange of ideas was possible during this transition phase. We then collected, processed, and brought those ideas together to continuously improve all processes," Comerlati says. "That tapped into a lot of strength."

Leveraging the home advantage

And the DACHSER & FERCAM Italia launch required a concentration of that strength. A look at the figures makes this clear: with almost 1,000 employees and 47 locations throughout Italy, Fercam has brought a broad base to the new joint venture. "The outstanding logistics infrastructure that Fercam has built up →

The Brenner highway: One of Europe's main traffic arteries

> With this acquisition, we're rounding off our own groupage and contract logistics network in the major continental European markets.
>
> Burkhard Eling, CEO at Dachser

over the decades is a major advantage," Tonn says. "Our goal for the coming years is to continue growing, not only in Italy but throughout Europe." The foundation for this will be reliable, uniform quality standards. "At Dachser, we're investing heavily in homogeneous IT systems and innovative digital solutions to make the flow of goods more efficient and to constantly optimize our processes," the Dachser COO says. Europe-wide standardized transport products from the entargo product family, with fixed transit times and quality standards, play a key role here. "Such a setup is possible only within a seamless network underpinned by uniform logistics processes, and delivers clear benefits for the customer," Tonn explains.

The joint venture places a particular focus on the Domino transport management system, which has been developed and refined over several decades and is to be rolled out across Italy over the next five years. There are also other digital services, such as the eLogistics online portal for managing logistics tasks. In the future, DACHSER platform will be available as an integrated solution covering all carriers. "When it comes to system integration, we bring everyone involved to the table: operations, sales, controlling, marketing, and HR," Tonn says. "A holistic approach is the only way we can grow together quickly at all levels."

Tonn emphasizes that system integration and the realignment of the company are always carried out with a full focus on the market and the customers. As Brillante explains, "We now have the opportunity to meet the full breadth of our customers' requirements and to develop innovative solutions for those who deliver from Italy to Europe, as well as for European customers who want to enter the Italian market. Our strength is that we can serve both the large industrial companies in the north and the smaller companies in the south." DACHSER & FERCAM Italia wants to shift Fercam's previous focus from many smaller spot customers with short-notice orders to groupage and palleted goods, which are suited to the freight structure in Dachser's European Logistics network. "This will enable us to offer these customers even better and more efficient services, particularly in contract logistics." The joint venture has 17 warehouses throughout Italy with a total of 310,000 pallet spaces.

Employees make the difference

Tonn and Brillante say that a decisive factor in the successful integration was the close collaboration and mutual trust between Dachser and Fercam employees. This is clearly noticeable in day-to-day business. Comerlati agrees: "The corporate cultures of our two family-owned companies are a perfect match. We don't sell products; we offer services that are provided by people."

Until now, the Dachser brand wasn't very well known in Italy, except in food logistics, where Dachser has been active with its own country organization since 2010. "But with experienced management, committed employees, and reliable performance, we'll quickly make a name for ourselves with DACHSER & FERCAM Italia," Comerlati says. This will be supported by the successive rebranding of vehicles and branches in Dachser yellow and blue, which has already begun. "Soon we'll be an unmistakable presence in Italy, too—as a strong Dachser brand."

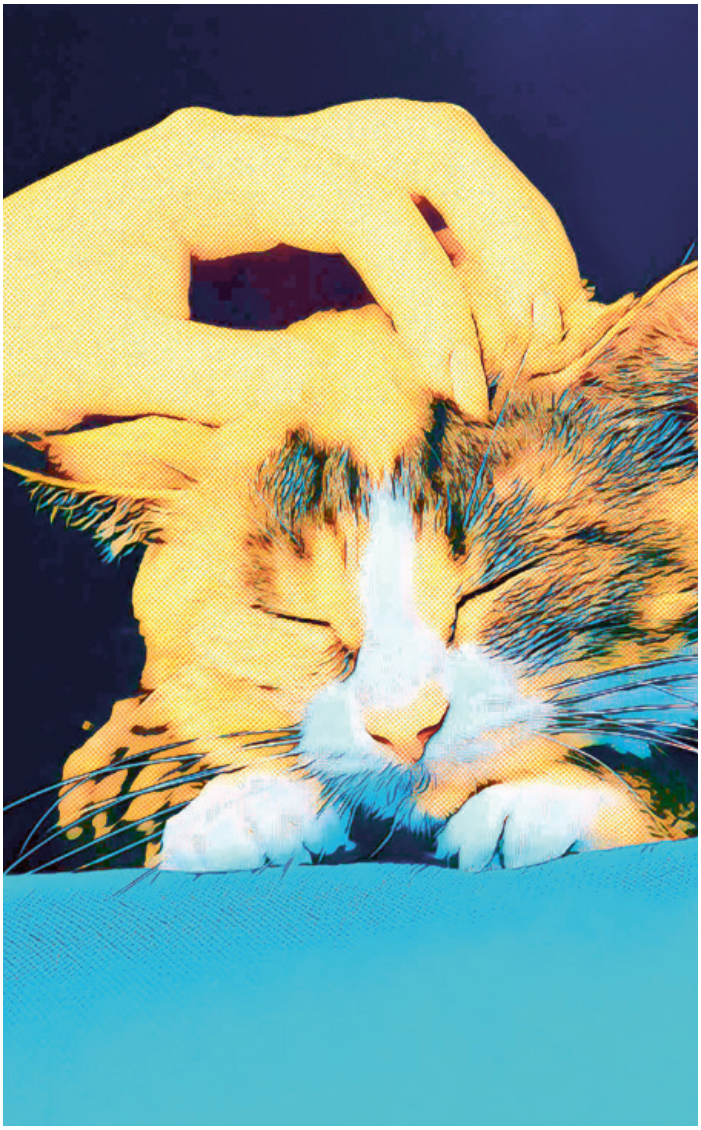
Bernardo has now arrived with his truck at the top of the Brenner Pass. Before heading down into Austria's Wipp Valley, he stops off at the Brennersee rest area to take his mandatory break. A good time for an espresso. "Un caffè," the driver says at the bar. "But tipicamente italiano, please: plenty of crema, nice and strong, and a little sweet." **M. Schick**

The logistics market in Italy

In a recent study on Italian freight transport, market researchers from Upply found that the Italian road freight market is developing at an above-average rate compared to the rest of Europe, despite glaring infrastructure deficiencies. In 2022, year-over-year growth was 6.1 percent, meaning the market exceeded 1 billion metric tons, a level that hadn't been reached since 2013. The Italian market is now in fifth place with 1.047 billion metric tons (bn t). It ranks third in Europe, behind Germany (3.061 bn t), France (1.631 bn t), Poland (1.600 bn t), and Spain (1.588 bn t). According to an estimate by Mordor Intelligence, Italy's road freight market will be worth USD 38.40 billion in 2024 and is set to rise to USD 47.38 billion by 2030.

