ISSUE 6

DENKFABRIK

NEW IDEAS FOR TOMORROW'S TRANSPORT

FOCUS ON AI

A battle between humans and machines

HOW MUCH AI IS THERE IN YOUR EVERYDAY LIFE?

Artificial intelligence (AI) is omnipresent and has long since become part of our everyday lives. It is used in numerous applications and we encounter it in various areas of life – even if we don’t always realise it. For example, 50 per cent of respondents to a survey commissioned by the TÜV association stated that they did not know that AI protects their inbox from incoming spam emails. And almost 40 per cent of participants were not aware that AI is used for personalised searches in search engines and online shops.

According to a survey by Statista and YouGov, half of the Germans questioned were unable to assess the extent to which AI now influences their everyday lives. Among those who have a good overview of the use of AI in everyday life, there is disagreement as to whether it is problematic (15 per cent) or harmless (20 per cent).

Source: statista.com

Dear readers,

Tools such as ChatGPT have made artificial intelligence easily accessible to everyone. This has driven the technology forward enormously. Its potential is huge: it can enable customised solutions, efficiency increases and innovations in almost all areas of the economy and society. We present some of them to you in this issue of our magazine.

We highlight the success with which our customers are already using AI and where we as the Krone Commercial Vehicle Group are using the technology to make trailers even smarter, more efficient and more resource-friendly. I myself had an appointment with an AI researcher from Switzerland: In the interview, you can read Professor Thilo Stadelmann’s views on the potential of artificial intelligence for transport and logistics. We present approaches on how AI can be used wisely. And we analyse the risks it poses – such as cybercrime – and how they can be countered.

Artificial intelligence is a resource that can help you meet the enormous challenges of our time. We want to support you in making the best possible use of this tool. And thus to maintain a decisive lead, to assert yourself on the market and, last but not least, to preserve the joy of entrepreneurship. Thinking ahead, daring to try new things, treading unknown paths: That’s what drives us all, especially in transport and logistics. We keep moving and AI gives us new energy to do so.

We hope you enjoy reading this DENKFABRIK and find it inspiring!

Yours, Alfons B. Veer

Alfons B. Veer,
CTO an Managing Director of Krone Commercial Vehicle Group

TITLE: ADOBESTOCK/LAUGHING CAT PHOTOS: FREEPIK/MAYFLOWER, KRONE

FOLLOW US ALSO ON

facebook.com/kronetrailer
instagram.com/kronetrailer
twitter.com/kronetrailer
youtube.com/user/KroneTrailer
tiktok.com/@kronetrailer
all known podcast portals
linkedin.com/company/krone-commercial-vehicle-group

CONTENTS

#06

Focus

Artificial intelligence

LEGAL NOTICE

Publisher:
Fahrzeugwerk Bernard Krone GmbH & Co. KG
Bernard-Krone-Straße 1
49757 Werlte
www.krone-trailer.com

Responsible for the publisher:
Dr. Frank Albers,
Geschäftsführer Vertrieb und Marketing
Tel. +49 5951 209-200

Publishing house:
DVV Media Group GmbH
Julia Schwericke (Projektleitung)
Heidenkampsweg 73–79
20097 Hamburg

Editorial contributions to this edition:
Juliane Gringer, Claudia Behrend, Julia Schwericke

Layout:
Benjamin Tafel, www.byben.de

Print:
www.muellerditzen.de, Bremerhaven

Blue Notes

News from the world of Krone

Krone Trusted: Spare parts now also for trucks

The Krone Trusted spare parts brand, which was successfully launched in 2020, is now expanding its range to include spare parts for trucks. Workshops and fleet operators can purchase them via the Krone-trailerparts.com online shop, with the range initially focusing on common wear parts for truck axles and brakes, such as brake discs. As for the trailer sector, the truck parts come from well-known manufacturers and offer a price advantage of up to 50 per cent. All Krone-Trusted spare parts for trucks are kept in stock and can be ordered immediately.

Cooperation with RIO

Krone and the logistics platform RIO are working together to drive forward the expansion of their digital services. The aim is to connect vehicle data, simplify communication between trucks and trailers and make route planning clearer for dispatchers. Thanks to the cooperation, data can be exchanged without the need for additional hardware. Krone Telematics transmits the data to the RIO platform, where it can be displayed in a fleet overview on a single digital map and individual items can be shared with a customer via a link. Maximilian Birle, Head of Krone Telematics & Digital Services: "By conveniently integrating truck and trailer data, Krone can further increase efficiency in the transport sector for its customers and thus help them to cope even better with the growing challenges of modern supply chains." RIO CEO Jan Kaumanns adds: "There is no question that the full potential of digitalization can only be realised together."

Trailer delivery by rail

New Krone vehicles have been transported by rail to south-west Germany since the beginning of 2024: Once or twice a week, an exclusive block train runs between Werlte and Wörth. Up to 32 semi-trailers are transported to Daimler Truck's main site with low CO_2 emissions; in the other direction, trucks and tractor units ready for delivery are transported by Daimler Truck to customers in northern Germany and Scandinavia. Heiko Isfort, Head of Logistics at Krone Commercial Vehicle Group: "By entering the field of intermodal delivery logistics for new vehicles, we are not only succeeding in reducing CO2 emissions and significantly relieving the burden on the roads, but also, significantly increasing our efficiency. In cooperation with our partners we have already set our sights on further routes."

New generation of interchangeable cases: Krone Dry Box

Krone Dry Box, the new generation of steel smooth-wall swap bodies from Krone, is being launched with ten product improvements, offering greater stability, increased protection against damage and simplified operation. Among other things, the front wall has been moved back slightly at the top for greater safety and to ensure sufficient space when cornering. The collision guard has been extended to 1,300 mm and the landing leg release, which can be operated from the outside, is now easier to access and has a rubber coating which is easy on the hands.

PHOTOS: KRONE

300,000 orders

The 300,000th order was recently placed on Krone-trailerparts.com. The haulage company Schmid and its service workshop Bavarian Trailer WorX were the customers who reached this milestone for Krone and its spare parts brand Krone Trusted. The content of this special order was a Krone side guard plate. To celebrate, the occasion Krone Regional Sales Manager Manfred Dahlbruck presented forwarding agent Markus Schmid with a wooden trailer model. Krone Trusted is the low-cost alternative to original spare parts without compromising on quality. Many customers take advantage of the option to order parts quickly and easily via the online shop: More than 1,000 workshops are already connected.

Technology comes, people stay

Artificial intelligence is changing the world of logistics: companies are exploring which solutions will drive their business forward and where the potential for the future lies.

"We want AI to support users and offer them new solutions."

WOLFGANG BRUNNER, HEAD CORPORATE IT GEBRÜDER WEISS

"Artificial intelligence is when a machine acquires a cognitive ability that we otherwise only know from humans," says Kenza Ait Si Abbou, summarising what the two letters AI stand for. Ait Si Abbou has been a member of the Fiege Group's Executive Board since September 2023, and is responsible for the Digital business unit, and IT department, while pushing the topic of the data-driven company. She wants to use AI in the company and sees potential for its implementation in transport, for example: Fiege is currently testing how route planning can be made more dynamic and optimised with enhanced data and artificial intelligence. The initial conclusion: when trucks are more efficiently loaded, there is less empty space and fewer vehicles are needed.

94 percent want to increase AI investments

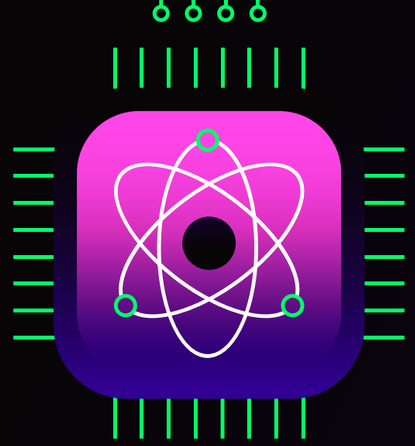
There are many other use cases for AI in transport and logistics: robots provide support in the warehouse, autonomous delivery vehicles save on personnel, data analyses reveal potential for optimisation. The industry knows how relevant the topic is: according to a McKinsey study, for which the consulting firm surveyed more than 250 freight forwarders and logistics service providers worldwide last year, 94 percent of companies want to maintain or increase their investments in digitalisation by 2026. Systems such as transportation management and warehouse management are already standard, while 68 percent of logistics service providers and 56 percent of freight forwarders have also purchased other advanced applications such as real-time transparency, route optimisation and telematics systems. In a survey of top managers from predominantly medium-sized companies in Germany, Austria and Switzerland, Steinbeis Augsburg Business School determined where SMEs are planning to use artificial intelligence: 57 percent of them see AI as a key function for logistics. In supply chain management, 56 percent assign AI use a core function. Overall, logistics and production are seen as key areas for the use of the technologies. Three quarters of companies surveyed want to use AI to improve the sustainability of their company.

