Issue 4/2021

DACHSER magazine

THE WORLD OF INTELLIGENT LOGISTICS

Machine learning

Support from the data cosmos

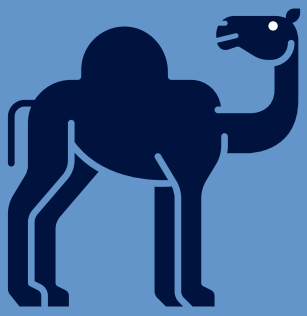
Automotive
All from a single source

Quality
Safely packed for transport

Less is more

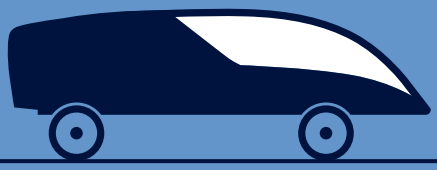
When resources are scarce, economizing is the order of the day. A skill that always relies on being efficient and proactive.

0.01 % is the efficiency of a candle's conversion of energy into light. In contrast, modern LEDs convert 40 to 50 percent of the energy consumed into visible light: one watt can generate up to 170 lumens of brightness.

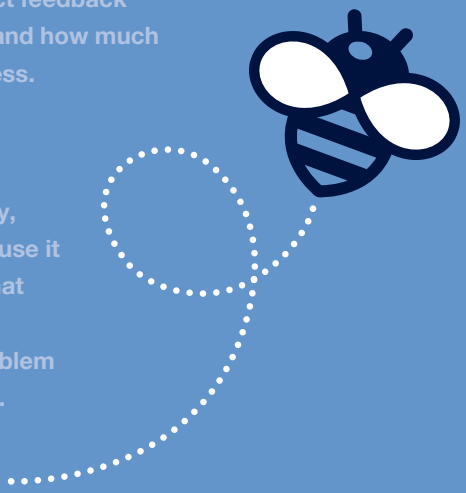


40 days is how long the average camel can go without food because it stores fat, not water, in its hump. If the camel manages this energy supply well, it can hold out even longer. In addition, camels are walking water tanks: they can slurp up over 100 liters in fifteen minutes and store it in their three stomachs.

17,000 km is how far the experimental Eximus IV electric rail vehicle could theoretically travel on the equivalent of just one liter of gasoline. Efficiency-obsessed experts at Sweden's Dalarna University cut their vehicle's energy consumption to 0.517 Wh per person per kilometer on a 3.36 km competition track: a world record.



0 liters of water or foam is how much firefighters need to put out fires of all kinds—at least, when in training. A virtual fire extinguishing system invented at the University of Kassel in Germany is designed to help train volunteer and professional firefighters. In the firefighting simulation, the trainees and their instructors receive direct feedback on how quickly the fire was extinguished and how much extinguishing agent was used in the process.



1,000 is the number of blossoms a bumblebee visits in a single day, collecting twelve times more pollen than a honeybee—because it calculates the shortest route to the sources in advance. How it manages to do that has always been a secret. Until now: researchers tracking bumblebee flight have discovered that these insects actually solve the logistical traveling salesman problem (TSP) to find the most efficient path between docking points—entirely by instinct. A modern computer would take much longer to do this. The bumblebee is believed to be the only animal with this mathematical ability.

MESSAGE FROM THE CEO

Dear readers,

Logistics is taking a new tack. One prominent reason for this change in course is the rapidly advancing digitalization of the industry. Others include the pandemic, which spurred or accelerated changes in supply chains; the lack of qualified personnel; and climate change and its far-reaching effects.

What does all this mean for Dachser? We will continue to rely on our efficiency, innovation, and inclusive responsibility, but at the same time, we need to become more agile to better respond to the increased complexity and speed of change in the current market. Climate protection is an excellent example of this: our initiatives aim to deliver efficient logistics processes, energy savings, and technological innovation in a bid to reduce greenhouse gases in line with the targets set by the Paris Agreement.

As of January 1, 2022, Dachser will be purchasing only electricity generated from renewable resources, thus increasing its proportion of green power from some 60 percent to 100 percent worldwide. In addition, we are expanding our in-house capacity for generating power from renewables. The first step here is to expand the photovoltaic systems on the roofs of our logistics facilities in Europe. By 2025, we will have quadrupled our current capacity. In this we are following a principle often ascribed to Mahatma Gandhi: “Be the change you want to see in this world.”

Kind regards,
Burkhard Eling, CEO Dachser

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CROSSDOCKING

New management for Dachser Peru

Olivier Le Hen is the new Managing Director of Dachser Peru. As a highly experienced practitioner with a 30-year career in logistics, business, and sales development, his stated goal is to further drive the company's growth in the region.

https://bit.ly/Dachser-Peru-appoints-Olivier-Le-Hen

Sustainability: A new take on truck transports

In the future, there will be no getting around zero-emission truck transport. Andre Kranke, Department Head Trends & Technology Research, Corporate Research & Development at Dachser, explains how to achieve this. The key is the Climate Protection innovation project.

https://bit.ly/Dachser-sustainable-logistics

Data in safe hands

Cyberattacks on companies are growing more frequent. At Dachser, cybersecurity plays a key role in the company's appropriate handling of customer data. To this end, the logistics provider has had its Corporate IT certified to ISO/IEC 27001.

https://bit.ly/Information-security-at-Dachser

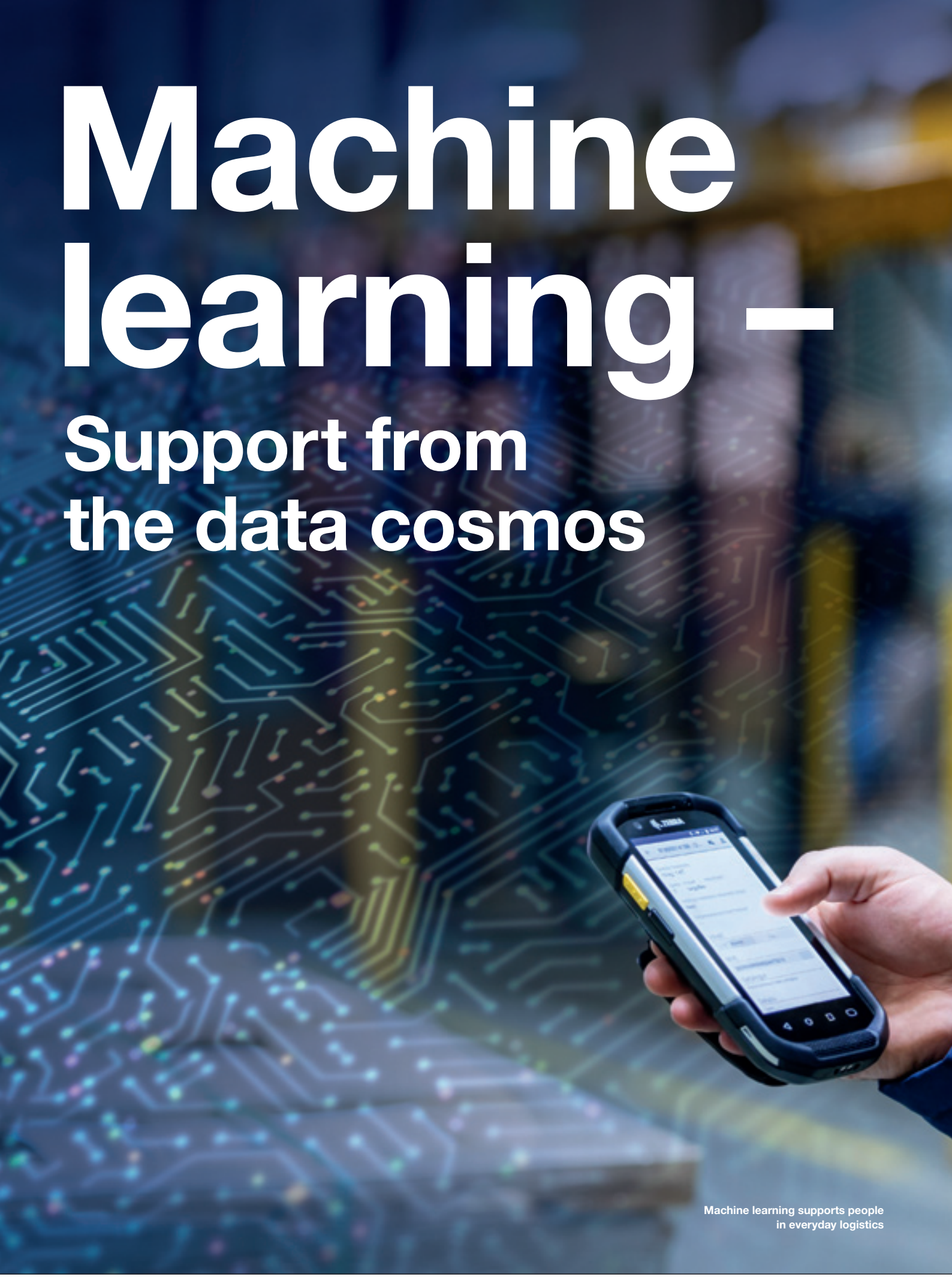
Relationship status: It's complicated

Tough times for supply chains between the UK and Europe: How COVID-19, Brexit, and global trade disruptions are impacting logistics opportunities for and with the UK. Read up on the current situation.