(Source: https://bit.ly/freight-transport-italy)

People & markets



Virtual worlds you can touch

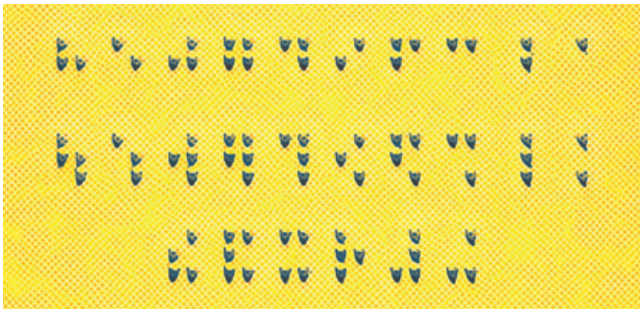
A cat in the virtual world. Awww, how cute! But when you stroke it, surprise, surprise: you can actually feel its fur. This sensation is made possible by the latest tactile VR technology from the EU research project TACTILITY. Developed over three years of research, the eponymous glove uses electrode-based pads to give users the realistic sensation of pressing buttons, molding a cold snowball, or stroking a cat. The electrotactile experience in virtual reality takes not only gamers, but also surgeons, designers, and factory and warehouse planners into completely new worlds of experience—literally at their fingertips!

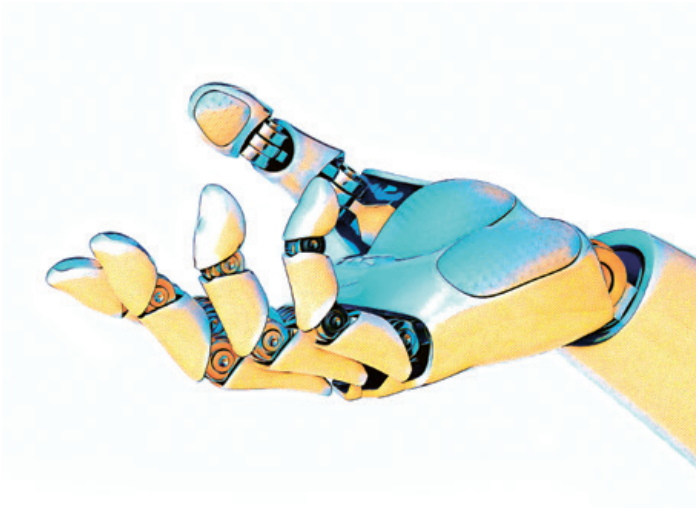
Rules of thumb (and fingers)

Common wisdom holds that a firm handshake shows self-confidence, whereas a limp one demonstrates the opposite. But the meaning of this common greeting and farewell ritual in the Western world is anything but clear from a global perspective. A brief, firm handshake with friendly eye contact is mandatory in the US, but completely unusual in India and China. When men and women meet in Italy and Russia, women are expected to offer their hands first. In Thailand and India, hands aren't shaken at all—instead, you place your palms together at about chest height. In Polynesia, after shaking hands, both people use their hands to stroke the other's face. In sum, the handshake may be common world-wide, but its meaning can vary greatly—so it's better to find out before your hand puts your foot in your mouth.

Getting a “hand”le on things

The human hand is a masterpiece of evolution. Its fingers bend and stretch some 25 million times over the course of a lifetime. It also possesses highly sensitive “antennae” for stimuli from the environment. A total of 17,000 touch receptors and free nerve endings on the palm of the hand react to pressure, movements, and vibrations. Our fingertips can sense even the tiniest bumps of just 0.006 millimeters. This ability is the key to the Braille system of writing developed by Louis Braille. With this alphabet, blind people can use the sensitivity of their fingers to read entire texts.





Sensitive machines

What if robots had a knack for holding a glass as securely as a human does? And in such a way that it doesn’t break, but also doesn’t fall to the ground? Researchers at the Max Planck Institute for Intelligent Systems have now developed a new thumb-shaped sensor for precisely this purpose. Equipped with a 160-degree fisheye camera and a deep neural network, it gives robots an artificial sense of touch. The sensor not only detects where objects are touching it, but also with what force. Machines that can feel and therefore also act with feeling—it’s an engineer’s dream come true.

Wonderfully touching

A hug, holding hands, a caress: What good do these do? Scientists from Bochum, Duisburg-Essen, and Amsterdam have evaluated and confirmed more than 130 international studies with around 10,000 participants: touch significantly increases well-being. Regardless of whether this touch comes from people or objects such as social robots, weighted blankets, or body pillows, it’s been proven to alleviate pain, anxiety, and depression. Surprisingly, this contact doesn’t have to be a lengthy massage; even short, frequent touches have big effects. Parental contact plays a particularly important role for babies, but adults also benefit from any form of closeness. The researchers’ recommendation: “If you have the urge to hug family or friends, don’t hold back—provided of course that the other person doesn’t refuse.”

Panorama

Biding **time**

In our digitalized day-to-day, it's not uncommon to feel that the world is turning faster and faster. Many people seek balance through yoga classes, digital detox weeks, and daily routines. But while that might help us slow down and briefly unwind now, it can have exactly the opposite effect in retrospect.

Tick-tock, tick-tock, tick-tock: the seconds and minutes we spend in a waiting room pass agonizingly slowly. But on a week's vacation, the clock seems to tick very differently: Didn't we pull up outside our holiday home just yesterday? And now it's over? Already? Albert Einstein taught us that time is relative. While this physical phenomenon might seem to boggle the mind, it's something we all experience in everyday life. Depending on the situation and our mood, units of time that are objectively the same can feel very different. Experiments have also shown that how we perceive time is a highly individual affair: people experiencing the same situation will give very different estimates of how long it lasted.

What many people have in common, however, is the feeling that the world is turning faster from year to year. Because in our digitalized daily lives, speed is of the essence: we're bombarded by a hail of push messages and alerts on our smartphones; timers on shopping portals tempt us with discounts; and short videos in our social media news feeds suggest that there's always something else to discover. Technologies like artificial intelligence are developing at a rapid pace—and they offer us progress and promise to make our work easier, if only we'll adopt them and make them our own.

Anchor points in the stream of possibilities

Thanks to technological breakthroughs, many tasks can be completed faster today than even just a few years ago. Think same-day delivery for online orders, or real-time bank transfers. And yet the feeling that we don't have enough time for our private lives is more pronounced than ever before. Hartmut Rosa, a well-known German sociologist, has put forward an explanation: he says that people's desire to get the most out of their lives is widespread, but in a globalized world, the palette of possibilities is so broad that we can't help constantly feeling we're missing out.

