

trailer world

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GREEN WAVE

Future-proof solutions for city logistics



“Pioneers are required for surfing the green wave.”



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The volume of delivery traffic is steadily increasing, and so are noise pollution and exhaust emissions, creating a real stress test for transport networks and the environment in cities and municipalities. Future-proof solutions for logistics issues in metropolitan areas are needed now more than ever to maintain cities as attractive places to live and to shape them in a sustainable fashion.

This issue of trailer world shows which concepts and technologies are being applied in Germany and elsewhere around the world to meet present and future challenges in city logistics. From Liuzhou in China to Santander in Spain or Hanover: turning visions into reality calls for people, institutions and companies that think ahead and lead the way. Pioneers are required for surfing the green wave – innovation leaders, such as BPW, who drive forward urban logistics with practical solutions. As part of this process, we have successfully begun electrifying commercial vehicles used by municipalities and businesses in

collaboration with Paul Nutzfahrzeuge, a leader in special vehicle construction. The series conversion of Mercedes-Benz Vario diesel vans into emission-free, efficient electric vehicles with our eTransport electric drive axle is a milestone for electromobility – and a perfect example of sustainability.

At BPW, holistic, responsible action is not just a trend – it has always shaped our business activities. This is documented in our first sustainability report and attested to in our daily work for our customers and for a better environment.

In this issue, take an emission-free journey with us to see the future of city logistics – I hope it leaves a lasting impression.

Carlo Lazzarini

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Photos: Holger Jacoby, Schober, BPW | Cover: Fotolia – Bill Perry

LIVING SPACES OF THE FUTURE

"Forest City" is how Italian architect Stefano Boeri refers to this district of Liuzhou in southern China, which is being designed by his company. It is based on Bosco Verticale, an award-winning residential complex in Milan. Boeri aims to define new models for architecture and city planning with his work. Owing to the extreme shortage of living space in China, Liuzhou is to be expanded by 175 hectares by 2020 – with this green settlement for 30,000 people. It will host a closely networked mixture of apartments, businesses, schools and a hospital. A high-speed rail line and electric cars will connect the district to the city. What's more, Forest City, will be completely overgrown by a dense green carpet of 40,000 trees and a million smaller plants of different species, which will supply 900 tonnes of oxygen, improve the microclimate, reduce city noise and absorb 10,000 tonnes of CO₂ plus 57 tonnes of dirt particles.

Energy Awards: eTransport grabs first prize for mobility



BPW managing general partner Markus Schell (second from left) and head of corporate communications Katrin Köster (centre) received the Energy Award in the Museum for Communication in Berlin.

› eTransport, the electric axle drive developed by BPW, has scooped first prize for mobility in the finals of the Energy Awards. It is therefore recognised as one of the most innovative ideas in the context of transforming the power economy. The Energy Awards serve the purpose of highlighting progress and changes being made in the sector, and acknowledging outstanding projects and ideas. “Shaping the future of transport efficiently and economically, and with an approach that is kind to the environment, ranks among the foremost challenges of our times,” explains Markus Schell, managing general partner of BPW.

The Energy Awards jury consists of leading representatives of the energy and media sectors, as well as prominent politicians. Awards are presented in five categories, namely industry, mobility, smart infrastructure, start-ups, and private and municipal utilities. Prizes are awarded to projects, concepts and ideas that optimise the use of renewables and thus not only increase energy efficiency and reduce consumption, but also integrate and interconnect individual solutions and energy sectors.

100 percent

Did you know that the Greenflex mudwings produced by BPW's Danish subsidiary HBN-Teknik are made entirely of recycled materials?

BPW awarded IATF 16949 certificate

› BPW has extended its portfolio of quality standards by demonstrating its compliance with IATF 16949. Only very few suppliers in the commercial vehicle segment have qualified for this certificate. The stipulations adopted by the International Automotive Task Force add various requirements and process documents to the existing raft of standards.



Certification to IATF 16949 standard reinforces BPW's quality promise.

IATF 16949 recognition also paves the way for the launch by BPW Bergische Achsen KG of its electric axle drive eTransport. Managing general partner Michael Pfeiffer comments, “We are aligning ourselves with the leading automotive suppliers in Germany and seeking to at least match their product, process and service credentials.”

Broader application range

› The BPW air suspension Airlight II is now available for swap body and jumbo trailers as well, demonstrating BPW's support for the continuing trend towards lightweight running gear systems. Depending on the version, Airlight II can reduce the weight of three-axle units by as much as 150 kilograms – compared with customary running gear systems.

Another advantage of the Airlight II lies in its modular design, which facilitates and accelerates both installation and servicing. BPW also grants operators its 5+3-year ECO Plus Warranty on the air suspension, giving them at least eight years of security. The warranty is valid for unlimited mileage throughout Europe.