https://bit.ly/Supply-chains-challenging-times

Machine learning –

Support from the data cosmos



Machine learning supports people in everyday logistics

Digitalization makes work in logistics easier and more efficient. Goods and data streams flow together, creating quality and transparency across all process steps. Dachser can apply machine learning to analyze and use data from day-to-day operations, opening up new horizons for intelligent logistics solutions that add value.

IT helps keep deliveries running smoothly

"Data is the oil of the 21st century." The British mathematician and data scientist Clive Humby is said to have first made this analogy back in 2006 when developing a loyalty card. At the time, it was a visionary claim. Today, Humby's vision has long since become an everyday reality, and even politicians pick up on the image again and again when they call for progress. And with good reason: every aspect of our lives is embedded in an ever-growing stream of data that is swelling exponentially. This data stream is just as much a part of our reality as a quick glance at the smartphone, chats with friends and family, or video conferences in day-to-day business.

Data has become a decisive economic factor, and the "Big Five" tech companies—Google, Apple, Facebook, Amazon, and Microsoft—are the Rockefellers and oil sheikhs of the 21st century. They have long since overtaken the oil supermajors as the most valuable companies in the world.

Some observers are uneasy about this expansion of data dominance; they paint gloomy pictures of companies scooping up our data and the rapid decline of data protection and personal rights. But the benefits ultimately outweigh the reservations as life becomes easier and less complicated, whether in online interactions across national and cultural borders or in the real-time availability of news and knowledge content, music and literature, and up-to-the-minute navigation tools for avoiding traffic and congestion.

Boosting efficiency with data analysis

In the manufacturing and service sectors, data drives significant efficiency gains. For instance, data analysis makes it possible to better monitor operational processes, detect and eliminate errors and inefficiencies at an early stage, and continuously optimize procedures. In logistics, data and data analysis have long been an integral part of the management of goods and supply chains. They are the basis for reliable logistics processes designed for maximum transparency, be it in putting together loads, planning transport routes, combining different means of transport, or tracking shipments—in short, management of the entire network.

Dachser and its global networks have already "learned" all of this. As early as the mid-1980s, the logistics company developed Domino, the cornerstone of its concept for processing freight-forwarding data. The software covers all processes related to the transport of goods—not just outbound and inbound in the transit terminal, or import and export, but also order administration, transport scheduling, billing, and above all, shipment information:

“The importance of artificial intelligence, machine learning, and data science for transportation, logistics, and supply chain management will continue to grow in the coming years.”

Stefan Hohm, Chief Development Officer at Dachser

tracking and tracing. Today, in addition to Domino, Dachser has two other deeply integrated systems: Mikado (warehouse) and Othello (air and sea freight), both of which it continuously expands. The B2B Gateway serves as the central communication platform for all of them. Meanwhile, Dachser customers can manage orders online using the eLogistics portal. Added to this is the ActiveReport supply chain event management tool, which sounds the alarm when discrepancies arise in the shipment process. In short: Dachser and its customers are at home in the world of data and make use of it for fulfillment every day.

You can’t go it alone

To fully tap the benefits of digitalization and further advance network maturity, Dachser is cultivating an even deeper fusion of IT and logistics. “Here we need freight forwarding experts and logistics practitioners just as much as statisticians, mathematicians, and computer scientists. You can’t get there on your own—the only way to develop intelligent algorithms for logistics is by teaming up with others,” notes Stefan Hohm, Chief Development Officer (CDO) at Dachser. He explains that this is an ongoing process that not only reflects technological development, but also helps drive it.

Since the beginning of June 2021, Dachser has pooled the expertise it has gained in various research and innovation projects in its new in-house competence center for data science and machine learning.

“The importance of artificial intelligence, machine learning, and data science for transportation, logistics, and supply chain management will continue to grow in the coming years. That makes it crucial for Dachser to further strengthen its expertise in this important field and to expand its ability to implement and operate machine learning applications,” Hohm says.

The background for this pooling of expertise arises from everyday logistics operations. Dachser produces large volumes of data on a daily basis, and this forms a foundation for the development and use of the new AI technologies. “We will make even better use of this data in the future and provide our employees with an even better basis for decision-making,” says Florian Zizler, Team Leader Data Science & Machine Learning.

Mention “artificial intelligence,” however, and what comes to mind isn’t always positive. People think of uncontrollable “big data” machines with a life of their own, of robots replacing humans and eventually making them completely superfluous in the world of work. It helps to first clarify some terms.

Doomed to constant learning

British logician, mathematician, cryptanalyst, and computer scientist Alan Turing (1912–1954), one of the masterminds of modern information and computer technology, made a pragmatic proposal for narrowing down the very broad field of AI: a machine is intelligent if it cannot be determined whether you are communicating with a person or a computer. And Irish dramatist George Bernard Shaw (1856–1950) observed that the disadvantage of intelligence is that you are continuously forced to learn.

In artificial intelligence, it’s the algorithms that do the learning (for those non-mathematicians out there, an algorithm is a sequence of instructions and computational operations within a software program that can be used to solve certain problems). And this is exactly where machine learning comes in as a subdiscipline of AI. By looking at examples, the AI system learns to recognize patterns and regularities in processes and contexts in order to master unknown situations.

Dachser recently developed concrete machine-learning applications as part of the DACHSER Enterprise Lab together with scientists from the Fraunhofer IML institute in Dortmund, Germany. One such application is PAnDA One: Predictive Analytics DACHSER, where “One” denotes that it is the company’s first machine learning project.

The PAnDA One model was specifically designed to forecast inbound volumes for a Road Logistics branch. →

Connectivity reaches into the truck

Step by step, digitalization is supplanting manual data acquisition

“Even the best computer scientist and mathematician can’t write a successful logistics software program single-handedly. And conversely, even the best freight forwarders aren’t able to get a machine learning tool up and running on their own.”

Florian Zizler, Team Leader Data Science & Machine Learning

“Our goal is to provide employees in our branches with valuable support on decisions they need to make regarding seasonal capacity planning,” explains Thomas Schmalz, Head of Production Management at Dachser. That makes it possible to obtain appropriate load capacity on the market at an early stage, or to plan resources in the transit terminal. “To that end, the forecasting model provides appropriate inbound volumes up to 25 weeks in advance.”

Machine learning is not an end in itself, Schmalz emphasizes: “We want to give our branches a tool that ultimately makes their work easier, more efficient, and also more attractive.” Dachser’s goal is not to replace people with calculations and computing. “We view IT, technology, the network, and people as a single unit: a cyber-socio-physical system. This is how we move our customers—and ourselves—forward.”

Data quality is everything

The success of machine learning depends on the quality of the input data. “The data itself is more important than the algorithm,” Schmalz says. “We have a unique pool that receives consistent data in assured and standardized quality.” Dachser has an advantage here because of its uniform system landscape in European Logistics and Air & Sea Logistics and because of its network maturity, which has grown over decades. “There aren’t too many in logistics who can offer that.”

Having good data is one thing, but interpreting and using it is another. “Machine learning is a team effort. Successful models are possible only when process experts work hand in hand with the experts from the Data Science & Machine Learning Competence Center. We need each other,” Zizler says.

Dachser’s competence center for data science and machine learning connects the worlds of logistics and IT. “We’re creating a space where a wide variety of stakeholders can come together and contribute their subject matter expertise. The exchange is immediate and direct. Ultimately, it’s about using data to model concrete processes,” Zizler says. “It’s a great experience for everyone to approach highly specific tasks in an interdisciplinary exchange and to develop helpful solutions for everyday logistics from them.”