The observation that in times of change we tend to feel overwhelmed is hardly new: back in the 19th century, psychologists were already investigating fatigue syndromes and overstimulation of the nervous system, and linking them to technological progress. The expansion of the railroad network and the spread of telegraph poles drastically widened the experience space for many people. This period also changed the world of work: electric light illuminated the night, and factories aimed to keep their expensive machines running in shifts right around the clock. Indeed, clocks and factory sirens became the pacesetters of progress; living one's life according to natural biorhythms was no longer the rule but the exception.

Today, many people are specifically looking to take time out from their hectic everyday lives. For evidence of this, consider the boom in yoga studios, meditation courses, and mindfulness seminars. Digital detox is all the rage, and camping vacations in the big outdoors are more popular than ever. In the frenetic whirl of world events, personal routines are also becoming increasingly important as anchor points: from daily morning exercise to weekly music rehearsals and the annual family reunion. The very fact that these moments let us blot out the almost infinite space of possibilities ensures that we slow down and unwind.

In retrospect, our perception of time gets flipped

But there's a catch: if our life consists only of routines, then slowing down can in fact become the opposite, at least when we look back. Paradoxically, those times where we experience little that is new are the periods that often seem to have passed especially quickly in retrospect. That's because our brain prioritizes the processing of new and important events; repetitive ones are filtered out. It's not for nothing that we remember biographical milestones from our childhood and youth particularly clearly: that big vacation in the summer break, our first kiss, the first apartment of our own, our first day at work.

Different perceptions of time are also a feature of the corporate world. For a newly founded start-up, two years is an eternity—there's always something new happening: finishing the first prototype, moving into the first office, finding the first investors. At the other extreme lie family-owned companies, where business is shaped along lines of development spanning generations. In the colorful context of a storied firm's ups and downs, two years is hardly worth mentioning. These companies never stand still, either, but they do enjoy a certain serenity: they don't jump on every bandwagon, and they're better able to take some crises in their stride. After all, if you're given to thinking in epochs, you're more likely to reach sustainable decisions—and that would do us all some good now and again. **S. Ermisch**

A system built for scaling heights

Stairlifts make life easier for many people

They make life easier: stairlifts keep people mobile, even if they're not too steady on their feet. TK Elevator specializes in these sophisticated technical solutions for the home. And Dachser brings them to customers all over the world.

With its constant ups and downs, it's a bit like the history of humankind: we're talking of course about the staircase. First documented around 10,000 BCE as a design element to connect levels of differing heights in a building, stairs are now undisputedly an omnipresent part of our lives. However, they can become an insurmountable obstacle for anyone who wants to grow old in their own home, but is no longer able to walk well or is dependent on a walking aid or wheelchair. Demographics in aging industrialized societies are exacerbating this challenge from year to year. According to a UN report on the world population, the proportion of people in Asia who are over the age of 64 will more than double by 2050. In the European Union, almost one-third of the population will be over 65 years old in 2100, compared to 21 percent in 2022.

High-tech down to the smallest detail

Stairlifts promise more convenience, mobility, and safety in old age. They are no longer the outdated products featured in magazine ads aimed at older target groups; today, internationally renowned design studios have a hand in developing them. In addition, stairlifts are incorporating more and more technology—from augmented reality that depicts how the lift will fit onto the staircase before installation, to robot and space technology that makes it easier to operate and get on and off the lift.

One of the largest manufacturers of these aids is TK Elevator (TKE), based in Düsseldorf, Germany. Formerly a subsidiary of the thyssenkrupp steel group, it has been an independent company since August 2020 and is one of the world's leading elevator companies. Its product portfolio includes stair and platform lifts for wheelchairs, elevators for smaller residential buildings, escalators, air passenger boarding bridges, and solutions for skyscrapers, as well as associated services such as maintenance and servicing. →

> TKE is expanding worldwide, and we aim to be the global market leader with our products. Well-established logistics processes are part of this.
>
> Alexander Heinrich, Senior Global Logistics Manager, TKE

While such products make life easier and more accessible for many people, they present manufacturers and logistics planners with an enormous challenge. Since staircases range anywhere from straight, narrow, and steep to very tight and curved, seat lifts and their necessary guide rails must meet custom requirements for each location. That's why many of the stairlifts that leave TKE's facilities in the Netherlands are also high-tech, one-of-a-kind models. A challenge both for the manufacturer and for Dachser as its global logistics service provider.

Dachser collects individual components from suppliers all over the world, consolidates them, and, where necessary, brings them to a preassembly point. From there, the parts go to the logistics provider's distribution centers, where the final shipments for the factories are picked and delivered. Dachser then collects the finished lifts from the factory several times a day.

A logistics concept for global markets

Since 2021, Dachser has been responsible for transporting TKE's lifts and rails, primarily to the company's main markets in the US and Canada. First, the lifts travel from TKE's factory to Dachser's Waddinxveen branch and are stored in the warehouse. From there, the logistics provider can coordinate air freight via Amsterdam's Schiphol Airport and sea freight from Rotterdam, depending on the customer's order. For example, full container loads are regularly shipped to the US and Canada. In urgent cases, some of the systems are also sent as air freight.

Virtual reality helps with planning

In Spain, TKE's third-largest market, Dachser also looks after the lift manufacturer's entire B2B business, which as of this year has also included road transport.

"When we were considering Dachser, what mattered to us was the company's global network and the fact that it offers road, air, and sea transport," says Alexander Heinrich, who is responsible for global logistics at TKE. This fits in with the manufacturer's strategy: "We're expanding around the world and aim to be the global market leader with our products. Well-established logistics processes are part of this."

In addition to the global logistics network, TKE was impressed by Dachser's speed of delivery. "Many of our end customers come to the hospital after an emergency, and they then need our product as quickly as possible so that they can continue living at home," Heinrich explains. TKE's aim is to keep the time between a lift being ordered and installed to an absolute minimum—a requirement that Dachser is perfectly equipped to meet. "Our global presence and product diversity enable us to react flexibly and ensure that installation can take place on time, even at short notice," says Andreas Saleske, Department Head Product & Price Management and TKE's main contact at Dachser.

Smooth flow of information

Such flexibility can be achieved only when information and data are exchanged smoothly along the entire production and supply chain. Linking the manufacturer's and logistics provider's IT systems is fundamental to this. Dachser receives information from TKE about what's being produced and delivered and can provide the corresponding storage space. The shipments are compiled and dispatched on call. Once they've crossed the Atlantic, they're stored in the Dachser warehouse in Atlanta, from where they're distributed to local retailers.