"It must always be about supporting, empowering and making people better through artificial intelligence," explain Miriam Meckel and Léa Steinacker in their book "Alles überall auf einmal" ("Everything everywhere at once"), which aims to describe "how artificial intelligence is changing our world and what we can gain from it". They believe that "enriched intelligence" or "machine usefulness" would therefore have been better terms for a technology that harbours fantastic potential and yet must be treated as what it is – a tool. Wolfgang Brunner, Head of Corporate IT at global full-service logistics provider Gebrüder Weiss Gesellschaft m.b.H., agrees: "Before we decided on specific tools and use cases in our company, we asked ourselves what role AI should play for us. The answer: we need it to support users and offer innovative solutions. We use this →

KENZA AIT SI ABBOU

The engineer, electrical engineer and AI expert **Kenza Ait Si Abbou** is CTO and Board Member at Fiege. She has published several books, most recently "Menschenversteher: Wie Emotionale Künstliche Intelligenz unseren Alltag erobert" ("Human understanding: How emotional artificial intelligence is taking over our everyday lives")(Droemer Verlag).

PHOTOS: FREEPIK; FIEGE GROUP



to optimise processes within the company and to further increase customer satisfaction. One thing is clear: We do not offer fully automated solutions to our customers; decisions are always made by a human being."

The human factor remains important

The company mainly wants to support the work in the company's own customer portal with AI and is working on a number of assistance programmes: When customers have questions about their shipment and contact the team via the portal, the enquiries are being categorised by AI, which reads the category from the message – a simple but very helpful step. Employees should also be automatically given suggestions for feedback or specific processes should be triggered, such as pulling the desired delivery document directly from the system. Brunner's main reason for not allowing the AI to respond without authorisation is connected to the excellent service quality that Gebrüder Weiss is committed to: "The human factor plays an important role."

Wolfgang Brunner has found that even simple use cases often bring the greatest benefits: "For example, we have set up a project in which instruction documents are digitised. Instead of laboriously searching for information in thick manuals, you can now find it via a keyword search in a simple chat. That's what I mean by answers to the question of how we can best support the user." For simple use cases, he can also imagine letting the AI make decisions, for example in scheduling calculations: "Because there you can assume good data quality, which is crucial: with bad data, any AI will struggle to come up with a good solution."

Making faster use of ideas

His teams have been using scheduling data for optimisations for a long time: "When we started, people weren't even talking about AI." With the rapid development of the technology and growing computer capacities, the performance has become better and better. "And that's often the case: some of the technologies have been around for a long time, but AI is making them more efficient, better and more accurate. This means that, for us as a company, ideas get out of the research and development stage faster and we can use them more productively."

He expects significant developments in the near future, for example, regarding everything to do with image recognition: "If we can visualise the movements in our warehouses and handling systems, this can have great significance for process control." Brunner also continues to see considerable potential in speech and text recognition: "As a service company, we communicate a lot internally and with customers, so this is where we are currently experiencing the greatest benefit. After all, greater efficiency here also immediately means lower costs." He also believes in the optimisation of blockchain solutions, for example regarding the analysis of data and pattern recognition, faster optimised algorithms and the optimisation of digital contracts, known as smart contracts. The latter could use AI to automate many processes that are still carried out manually today, such as payment after successful delivery or the time-consuming processing of sea freight documents.

WOLFGANG BRUNNER

Wolfgang Brunner, Head of Corporate IT at Gebrüder Weiss, has been with the company for almost 34 years. He began with an apprenticeship as a forwarding agent and later held positions such as Head of IT Logistics Team & IT Customer Solutions and Head of Project & Portal Management.

"As long as everyone is doing their own thing AI won´t help."

KENZA AIT SI ABBOU, CTO FIEGE GROUP

Precise and binding transparency

"Blockchain solutions could unfold new potential with regard to the Supply Chain Act, for example, as they could ensure complete traceability and verifiability along the entire supply chain. The fact that data can no longer be changed once it has been added to the blockchain could provide a precise and binding transparency." Gebrüder Weiss stores the bill of lading for sea freight transport in the blockchain – a test is being carried out via the CargoX platform. "In our opinion, however, the legal conditions have not yet been fully clarified and an analogue form is therefore needed in the event of a dispute," says Brunner.

Gebrüder Weiss has its own innovation department to think about such topics. "We collect ideas there, although the technology behind them is not relevant at first," explains the IT expert. "I think it's important to work with new approaches, try them out in pilot projects and get an idea of what can be used and where." He also believes it is crucial to take employees on board on the path to change: "Not least because they need to be aware of the risks so that everything is legally secure. ChatGPT is impressive, but it's not a good tool for entering sensitive data such as contracts."

Talking to machines

With the introduction of ChatGPT in 2022, a tool was made available to the general public that allows them to talk to machines. Meckel and Steinacker say: "With the further development of generative AI, we are experiencing an evolution that enables humans to develop together with machines in a creative, non-linear way to create their own multiverse of ideas, and even to contradict each other in this creative process. We will have to learn a lot and deal with many changes, and generative AI will not be the last stage of development in the history of technological evolution." It is precisely this collaboration with technology that needs to be organised so that humans and machines complement each other perfectly.

In logistics, this also means that the bridge between advanced technology and its practical implementation requires extensive collaboration. A seamless connection must be created across the entire supply chain. Kenza Ait Si Abbou explains: "For me, logistics is something that is logical. As an engineer, I know that if you take the right steps one after the other, you'll get somewhere." In her opinion, the entire supply chain needs to be consistently networked in order to utilise the potential of AI: "As long as everyone is doing their own thing, working in their own formats and the different systems are not connected, AI won't help."

KRONE EXPLOITS THE POTENTIAL OF AI

The range of applications for artificial intelligence is vast and Krone wants to exploit it to the full: "We naturally want to use the potential of the technology within the company, which is why we are already using it intensively in many areas and exploring new developments for ourselves," explains Dr Goy Hinrich Korn, Chief Digital Officer of the Krone Group. "We are already using generative AI, process automation options, data analysis and image recognition. Almost every employee in the company comes into contact with it." The Krone team sees the technology as an important support, as Chief Information Officer Sascha Gebhardt emphasises: "For us, artificial intelligence is a tool that supports people in their work processes."

Find out more on page 19.

FOTOS: FREEPIK, GEBRÜDER WEISS

Cybercrime is a daily reality

Alpha Barry, CEO of Secida, wants to make digital identity and IT infrastructure more secure across companies.

How much respect should medium-sized haulage companies have for cybercrime?
Respect is the right term – fear doesn't help. Cybercrime is now an everyday crime, comparable to pickpocketing in the city centre. In the study 'Cybersecurity in Supply Chains', which we conducted together with the German Logistics Association, only around a quarter of companies stated that they had not experienced a cyberattack in the past five years. If they were affected and had not prepared well in advance, it took weeks, months or even more than a year to eliminate all the consequences. For those companies that had protected themselves, everything was usually back to normal within hours or days.

ALPHA BARRY

Alpha Barry studied industrial engineering (electrical engineering) at the TU Berlin. He worked at McKinsey & Company, 4flow and thyssenkrupp, among others, before founding secida AG at the beginning of 2020.

What do typical attacks look like?
At present, ransomware is generally used: The hacker attempts to penetrate the company's own IT system and encrypts data that is needed to operate the systems. He then extorts a ransom from the company in return for the key. At the same time, personal data is often stolen in order to threaten to publish it. Somewhat rarer are cases in which attackers attempt to trigger payments by, for example, impersonating high-ranking company managers in emails. Basically, it is all about money: the cybercriminals are not interested in stealing valuable data.

How clever are they?
They are usually not too technically skilled and invest little time in checking whether they can infiltrate a company. If it becomes difficult, they move on to the next victim. This means that companies can protect themselves fairly easily. To do this, there should be someone who is familiar with the topic of cyber security and can coordinate it. Many training programmes are available, for example from TÜV. Guidelines should be included for employees so that they know how to recognise when a hacker is trying to access the company's IT. And technical protection should be provided to make it more difficult for hackers to gain access.

How much does it cost?
I would warn small and medium-sized businesses in particular not to open their wallets and buy expensive systems right now. In many cases, hackers exploit human vulnerabilities because it's much easier for them. They send emails with links to malware and hide them in documents, for example, or they pretend to be an IT employee by email.

If it has happened and I am already being blackmailed, what do I do?
You should also be prepared for this, so ideally you should have an emergency plan in the drawer. This specifies who in the company needs to be informed in the event of a cyberattack and who makes the decisions. It should be clear how to communicate with business partners, customers and suppliers and what reporting requirements you have, for example if the attacker has stolen personal data. In my opinion, the police should always be informed because, first of all, there are good offers of help and, secondly, the number of cases should be recorded so that the issue is recognised.

PHOTOS: FREEPIK, SECIDA AG, ADOBESTOCK/OLECNX

Point of View

Artificial intelligence polarises: While some are celebrating the technology as groundbreaking progress, others are warning of risks and ethical concerns.

"Artificial intelligence will change medicine at least as much as x-rays, ultrasound and laboratory analyses did in the 20th century. It will make more precise diagnoses, recommend better therapies and often recognise emerging diseases earlier than a doctor."