For PAnDA One, the Dachser experts in the competence center worked with the different departments to comprehensively analyze processes and identify criteria for reliable forecasts. “Our data goes back as far as 2011. The focus is on historical shipment data,” Zizler says. “We supplement this data pool with calendar data, such as public holidays or school vacations. This enables the model to recognize the seasonal patterns that are so important in overland transport. To better anticipate trends, we’ve also integrated a wide variety of economic indices.”

However, the predictability of future requirements and customer needs still reaches its limits when conditions change due to major unforeseen events. “Of course, it was a challenge for forecasts to cope with volatile volume fluctuations as well as the coronavirus pandemic,” Zizler says. But he and his team of experts remain optimistic: “We’ll soon get our forecasting back to its usual high quality.”

Another specific use case is the B2X Labeling project. The job of the algorithm is to improve data quality and solve a classification problem from everyday operations, namely, determining whether the recipient is a company (B2B) or a private individual (B2C). Based on the order data alone, this distinction is not always clear. For logistics processes, however, it makes a considerable difference whether the receiver is a company or a private household.

In machine learning, there is a fundamental distinction between a training phase and an application phase. During training, the algorithm is shown sample data to learn how the input is transformed into the output. Input data for the B2X project focuses on order data such as geographical data. In the subsequent application phase, the trained model uses the learned correlations to generate an output (B2B or B2C) under real operating conditions based on new information. This project plays a vital role in quality assurance by not only increasing data quality, but also further optimizing processes in logistics handling.

The competence center continuously evaluates new ideas and potential use cases. One of these is in process optimization and the improvement of ergonomic working conditions for logistics operatives in cargo handling. Here, machine learning experts are testing a new process for boosting process quality together with the start-up MotionMiners at five locations (we reported on this in DACHSER magazine 2/2021).

The range of applications for machine learning is broad. In the course of exploring them, a robust and dynamic open source ecosystem has developed in recent years. “Machine learning will increasingly shape Dachser’s diverse process landscape. Thanks to the availability of open source applications, we no longer have to develop everything ourselves. Skillful use of these algorithms will let us tap our data potential even more effectively,” Zizler says. This is one of the reasons why Dachser is a founding member of the Open Logistics Foundation (more on this on page 30). This is, then, another difference from the oil of past centuries: data doesn’t run out. Quite the opposite, in fact! An excellent foundation for the future. **M. Schick**

Deep learning is a subfield of machine learning that uses algorithms inspired by the structure and function of the brain. Such “artificial neural networks” repeatedly link what has been learned with new content and are capable of learning on their own. Unlike machine learning, humans no longer intervene in the actual learning process; the analysis is left to the machine.

The universe in a lab

From the Big Bang to the present day, matter in large planets, stars, and stellar explosions has been subjected to extreme conditions, such as high temperatures, pressures, or densities. To create precisely these conditions in the laboratory, scientists need to accelerate ions (electrically charged atoms or molecules) to up to 99 percent of the speed of light. To this end, the new international accelerator facility FAIR is being built at the GSI Helmholtzzentrum für Schwerionenforschung in Darmstadt, Germany. It is one of the largest research projects worldwide, with an investment volume of more than EUR 3 billion. When the facility is finished in 2027, scientists will shoot particles at small samples of matter in a 1,100-meter-long underground tunnel using superconducting magnets cooled to -269°C with liquid helium in an ultrahigh vacuum. Cosmic matter, which otherwise occurs only out in space, is then created for a brief moment at the tiny point of impact. The more than 3,000 researchers involved in FAIR hope to gain fundamental insights into the structure of matter and the evolution of the universe, and to then apply these in developing ideas for completely new applications in medicine and technology.

I hate Mondays

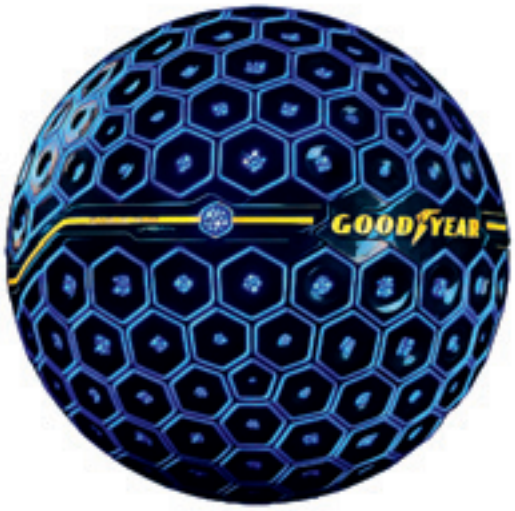
Mondays have a bad reputation. The weekend is barely over and the next one couldn't be farther away. But what's really behind the "Monday blues"? Industrial psychologists at the University of Leipzig have investigated this question in a new study. The good news is that people's feeling of well-being is no worse on Mondays than it is on Tuesdays, Wednesdays, or Thursdays. Exhaustion and vitality, the researchers found, fluctuate over the course of the week, but ultimately tend to remain constant rather than increasing linearly. As expected, the mood lifts toward the weekend and the vitality curve generally rises: TGIF—Thank God It's Friday.

Elasticity at the touch of a button

Materials are getting smart, thanks to macromolecular chemistry. Researchers from Mainz, Germany have now developed a stiff ultra-thin nanopaper that instantly becomes soft and elastic just by pressing a button that starts an electric current. When the flow of electricity stops, the paper regains its firmness. In the future, this should enable solutions for adaptive damping materials that switch from stiff to compliant if they become overloaded, for example.

Flying microchips

Scientists from Northwestern University in Evanston, Illinois (US) have developed wind-borne “microfliers” modeled on the seed of the maple tree. These objects use sensors to measure concentrations of particulate matter, viruses, or certain air pollutants at high altitudes. After being released from skyscrapers, balloons, or even airplanes, the floating microchips transmit this data in real time by radio to a ground station. Because the microfliers are inexpensive to produce, the researchers envision releasing entire swarms of them to measure large swathes of the atmosphere for the purposes of environmental and climate protection.



A tire that thinks

With its spherical tire, Goodyear is already moving toward the future of autonomous driving. In the developers’ vision, the “Eagle 360 Urban” concept tire will let driverless cars and trucks flexibly weave their way through traffic in the future—forwards, sideways, even diagonally. This is to be achieved by magnetic levitation technology that doesn’t require any mechanical connection to the vehicle. Sensor networks ensure that the vehicle’s speed is automatically adjusted when the road is wet or slippery. At the same time, the data is to be passed on to other vehicles or the traffic infrastructure and vice versa. Thanks to artificial intelligence, the tire can continuously optimize its behavior, for example localizing damage and changing the tread accordingly. To do this, materials flow toward the affected region and patch damaged surfaces.

The spoken word is uniquely captivating

Hear ye, hear ye!

Amid the wealth of media content on offer today, it might initially seem surprising that audio content is booming. But the fact is, people have always valued the spoken word—even if its range was, for a long time, rather limited.

It was a rebuild in the heart of the Republic: shortly before his assassination in 44 BCE, Julius Caesar ordered the Rostra, a platform for speakers, at the Forum Romanum to be dismantled and rebuilt in a different location. For a long time, historians were agreed that Caesar's movement of the Rostra symbolized the dictator breaking with the institutions of the old Roman Republic. But a research team comprising audio specialists as well as archaeologists recently came to a different conclusion: they showed that this new location allowed speakers to reach a much larger audience. Caesar, they believe, was motivated not by the symbolism, but simply by the desire to be better heard.

Even at that time, the written word had long been gaining ground. Indeed, Caesar—much to the chagrin of schoolchildren learning Latin today—had already made a name for himself as an author. But to the rhetoricians of the ancient world, the spoken word was much more important as it can convey more emotion along with information. A famous criticism of recording ideas in written form can, ironically, be read in a book, "Phaedrus," in which Plato quotes his teacher Socrates. "And when they have been once written down they are tumbled about anywhere among those who may or may not understand them," Socrates said. His reasoning was that in the absence of the author, questions cannot be clarified and there is no one to provide a full-throated defense of what has been stated. Moreover, Socrates claimed that writing destroys memory and weakens the mind.