"Our strategy is very much geared toward digitalization and automation in order to increase efficiency and reduce costs," Heinrich says. The two companies are currently working on linking their ERP and transportation management systems so that these can communicate with each other in real time. "Our goal is to have a fully electronic process from production through to the end customer," Heinrich explains. Dachser pursues a decidedly similar strategy in these areas, "which is why we fit together so well."

Both companies maintain an SME-like structure, which also makes them a good fit. "Our older customers in particular have more of a need to talk during delivery," says Heinrich with a

A stairlift packed on a pallet

> Our global presence and product diversity enable us to react flexibly and ensure that installation can take place on time, even at short notice.
>
> Andreas Saleske, Department Head Product & Price Management at Dachser

grin. Most of the retailers and installers are small and medium-sized as well, so they, too, are used to personal contact. For Saleske, this is nothing new and not a problem. “Despite all the digitalization, we at Dachser always make sure that we never neglect human interaction,” he says, describing the culture of the family-owned business. “Our customers have their own personal contact on-site rather than having to deal with anonymous call centers.” That’s something that Heinrich appreciates as well: “Of course things go wrong from time to time; when they do, it’s good to have someone on hand to take care of it.”

Profile

TK Elevator (TKE) is a global leader in vertical transportation and urban mobility. With over 50,000 employees worldwide serving TKE customers in more than 100 countries, the company achieved sales of around EUR 9 billion in the 2022/2023 financial year. **tkelevator.com**

Innovative packaging solutions

This direct contact also ensures the necessary flexibility, says Saleske. TKE offers a wide variety of products and is constantly developing them further, so Dachser always has to be ready to respond. For example, by developing a new type of packaging for shipping high-quality TKE products by air. Previously, the lift parts were strapped to a pallet for shipping and wrapped in film. This could occasionally lead to damage or lost parts during transportation and handling of the pallets. Together with TKE, Dachser developed a particularly sturdy type of cardboard packaging that, like the rails and stairlifts, can be highly customized. This innovation reduced damage and the cost of repairs to almost zero. Instead of wrapping the parts in a lot of disposable film to protect them, Dachser now uses recyclable cardboard boxes, which are cut to size so that no empty space remains inside. “This saves on space and freight costs, and improves sustainability in transportation,” Saleske says.

Here, the aim is to accommodate the different dimensions and numbers of parts in packaging with a standard size wherever possible. “Basically, we want standard packaging for highly individual pieces,” says Saleske. He sees no contradiction there: “Dachser is as diverse as its customers.” **A. Heintze**

Future lab

Both present and future

Artificial intelligence is already an integral part of many applications. Researchers and developers are now working hard to find better ways of getting more out of foundation models.

Is artificial intelligence (AI) a technology of the distant future? The answer is both yes and no. No, because AI applications have long since become a part of our everyday lives. Take facial recognition, which many people use to unlock their smartphones. Or translation services that are now highly adept at accurately rendering phrases and even entire documents in a host of other languages in a matter of seconds. Then there are chatbot systems like ChatGPT and Copilot, which provide today's school and university students with a whole new way of writing papers.

These are three examples of IT applications that are not based on traditional if-then programming. Instead, they use vast amounts of training data, advanced learning methods such as supervised or reinforcement learning, and algorithms that often employ highly complex neural networks. An AI algorithm will never produce "0" or "1" as a result. Instead, the AI always provides the probability of a mathematically calculated prediction being correct, and this will never be 100 percent. Assertions made by artificial intelligence are always at least a little off. And it's precisely this characteristic that requires results to be scrutinized—although this in no way negates the technology's vast potential. Indeed, AI is the only way to calculate practicable solutions for the most complex correlations. AI applications are rather like a smart colleague who has a lot of knowledge, but is occasionally mistaken.

AI has also arrived in logistics. More than six years ago, the team at the DACHSER Enterprise Lab at Fraunhofer IML began developing algorithms to forecast tonnage volumes for Dachser's groupage network 25 weeks in advance. They also came up with an image recognition solution to identify, locate, and measure packages in groupage warehouses in real time. For several years, the cornerstone of Dachser's AI implementation strategy has been to have its logistics specialists and process experts collaborate with mathematicians and software developers.

New, unexpected possibilities

Nevertheless, artificial intelligence can also still be considered a technology of the future. New models continue to open up unexpected possibilities. At the forefront here are the foundation models for generative AI, which use advanced algorithms, trained on masses of data culled from the internet, to understand and create texts and images. ChatGPT and other large language models (LLMs) in particular give the impression of possessing "intelligence." However, this is really just based on a mathematical function that predicts a coherent word order.

But there's no getting around the fact that these models produce impressive results, and we have only just begun to tap their vast potential. In the robotics industry, for example, experts are experimenting with foundation models as a means of communicating with and controlling autonomous vehicles. This would enhance robots' ability to perform complex tasks such as natural language processing, image and object recognition, and autonomous navigation. These models allow robots to learn from vast amounts of data and adapt to new environments and tasks, which in turn means they offer greater flexibility and a wider range of applications. And it won't be long before we see if the autonomous vehicles used in warehouses can be controlled more intuitively and efficiently. Intensive research is being carried out worldwide.

RAG: A better basis for AI-assisted research

Many developments in AI focus on retrieval-augmented generation (RAG), which promises to enhance the quality of the results produced by large foundation models. Essentially, RAG furnishes LLMs with higher-quality data and knowledge sources for the given use case. This prevents the LLM from fabricating results should it be unable to come up with a solution that has

AI is making its way into everyday business

a high probability of being correct. Such misbehavior in LLM tools is referred to as a "hallucination" and can often undermine users' trust in artificial intelligence.

Further research into artificial intelligence will yield a whole new range of potential applications. Companies like Dachser have to find the right mix between the use of standardized AI applications and in-house developments. AI models must be trained with specific internal company data, especially for special logistics processes and solutions. The general information available on the internet is not sufficient as a basis for training. At the same time, consideration must be given to the costs, especially of AI models that require considerable computing power, as well as to compliance with the EU's new legal framework for AI applications as laid out in the AI Act. Both industry and society are only just beginning to delve deeper into using artificial intelligence—a journey that will surely present its fair share of challenges.

Andre Kranke, Head of Corporate Research & Development bei Dachser

The "Future lab" feature presents findings from the Corporate Research & Development division, which works in close collaboration with various departments and branches, as well as the DACHSER Enterprise Lab at Fraunhofer IML and other research and technology partners.

Foundation models in AI

In the field of artificial intelligence (AI), a foundation model is a large, pretrained model based on vast datasets that is compatible with a wide range of applications. There are different types of foundation models, including large language models (LLMs) and visual processing models. LLMs such as GPT-4 from OpenAI, Gemini (formerly "Bard") and Bert from Google, and Llama3 from Meta specialize in understanding and generating natural language. Visual models such as Sora and DALL-E from OpenAI are designed to generate videos and images using free-form text input (prompts). As the name suggests, foundation models often serve as the basis for specialized applications, for which they are adapted to incorporate specific tasks or datasets.