MICHAEL FORSTING, RADIOLOGIST AND KI DEVELOPER AT ESSEN UNIVERSITY HOSPITAL

"The independent nature of artificial intelligence lies in its very nature. We want to come up with new solutions with AI, so we can't programme it in such a way that it doesn't take on a life of its own. The question is when, to what extent and, above all, by what standards this happens."

PROF. MICHAEL TEN HOMPEL, FRAUNHOFER IML

„It´s not clear we can control such a thing, but we can aspire to guide it in a direction that's beneficial to humanity."

ELON MUSK, CEO TESLA

One thing that's clear from everything that has been written so far about the risks of AI—and a lot has been written—is that no one has all the answers.

BILL GATES, FOUNDER OF MICROSOFT

"With every new technology, there are always apocalyptics who are warning of the imminent end of the world. However, I believe that fear is not the right emotion to better understand a technology and evaluate where the real dangers lie."

SASCHA LOBO, JOURNALIST

Healthy working

Ralf Schulz (right) and his workshop team

“With the Comfort tarpaulin on the Krone Mega Liner, loading is quick and easy: since we equipped our fleet with it, the drivers have taken significantly less sick leave. Before, they were often simply overloaded: Some colleagues had to open and close the tarpaulin 30 times a day, now it’s much easier! The trailer also lasts a long time – thanks to the new cathodic dip-paint coating on the chassis. Both are important for us to do our daily job well. Wesergold uses 84 vehicles to deliver the drinks that we produce in our German plants in Rinteln, Dodow and Waibstadt: Water, juices and, for example, our popular ‘Durstlöscher’ (thirst quenchers), which are available to buy throughout Germany.”

RALF SCHULZ, HEAD OF THE VEHICLE WORKSHOP RIHA WESERGOLD

What still moves us

More inspiration, tips and thoughts

Have a listen

The podcast “KI – und jetzt?” offers new perspectives on the topic of the future every Friday. The ARD journalist Nadia Kailouli and the leading expert in German AI research Dr Aljoscha Burchardt from the German Research Center for Artificial Intelligence talk about where and how AI can help us.

App check

Audiopen is a cross-platform web application that can be used to efficiently transcribe spoken ideas. A click on the microphone in the centre of the screen starts the recording. Any voice note can then be recorded, which is automatically converted into a text note and saved when the stop button is pressed.

www.audiopen.ai

Up to date

“Das Gelbe vom AI” is a podcast project that is also published as a newsletter on Linkedin. Once a week, the creators talk and write about the latest developments on the AI market and their impact on the labour market. The newsletter highlights the most important matters.

The AI did it!

The pitfalls of artificial intelligence: Germany’s leading socioinformatics expert Prof. Dr Katharina Zweig explains in an entertaining way and using sometimes absurd current cases, how we can recognise wrong AI decisions and defend ourselves against them. This is because we should know what to look out for so that algorithms play by our rules and not theirs.

Discover AI

The AI exhibition at the Deutsches Museum Bonn offers fascinating insights into the world of artificial intelligence. Visitors can interactively discover the history, functionality and future of this technology. From robots to data processing, the exhibition provides in-depth knowledge and encourages reflection on the impact of AI on our society.

.

PHOTOS: WESERGOLD, RBB, CONVERSION MAKER, AUDIOPEN, DEUTSCHES MUSEUM BONN; HEYNE VERLAG

"We consciously aim high and don't just follow trends, we also want to lead the way."

Uwe Lachmann, CEO at Hartmann International

Digital innovation all along the supply chain

Hartmann International, a full-service provider for freight forwarding and logistics in Paderborn and Ibbenbüren, is ambitiously developing its digital tools and ideas.

AI-based route planning means that one push of a button is all it takes to plan the routes of around 100 local lorries within 20 minutes. Hartmann International from Paderborn has integrated this into its processes thanks to a collaboration with the start-up, Smartlane. "Previously, four or five dispatchers always had to organise around 1,100 incoming consignments manually in the transport management system from midnight onwards," explains Uwe Lachmann, CEO of the freight forwarder. "Today, it is sufficient for this workstation to be manned by a colleague who monitors the process and takes care of special cases, such as when a driver calls in sick in the morning." Thanks to the collaboration with Smartlane, the company has succeeded in rolling out such a functioning, AI-based tour scheduling system as a pioneer on the market. "It was ready for series production within just three to four months and is still a very important tool for us in delivery and pick-up scheduling, especially for our general cargo in local transport."

From moving to commissioning

As a full-service provider, Hartmann International offers its customers, among other things, classic forwarding services: "We start where the parcel service ends," says Uwe Lachmann. "Then it's on to part and full loads, nationally and internationally, around the globe. For us, logistics means not only traditional warehouse logistics but also all value-added services such as repackaging, display construction, order picking and labelling." The company is active in air, sea and rail transport via the Silk Road from overseas. It also rents so called self-storage units to private persons and organises removals. Since 2013, Hartmann International has been a partner and shareholder in the Cargoline logistics network, which moves over 13.2 million consignments a year with 85 players in 43 countries and operates more than 1.7 million square metres of storage space. Hartmann's own vehicle fleet comprises around 500 towing and towed units and 70 swap bodies. Krone is one of the main suppliers for the company's trailers. "Above all, we value the reliability of the equipment and also the long-standing loyalty in this partnership," says Uwe Lachmann. "Krone cultivates the culture of a reliable medium-sized company; we can always find someone to talk to."

Founded in Paderborn in 1856, Hartmann International originally provided transport services for Paderborn merchants. After the Second World War, during which the company's headquarters in Paderborn were completely destroyed, a new start was made: with two horse-drawn vehicles, a truck and six employees. In the 1960s, the company moved because it needed more space. The expansion continued and the fifth generation took over at the beginning of the 2000s. →

The company is a partner and shareholder in the Cargoline logistics network.

Uwe Lachmann knows how important the employees are for the company's success.

In the past 15 years it has almost tripled the number of employees: around 730 people are now part of the team, including almost 50 trainees.

Solid and wide-ranging education

"The trainees work in all departments, from office management to IT, including forklift drivers or vehicle mechatronics technicians," says Uwe Lachmann. "We want to provide solid and wide-range education and give them responsibility early on. Of course, this also helps us to secure qualified staff: many apprentices stay with the company." For Uwe Lachmann, the employees are clearly at the centre of everything: "We can't do it without them. And the more the company grows and the broader we position ourselves, the more important good communication and an open culture are." Hartmann has received very positive feedback on employee review platforms and the company has been recognised as "family-friendly".

At the Paderborn site, the warehouse and logistics area has currently grown by 20,000 square metres to 150,000 square metres thanks to a new building. The modern buildings contain a large hazardous materials warehouse where lithium-ion battery technology can be stored. The new building is connected to the freight forwarding terminal via an underground tunnel: "This saves distances and means that our customers and we can outsource and pick goods right up to the very last minute and feed them directly into the Europe-wide transport network at the freight forwarding company." In terms of sustainability, Hartmann International uses a fully electric lorry, among other things. A regional reforestation project helps to offset emissions. And intelligent, AI-based planning in cooperation with Smartlane ensures better utilisation of the fleet and avoids emissions.

Krone's Regional Sales Manager Norbert Brink (left) is Uwe Lachmann's permanent contact for all questions relating to Krone solutions.

PHOTOS: MICHAEL ADAMSKI

PROFILE

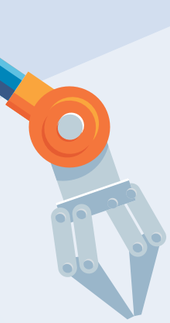
Hartmann International is a medium-sized, globally active logistics company based in Paderborn and Ibbenbüren. Around 730 employees work in freight forwarding, logistics, air, sea & rail as well as in the area of worldwide private and company removals.

www.hartmann-international.de

Dedicated digitalisation team

A dedicated team is leading the digitalisation of the company. "It doesn't just include colleagues from the IT department, but employees from different areas," says Lachmann. Anyone in the company can approach the team with specific ideas and requests. "These can be very small optimisations for a more efficient working day, such as programming a shorter key combination for a frequently used process. Or the sales department has new requirements in the customer portal, for example if certain statistics need to be analysed." The digital team meets weekly, works in an agile manner and can therefore present results quickly. Another format that supports innovation is "Garage33", which Uwe Lachmann calls "the Silicon Valley of Paderborn": In cooperation with students from the city's university, Hartmann International analyses business models and develops new ones as part of disruption workshops. For example, the digital freight forwarder Cargoboard was created, which allows tradespeople to organise shipments entirely on one platform.

Around 15 years ago, long before the great wave of digitalisation in the economy, the freight forwarding team sat down to put into words what would define the company's philosophy and shape its future development. The mission has evolved steadily since then and today's statement is as follows: "We are pioneers in the logistics industry and transform future customer needs into smart solutions. By intelligently connecting people, organisations, technologies and data, we exceed expectations and set standards in the industry." Uwe Lachmann knows how self-confident this sounds: "We consciously aim high and don't just follow trends, we also want to lead the way. In fact, we often exceed expectations and set new standards for our customers and the partnerships we maintain."



"We use AI every second"

Dr Goy Hinrich Korn, CDO at Krone, and CIO Sascha Gebhardt explain how much the company is already using artificial intelligence.