Photos: Ulf Büschleb, BPW



The BPW summit in Wiehl attracts experts and decision-makers from the transport and logistics segments.

Wiehler Forum attracts record number of guests

› The slogan adopted for the 2017 forum was “Harnessing curiosity as a motivational force”. Every two years, BPW Group invites experts and decision-makers to its industry congress in Wiehl to discuss innovative strategies, technologies and business models for the transport and logistics sector. The most recent event generated more interest than ever before – it was attended by 150 prominent industry leaders, including senior managers from the likes of UPS, MAN and Schenker, and practically all of Germany's major haulage companies. In addition, the programme was extended to span two whole days for the first time, which afforded the guests more opportunity to share their thoughts on enhancing the efficiency of transport both within towns and cities and between major conurbations – typically by exploiting big data, platooning, driverless vehicles, and electric drive systems.

For Michael Pfeiffer, who as managing general partner of BPW hosted the forum, the future will be shaped not only by technology, but also by attitude. He remarks, “Curiosity holds the key to innovation. It's not something that can be orchestrated from above. Innovation depends instead on our ability to create a culture of trust, in which employees feel at ease and their ideas can thrive.”

DATES

19–20 June
Fachseminar Werkstätten
Wiehl, Germany

29 June–1 July
Truck-Grand-Prix
Nürburgring, Germany

11–15 September
Automechanica
Frankfurt, Germany

20–22 September
expo PetroTrans
Kassel, Germany

20–27 September
IAA Commercial Vehicles
Hanover, Germany

13–14 November
BPW Praxistage
Wiehl, Germany

Visit the Service section at www.bpw.de/en for an overview of all BPW seminars and to register online.

Successful crash test



› The tail lamps in the Ermax Eternal Light range are especially rugged thanks to impact-resistant glass. In a recent crash test the Danish BPW subsidiary Transport Teknik outperformed competitors by demonstrating that the glass does not break when force is applied.

The modern 7-function tail lamp for trucks and trailers includes position, brake, indicator and reversing lights, as well as a rear fog lamp and licence plate and side marker lights.

Fourth Movin' Star hits the road

› The Movin' Stars fleet is getting bigger. Mahlstedt, a forwarder with offices in Delmenhorst, recently took delivery of the fourth vehicle in the series – a Kässbohrer jumbo trailer. Movin' Stars are test trailers accommodating integrated solutions from BPW Group, produced in collaboration with the vehicle manufacturers Fliegl, Kögel, Kässbohrer and Schwarzmüller. In partnership with PEMA, Euro-Leasing and TIP Trailer Services, they are being leased for periods of four to eight weeks – the costs are being shouldered by BPW.

“Mahlstedt already uses telematics solutions from idem telematics, so that the jumbo trailer, which has an automatic tyre pressure monitoring system, complements the existing fleet very well,” said Siegfried Last of BPW Sales when handing over the trailer. “We look forward to engaging in further dialogue with the operator.”



Siegfried Last (right) of BPW presented the vehicle to Mahlstedt's technical director Heinz Holldorf.



THE DIGITAL CITY

Modern technologies should help to simplify urban living. Technical progress can optimise processes, cut costs and facilitate mobility. Pioneering cities such as Santander in Spain are already implementing a number of ideas.

In Santander, lights only come on at night if people are present. Rubbish is only collected when containers are actually full, and road congestion and environmental sensors provide for better traffic management. This is all due to the unassuming grey boxes on the city's old iron lampposts, or rather the sensors inside them and on numerous buses and taxis – 15,000 units in total. They are intended to turn Santander into a smart city after many economically difficult years. The residents are participating via an app developed by the city authorities and can report incidents such as fallen trees or defective parking meters.

Safeguarding quality of life

Santander Smart City is an initiative of the Spanish government. It has been running since 2009, but for a long time was more theory than reality. Thanks to intensive cooperation with companies such as Telefónica and locally headquartered Banco Santander, as well as the city's university, it has finally picked up speed. This is how Gemma Igual Ortiz, the young mayor of Santander, describes the initiative: "This project is helping our city to reinvent itself with a view to safeguard-

ing its residents' quality of life." First and foremost this means jobs, as eight years of financial crisis have clearly taken their toll: 14 percent of the population are still unemployed. This is about to change. And costs will be cut, too. "In many areas, such as rubbish collection and lighting, we have already managed to reduce expenditure by 25 percent because we have better control of everything thanks to the sensors and a central management system," explains Igual Ortiz proudly. The money can be invested in other projects, including an arts centre.

Photos: Fotolia - Takashi Images, Alvaro Rodriguez

Santander is a real "smart city" where the bins themselves organise rubbish collections and streetlamps turn off when there is nobody around. The sensors that make this possible are concealed in containers the size of shoeboxes with antennas, which are attached to masts, streetlamps and facades.