An evolutionary cultural device

It's not known exactly when in human history our ancestors spoke the first words. Some researchers believe that it was as far back as around 500,000 years ago, while others say it was only 50,000 years ago. But everyone agrees that in the primeval world, the ability to speak provided a huge evolutionary advantage. Evolving from simple grunts to using abstract languages enabled people to better organize as well as to pass knowledge on from generation to generation. A current German radio spot promoting audio ad content uses the apt slogan "Audible is memorable."

For a very long time, oral tradition reigned supreme for large parts of the world's population. This is because the ability to read and write remained the domain of the minority elite. Ordinary people learned of world events only through "hearsay." Huge crowds flocked to roving preachers, who used simple language to denounce wrongs while promising a better world. In the West, the written word really took off in the 1450s following Gutenberg's invention of the printing press. By contrast, China had already experienced a blossoming in literary output between the seventh and tenth centuries.

Capturing words with hog bristles

But neither in the West nor the East could even the most elaborate printing presses crush people's fascination for verbal utterances. Time and again, inventors searched for ways of capturing the spoken word. Ironically, it was a printer who finally made the breakthrough in 1857: using a bucket, a membrane, and a hog bristle, Édouard-Léon Scott de Martinville built a device capable of capturing sound waves on paper. Picking up where he left off was none other than Thomas Edison: his phonograph could also play the recordings back. At the same time, Nikola Tesla was laying the technical groundwork for radio broadcasting. Phonograph records and radio transmissions soon became mass media, decoupling speech from the time and place of the speaker.

The connected world of IT reduces text, images, video, and audio to a stream of zeros and ones that are sent around the world almost in real time. But in the massive multimedia mix of the modern age, the oldest form of conveying information is not only putting up a good fight, it is enjoying a renaissance—through the medium of the podcast. With some two million different podcasts to choose from and the fact that they can be downloaded on demand to smartphones, this "ambient" medium is ideal for listening to while driving, cooking, or jogging and offers something for virtually every area of interest. Unlike on the radio, or even in ancient Rome, anyone can now speak to the masses. All you need is a little technology and the determination to make yourself heard.

S. Ermisch

"Mr. Watson—come here—I want to see you." These are the words Alexander Graham Bell spoke to his assistant in the world's first telephone call in 1876. It was a milestone in human history. The original telephone connected caller and recipient via wires and comprised a cup filled with acid that converted sound into vibrations. These in turn produced fluctuations in the transmitting current, which a membrane converted back into sound waves and thus into recognizable audio. Positioned above the cup was a funnel into which the user could speak, or—perhaps more accurately—shout.

Ahead of the curve

Connected mobility for the city of the future

Radical upheavals are in store for the automotive industry. Aptiv is a leading technology company innovating at the intersection of disruptive trends in the mobility industries. And intelligent logistics is making a crucial difference.

Over six years ago, Aptiv made the impossible possible. A dedicated team and technology helped complete the longest automated vehicle drive ever—traveling nearly 3,400 miles from San Francisco to New York City, with 99 percent of the drive in fully automated mode. The vehicle successfully navigated complex driving situations, collecting data essential to advancing the emerging active safety technology sector. →

Dachser brings modes of transport together for Aptiv

Aptiv's unique position as the only provider of the brain (software and compute) and nervous system (power and data distribution) for mobility solutions is allowing the company to conceive, specify, and deliver the advanced vehicle architectures of the future. Aptiv's mission is clear: "We use our portfolio of technologies to make vehicles safer, greener, and more connected and enable the future of mobility."

PROFILE

Aptiv is a global technology company that develops safer, greener, and more connected solutions enabling the future of mobility. The company has more than 180,000 people across 124 manufacturing facilities and 12 major technical centers worldwide. With a presence in 44 countries, the company addresses mobility's toughest challenges through deep software and systems integration expertise, delivering market-relevant solutions for its customers.

www.aptiv.com

To gear up for present and future tasks, the company is collaborating with over 100 suppliers, including many from Germany. Dachser supports Aptiv in Asia Pacific, where it has numerous manufacturing facilities that produce parts and systems for local as well as global markets.

Aptiv's demands on its suppliers and logistics are correspondingly high. Even a single missing part could mean not being able to deliver a complex unit such as the one that controls the energy flow when recharging an electric car. Consequently, the company was looking for a logistics partner that offers everything from a single platform. And Dachser had just the right answer: its DACHSER Automotive Logistics industry solution.

"Like clockwork"

Dachser now collects the products from Aptiv's European suppliers and consolidates the consignments for onward transport worldwide, generally by sea freight. "Our European transport network is tightly interconnected and very flexible, and it offers the highest quality standards and short transit times. This lets us handle orders for our automotive customers efficiently, seeing them through to destinations all over the world—and it ensures complete transparency at every stage of the transport chain," says Stefan

“The individual elements of our automotive supply chain mesh like clockwork to keep transit times consistent.”

Stefan Dahnken, Department Head DACHSER Automotive Logistics

Dahnken, Department Head DACHSER Automotive Logistics. He adds that to manage the automotive sector’s complex supply chains, Dachser can apply not only its expert know-how but also the tried-and-tested combination of its strong European Logistics and Air & Sea Logistics networks with precisely timetabled transit times. “The individual elements of our automotive supply chain mesh like clockwork to keep transit times consistent and reliable,” he says, explaining the recipe for success. Dachser has set up an Automotive Coordination Tower in Hamburg to provide a corresponding service and control unit for the sector. Its staff of 40 ensures optimal workflows in planning and booking, in the control and organization of pre-carriage, in customs clearance, and in the selection of suitable means of transport.

For Aptiv, Dachser’s Neuss branch in North Rhine-Westphalia is an important hub in the Dachser network. It is where the trucks arrive carrying supplier products from various European countries ready for consolidation and onward transport. Shipping containers are then loaded just a few kilometers further down the Rhine at the inland port of Duisburg. Here, the employees are careful to make best possible use of the cargo space. With widely varying product shapes—including everything from cable spools to palleted goods to individual boxes—this is not always easy. Furthermore, stackability is sometimes greatly restricted for boxes containing sensitive electronic components. This makes it all the more important to bring the consolidated shipments to their destination with as little transshipment as possible. Not to mention that having many individual shipments means a lot of customs red tape and occasionally longer transit times.

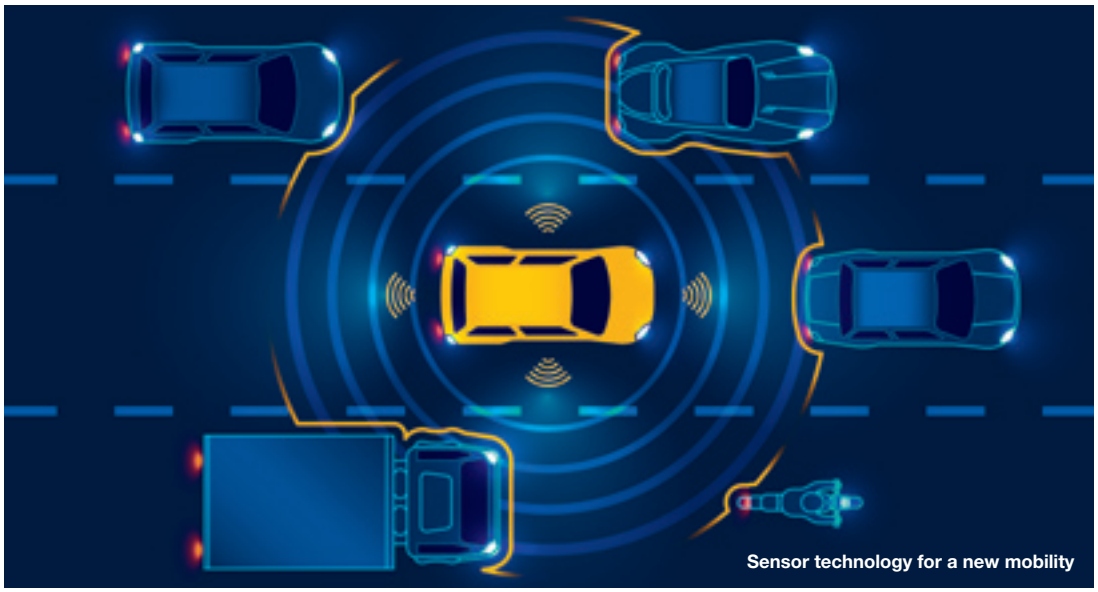
All from a single source

Dachser has since managed to increase the average utilization of container capacity by 20 percent for Aptiv. In addition, the customer benefits from continuous shipment tracing by means of Serial Shipping Container Codes (SSCCs). “Continuous improvement of cost and efficiency in complex supply chains were a key target for Aptiv,” emphasizes Martin Ma, Department Head Key Account Management Air & Sea Logistics Far East at Dachser. Ma is Aptiv’s direct contact and looks after the customer from his office in Shanghai.