Generative AI, process automation, data analysis and image recognition: the Krone Group is already using these areas of artificial intelligence to its advantage. For example, generative AI helps with service and the translation of guidance videos for customers: "For instance, we can use it to easily and quickly translate into more languages than before," says Dr Goy Hinrich Korn, Chief Digital Officer of the company. "A human still has to check everything because the technology doesn't always get everything right, but AI offers new options here and saves time and costs."

ILLUSTRATION: FREEPIK

IT robots have automated processes

The automatic recording of invoices has long been standard in financial accounting. Robotic process automation (RPA) can for example, instantly check documents that previously could not be posted automatically. "We have also transferred this application to Purchasing. There, the IT robot can handle simple, repetitive tasks well," says Korn. "Errors are avoided and people are released for other tasks."

In the area of analytics, Krone works with telematics data in particular: "We manage more than 30,000 vehicles for our customers via our telematics portal. If they allow us to do so or even instruct us to do so, we can analyse the data," explains Goy Hinrich Korn. "We use the information to draw conclusions about tyre wear, for example. Among other things, this benefits road safety. We also gain insights as to which tyres are optimal for which driving behaviour and refine preventive maintenance." All of these measures ultimately lead to greater sustainability, whereby resources are conserved and costs are reduced.

Optimal use of loading space

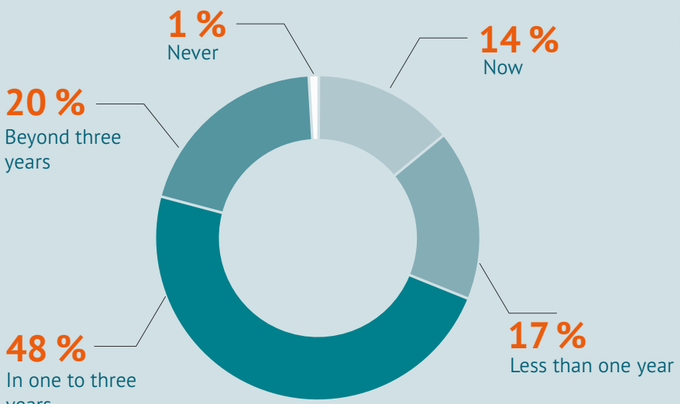
Another artificial intelligence technology is image data analysis: Krone uses it with its own Smart Capacity development, for example, to help avoid empty runs. Camera images of the loading space are analysed, free space is calculated and offered for occupancy online via freight exchanges.

The use of AI also increases the security of computer systems at Krone: "It recognises unusual actions that could indicate a hacker attack, for example, and then locks the affected computers as a precaution," says Sascha Gebhardt, Chief Information Officer. "This can prevent damage. In the data and security environment, we use AI virtually every day, every minute and every second. And that has an effect."

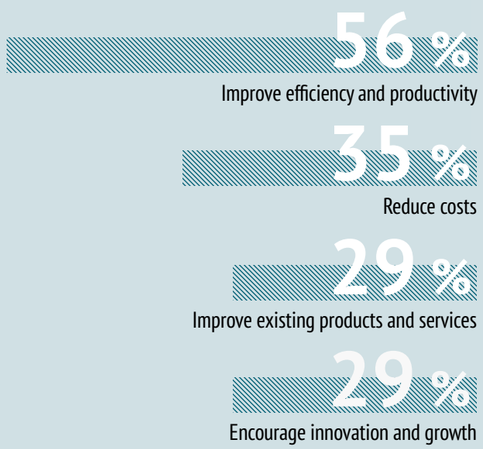
Facts, fakes and failures

The whole world is talking about it: We all use it – sometimes more, sometimes less consciously: artificial intelligence has found its way into our lives. The areas of application are almost limitless, the results sometimes astonishing, sometimes amusing, at best useful – and sometimes with serious consequences.

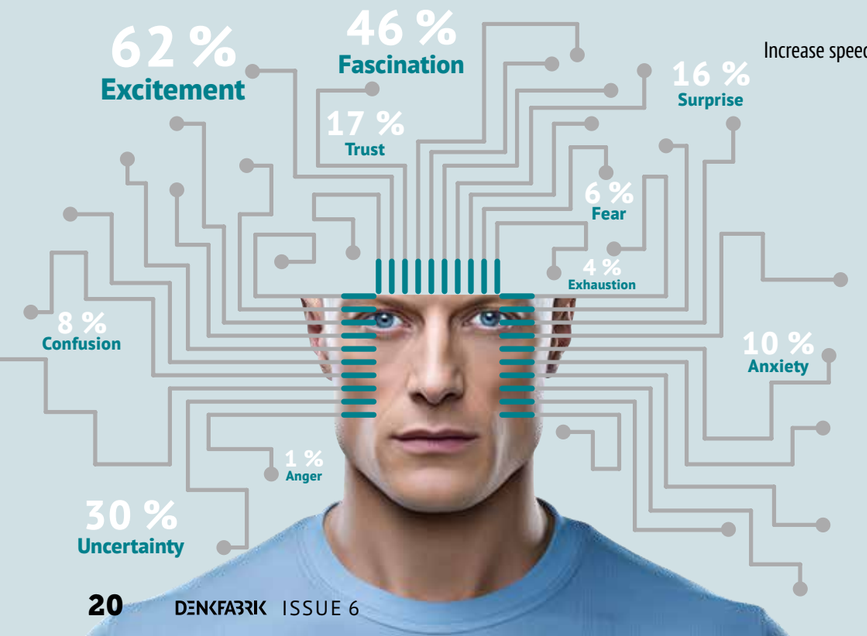
When is generative AI likely to transform your business?



What advantages do you expect from generative AI?



What emotions do you feel at the thought of AI?



Generative AI at work

81 % of internet users in Germany have already heard of generative AI.

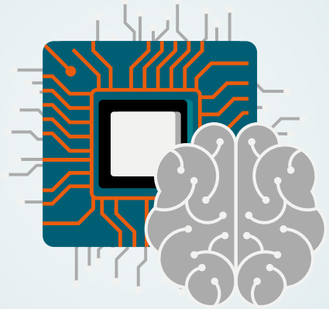
27 % of employees have used text-based generative AI in their professional environment.

52 % of respondents would like to see greater regulation of generative AI.

36 % have already used it to create texts, programme codes, images or videos.

60 % stated that they would be able to use the generated results in a meaningful way in their job.

11 % see no reason for this.



64 % perceived a saving in time.

47 % of internet users expect the increasing use of generative AI to result in mankind losing control of the technology.

63 % found that generative AI helped them to perceive their work results more positively and without any major workload.

66 % of employees who have already heard of generative AI systems state that there are no specifications or guidelines for their use in their workplace.

67 % of those who had already used text-based generative AI professionally checked the results for correctness.

47 % of internet-using employees assume that at least some of their jobs will become redundant in the next ten years due to the increasing use of generative AI.

46 % however, would like to see such guidelines.

66 % state that they know that generative AI can produce incorrect results.

An **online travel guide** from Microsoft suggested a visit to the Food Bank – which is comparable to a food bank in Germany – as a top tip for visitors to the Canadian capital, saying: "Consider coming with an empty stomach." Tourists should therefore eat the food away from socially disadvantaged people. Microsoft admitted that an artificial intelligence had written the travel tips – obviously without a check by a human being.

Artificial intelligence helps to recognise new **kinds of fraud** at an early stage. The Algorithms look for behaviour that is not typical for people, such as paying several times in a row at petrol stations. The AI is fed with the credit card provider's resolved fraud cases in order to recognise malicious transactions with greater probability to minimise erroneous card blocking.

Researchers at the Massachusetts Institute of Technology (MIT) in the USA have fed an AI with 1.6 million Streetview images of American cities. These were pairs of images, each taken a few years apart. This enabled the AI to learn how neighbourhoods have developed over time. The results can help with **urban development** and show what effects factors such as average income, level of education, surrounding neighbourhoods and the age of buildings can have on urban development.

In Scotland, an **autonomous camera** kept losing sight of the ball during a football match because of the linesman's bald head. An automatically aligned camera frustrated spectators and presenters as it constantly panned from the ball to the linesman, whose bald head apparently confused the algorithms. Videos show how the camera repeatedly loses sight of the game and instead focusses on the linesman, whose head was mistaken for the ball in the backlight.

PHOTOS: FREEPIK/U-DAY, FREEPIK, FREEPIK/MACROVECTOR, FLATICON SOURCES: DELOITTE, BIDT

Always up to date

The increasing importance of AI can also be seen in the transport of goods, especially at container terminals. By using the technology, ports want to make their processes more efficient and more transparent for everyone involved in the supply chain – with potential benefits for transport companies, too.

Whether optimising transport routes, more accurate ETA (Estimated Time of Arrival) forecasts or automated freight handling, artificial intelligence (AI) is intended to make processes at the container terminal more efficient and cost-effective. At Hamburg terminal operator HHLA, for example, the technology is used in block storage at Container Terminal Burchardkai (CTB). There, the boxes have to be prepared for onward transport efficiently, i.e. in a time and space-saving manner. AI helps the storage crane system (LKS) to always predict the most favourable storage location.