Technology also helps to manage irrigation in the gardens and parks of Santander, as aridity can now be measured precisely. Digital signs indicate free parking spaces, and the city app knows whether a bus is delayed. "If we identify a high level of air pollution or adverse weather, we can warn residents in good time via the app and the digital warning signs in the city. Traffic is diverted appropriately", says Luis Muñoz, an IT professor at the University of Cantabria. Urban traffic data should soon be incorporated into motorists' navigation systems in Santander, so that they can better avoid accidents and traffic jams.

A holistic approach to future issues

The smart city should be efficient and technologically advanced, offering its residents a better quality of life – in other words, it should be greener and more socially inclusive. State-of-the-art technology and networking foster the development of appropriate infrastructure, environmentally compatible mobility and high levels of productivity in a liveable environment. The term "smart city" means a city with additional functions. But it also means an approach in which all issues faced by major

cities are considered as a whole, and appropriate solutions are developed to deal with them.

"The concept of smart cities has been a central theme in urban development for a few years now," explains Jan Strehmann, a spokesman on smart cities and regions for the German digital industry association Bitkom e. V. "Many cities are working on it, also in Germany. Their focus is no longer on digitising administration only, but all associated services as well." From e-governance to the intelligent control of building technology or traffic flows – people have become much more aware of the importance of collaborations. "For example, there can be no e-mobility if the energy network is not designed for it," he continues. Accordingly, an increasing number of urban energy companies, utilities and transport providers are being included. "This interdisciplinary work is a challenge that requires viable structures and good project development," says Strehmann.

Germany's digital pioneers

Major German cities have a particularly large number of issues to bring together, but they are also addressing the topic in a particularly ambitious manner. Berlin, for example, expects to become an intelligently interconnected, future proof, post-fossil and resilient city by 2030, for the benefit of an educated, tolerant and creative society. As one of several measures to make this vision a reality, the Smart City Berlin Network has been founded – a working group of over 100 companies and academic and research institutions in the city that are actively involved in the smart city strategy of the federal state of Berlin. Hamburg is cooperating via its Digital City Science Lab with the Media Lab of the renowned Massachusetts Institute of Technology in Cambridge, USA and undertaking basic and →

applied research. Among other things, the Lab aims to investigate digital innovations and their effect on society, and to discuss current urban challenges with experts and citizens.

But medium-sized towns, too, are keen not to be left behind. In 2017, Bitkom joined forces with the German Association of Towns and Municipalities to hold a Digital City competition for municipalities with 100,000 to 150,000 residents. Darmstadt came out on top with the best overall concept, while Heidelberg, Kaiserslautern, Paderborn and Wolfsburg also achieved a lot of points. Above all, the jury assessed whether the cities already met the requirements to implement smart city projects in the next two years – because this is happening now in the winning city. “Applicants had to show that they can contribute the appropriate personnel, expertise and motivated local partners, and that they also have the political will to undergo such a comprehensive process of change,” explains Jan Streh-

mann. A broad alliance of over 20 partner companies is now supporting Darmstadt’s digital expansion free of charge, providing products and services valued at more than ten million euros. Soon Darmstadt will probably boast such things as smart street lamps – as in Santander.

Need for new business models

Gernot Liedtke heads the Commercial Transport department at the DLR-Institute of Transport Research in Berlin. In his opinion, when it comes to smart cities, the problem is less the technology than the business models that use its potential – especially in the area of mobility. It is clear why companies want to become more digital, he says, “They are trying to create new living environments in which they can create new services – not in order to enhance mobility, but to integrate mobility in their

“Companies using modern technologies such as alternative drives and digital fleet management will come out on top.”

Prof. Gernot Liedtke,
Head of the Commercial Transport department,
German Aerospace Centre

business models to a greater extent.” Cargo sharing is a case in point, in which companies use free cargo space offered by other companies for their own cargo. The use of private individuals as couriers is also under consideration. “Today we cannot say for sure whether giving goods a lift could be a business model,” says Liedtke. “If we look at it more closely, it’s nothing more than an outsourcing of transport to subcontractors. A much more interesting question for me is where, in future, concepts will be created which will also bring benefits to society in that they protect the environment, reduce traffic or make a social contribution.”

Liedtke explains the example of loading bay management, “In future, if all vehicles delivering goods are interconnected with customers, then consignors will know when the recipient is available and whether they can use a loading bay in the area.” A big advantage would be that delivery vehicles would always find a parking space and not block traffic. “This would necessitate some coordination, and a reservation system would need to be set up. We would have to see whether the loading bays are to be reserved by the city or by a traffic management centre – or whether the scheme is to be coordinated privately.” Because, to some

extent, information technologies also need new institutions to organise them, according to the expert; it might even be necessary to reallocate the roles of public authorities and private companies: “Regarding freight transport in particular, many details remain unclear.”