Opportunities in logistics

Jan Herzig loves his job

Digital connector

As digitalization advances in day-to-day logistics operations, it makes life easier for logistics operatives and keeps goods flowing. Jan Herzig is helping to ensure that at Dachser, the clipboard is increasingly being replaced by the tablet.

When Jan Herzig began his career as a dual-track student at Dachser in September 2017, he was one of a handful of experts who were specifically concerned with digitalization in everyday logistics. Seven years later, as a team leader in the Shared Services department, his focus is on digital platform products. The 27-year-old is currently helping to shape groundbreaking changes in the daily work of almost 15,000 Dachser employees worldwide.

"The aim is to involve our employees in operations even more deeply in the digital exchange of information. This includes giving each of these logistics operatives access to digital content via a mobile device," Jan Herzig explains. His enthusiasm for the project is palpable.

Digital processes for all

The tablets are bringing digital communication and data exchange—already part of everyday life in commercial areas of the business through the use of Microsoft 365 applications and Teams—into the transit terminals, warehouses, and depots. "This is a major step, as it extends the direct digital connection to our colleagues here, too. As a result, effective digital communication is possible at any time, paving the way for manual processes to be replaced by digital ones—a real efficiency gain," Jan Herzig explains.

Jan Herzig cites the example of communication between logistics operatives and service employees: operatives would be able to forward information and if necessary take photos directly

Digitalization is making strides in everday logistics

with their tablet. And this, he points out, is only one aspect. Warehouse employees can also use the tablet to submit ideas for improving workflows directly into Dachser's Idea2net idea management system.

Jan Herzig often leaves his desk at the Head Office in Kempten to visit pilot sites in Germany and Europe. He aims to use this opportunity to get as many employees on board as possible. "The reaction is usually great enthusiasm," he says with a smile.

Added value in day-to-day business

"Lots of colleagues are delighted with the new approach and wouldn't want to give back the mobile devices and all their new possibilities," Jan Herzig says, continuing: "It's great when you can create added value like this for professionals in the transit terminal." The rollout of "Microsoft 365 meets Logistics Operatives" at Dachser's branches in Germany is set to begin in 2025. In the coming years, every Dachser logistics operative worldwide is to be integrated into the digital communication setup.

Jan Herzig sees the potential for improvement in this area as "almost limitless." Once introduced, the tablets can be used for a variety of applications. One of these is the Dachser Translate tool, which Jan Herzig's team is working to develop further. Others include digital integrations with the @ILO or Telematics applications.

Save paper, gain sustainability

The smapOne app kit offers at least as much potential for the digitalization of day-to-day work. With the help of "smaps," even users without any special programming knowledge can create small digital applications that make their work easier; for example, digital checklists that are checked off and signed electronically. "The general idea is to move away from the clipboard and toward digital solutions," Jan Herzig says. This approach also leads to more sustainability: so far, Dachser has saved more than 8.9 million pages of paper across various processes.

Jan Herzig's team is made up of five people in total, and he is happy to say that "we get along really well outside of work, too." This special team spirit has also played a role in establishing digitalization in everyday logistics. "The integration of digital platform products is more than a pioneering IT achievement. We're connecting the digital and analog futures—designed by people for people. It's all very exciting." **L. Becker**

At Dachser, IT is made for people

Teamwork magnifies innovative strength

Ideas that shape the future

In 2014, Dachser launched its strategic focus program, Idea2net. It is founded on the conviction that there was a great deal to be gained from involving all employees in the ideas and innovation process—gains for Dachser, its employees, and its customers. Over the past ten years, Idea2net has not only met expectations but has often greatly exceeded them, and yielded results that are transforming day-to-day logistics.

Innovations are like flashes of inspiration: they don't appear out of nowhere. Instead, they require fertile ground on which to develop and mature. It's a process that doesn't happen overnight and calls for patience and favorable growth conditions. In 2024, Dachser is celebrating ten years of its Idea2net strategic focus program—a decade full of innovation and advances.

What began as an initiative to structure innovation processes and to involve employees in idea generation in a more focused way has evolved into an integral part of Dachser's corporate strategy. "Courage to innovate is one of our core values—and innovation is the basis for our company's commercial success and long-term survival," says Dachser CEO Burkhard Eling.

This is where Idea2net comes in: as a holistic platform through which Dachser collects and structures ideas from throughout its network and develops them into tangible projects. "It's rarely stand-alone ideas that propel us forward. Rather, it's networking and the pooling and sharing of knowledge that give rise to innovation," says Chief Development Officer (CDO) Stefan Hohm.

On a course for a sustainable future

"Innovation calls for us to be courageous and agile, while focusing on providing our customers with added value," Eling says. That's why he feels it's important to think of innovation as a process that is driven by management but that is also firmly rooted in the bedrock of the company: the employees at the branches. "What impresses me time and again is the innovative spirit that resides within our Dachser family. The way our employees contribute their ideas makes it possible for us to find new, often surprising approaches that drive our company forward."

Award-winning innovation: Dachser is writing logistics history with @ILO

Dachser created the @ILO Idea2net project, a pioneering digital map of all packages, assets, and procedures in group-age logistics—a paradigm shift in how transit terminals are organized that is now catching on across Europe. In recognition of this innovation, Dachser and its research partner Fraunhofer IML received the prestigious German Logistics Award in 2023.

Innovations from practice, for practice

A key part of the success of Idea2net is ensuring that the ideas gathered from employees' day-to-day experience dovetail with the company's strategic goals. "The many suggestions and experience-based concepts that emerge locally at our branches are a valuable source of innovations—some even with global implications," Hohm says.

Dachser has set itself on a clear course. The general concept of Idea2net is not merely to gather ideas, but also to translate these into concrete projects wherever possible. Systematically bundling individual ideas into what are known as Idea2net clusters leads to the development of solutions that can actually be put into practice and add tangible value to the network. These include things like new digitalization tools as well as many minor process optimizations to increase efficiency.

Innovations straight from everyday practice

Moreover, Idea2net has proved to be a catalyst for the topic of sustainability. A global ideas campaign related to the DACHSER Climate Protection program yielded more than 2,000 ideas, of which over two-thirds have already been processed, further developed, or implemented. This is yet another illustration of how effective the network is. "The wealth of ideas emerging from the network is impressive. Bundling and then implementing this multitude of innovative approaches is a key element of our success," Hohm says.