AI is also used at the CTB to predict the dwell time of containers. This means that even before the box is unloaded, its dwell time in the yard and the subsequent transport carriers such as lorries, trains or ships can be predicted. "This precise prediction enables more efficient stacking and transport planning as well as minimising movements, which reduces operating costs and energy consumption", explains a HHLA spokesperson.

The port of Rotterdam uses, among other things, "Routescanner", a platform for planning optimal routes in container logistics that helps shippers make sustainable decisions with the help of AI. "Pronto", a collaborative platform for ship and terminal planning, has since evolved into Portxchange, an independent subsidiary of the Port of Rotterdam Authority.

Nextlogic, also a subsidiary of the port operator, which operates a planning system of the same name for the handling of inland container shipping, and "Portbase", the port information system for the two Dutch seaports of Rotterdam and Amsterdam, also use AI.

"We are also working on applications in the port that will soon enable physical objects to learn what is expected of them in different contexts on the basis of AI", reports spokesperson Sigrid Hesselink.

Calculating for load readiness

In addition to port operators, port community system providers such as the Hamburg-based software company Dakosy also want to use AI to carry out forecasting processes for activities in the Port of Hamburg. In export, for example, real-time data can be used to calculate when the goods need to be ready for pre-loading at the latest time in order to reach the desired ship. It will also be possible to plan when the required empty container must leave the depot.

It is also possible to determine whether the export container will arrive in time for further loading – particularly important for hubs such as transshipment stations and inland ports in the hinterland. If the expected movement and arrival of a consignment at the intermediate hub can be predicted, the planned buffer time is reduced so that the hinterland terminals can be relieved and utilised more efficiently.

Start-ups such as the Finnish company Awake AI are also working on optimising the flow of goods in ports. At its core is an AI-controlled logistics platform that has been developed to connect maritime players at sea, in ports and on shore to make port operations more efficient, safer and more sustainable.

Terminal operators can optimise port calls with AI insights, port authorities can maximise the use of their existing port capacities, ship operators can achieve just-in-time (JIT) arrivals and faster turnaround times, and cargo owners gain full transparency of cargo flows at sea, in the port and on shore.

In addition to the port authorities, terminal operators and shippers should also benefit. According to Awake AI, this primarily includes complete transparency of cargo flows between sea, port and land, optimisation of the working capital cycle for JIT production and delivery, as well as better planning and forecasting options for days or weeks in advance.

The Fraunhofer Centre for Maritime Logistics and Services CML in Hamburg also has a number of AI projects related to container terminals. These include "Cookie" (container services optimised by artificial intelligence), which aims to improve the predictability of maintenance and the availability of empty containers in the Port of Hamburg.

Image recognition for damaged boxes

As part of "Maintenance & Repair" (maintenance and repair of empty containers), AI-based image recognition is intended to support inspectors in identifying and assessing damage, thereby increasing the uniformity of the assessment. This leads to better detection of intact and damaged boxes and better planning of the reuse of empty containers.

In the "tank container cleaning" field of application, an optimal cleaning programme is to be learned independently by an AI system and the cleaning procedure documented. The aim is to achieve the greatest possible automation of the systems while at the same time increasing resource efficiency. Modern algorithms from the field of reinforcement learning are used for this.

"By predicting gate utilisation or the readiness of containers for loading, haulage companies also have the opportunity to adapt their route planning to the respective circumstances and thus reduce downtimes and improve their productivity," emphasises Patrick Specht, research associate at the Institute of Shipping Economics and Logistics (ISL).

However, despite all the exciting approaches, there are some fundamental challenges to overcome, especially in complex environments such as container terminals. Collecting and processing the large amounts of high-quality data that AI systems require can be difficult. In addition, AI technologies need to be integrated into existing systems and processes, which often requires extensive customisation and training. Furthermore, data protection can become an issue when it comes to sensitive data such as location information and personal details. The use of AI may also lead to fundamental changes in workflows and processes, so employees should also be involved at an early stage.

PHOTOS: HHLA/THIES RÄTZKE, ADOBESTOCK/YLIVDESIGN

"AI simplifies things, and I see that as a positive thing first of all."

Dr Thilo Stadelmann, Professor of Artificial Intelligence and Machine Learning

"AI is a tool"

Professor Thilo Stadelmann researches the industrial application of artificial intelligence at the Zurich University of Applied Sciences (ZHAW). He met Alfons B. Veer, CTO and Managing Director of Krone Commercial Vehicle Group, in Zurich to discuss the potential and risks of the technology.

Heart of the matter

Alfons Veer: ***Mr Stadelmann, when it comes to AI, most people think first of the chatbot ChatGPT, which answers questions within seconds using machine learning technology. What do such tools mean for us humans? Do they perhaps also cost us intelligence by taking too much of the thinking out of our hands?***

Thilo Stadelmann: I think AI is changing us in a completely different way than we might imagine at first glance. Basically, it's like this: While humans seem to be able to do more and more throughout history, their capacities are still very limited. We therefore have to replace skills in order to progress – and in this sense, our tools also shape us. But not necessarily in a negative way! Since we no longer have to pull the plough ourselves, we are a little less muscular and broad-shouldered than our ancestors. However, this hasn't done us any great harm, except that we should do some back training nowadays. And thanks to the navigation device, we don't get lost, but we're also less capable of reading maps. Does that mean we have to make a big noise about cultural techniques that have been lost? AI simplifies things, and I see that as a positive thing – first and foremost. Do you use generative AI at Krone?

"The cases in which AI replaces jobs are rather rare."

THILO STADELMANN

Alfons Veer: ***Our in-house digital service, for example, works intensively with it, both in customer service to answer questions and in training courses to enable users to use our tools. The teams are very successful in personalising their training material to the individual customer. The tools depend on the quality of the material that is entered and it is always necessary to check thoroughly whether everything is correct. But they do make the work much easier. AI also plays a major role for us when it comes to topics such as cargo space recognition with our Smart Capacity system: this scans the cargo space and can help to use existing logistics capacities really efficiently. It is therefore a major key to greater sustainability.***

Thilo Stadelmann: I believe that this is precisely the key aspect of technology, which is somewhat hidden behind terms such as learning or intelligence: it's all about optimisation. Technology that enables this is particularly welcome in industry.

Alfons Veer: ***Yes, of course. What are you currently working on?***

Thilo Stadelmann: We are a university of applied sciences, so I deal with issues that are brought to us from industry. For example, we are currently supporting an industrial group in improving its production processes. It's about plastic injection moulding, which is influenced by many parameters such as room temperature or humidity. We are working on processes that can learn from data how to always achieve the desired result despite changing conditions. To do this, we use dynamic learning systems that are not only able to recognise when a process goes off the rails, but can also restore it. In scientific terms, this is known as transfer learning. In machine learning, we first train a model for a very specific case, for example for a certain machine. If we want to produce a different part, we don't have to reinvent the method, but simply collect data and feed it to the machine. This can take a long time, so it is not worthwhile for products that are only manufactured for a short time. However, if I can transfer things I've learnt once with minimal adjustments, it's far more practical. Humans are good at this: we learn something in one context and can transfer it to another. As researchers, we are always looking for ideas on finding ways to make this easier for the machine.

Alfons Veer: ***That sounds interesting. We are working in a similar way: our refrigerated semi-trailers are constructed using foamed panels. To produce them, we place a 13.6 m long by three metre wide coated steel sheet in a mould. Then we inject the foam and apply a further steel. The foaming process tends to create minute pores on the surface, which ideally, should not be present. So, we are trying to build a model that can assign all the process data to the individual panel and correlate it with the number of air pockets in the foam. The idea is to predict whether the panel will achieve the desired quality. We are working together with a start-up and are building the infrastructure in the background so that we will be able to transfer the model to other production processes in the future.***

Thilo Stadelmann: This is valuable fundamental work! I recently heard again in the context of large language models such as ChatGPT that the only thing that makes you stand out in the field of AI is, ultimately, the data on which you can build something – because AI learns from it. We recently completed a project in which we virtually reversed the process. It involved photovoltaic modules where the process data was not collected during production. For modules that perform well, you can't determine the parameters under which they were produced. But you can simulate it. Together with partners, we have run a simulation model that creates something like a medical diagnostic image and shows where and how much electricity is generated. We used this to train a machine learning model and thereby could reverse the process. So we can turn it around: We feed in photos of real systems and find out with a high degree of approximation which parameters have led to this module.

Alfons Veer: ***We realise that we have a relatively large amount of data, simply because of the telematics in our trailers. We just need to organise it in the process.***

Thilo Stadelmann: And decide on the most promising use cases? It's still a lot of work to build something for a specific application.

Alfons Veer: ***Definitely! In production, however, it is relatively easy to generate value from the mass of data. To stay with the example of process data: Here you can save costs caused by rejects at points where humans can do no more optimisation. So we are only getting better and therefore have a clear case. Moreover, we are not replacing people, but supporting experts in making optimal decisions.***

Thilo Stadelmann: I have the impression that the examples of AI replacing jobs are rather rare. Currently and for the next few years, AI is simply another tool in the human toolbox to do things well. In the best case scenario, it will make our lives easier and free up space in our diaries.