The DACHSER Automotive Logistics corporate solution grows with its customers as a scalable solution. If the customer adds new suppliers or production sites, both the pickup matrix and the delivery runs are adapted accordingly. And in situations where speed is of the essence, shipments take the “fast lane” with the corresponding targospeed product—in overland carriage with subsequent intercontinental onward transport by airplane or rail—when a sea route would take too long. On this point, Dachser is just as flexible as Aptiv. After all, a new battery technology or new recharging standard for electric cars can establish itself overnight. And if it does, the supply chain has to remain reliable, plannable, and flexible.

D. Kunde

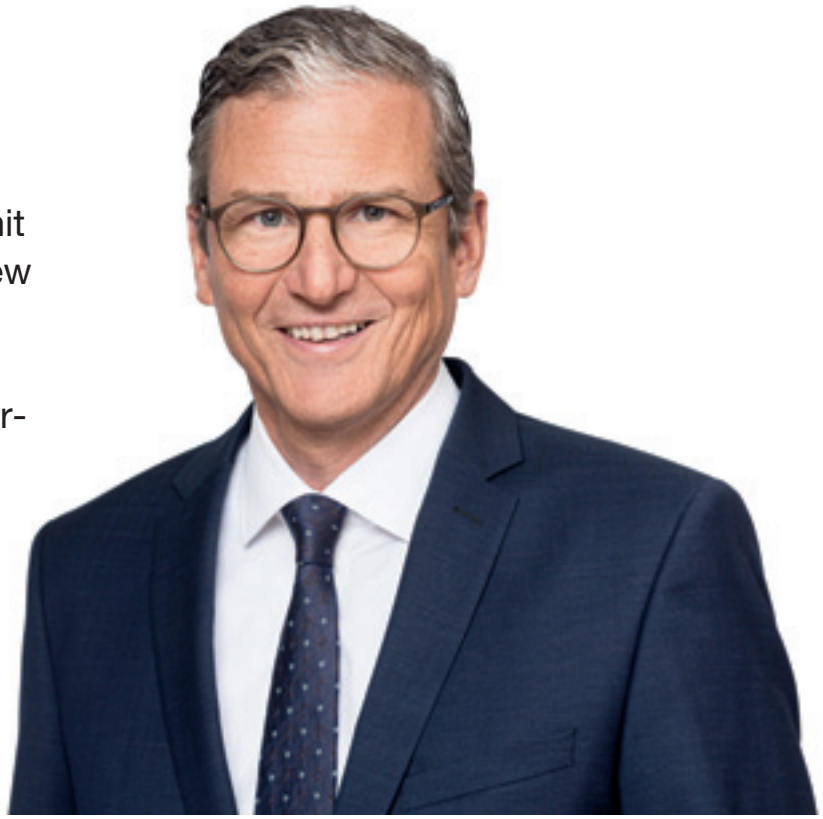
The first experiments with self-driving cars started back in the 1930s. At the 1939 World’s Fair in New York, artist Norman Bel Geddes had small vehicles whiz back and forth between the towers of his miniature city, called Futurama. The vehicles were pulled by electromagnetic fields triggered by automated radio signals and generated by wire pins embedded in the road.



Sensor technology for a new mobility

Continuing to build on success

Since January 2021, Robert Erni has headed Dachser's Finance, Legal and Tax (FLT) Executive Unit as Chief Financial Officer. The new Dachser CFO brings with him a great deal of experience from his various positions at large international logistics providers. In an interview with DACHSER magazine, the Swiss native explains what drives him.



Expertise and closeness: Robert Erni

Mr. Erni, during your almost 30 years in logistics, you have charted an impressive path with various positions of responsibility across four continents. What led you to a career in this field?

Robert Erni: I spent the first years of my life in a small Swiss village that had only 350 people. That's probably why I've always wanted to see the world. After graduation, I deliberately looked for companies that would very quickly give me a chance to work abroad. Logistics was an ideal industry, although I didn't know much about it at the time.

What was it about Dachser that interested you, and how did you come to join the company?

Back then, in 1992, globalization was just beginning. Everything was still in its infancy and I found that fascinating. I wanted to go abroad and get to know foreign cultures and people. That was what drove me, and logistics opened the door to the world. The longer I worked in the industry, the more I realized how extremely dynamic it is. You have to constantly adapt to new market conditions and customer needs, and to ongoing globalization. That appeals to me to this day.

I knew Dachser to be a successful, family-run company. One plus point for me was certainly Dachser's long-term, sustainable strategic planning; I know all about the conflicts of interest with short-term investors at listed companies. In Dachser, I found a company that is aligned with my ideas about culture and values and that thinks long-term. I feel I have a lot to offer here as a person.

What role does the CFO currently play within the Executive Board team?

I can certainly contribute food for thought and experience from my international career. At the same time, I still have an outsider's perspective. I'm the mirror, so to speak, reflecting what's worked and what hasn't in my previous positions. That gives us something tangible to grapple with and a way to consider what the solution at Dachser might look like. My intention here is not to turn Dachser into a different company. There's a good reason

“There’s a good reason why Dachser is so sustainably successful, and there’s no reason to tinker with that.”

Robert Erni, Dachser CFO

why Dachser is so sustainably successful, and there's no reason to tinker with that. For us as an Executive Board team, this long-standing success is a privilege that affords us the luxury of setting new areas of focus.

What makes a good CFO?
I always channel my personality and character into my work. I value trust, honesty, and authenticity. I'm very open and direct, and I expect a lot when it comes to expertise. Moreover, I don't see my role and that of my executive unit as just recording figures and adding them up. We want and need to offer support to the business and be very close to the operational functions.

Beyond being good with numbers, what skills in particular does a CFO need?
A good CFO possesses both professional and social skills. I've spent my career building up knowledge in all disciplines and have myself worked in almost every role you can find in the Finance, Legal and Tax Executive Unit. I wasn't born a CFO and I didn't necessarily set out to become one. However, I was always interested, curious, and ambitious. During the first 20 years of my career, I switched jobs almost every two years, albeit always at the same company. I also often took on jobs that others didn't necessarily want, in countries that weren't very attractive for expatriates. This allowed me to prove myself and move up the ladder.

Can you tell us about your experiences abroad in a little more detail?
My first placement was in Hong Kong. I wanted to experience a foreign culture, but I quite quickly became disillusioned because Hong Kong was very westernized and there was a large expat community. I didn't really find the adventure I was looking for there. In Delhi, it was my job to set up a new company site. My main task was to keep the infrastructure running. Recruitment was also a challenge, as logistics expertise was almost nonexistent in India back then. Next I went to Argentina, and after almost five years, I was then sent to the US to integrate a major acquisition into the company. Finally, I returned to the company headquarters in Switzerland, and they never let me leave again.

The coronavirus pandemic has definitely taken the joy out of travel, and it must have been very challenging to join a company during a lockdown, even more so as an Executive Board member. How has your time at Dachser been so far?
It was of course new territory for everyone and we all had to react flexibly. I really have to take my hat off to the employees—everyone adapted to the new situation of mobile working so quickly and is doing a great job. Personally, I can see that Webex meetings are convenient, but I really miss personal contact.

What does that mean in concrete terms?
My management style builds on closeness: I want to have a coffee together with my team and talk about non-work stuff, get to know the people in my executive unit and at Dachser. Doing that digitally is really tough. That's why recently, on my way to Kempten from Switzerland, I decided to make an impromptu stop at the Swiss branch in Regensdorf to say hello. It's important for me to be on-site, to meet people, and to see the business firsthand. As soon as the situation allows, I'll definitely focus on in-person meetings again. I'm already really looking forward to it.

“It’s important for me to be on-site, to meet people, and to see the business firsthand.”

Robert Erni, Dachser CFO

An unknown entity: The battery

Batteries are an indispensable part of electromobility. But these energy storage devices also raise many questions, especially about performance and climate friendliness. We set out to find some answers.