Progress in day-to-day logistics

All this has a big effect on day-to-day logistics operations. As part of the Idea2net Digital Documents project, for instance, 4,734 document folders were digitalized and 712 clipboard processes eliminated. Thanks to the Telematics project, Dachser has 8,500 swap bodies equipped with internet-of-things devices, which makes it possible to track the majority of long-distance transports in real time and estimate their time of arrival.

Through the City Distribution project, Dachser has brought emission-free delivery to 16 European city centers to date, and a further eight are expected to be added by the end of 2025. DACHSER Emission-Free Delivery won an award in the German Federal Competition for Sustainable Urban Logistics.

"We're excited to see where else Idea2net will lead us," Eling says. "One thing is clear: we've set a course for innovation—and Dachser is determined to stay on it."

M. Schick


DACHSER
Intelligent Logistics
h2truck

Out and about in Magdeburg's Port of Science

H_2 pioneer in practice

At its Magdeburg branch, Dachser has been using a heavy-duty truck with hydrogen fuel-cell technology for more than a year and a half. With zero local emissions, the truck proves its suitability for regular use in short- and long-distance transport every day in two-shift operation.

There's not much room at gate 11. An articulated truck is parked on the left, a swap body on the right. However, precise reverse maneuvering with a three-axle vehicle is no problem for Stefan Heinze. It's all part of the everyday routine in a logistics facility. The 43-year-old professional driver has already done this countless times—just like all his colleagues, who drive their (articulated) trucks in and out of the transit terminal at Dachser's Magdeburg logistics center all day, often one a minute. But something here's different from the usual maneuvering at the facility on Wörmlitzer Street: Heinze's truck is making virtually no noise; the only thing to be heard while it reverses is the warning beep.

Weighing in at 27 metric tons, the truck-trailer combo looks like an ordinary Dachser vehicle with its dark blue cab and yellow-and-blue box trailer. However, a sticker on the side highlights a crucial difference: it bears the words "h2truck," framed by the logos of the funding and development partners. The "H" stands for hydrogen, which comes from the Greek "hydro" + "genes," meaning "water forming."

Heinze is one of three drivers of the Hyundai XCIENT Fuel Cell: the first volume-produced heavy-duty truck with a hydrogen fuel-cell powertrain, which Dachser has integrated into regular operations here in the heart of the German state of Saxony-Anhalt. During the day, the truck covers more than 180 kilometers on distribution duty; at night, with a food logistics unit on the trailer forming a 42-metric-ton combination to make the round trip between Magdeburg and Berlin-Schönefeld, it drives 290 kilometers per shift. →

> We see potential in hydrogen fuel-cell technology. Being able to put it through its paces in day-to-day logistics is an important step for us.
>
> Alexander Tonn, COO Road Logistics at Dachser

Great potential for carbon savings

The "Big Guy," as the drivers affectionately call the hydrogen truck, is actually an electric vehicle that draws its power from two fuel cells. Using an electrochemical reaction of hydrogen and oxygen, these cells generate the electricity to power a 350 kilowatt (approx. 480 hp) electric motor.

"As part of our climate protection strategy, we're deeply interested in exploring alternative powertrains and fuels. We want to actively support their development," says Alexander Tonn, Chief Operating Officer (COO) Road Logistics at Dachser. "We see potential in hydrogen fuel-cell technology. Being able to put it through its paces in day-to-day logistics is an important step for us."

The opportunity arose last year when a public hydrogen filling station went into operation in the immediate vicinity of Dachser's Magdeburg logistics center near the A2 highway. Christian Schäckel, head of the branch, saw this as an opportunity: "That's a great fit for Dachser's sustainability strategy," he thought to himself, and immediately began exploring the possibility of a field test with fleet manager Jens Horstmann. At almost the same time, Hyundai launched the XCIENT Fuel Cell, the first heavy-duty truck to feature hydrogen fuel-cell technology. Dachser took this opportunity to launch its own field trial over a period of eight years. It joined forces with H2 Green Power & Logistics GmbH and the truck rental company H2 Delivery Truck Pool GmbH & Co KG. The official launch date was May 2, 2023.

Hydrogen refueling made easy

A smarter way to drive and refuel

"It's an adjustment at first," Heinze says. "Driving a hydrogen truck requires a different approach than driving a diesel one. It transmits power much more directly, with lots of torque from the electric motor, so you have to be gentle when accelerating to prevent the wheels from spinning when you start off. And then, of course, you have to keep an eye on the hydrogen tank, on where the next filling station is, and even on whether it offers hydrogen at 350 or 700 bar, since that hasn't been standardized yet. Getting stranded out on the road with an empty tank would be terrible. After all, hydrogen doesn't come in jerry cans."

While Europe's charging infrastructure for battery-electric trucks definitely needs to be greatly expanded, the supply network for green hydrogen is barely out of the starting gates. There are currently hardly any filling stations for trucks and very little "green" hydrogen available. According to the online database H2stations.org, there were 265 hydrogen filling stations in Europe at the end of 2023; of these, roughly 40 percent can serve both cars and trucks. This also means that hydrogen powertrains aren't yet economically viable, especially as the purchase costs are significantly higher even than those of battery-electric vehicles. To hold the door open for the hydrogen pathway, in keeping with its climate protection strategy, Dachser is financing the H_2 pilot vehicle in Magdeburg as part of its research and innovation activities.

But for now, venturing too far from the few isolated hydrogen filling stations that are already operational isn't an option. "For our field test, we chose routes that were adequately supplied," explains fleet manager Horstmann. "The hydrogen filling stations in Magdeburg and Berlin-Schönefeld ensure we can continue ongoing shift operations. But of course, if the filling stations ever face supply bottlenecks, we're in trouble, too. Fortunately, that only happens very rarely."

Heinze drives up to the hydrogen filling station before heading out to customers. No need to wait in line here. Behind the driver's cab, the truck carries a line of seven hydrogen tanks, which need to be refilled with gaseous hydrogen at a pressure of 350 bar. Since hydrogen-powered cars refuel at 700 bar, there's no overlap at the filling station. "It's as simple and straightforward as a normal diesel fuel pump," Heinze says, as he connects the fuel nozzle to the tank coupling. "The seven pressure tanks are usually filled in around 20 minutes, but it

Stefan Heinze always has to answer a lot of questions on his route

takes a little longer at very low temperatures." The hydrogen truck holds 31 kilograms of hydrogen gas, and consumes on average around 7 kilograms of gas per 100 kilometers; 1 kilogram of hydrogen costs EUR 10-15.

Many questions – many surprising answers

On his tour, Heinze repeatedly has to answer customers' questions about his unusual truck: What's it like to drive the truck? Is it dangerous? Why is Dachser involved in this area? Heinze is happy to explain the vehicle and its concept: "No, it's no more dangerous than any other truck. In the event of a crash, the hydrogen is simply vented through predetermined breaking points. The tanks contain gas, not liquid, and instead of exhaust fumes, the truck emits distilled water. Overall, driving is much quieter, more relaxed, and there's less vibration; all in all, ideal for urban low-emission zones. This could really be a good way toward an emission-free future."