Alfons Veer: ***Another topic that is being strongly discussed in connection with AI is autonomous driving. We are working with Fernride, a start-up that wants to establish teleoperated driving, where the driver no longer drives the vehicle but works in an office from which he can control several vehicles. What do you think? Is fully autonomous driving possible and if so, when?*** →

Thilo Stadelmann: In my opinion this is not so much a technical question as a social one. Even with the current state of technology, we would probably have faster, safer and more economical transport if it were autonomous. But self-driving vehicles use different methods, have a different perspective on the world and therefore accidents would happen that humans might never have caused – for example, if the technology recognises objects incorrectly. The technology we have now is largely based on statistical analyses. You can improve it as much as you like, but there is no provision for zero per cent errors. So people could die because a car was not controlled by a driver, but by an algorithm. As a society, we could decide to accept this, but I don't think we will because, quite rightly, we probably simply won't accept that avoidable accidents happen then.

Alfons Veer: ***In the end, there will always remain the question of responsibility.***

Thilo Stadelmann: My impression is that the agreement at the moment is mostly to regard the technology as a tool. Then the person who uses the tool is responsible, not its manufacturer, the state or other institutions – I think that makes sense. As AI has a growing influence on society, we need to think about how to use it responsibly. Corresponding codes of conduct usually underline that a human being must always be responsible in the end. I would argue that for companies which offer AI-supported services, this means that there must always be a person who can be available.

Alfons Veer: ***What can AI do for logistics in your opinion?***

Thilo Stadelmann: I'm not a logistics professional, but from the perspective of an outsider I can see two important issues, namely planning on the one hand and physical handling on the other: goods have to be moved. AI can help perfectly with both. It can quickly deliver ideal solutions when planning processes. In a recent project with a railway operator, for example, we worked out how trains can be rescheduled quickly if there are minor disruptions, for example because a door is stuck and a carriage has to wait two minutes longer at the station. This can no longer be solved efficiently with big data, as too many variables have to be taken into account. We have therefore modelled each individual train as its own learning agent, which has its own goals, such as being exactly on time. The underlying method is called reinforcement learning, i.e. learning by trial and error. Robotics in particular offers great potential for physical transport. It is developing dynamically: algorithmic breakthroughs have led to enormous successes in terms of autonomy in the recent past. And I also believe that there is still a lot to be achieved. The combination of improving automation technology with hardware is only just beginning to get really exciting.

Alfons Veer: ***If we look at the degree of automation in our production and logistics processes, we see distinctly structured areas – such as welding, which has been automated for decades. However, the closer we get to the customer with the product, the more people are involved. In future, we want to automate more and more of the highly individualised steps involved in the manufacturing of a each product. In this context AI is key: it could carry out simple tasks close to people, ideally without having to redesign the entire process.***

Thilo Stadelmann: "Agents" have again been discussed a lot in recent months because they bring the benefits closer to people. With large language models, we can at least implement a certain kind of common sense, especially when hardware-supported, robotic systems "think for themslves", for example when they perform beyond their actual tasks, it becomes interesting because interaction can take place and cooperation with a real person then really makes sense.

Alfons Veer: ***That sounds very interesting. There will simply continue to be a lot of development, won't there?***

Thilo Stadelmann: Yes, we live in an incredibly dynamic time. I wouldn't want to live in any other.

ABOUT

Computer scientist **Thilo Stadelmann** is a professor at the ZHAW School of Engineering in Winterthur, Switzerland. He is head of the Centre for Artificial Intelligence and the Machine Perception and Cognition research group there.

DOWN TO THE MILLIMETRE

By using augmented reality (AR) in production, Krone can ensure that everything on the trailer perfectly fits and that the quality remains high. The technology detects deviations quickly and reliably: The entire vehicle can be checked to ensure accurate construction by comparing it with a target data set. For example, it is possible to recognise instantly whether ordered components are missing or something has been installed incorrectly – and this can be corrected before delivery.

PHOTOS: MARVIN ZILMS

PHOTO: KRONE

Saving fuel, CO_2 and tolls

The Vecto software tool makes the energy balance of heavy commercial vehicles transparent – but the EU is demanding new, almost unattainable limits from the industry.

If Europe is to become the world's first climate-neutral continent by 2050, under the European Union's Green Deal, a sound database is essential to effectively manage the necessary steps. Vecto (Vehicle Energy Consumption Calculation Tool) provides this for heavy commercial vehicles: The simulation software calculates how much energy and fuel trucks consume and how much CO_2 emissions they emit. It thus forms the basis of EU Regulation 2017/2400, which aims to increase transparency, reduce the environmental impact of transport and promote the transition to more sustainable mobility.

Optimisations increase efficiency

Krone has been working for many years on optimising the operation of the trailer to make it more efficient. "With a whole range of measures, we ensure a reduction in CO_2 and fuel and thereby a good Vecto balance sheet," explains Heinz Fust, Head of Technical Services and Homologation at Fahrzeugwerk Krone. "These include aerodynamic components, lightweight construction and special tyres." As well as reducing fuel costs, this can also reduce toll charges: "The EU is planning to base the level of charges on the Vecto categories," says Fust. "So anyone who buys a highly efficient trailer from us will save on tolls in future."

The demands of politicians are ambitious, but are they too ambitious for practice? "As part of the trailer industry, we are of course behind the Green Deal," says Fust. "But the demands made of us by the EU Commission are too much for the short timeframe it has set." The negotiators from the European Parliament and the EU member states presented emissions limits at the end of January. These stipulate that from 2030, measures on trailers must reduce the CO_2 emissions of a diesel truck by 10 per cent compared to 2025.

"We need a strong economy to counter climate change and its consequences."

HEINZ FUST

"At Krone, we will achieve 7 per cent of this with measures that we already know, but the remaining 3 per cent is an enormous challenge. It's only six years until 2030 and that's a step too large to bring to the market in such a short time." Fust would have liked to see smaller, more realistic targets and a "more technical understanding of the trailer".

Developments takes time

Research and development of components that enable such optimisations take time: "I have spoken to tyre manufacturers who assume that it will take ten years before they achieve what the EU is demanding here." The Commission's ideas, on which it bases its decisions, are to some extent unrealistic, says Fust: "They assume that trailers can be designed to be up to 20 per cent lighter. This is theoretically possible, but it is at the expense of strength and would mean that utilisation options would be restricted. A weight reduction of 5 to 10 per cent is possible, depending on the vehicle category." The Vecto tool would also produce better values, for example, if the trailer was built lower – the reduction in air resistance saves energy. However, as long as the vehicles are only allowed to be twelve metres long, this would cost loading space and in turn means that more lorries would have to be on the road to cope with the transport volumes.

If the specified Vecto values are not achieved, painful penalties are to be paid – in an industry that is already facing enormous challenges due to rising commodity prices, inflation and other crises. "We need a strong economy to counter climate change and its consequences," emphasises Fust. "That's why political measures should not weaken the industry and freight forwarders." He also sees the risk of market distortion if transport companies then perhaps authorise vehicles outside of EU member states in order to circumvent the Vecto measurement. Instead of strict measures, he would rather see the promotion of technological progress. "And more development in policy regulations: we not only need to drive technolgies forward, but also the regulations. We need more flexibility and, above all, faster implementation of new laws."