Electromobility is the future. Legal arrangements and automakers' announcements have put this beyond doubt. In most applications, the electric motor is indisputably superior to the internal combustion engine in technical, ecological, and economic terms. However, there is a lack of clarity concerning the actual heart of an electric powertrain: the battery. It's not always easy to assess a battery's performance or its impact on the climate. This often leads to uncertainty and sometimes to heated discussions.

Drive further, charge faster

To put it simply, the two main factors determining an electric vehicle's range both have to do with its battery: the power density and the capacity. Today's most widely used lithium NMC and lithium NCA batteries currently have a volumetric energy density of about 400 watt-hours (Wh) per liter of volume. Taking as an example a car with around 75 kWh battery capacity, this leads to real-world ranges of 300 to 400 kilometers. Experts believe that volumetric energy density will increase by another 50 percent in the next ten years, making it possible to achieve ranges of 600 kilometers. Lithium iron phosphate (LFP) batteries, which will also be increasingly used in electric trucks in the future, offer new possibilities here as well.

Another decisive aspect for the possible applications of battery-electric cars and trucks is charging time. This is mainly driven by the maximum permissible charge and the discharge current. The greater the ratio between charging current and battery capacity for a given battery size (known as the C-rate), the shorter the charging time, at least at a state of charge (SOC) between 10 and 80 percent. For the final 20 percent, to get the battery completely full, the charging time then increases significantly. The car in the example would need about 35 minutes at a 125 kW quick charging station at normal outside temperature to "refuel" 55 kWh of energy, or 280 kilometers of range, and return to an 80 percent state of charge.

For recharging, slower is better

There is also some uncertainty surrounding the question of how great an effect frequent quick charging has on battery life. What is clear is that slow charging is essentially good for batteries. Manufacturers define battery service life primarily in terms of a guaranteed number of charging cycles. For example, a car battery that is guaranteed to last for 1,000 cycles will provide a total mileage of around 160,000 kilometers over its lifetime. In the fine print, however, manufacturers sometimes point out that the electric car should if possible operate within a state-of-charge range of 20–80

Battery-electric trucks present a particular challenge

percent and should be fully charged only during planned long-distance trips, as this is the only way to achieve the guaranteed battery life. A bunch of conditions, then, that certainly don't make it easy for the average user to reliably determine charging time, range, total mileage, and thus vehicle lifetime.

Climate friendliness guaranteed?

However, vehicle lifetime is central to assessing a battery's climate benefit. Given how energy-intensive battery production is, batteries carry quite a CO_2 burden even at zero mileage. This means that the greater the total mileage achieved, the more this CO_2 burden is distributed over the kilometers driven, and the more climate-friendly the electric vehicle is compared to one with a combustion engine. Assuming the car in the example recharges using only renewable electricity and only green electricity was used to produce its battery, then its greenhouse gas emissions over the manufacturer's guaranteed total mileage will be around 90 percent lower than those of a modern diesel vehicle. For trucks, the figure is even better—over 95 percent—thanks to their higher mileage. This is the result of recent calculations by Dachser's Corporate Research & Development Division.

Even if battery production uses not green electricity but rather today's electricity mix and production conditions in the European Union or China, then an electric powertrain will still achieve CO_2 reductions of at least 90 percent (Europe) and 85 percent (China) for trucks, and at least 80 percent and 65 percent respectively for cars. This shows that the CO_2 burden of battery production doesn't play such a large role for trucks. In the case of passenger cars, though, battery production should be converted to state-of-the-art standards and 100 percent renewable electricity as quickly as possible in order to leverage the full climate protection potential of battery-electric powertrains.

Switching to all-electric cars and trucks requires drivers and fleet operators to rethink and, above all, be open to these new arrangements. The journey ahead will sometimes be tough, especially in the first years of the upcoming transformation. But there is no alternative because, based on the current state of automotive technology and its economics, no other technological option is in a position to achieve the targeted climate protection effect of near zero emissions. What's needed is for automotive manufacturers to push the performance and sustainability of battery technology further and to turn a technology that is still complex today into an easy-to-use innovation that people will be keen to take up.

Andre Kranke
Department Head Trends & Technology Research
Corporate Research & Development

The "From the laboratory of the future" 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.

Claudia Beck leads an international team of software developers

OPPORTUNITIES IN LOGISTICS

Programming the future

Two women, two careers in IT, one shared goal: to constantly improve processes for Business Integration customers.

Nicola Elsner is a project manager in the Robotic Process Automation team

"Twenty years ago, if someone had told me that I'd now be working in IT, I wouldn't have believed them," says Nicola Elsner. Her career path made a lateral move from the administrative court to Dachser. "I studied to be a clerk of court, but as that job involves doing the same thing day in, day out, I didn't find it fulfilling. So I started looking around for something new," says Elsner, who is now 44. It's 21 years since she found her fresh start at Dachser, joining the company as an assistant in the IT department. Over the years, Elsner has built up extensive knowledge of IT topics and immersed herself in the world of Dachser IT. Just over nine years ago, she took on the role of consultant for customer projects, which has allowed her to constantly enrich her wealth of experience. Most recently, she has also become a project manager on the Robotic Process Automation (RPA) team.

Thirty-three-year-old Claudia Beck, meanwhile, chose an entirely different career path: "Even before I completed my bachelor's in computer science, I started gaining practical experience at Dachser, and it was also here that I wrote my final thesis." Her degree in computer science set her on a more traditional path. Beck joined Dachser after graduation, starting as a software developer. In 2020, she took on more responsibility within the eLogistics Development team. Now she is a team leader in charge of a group of international software developers. "The great thing about my job is that it's about more than just designing and implementing software. I also get to see the results of my work being put into practice."

Continuity and change

Two different career paths, two different areas of focus. But Elsner and Beck are pursuing a shared goal, and although they work in different areas, everything they do is about achieving it: "We want to make our processes better and more straightforward for our customers, all with the aid of IT," Beck says animatedly.

A great deal has happened over the past two decades. "In logistics, communication used to be almost exclusively paper-based; today it's almost entirely digital. And back then, nobody could've imagined that video conferences would become a regular thing. Since many orders were still being placed by phone, screen-based interaction didn't enter into it," Elsner says.

Both women work in the Business Integration Division, but on different projects. Collegiality and mutual support are a given. →

Dachser's Corporate IT employs more than 550 central and distributed IT specialists at its locations in Kempten and Malsch (Germany), Chanverrie (France), and at the Regional Head Office Americas. These are joined by more than 230 IT coordinators based at the company's branches around the world.

Claudia Beck studied computer science ...

... and now manages data ...

... and processes at Dachser

“We’re always happy to welcome reinforcements at Corporate IT.”

Claudia Beck, Team Leader eLogistics Development

Enhanced customer experience

Every day, Dachser’s customers experience just how digital logistics has become through the eLogistics portal. This is where they can organize and track their shipments online in real time, calculate freight charges, place transport orders, monitor warehouse processes, and find suitable products. The portal also offers a variety of applications that are integrated directly into Dachser’s transport and warehouse systems. Beck looks after these web applications: “My team makes sure that everything goes smoothly for customers using the portal. This means that in addition to being logical and easy to use, the applications must always be stable, secure, and perform well.”

Over at the Robotic Operations Center, Elsner’s RPA team manages the efficiency of processes behind the scenes, manually identifying and analyzing recurring processes that can be performed by virtual helpers—in other words, robots aided by software. One such process is the automated booking of packaging material for all branches. A total of five experts work at the Robotic Operations Center, providing bots that assist Dachser colleagues in their daily work.

A lateral move with fresh perspectives

Shaping all these developments calls for skilled individuals, even those with unconventional career paths. Elsner recalls: “Back then, I was one of the first who came from an entirely different sector. Now there are more of us who don’t have a traditional logistics background. We all bring our own qualifications and fresh perspectives to the table, each one helping to enhance Dachser IT.”

A lot has changed since Elsner started. The advent of digitalization has led to Dachser IT taking on more and more tasks, which means that the number of people working in Corporate IT has grown steadily over the past few years to over 550. “We’re always happy to welcome new colleagues who help us master the challenges posed by digital logistics,” Beck adds. This growth is also accompanied by a more diverse range of projects. And there will be no lack of exciting tasks in the future, thanks to process automation, predictive analytics, and new aspects of machine learning.

International collaboration

Just like Elsner, Beck is really enthusiastic about where she works: “I lead an international team of software developers

“There’s nothing you can’t learn.”