"Stefan, René, and Dirk, our three hydrogen truck drivers, are passionate about the new technology. They want to play a pioneering role in the future of sustainable transportation, and they're wholeheartedly enthusiastic about the experience of driving in a completely new way," Horstmann says. But he also knows that many other drivers are still skeptical about the new technology. "There's always a great deal of respect for the unknown," he says. "To convince people, you need positive experiences directly from everyday driving. Theory alone isn't enough."

And so the hydrogen truck field test is a holistic undertaking for Horstmann and his team: "Now the technology has to prove itself in practice, yes, but at the same time, we're also critically examining it in terms of its acceptance by drivers and customers." An organic juice producer from Dachser's customer base in Magdeburg immediately took a liking to the climate-friendly transport technology. "We were asked to deliver materials for the company's festivals exclusively with the new truck," Horstmann says. "There were pictures and videos on Instagram and TikTok straight away."

M. Schick

By pursuing a long-term climate protection strategy and focusing on efficiency, innovation, and inclusive responsibility, Dachser is paving the way for sustainable logistics together with its customers and partners. The company began deploying battery-electric vehicles in 2018; for example, as part of its sustainable DACHSER Emission-Free Delivery concept for downtown areas. Dachser is also steadily expanding its fleet of vehicles with alternative powertrain systems, especially in the long-distance segment.

Network expertise

The container port in Rotterdam is a gateway to the world—and into Europe

New **export gateway** for sea freight

With its new container freight station (CFS) in Waddinxveen near Rotterdam, Dachser has set up a central location for export shipments in the LCL (less than container load) sector.

In its own contract logistics warehouse, Dachser consolidates the groupage shipments of its customers from the Netherlands, Belgium, large parts of France and Germany, Switzerland, and, in some cases, Austria and Eastern Europe. These are then sent as sea freight from the port of Rotterdam. In this crucial part of the supply chain, such a combination of an export gateway with consolidation processes at its own facility creates comprehensive process control as well as optimum flexibility and planning capability, with no need for third parties. As one of the largest seaports in the world, the port of Rotterdam is closely linked to all major international trading centers, offers regular connections to Asia as well as North and South America, and enables attractive ship transit times. “Thanks to the close link between the location in Waddinxveen and our integrated European groupage network, we have the opportunity to set up central LCL consolidation there. We ship the pooled LCL shipments to destinations worldwide on high-frequency connections from the port of Rotterdam,” says Christian Kurse, Head of Global Ocean Freight LCL at Dachser.

Training for a better future

Welcome to Dachser

Dachser continues to rely on in-house training, so that it can later fill demanding positions from its own ranks. At the start of Germany's training cycle, a total of 616 new apprentices have set out on their careers in 13 different industrial and commercial professions at Dachser's German locations, while 22 young people took up a dual work-study program. Worldwide, roughly 2,400 young people are either training or studying at Dachser, which equates to an international training rate of 7 percent.

This is what the logistics center will look like

Logistics center for Ingolstadt

Dachser has broken ground on a new logistics center in Ingolstadt. The goal is to open a new site for the transport and storage of industrial and consumer goods in June 2025. Offering 6,500 m^2 of space, the new transit terminal will have 76 loading gates, while a new 6,770 m^2 warehouse will have room for 17,000 pallets. Around 90 new jobs will be created in the medium term.

Strengthening distribution in Dortmund

Dachser is expanding its network in one of central Germany's major economic regions: it will open a new logistics facility in the Unna-Ost industrial park near Dortmund in 2025. Strategically located at the A1/A2 highway junction, the site will host a 10,800 m^2 warehouse with up to 22,000 pallet spaces, an administration building, and a transit terminal with a direct connection to the Dachser network.

Zero emissions in major European cities

The next emission-free cities

Dachser continues to expand its network of emission-free delivery zones in major European cities. The "DACHSER Emission-Free Delivery" concept is to be rolled out in 24 cities by 2025. The latest additions are Cologne, Vienna, and Stockholm. This concept is based on using only battery-electric vehicles in defined inner-city areas for all deliveries of non-refrigerated goods. The vehicles run exclusively on electricity from renewable sources.

Smarter driving with data

Dachser is implementing a new solution for economical driving. As a first step, around 200 vehicles in the company's own fleet in Germany will be equipped with modern connectivity devices built by ZF Friedrichshafen by the end of 2024. These devices enable drivers to optimize their driving style based on data, essentially making their driving more economical and hence more environmentally friendly. In addition, Dachser driver trainers will be training the company's own drivers and, in the medium term, those of its service partners to drive as efficiently as possible.

Chemical logistics on the move

One of the world's largest economic sectors, the chemical industry has high export rates—and very high energy requirements. A scientific study has now examined the impact of the current extensive transformation, and the switch to renewables in particular, on chemical logistics in Germany, a major chemical industry location. Below, we present the initial insights and outlook from the study authors Prof. Christian Kille and Dr. Andreas Backhaus.

Chemical logistics connects people and markets

We live in transformative times. This applies in particular to key German industries such as the chemical industry. The sweeping dynamics of change associated with this also have an impact on logistics and its processes. A study entitled "Chemical logistics on the move: Scenarios and outlook for Germany" describes the status quo in chemical logistics regarding the global flow of goods, using the country as a specific example. It develops concrete scenarios for the various developments and outlines the expected effects on the future organization of supply chains. Based on these findings, the study team drew up six recommendations for actions chemical logistics can take. Action along these lines can help ensure Germany's continued success in international competition as a chemical industry location and simultaneously produce positive long-term effects for the global target markets.

The work was carried out in several steps in order to develop the results in as nuanced and analytical a way as necessary, while at the same time keeping them as practical and plausible as possible.

Analysis of the chemical industry using Germany as an example

First, the authors describe the status quo in the chemical industry. With knowledge of the sector's production and logistics locations as well as of the flow of goods, it's possible to show the expected changes in concrete terms.

Revenue of around EUR 200 billion, almost 4,000 companies, over 350,000 employees, and logistics costs of some EUR 10 billion: the chemical industry is a key sector of the German economy. It operates production sites throughout the country and is an important supplier for every industry. Its logistics locations are concentrated in the west of Germany (in the state of North Rhine-Westphalia) and the "chemical triangle" of Baden-Württemberg, Rhineland-Palatinate, and Hesse. The most important transport corridor for bulk products and bulk cargo stretches from the southeast to the northwest and the multipurpose seaports in Antwerp (Belgium), Rotterdam (Netherlands), and Amsterdam (Netherlands). Packaged goods, in contrast, are distributed more broadly and don't have a similarly clear-cut corridor.