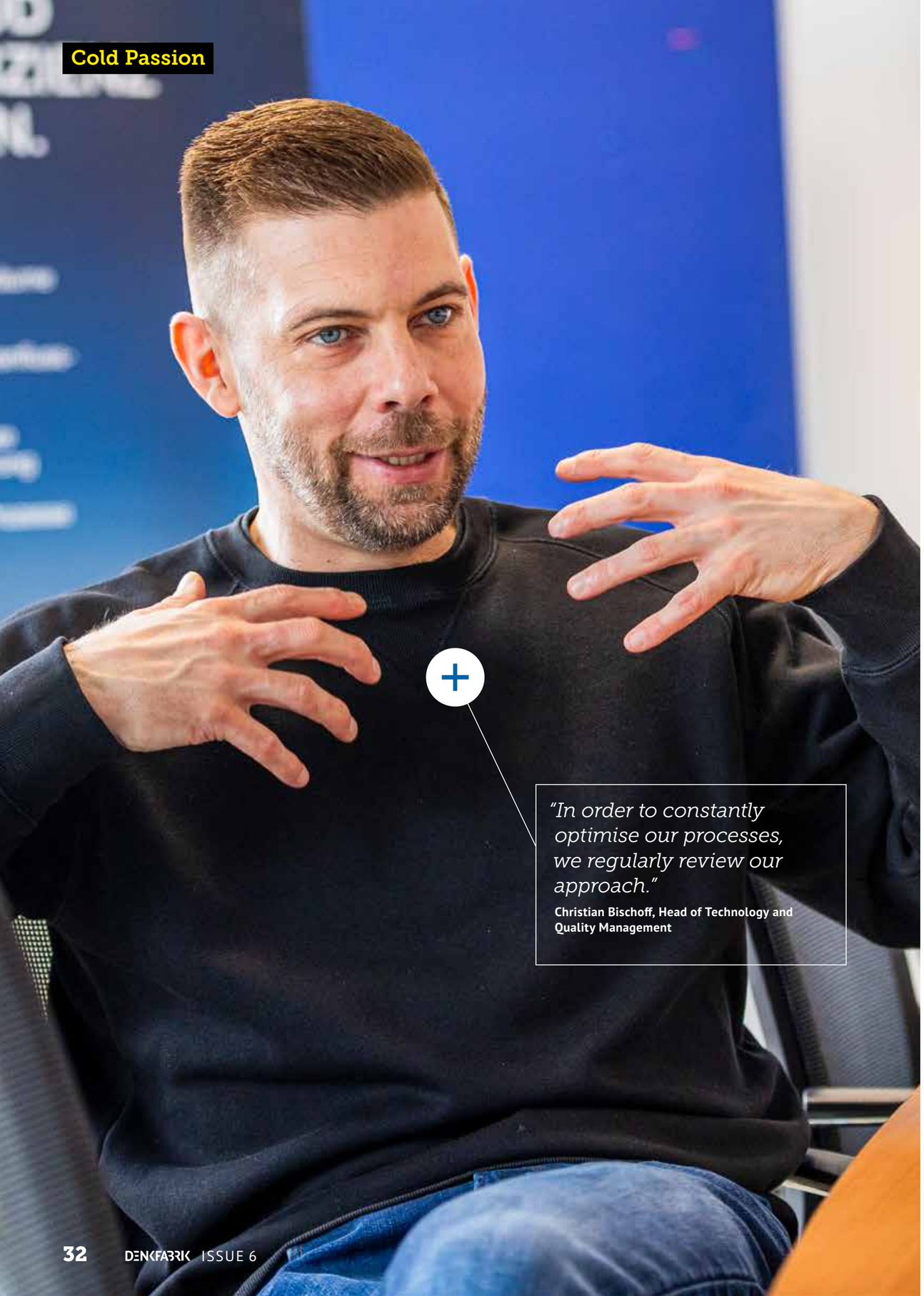
Promoting implementation together

As a manufacturer, Krone has a special responsibility towards its customers. "In our development, we will define a strategy on how to achieve the 10 per cent by 2030," says Fust. "We will therefore have to determine, for example, which aerodynamic components will be installed on the trailer in the future. This could lead to the paradoxical situation where the customer has to pay a surcharge if they don't want a certain CO_2-optimising feature." For them, one thing is clear: "The 10 per cent target has been set: we vehicle manufacturers and logistics companies must bear the consequences together and ensure that we drive implementation forward while keeping the associated costs as low as possible."

ENGAGING IN BRUSSELS

When politicians issue regulations, the focus is less on trailers than on cars or trucks. Krone is committed to changing this. The company invited politicians to its plant in Werlte and Krone representatives travelled to Brussels to talk at length about Vecto and raise awareness of the trailer. The talks were held between 2023 and 2024 – at a time when the legislation was still being negotiated. The Krone team presented the Vecto tool to politicians in detail and highlighted the potential for CO_2 savings in order to create a knowledge base for realistic CO_2 targets.

PHOTOS: ISTOCK/PETMAL, KRONE



"In order to constantly optimise our processes, we regularly review our approach."

Christian Bischoff, Head of Technology and Quality Management

"There is no way around high quality"

The logistics company Heidelmann Kühllogistik has grown with its customers for over 75 years, and during this time has developed into an absolute specialist in temperature control.

Blood plasma saves lives: It is used by emergency medical practices for diseases such as coagulation disorders or to produce medicines. In Schwalmstadt near Kassel, one of the largest and most modern plasma warehouses in the world has been created, with the construction of new buildings and extensions to the existing Heidelmann Kühllogistik site. While the pharmaceutical customer prepares the plasma for production in the plasma logistics centre, Heidelmann is responsible for all warehouse logistics processes and a large part of the transport, which is carried out to the highest safety standards. The products are stored and transported at -28 °C and colder, with telematics ensuring seamless monitoring during the process.

High ethical responsibility

"We have a high ethical responsibility to fulfil when it comes to this," says Christian Bischoff, Head of Technology and Quality Management at Heidelmann. Together with his quality team, he is in charge of ensuring that all quality-related specifications are met and that the plasma reaches its destination with no issues. The trained refrigeration and air conditioning technician has undergone continuous training over the years and built up a great deal of expertise in the pharmaceutical sector. "In my position, I would see myself as an advocate for the goods," he explains. "There is no way around high quality."

The company was founded in 1946 by Bischoff's great-grandmother Martha Heidelmann, who organised the transport of construction materials and rubble with her husband Willy. Removal services were added until the company specialised in refrigerated logistics in the mid-1960s and set up its own business division for this. "At the time, a large food producer was looking for a partner to store and transport its raw materials and then later, also to store its ready-made products," says Christian Bischoff. "We started with raw materials that needed a certain humidity as well as a low temperature."

Steady expansion

With customers like these, Heidelmann continued to grow steadily and soon offered services such as packaging, display construction and labelling (value-added services). At the end of the 1980s, a high-rack cold store with office space and social rooms was added to the company's refrigerated warehouse, followed by extensions and a second one in the 1990s. →

Heidelmann operates one of the most modern plasma warehouses in the world.

"Back then, we thought we had built for generations." But there was more to come: in 1996, Heidelmann became a Dachser network partner and entered the groupage business for fresh food logistics. In 2013, Heidelmann co-founded the "European Food Network", a groupage network of leading European food logistics companies. Through this cooperation, individual pallets can be distributed throughout Europe at +2 °C to +7 °C, which has expanded the customer portfolio. In 2006, a large pharmaceutical company brought Heidelmann into contact with the pharmaceutical industry, and thus the company's ongoing expansion. "Pharmaceutical transport is demanding, every detail counts," says Bischoff.

After Heidelmann won a major tender from the long-standing pharmaceutical customer, the team built a new deep-freeze warehouse over the past two years – a state-of-the-art property in which Heidelmann has also been organising the entire warehouse logistics for the pharmaceutical customer in combination with the existing warehouse since mid-2023. "We have developed into an absolute temperature specialist," says Christian Bischoff. The company can professionally cover all temperature zones: under -20 °C, +2 °C to +7 °C and +15 °C to +25 °C. Everything is moved by over 80 of the company's own 40-tonne trucks, 15 distribution vehicles for local transport and special trucks for the pharmaceutical business. The most recent addition to the fleet are 20 Krone Cool Liners, which have been operating for Heidelmann since the end of 2023. "When buying trailers, it's clear to us that the quality, service and price have to be right, which is why we chose Krone." The two companies have been working together since 2006.

Digitalisation at the top of the agenda

Heidelmann celebrated its 75th anniversary in 2021. At the beginning of 2024, Ute and Volker Bischoff handed over the company to their two sons Christian and Till and thus to the fourth generation. Till Bischoff has been Managing Director of Heidelmann Kühllogistik GmbH and Spedition Heidelmann GmbH since August 2018 and has now also been appointed Managing Director of the company's own workshop, Technik Center Schwalmstadt GmbH. His wife Janina is responsible for human resources at Heidelmann. Sven Vollmann, a long-standing employee and authorised signatory, has also become Managing Director: he began his training as a forwarding agent at the company in 1997 and subsequently held various management positions and worked on major projects. "In order to constantly optimise our processes, we regularly review our approach," explains Christian Bischoff. "The further digitalisation of Heidelmann is right at the top of the agenda."

When training staff, however, the team continues to focus on personal contact, supported by digital formats: "Direct and personal contact is irreplaceable." The entire family is well aware that the employees are the basis of the company's success. Particularly in view of the complexity of the current tasks, they rely on a strong team and good communication: "When we look back, we can see that every generation has faced challenges that had to be overcome. The world is changing dynamically, with crises and issues such as sustainability and the energy transition, presenting us with many challenges. This makes it all the more important to work together with our team and business partners in a constructive, solution-oriented and respectful way."

Gold in the sustainability rating

Heidelmann's long-term planning is also reflected in its commitment to sustainability. "Refrigerated logistics is energy-intensive, so we have always endeavoured to be efficient," says Bischoff. The company has now made a conscious decision to move towards CO_2 neutrality: it has been using only green electricity since 2022 and has been generating electricity from its own photovoltaic systems for many years. This year, a fully electric eActros 400 refrigerated truck will be added to the fleet for use in local transport. In a sustainability rating by the provider EcoVadis, Heidelmann achieved the gold medal in its very first assessment – and is one of the top 4 per cent of logistics companies that have been assessed by EcoVadis in the last twelve months. Christian Bischoff is convinced: "We will continue to build on this and lead Heidelmann sustainably into the future."

PROFILE

Heidelmann, a logistics company operating throughout Europe, specialises in temperature-controlled food logistics, pharmaceutical logistics and contract logistics. As a founding member of the European Food Network, it offers holistic and customised logistics solutions for the food and pharmaceutical industries.

Nils Vollmann (left) manages the Heidelmann haulage company, Jan Bieberstedt Heidelmann's fleet of vehicles.