Nicola Elsner, Project Manager,
Robotic Process Automation (RPA) team

comprising trainees, students, externals, and colleagues from France.” Dachser’s Corporate IT places a great deal of emphasis on teamwork and opportunities for personal and professional development. “IT underpins everything that Dachser does. It’s really fun to be a part of further enhancing our range of digital customer services every day,” Beck says.

Elsner agrees completely: “I’m really happy where I am. Every day offers something different and there are always new challenges to tackle. My motto is ‘There’s nothing you can’t learn’.” So she says she has no regrets about the path she took.

Both Elsner and Beck rate the opportunities for personal and professional development at Dachser IT as very attractive. No matter what path they took to reach their goal: “We’ve got the chance to work together to shape Dachser’s digital future.” **L. Becker**

IT – A SUCCESS FACTOR

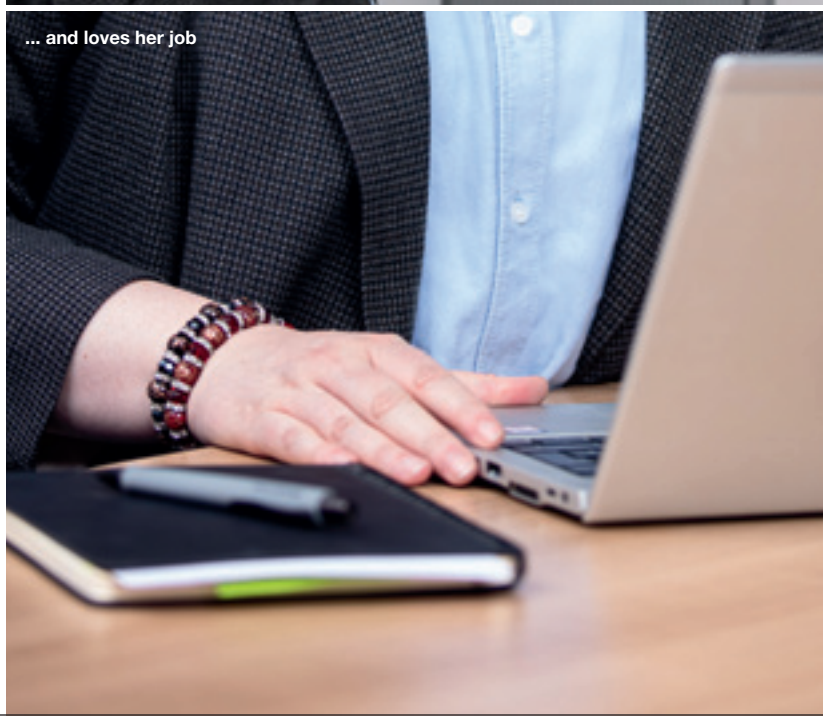
Seamless, globally interconnected logistics services are based on high-performing, intelligent IT. Dachser’s information logistics marks the company as one of the logistics industry’s technological pioneers and drivers.

As system orchestrator, Dachser can meet the highest customer requirements for global transport and warehouse services. IT-controlled logistics creates maximum flexibility and transparency across all logistics functions in all divisions. Homogeneous systems are the key to a reliable and continuous information flow. But this hinges on data quality.

Dachser employs more than 800 IT experts, who ensure that the IT systems used around the world are always up to date. A uniform software version helps maintain high standards and ensure stable applications. In this way, Dachser IT solutions play a major role in optimizing processes and thus the logistics balance sheets of Dachser customers.

Nicola Elsner made ...

... a lateral move into IT ...



... and loves her job

Automated guided vehicles communicate with the warehouse and find their own way around

A driverless warehouse

How can automated guided vehicles relieve employees of routine tasks in the warehouse? The answer lies in research currently being conducted at two Dachser locations.

A mix of automated and manually controlled vehicles: as part of its research and development activities, Dachser is currently performing an extended test run to see how this combination could work in everyday warehouse operations. In the test, the Langenau and Vaihingen locations in Germany have each been using one automated guided vehicle (AGV) since the beginning of the year. The next step is to run tests of the swarm-intelligence aspect of how such systems interact when both AGVs work together at the same location.

The tests grew out of a previous project conducted together with researchers at Fraunhofer IML, with which the company has been working as part of DACHSER Enterprise Lab since 2017. In that project, researchers and logistics experts explored how the use of AGVs could spare logistics operatives from routine and physically strenuous work, freeing them up to concentrate on more demanding tasks. Here the robotic vehicles have a clear advantage: they can remain in operation 24 hours a day.

Vehicle and warehouse "talk" to each other

AGVs can perform tasks such as transporting goods from the warehouse entrance to the delivery zones in a high-bay storage area, autonomously picking up and setting down pallets in the process. Thanks to an interface with Dachser's own warehouse management system, Mikado, the AGVs can be assigned transport jobs at any time; they then find their own route through the warehouse.

The AGVs are equipped with lithium-ion batteries, which support inductive charging. "The charging process uses a base plate and takes just ten minutes," explains Daniele Andreano, Team Leader Contract Logistics Engineering at Dachser, who is responsible for the tests.

Since the vehicles drive through the warehouse autonomously, safety is a top priority. To this end, each AGV is equipped with multiple sensors at various heights, allowing it to scan its surroundings continuously for any obstacles—other vehicles, people, or objects in the aisles between the shelves. If it detects one, the system brakes autonomously, either coming to a complete stop or calculating a new route that will allow it to bypass the obstacle. The maximum speed of 5 kph also plays a large role in safety.

Thomas Klare, Head of Corporate Contract Logistics at Dachser in Kempten, is very happy with the results so far. "Our goal for the practical test is to gain valuable experience in using AGVs in the warehouse as well as in conjunction with the transit terminal. This will allow us to understand how these vehicles can best support employees in their day-to-day work and be integrated into daily operations."

M. Gelink

In the DACHSER Enterprise Lab in Dortmund, Germany, Dachser logistics experts and scientists from Fraunhofer IML work in joint lab teams on concrete research and development assignments. Applying targeted approaches, they develop and refine pioneering technologies for use across the board in practical applications.

Lightening the workload for people

Forward with green electricity

Harnessing the power of the sun

Dachser will switch to electricity from renewable sources worldwide in 2022 and will quadruple the amount of green electricity it generates itself using photovoltaic systems.

January 1, 2022, is the big day: from then on, Dachser will be purchasing only electricity generated from renewable resources. This means that the logistics provider, which operates 387 of its own locations in 42 countries, is increasing its proportion of green power from around 60 percent to 100 percent. In Germany and the Netherlands, the family-owned company has already switched to green electricity. In addition, Dachser will significantly step up its in-house generation of renewable energy and, as a first step, is installing and expanding photovoltaic systems on the roofs of its European logistics facilities and office buildings. By 2025, its current capacity will more than quadruple, to over 20,000 kWp of installed capacity. "We're implementing two basic building blocks of our climate protection strategy by switching to purchasing electricity solely from wind, solar, and hydropower worldwide, while also expanding our own production of green electricity," explains Stefan Hohm, Chief Development Officer (CDO) at Dachser. "These actions are reducing our carbon footprint. At the same time, our demand strengthens the production of green power and contributes to the expansion of capacity in Europe for generating electricity from renewable sources."

Open source community for Europe

Dachser, DB Schenker, duisport, and Rhenus have established the Open Logistics Foundation in Berlin. The purpose of the nonprofit organization is to create a European open source community.

Open source, a key topic for the future, has reached a historic milestone: at the initiative of Fraunhofer IML, leading logistics companies such as Dachser, DB Schenker, and Rhenus have launched the Open Logistics Foundation. Its core is a platform for software whose source code can be viewed publicly and modified and used by third parties free of charge. This also plays a crucial role in the digitalization of logistics and supply chain management when it comes to standardizing logistics processes through de facto standards.

"The digitalization of logistics must be a joint undertaking. We see the establishment of the Open Logistics Foundation as the first step toward a platform economy built on European legal standards and values. It is both a beginning and an appeal to the logistics sector to think of technology and processes as parts of a whole and actively participate in the open source community," the founders said in a joint statement.