Next, the study looked at overarching trends and drivers that are relevant for the economy in general and the chemical industry in particular. These offer the opportunity to assess the different directions of development. Because the chemical industry accounts for such a large share of imports and exports, global changes—especially the current geopolitical upheavals—are of particular importance. These have led not only to high energy costs, but also to increasing protectionism in major partner countries. Upcoming political decisions (in the form of elections) in many relevant countries present another challenge, as these could significantly change the situation. This uncertainty on the macroeconomic side, especially the resulting high energy costs and the current weakness of the German economy as a whole, doesn't make it easy to reach decisions about necessary investments in digitalization, new logistics solutions, and climate action.

Development of a realistic scenario

Against this complex backdrop, the study sets out theses on the impact of trends and drivers on the chemical industry and chemical logistics. These theses also served as input for a survey of the specialist public, which was conducted in collaboration with the German trade journal CHEManager. In this way, they helped to keep the complexity manageable and make further interpretations more practical. Steps were taken to distinguish the effects of social, technological, economic, ecological, and political changes.

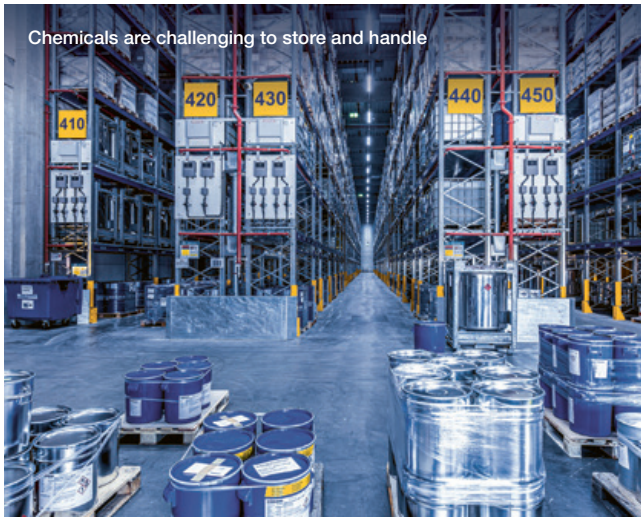
In the next step, the study team developed a realistic scenario from these findings that they then analyzed to see how it will tend to change the chemical industry and chemical logistics in particular. Here are their results:

Social: Despite intensive efforts to improve their reputation in society, companies in the chemical industry and chemical logistics are not managing to position themselves sufficiently as attractive employers. As a result, they will not only feel the effects of the general lack of qualified personnel, but will also face greater challenges in their transformation.

Technological: Infrastructure challenges are becoming bigger and more urgent. However, public institutions as well as companies in the chemical industry and chemical logistics can increase their efficiency, and thus their competitiveness, thanks to increased investment and sophisticated digitalization and automation solutions.

Economic: Numerous chemical companies will continue to report falling revenue and closures of production sites, while others will experience growth. The expected developments will be challenging for chemical logistics companies that focus on bulk products and bulk cargo. In contrast, volumes of packaged goods and related additional services will grow. →

The study "Chemical logistics on the move: Scenarios and outlook for Germany" was produced with the support of DACHSER Chem Logistics and the trade journal CHEManager in collaboration with logistics experts Christian Kille, Professor of Retail Logistics and Operations Management at the Technical University of Applied Sciences Würzburg-Schweinfurt, and Dr. Andreas Backhaus, former Senior Vice President Supply Chain Strategy & Performance at BASF. If you'd like to read more about the study, please contact DACHSER Chem Logistics: chemlogistics@dachser.com



Chemicals are challenging to store and handle

Ecological: The climate-related influences on the chemical industry in general are manageable, even if they are accompanied by cost increases. Nevertheless, the chemical industry and chemical logistics will undergo a reorganization in the long term, as not all companies will succeed in the transformation.

Political: On the path toward resolving the (trade) conflicts, reducing today's high energy costs, and achieving climate neutrality, there are many challenges on the political front. While this burden will be manageable for some companies, for others it will lead to unacceptable cost increases.

Analysis and recommendations for action

Overall, this scenario means that some logistics locations, particularly in the south and west of Germany, should expect negative developments. Locations in the east and north will tend to have better access to renewable energy and therefore face fewer challenges. The locations with specialty chemicals will probably find it somewhat easier to handle the changes. This not only shifts the focus of logistics locations to the east, but also alters the flow of goods.

Based on all this, the study identifies recommendations for ways chemical companies can organize their logistics so that they can continue to compete successfully on the international stage despite the challenges.

1. Logistics can (still) be successful only through people: Investing in the recruitment and retention of personnel secures the existing business and promises long-term competitive advantages.

2. Innovations mean advantages for locations: In addition to participating in research into logistics innovations, measures to modernize logistics are needed to ensure a good position in international competition.

3. Germany as a location for the chemical industry can succeed only with high-quality, diversified portfolios: Investments in automation and digitalization are crucial in logistics in order to increase the resilience and thus the performance of the chemical industry.

4. A transformation will take place in the chemical business: The changes in the chemicals market require the reassessment and adaptation of logistics networks and services.

5. The effects of climate change and the energy transition are leading to changes of strategic direction in the chemical industry: Logistics must prepare for restrictive measures in the course of the energy transition and implement processes that are resistant to the effects of climate change.

6. Chemical companies have to find their way in a multilateral world with increasing tensions: The trend toward regionalization is driving a reduction in overseas exports due to growing competition. The remaining global supply chains must be operated more robustly with comprehensive cooperation, new approaches, and modern technologies.

In sum, chemical logistics is and will remain a central pillar for a successful chemical industry—in Germany and around the world. **Prof. Christian Kille and Dr. Andreas Backhaus**

Profile

Prof. Christian Kille works at the Institute of Applied Logistics Solutions (IAL) at the Technical University of Applied Sciences Würzburg-Schweinfurt.

Dr. Andreas Backhaus was Head of Logistics for BASF's European sites until 2019 and was responsible for the BASF Group's supply chain strategy. Since his retirement, he has worked as a freelance lecturer and consultant.


From left: Prof. Christian Kille and Dr. Andreas Backhaus

Milestones in education and climate action

In 2025, it'll be 20 years since Dachser and the children's aid organization Terre des Hommes joined forces to campaign for children's and women's rights, education, training, entrepreneurship, and environmental protection. What began in India and Nepal has now spread to South America, Southern Africa, and Ukraine. The focus is on supporting local grassroots projects—helping people help themselves. In 2024, both partners further expanded their efforts to support climate action projects worldwide in collaboration with nonprofit organization myclimate.

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