PHOTOS: SONJA RODE

Is the driver still breathing?

IMS is helping to shape the safety and comfort of future mobility: AI algorithms can measure the breathing and heart rate of vehicle passengers.

Recognising at an early stage that a driver has acute health problems can save lives: The Fraunhofer Institute for Microelectronic Circuits and Systems IMS (Fraunhofer IMS) has therefore developed AI algorithms that analyse the heart and breathing rate of vehicle occupants. The technology could be used in private cars as well as in commercial vehicles or trains. The vehicle of the future will not only keep an eye on road traffic, but will also be significantly safer and more comfortable for drivers and passengers.

Cameras detect the smallest movements

The vital data is captured using optical sensors: "Intelligent image and signal processing in combination with AI-based algorithms extracts tiny changes in intensity or micro-movements on the skin or human body," explains Dr Christian Wiede, Head of Embedded AI at Fraunhofer IMS. This is because the breathing rate of people can be read and measured from even the smallest movements of the chest. The heart rate can be recognised thanks to an optical phenomenon called photoplethysmography: the contraction of the heart causes subtle changes in brightness on the skin. They cannot be seen with the human eye, but cameras can recognise them.

The measurements are contactless and the driver does not have to intervene actively. The algorithms are modular and can be easily integrated into the vehicle and existing systems – regardless of the vehicle manufacturer or supplier. Fraunhofer IMS has developed a modular software library that can be easily integrated into existing applications and assistance systems in the vehicle. The European New Car Assessment Programme (Euro NCAP), which stipulates the installation of interior cameras in vehicles, supports the development. The AI algorithms were presented for the first time at the IAA Mobility 2023 in Munich.

Improving the driving experience

In the future, it is conceivable that other parameters will be recorded, such as blood pressure, symptoms of stress or whether someone has consumed alcohol in the vehicle. The technology can not only indicate emergency situations already, it can also make mobility more comfortable: For vehicle manufacturers, it is an interesting option to customise temperature, sounds and lighting even more individually to the individual. This improves the driving experience and could ultimately help to make the truck driving profession more attractive again.

PHOTO: FRAUNHOFER IMS/ANNE SMETS

AI algorithms ensure greater comfort and safety in the vehicle.

“Just do it!”

Steffen Obermann is exploring the path to “sustainably mindful logistics” for the Zufall Logistics Group – for a world that is “really good for people”.

Sustainable, mindful logistics is what the Zufall Logistics Group wants to accomplish and Steffen Obermann is one of the people responsible for achieving this goal. He says: “If you are operating in an industry which can attract some negative views from the general public, then it can present an exciting challenge.” He has been running the in-house zufall.lab for three years. The lab explores how the harmony between “people, planet and profit” can quickly become a reality in logistics. “We believe that we have to work and think radically and differently to achieve this. We can try it out at zufall.lab.”

It starts with questioning previous routines: “You have to be able to reflect if you want to try something new,” says Obermann. Processes are then “turned inside out and completely redesigned”, usually supported by digitalisation and AI or by partners with the relevant expertise. New business models are also tested in the lab, often together with customers. According to Obermann, the motto for all these activities is: “Just do it! The only really important thing is that you need to know your problem and what’s behind it. Once you’ve understood that, it doesn’t matter where you start – all that matters is that you take action.”

The focus is on people

He already knew in the ninth grade that “people” should be at the centre of his profession. At first, he thought he would find this in marketing, where emotions are conveyed in a few seconds via advertising. However, he quickly switched to business administration during his studies and chose industrial psychology as his specialisation. “I graduated in the middle of the financial crisis – and wrote 95 applications before I got my first job, and it was there that I first l realised it was not the way I wanted to work. For me, the question remained: What should a world look like that is really good for people?” He is the father of three young children: “If we as a humance race continue to treat nature so harshly, I don’t know if I can advise them to have children of their own later on. I don’t know what kind of future they’ll have, a lot is open. Instead of sitting back and accepting it, I would rather seize the opportunities that present themselves and get started.”

Logistics is the fifth industry he has worked in. Previously, he was employed by a metalworking company, a training provider, a solar technology company and a hospital. Together with a friend, he founded the company Bicycledudes, which sells wooden wall holders for bicycles. In these positions, he learnt a lot about agile methods, project management and customer orientation, modern working methods and a good feedback culture. “Then someone from the Zufall advisory board called me at some point and told me that they wanted to set up the lab,” says Obermann. “I was immediately hooked because Zufall, as a family-run logistics service provider, has a lot of room for decision-making and the topic of people meets the environment, which has also become increasingly important to me over the years.”

Sustainable mindful future of the logistics world

With zufall.lab, the company wanted to create a physical space that designs a “sustainably →

mindful future of the logistics world". It comprises workshop rooms, co-working areas and logistics halls that provide space, tools and a basis for new ideas. "I don't know of any other logistics company that has created a physical place to work on innovation and culture at the same time. This shows how serious we are about our sustainable, mindful logistics," emphasises Obermann. He is attracted by projects where "everyone says it can't work". Because then you can do nothing but win.

He is impressed by how more and more people are following this path: "When we founded zufall.lab, many were very sceptical. But at the same time, they were open and approached us with curiosity. They are really interested, and take the time, even though logisticians usually have the least of it." He believes that the high pressure on those working in the industry leaves them little room to develop new ideas: "I get messages from people saying: 'As interesting as your emails are – I don't have that much time to think in my job'." Staffing levels are too thin. And little financial room for manoeuvre makes investments difficult: "In some areas, entrepreneurial courage is important, for example when it comes to sustainability – but freight forwarders can hardly afford it." The Zufall Logistics Group is consciously creating a "budget for courage": "In some areas, this means sacrificing profit, but the company remains profitable. You take part of the money earned from operations and put it into a world that is more suitable for grandchildren – that's brilliant."

Digitalisation saves money

In order to network with other innovators in the industry, Zufall has rented a space at the Digital Hub Logistics in Hamburg. "It's mainly start-ups that meet there, but also established logistics companies that discuss their challenges, which I find very useful: you need partners for good solutions," says Obermann. At an event at the hub, he got talking to Maximilian Birle, Head of Telematics & Digital Services at Krone. "We quickly realised that we were working on similar topics and decided to initiate a joint research project to make the swap body more intelligent." As this transport carrier does not have its own power supply, it is difficult to "make it transparent", explains Obermann. "Krone has presented a very good concept to enable this. We are allowed to provide input from the real world as to which functions we as Zufall Logistics Group would like to see and thus help develop the product as a customer. I think that's brilliant: that's exactly how work should be done, working closely with the customer and thinking about ideas together." He personally doesn't understand why so many players in logistics hardly exploit this potential: "If you want to transport goods from Hamburg to Munich, you already need five or six hauliers: everyone is already working together in this chain, but they don't talk to each other. That should change: Logistics thrives on networking!"

What has he learnt about logistics in recent years? "It's a great industry that people are passionate about. It's a very process-intensive industry, but things still happen every day that throw everything out of order, so you constantly have to play firefighter. Working strategically is therefore a major challenge. Nobody outside our own ranks thinks logistics is great, yet it is the most important industry for our prosperity. And because we as a society see it as so inferior, the margin is so small that logistics can hardly be good for the environment and for people." He sees solutions in digitalisation: "Because digitalisation saves money if you do it well. And this money can then be used for people and the environment."

He advises companies that want to take this path and focus more strongly on sustainability to change course: "Top management must set a different direction and processes must be changed. So you have to have the courage to hire people who work on the process – process experts, IT specialists, HR managers, innovators, project managers. The changes mean that fewer people are needed in the operational area. Nobody has to be made redundant because skilled labour is scarce. In my opinion, investing in people who work on the processes is the smartest thing you can do at the moment." ↙

PHOTOS: ZUFALL LOGISTICS GROUP

THE PERSON

Steffen Obermann studied business administration at Georg-August-Universität Göttingen and then worked for nine years at SMA Solar Technology AG, among others. Since 2021, he has headed the zufall.lab of the Zufall Logistics Group and is Managing Director of his own small start-up Bicycledudes and also helps the Zufall start-ups Logimate and Citylogistik to scale up.

A column from Bernard Krone

AI is not tomorrow, AI is today

The human brain is an incredible powerhouse that has been shaping our world for centuries. It generates the thoughts and ideas that shape our lives, our economy and our future. The potential of artificial intelligence, which to a certain extent imitates and thus supports our thoughts and actions, is correspondingly great. AI can bring about greater efficiency and climate protection, conserve resources and reduce costs. And we are no longer observers of this development, we are right in the middle of it: AI is not tomorrow, AI is today.

However, it is also important that we monitor the development and application of AI critically and attentively, while utilising its potential and at the same time understanding its limits and risks. This is the only way we can ensure that artificial intelligence remains a tool that supports and enriches us rather than replacing or monitoring us. In a world that is

"AI can bring about greater efficiency and climate protection, conserve resources and reduce costs."

increasingly characterised by technology, we should use the fascination of artificial intelligence to jointly shape a future in which humans and machines work in harmony and benefit from each other. ↙

PHOTOS: FREEPIK, KRONE


KRONE