+++ DACHSER EMISSION-FREE DELIVERY NOW ALSO IN PRAGUE +++ Since October of this year, Dachser has been making emission-free last-mile deliveries in the city of Prague. All shipments destined for the center of Prague are delivered either by e-truck or special e-cargo bike. Retail customers in particular appreciate the ecological approach and high reliability of deliveries. +++

Lived values lead to solidarity

+++ NEW COMPLIANCE REPORTING SYSTEM +++ Dachser has created an additional route for reporting breaches of compliance rules by setting up the "supportDACHSER" system, which went live on October 1, 2021. With the help of this IT-supported platform, Dachser employees, business partners, and the general public can share any knowledge they may have in relation to serious misconduct involving our company. The "supportDACHSER" reporting system can be accessed via dachser.com and on all Dachser country organization websites.

Analogous to the new compliance reporting system, Dachser is also expanding the options for people to exercise their right to information and to report data protection incidents. A form for this purpose is available on dachser.com under "Data protection."

As with the compliance reporting system, full anonymity is guaranteed on request when reporting data protection incidents, and the process meets the strictest technical security standards. +++

+++ EXPANDING IN PHOENIX +++ Dachser USA Air & Sea Logistics has expanded its existing location in Phoenix, Arizona, in response to increased customer volumes in the region and growing logistics needs on the US West Coast. The new Phoenix facility offers expansion opportunities for future growth. +++

+++ PROVEN PHARMA QUALITY +++ Dachser's Frankfurt air and sea freight branch has had its certification from IATA's Center of Excellence for Independent Validators in Pharmaceutical Logistics (CEIV Pharma) renewed, demonstrating its capabilities in logistics services for the life science and healthcare industry. +++

More space in Erfurt

+++ EXPANSION IN ERFURT +++ Dachser is once again expanding its logistics center in Erfurt, Germany, and adding some 3,200 m^2 of transit terminal space to its stock warehouse. This means that the Dachser location now has 6,100 m^2 of floor space available for industrial goods and a total of about 3,300 m^2 for food. Operations at the new addition began on schedule at the start of September. +++

Stephan Wnuck, 45, has been with Dachser since 1996

Safely packed

Damage-free transportation of goods is essential for managing increasingly demanding supply chains. How can appropriate packaging and foresight help? We asked the expert: Stephan Wnuck, Team Leader Loss & Damage at Dachser.

Mr. Wnuck, moving goods always involves a certain transport risk. How high is the probability of shipments being damaged along the supply chain?
Stephan Wnuck: In our Food Logistics and European Logistics networks, we have thousands and thousands of shipments on the road for our customers every day. Moving goods physically from A to B always involves the risk of damage, and there's no way to rule this out completely. The basic prerequisite for readying stowage for transport and securing loads is to use packaging that is appropriate for the stress and keeps its shape.

What does that mean?
Packaging should protect the goods from the usual dangers and stresses during transport to ensure they reach their recipient without suffering damage.

What can go wrong?
Time and again, we have to deal with packaging that is the wrong size, oversized pallets, packaging of inferior quality, as well as missing instructions for proper handling or insufficient labeling of the goods. Poor securing of load units on the pallet, inadequate shrink wrapping or strapping, goods hanging off the pallet, or completely unpackaged goods are also among the defects that come up over and over again.

Ideally, what is the role of correct packaging in groupage transport?
During truck transport, goods must be protected against the dynamic loads that occur on the road. According to the road traffic regulations, emergency or dangerous braking and sudden evasive movements in the course of transport do not constitute exceptional transport events. Rather, they are considered normal effects that must be factored in to transport and that the packaging must be able to withstand. Even during emergency braking, the pallet must not fall apart. It must also be able to withstand the stresses of cargo handling and be loaded in as form-fitting a way as possible.

Last but not least, packages must be prepared in a way that makes unnoticed access or manipulation of the contents impossible. This point is particularly essential for theft-prone goods. All this may sound obvious, but that's not always the case.

What are the main causes of possible damage, and what does this mean for quality and for any additional effort that goes into the process?
Where there is a lot of movement, there are also many possible causes of damage. Damage due to a fall, a collision, or incorrect cooling settings should be the exception rather than the rule. Much of the damage occurs in the course of handling during groupage loading and the associated stresses. During cargo handling, there's basically no way to avoid loading and set-down impacts or pushing, pressing, and pulling maneuvers, as well as contact or friction with packaging. These kinds of issues are absolutely normal transport- and handling-related stresses.

... but they can also exceed the limits of the packaging load capacity ...
That's true. It's not uncommon for damage to a shipment to result in enormous additional effort. Quite apart from →

Quality assurance is one of the main tasks for the Network Management Organization of Dachser's Road Logistics Business Unit. One aspect involves avoiding the loss of or damage to shipments. Besides appropriate packaging, other key topics here include preventing theft, securing cargo, and training employees. As part of the latter, drivers as well as warehouse personnel are regularly trained on how to load trucks evenly and with no gaps, so that the goods are always safe and secure in transit.

the additional administrative work for all parties involved, there's the further burden of organizing additional return and replacement deliveries, tidying up, and, if necessary, cleaning.

What can you do to minimize this?
Dachser's Loss & Damage team analyzes the processes in Road Logistics in a structured way. Our damage database lets us trace the causes of damage so we can tailor preventive measures for and with our customers to minimize or, ideally, avoid this additional effort on both sides.

How important is damage prevention in Dachser's day-to-day logistics operations?
Maximum damage prevention for the goods entrusted to us is Dachser's top priority and an indispensable aspect of our quality standards. After all, our customers entrust us with their goods and expect us to handle them in an absolutely professional and dependable manner. This relies not just on the customer packaging and labeling the goods in a way that is suitable for the stresses involved, but also on us ensuring careful handling and professional load securing at all interfaces. Every type of goods and every transport type has its own options for securing goods. We and of course the customers just have to make systematic use of them. We're all in the same boat there.

How do you engage customers in proactive loss prevention?
We use our benchmarks to specifically analyze the type of damage. Then we take the results, together with a specially developed checklist for documenting conspicuous features of the transport packaging used, and enter into dialog with customers. We then work with them to arrive at the best possible solutions. During consultations, we also involve experts from packaging companies and neutral third-party experts, if necessary. This results in a very open, constructive dialog. The fact that most customers really appreciate this reaffirms our commitment to this systematic and targeted approach to loss prevention. Ultimately, it's in the interest of our customers to satisfy their own customers with a low claims ratio.

Can you give an example of this?
In the case of customers with frequent claims, we reach out to them and take a close look at where there is potential for optimization. For example, by matching the carton size to the contents to avoid stacking instabilities due to empty spaces. Usually there's also plenty of scope to optimize strapping and wrapping, and the effort involved is often manageable. If we see that we can't get a shipment safely from A to B because of inadequate packaging, we sometimes restrap or rewrap it ourselves. But that really ought to be the exception and not the rule. After all, our delivery drivers in short-distance transport have to bring the goods safely to the recipient.

And if something does break ...
Because we keep a close eye on interfaces, we can generally tell where the damage occurred. That lets us find possible sources of damage and, ideally, eliminate them. If possible, we also solve the problem on-site. Taking an example from our food business, if a single carton on a pallet of fresh produce is damaged, we take the carton out and credit it to the customer, which means they can still accept the rest of the shipment rather than refusing the entire pallet. In European Logistics, things look a little different. We can't just take one of five garden gates off the pallet.

What training do Dachser employees receive to prevent damage in transshipment?
To achieve a uniformly high standard of quality, we offer extensive loading training. To this end, all branches are currently training trainers in the areas of load securing and damage and loss prevention. These training courses are not only about safe loading, but also about preventing damage and optimizing use of the means of transport. We've already trained more than 100 trainers during the pandemic, who in turn are now starting to train employees in the branches. The program was launched in Germany and is now being rolled out across Europe.

What lessons have you learned so far from your systematic damage analysis, and what are your priorities going forward?
By taking a proactive approach to damage analysis and prevention, we can significantly reduce the incidence of damage. This not only saves both time and money, but it also strengthens trust in the processes. Openly addressing weaknesses and risks generates a higher level of quality awareness among all parties involved—including our customers as well as our logistics operatives.

Stephan Wnuck has a background in hands-on logistics

Turning trash into cash

After encountering Dachser Young Professionals in Zambia and again in Germany, a group of young people launched a new recycling system in their home town of Livingstone. The Trash4Cash project offers a modest income and makes a sizable contribution to climate protection. The project is funded by terre des hommes and Dachser. It's an impressive story of young people who are shaping their own future with enthusiasm and entrepreneurial spirit. Watch the video:

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