As for delivery traffic, Liedtke is confident that “companies using modern technologies, such as alternative drives and digital fleet management, will come out on top”. He believes that it is precisely the cooperation between hauliers and their fleet management on the one hand, and urban traffic management on the other, that can bring about win-win situations: “Both parties have similar interests and don’t want any trucks sitting in traffic jams.” Or paying road tolls. “In London, the Congestion Charge only applies on weekdays between 7 and 6 pm. If you drive outside of these hours, you save money,” says Eileen Mandir, who is a management coach and specialist in digital mobility. “Traffic can also be influenced by such pricing policies.” Mandir can imagine digital cities without any physical traffic lights, in which vehicles will recognise traffic signals via augmented reality or a digital map. “These light signals will be controlled more flexibly.”

Call for intelligent data management

Control of this kind requires data – and this would have to be managed intelligently. Luis Muñoz comments, “We have an inconceivable amount of data and we have to handle it very carefully.” Above all, he wants Santander Smart City to serve local businesses and foster better interaction among the various urban service providers. “Collecting data is not enough – it has to be interconnected,” he says. After eight years of gathering information, the Santander Smart City database is the most comprehensive to date in the field of

Around 12,000 sensors are spread all over Santander – on masts, facades and streetlamps. The transmitters send a constant stream of information about various processes in the city to a central control station.



city intelligence. Traffic data and environmental pollution information is collected on various IT platforms and evaluated by Muñoz and his university team.

As far as Gernot Liedtke is concerned, the concept of a smart city is not new. “The development towards a digital city has been going on for a number of years now and, for the most part, even the technology has been available for a while,” says Liedtke. There were breakthroughs whenever players took up the reins and drove innovation forward. To illustrate this point, Liedtke references the Baltic states, in which it is already possible to register vehicles paper-free within the scope of e-governance. Moreover, he sees Industry 4.0 as being a major driver of smart cities – and the software developer SAP as a dominant driver of Industry 4.0 itself. “There

is already a trend towards making production more individual, and I think this trend will become even stronger and be facilitated by technical means such as 3D printing.”

The first energy self-sufficient municipality

Feldheim, a district of Treuenbrietzen in the state of Brandenburg, has introduced an intelligent concept for supplying energy and become Germany’s first energy self-sufficient municipality. The 130 residents generate their own electricity and heat entirely from renewable energy sources, such as wind, corn, sun and manure. A separate network transfers the locally →



The science city of Darmstadt won the Digital City competition held by the IT industry association Bitkom and the German Association of Towns and Municipalities.

Photos: Bitkom, Alvaro Rodriguez

generated heat and electricity generated directly to consumers. Excess energy is fed into the public network. But the district can serve as a role model only to a limited extent. "Feldheim has the perfect prerequisites for this project, among other things due to its compact size," explains Doreen Raschemann of New Energies Forum Feldheim. Above all, the project is intended to show that it is possible to have your own electricity and heat supplies on a renewable and affordable basis.

The electricity is mainly generated by a wind farm nearby, while heat is produced by the local biogas plant as well as a wood chip heating plant. A peaking power plant with a battery system keeps the network frequency stable and provides an interim storage facility for surplus energy. The people of Feldheim will soon be able to see for themselves how much they are using. An app not only documents their heat and electricity consump-

tion, but also enables them to see from which source the current consumption of electricity is coming from and at what price.

Including people

"How smart our city will be ultimately depends on people and their use of the new technology," says Juan Echevarria, who manages the innovation department of the Santander municipal authority. In particular, older Santanderinos – as the residents are known – are often ill at ease with technology; they are not accustomed to carrying their smartphones with the city app when they go shopping. Other residents are worried that they are being observed by the sensors. Luis Muñoz is therefore keen to highlight the benefits of the technology more clearly. The city also offers free courses to help residents get the most out of the internet and their smartphones. A lot of imagination has been invested in increasing acceptance. "Smiley coupons" offering

discounts in local shops have been given to residents willing to smile while having their picture taken – the bigger the smile, the bigger the discount. "These measures will bring the city centre back to life," says Echevarria. The city's retail sector is very close to his heart, and he hopes that technical possibilities will help to give local businesses a boost. "In a smart city, there are completely different kinds of customer relationships. Our shops can even communicate with customers outside of opening hours via a QR code on the door, for example. In turn, the customers obtain information about the business via the code."

Jan Strehmann of Bitkom is also convinced that a smart city cannot be implemented "if we only focus on technology, without including people." He considers digital participation to be crucially important, as he explains, "If the city council meeting is streamed live, you may get several thousand residents watching, rather than the usual 50 or so in the public gallery. It would allow local politics to reach many more people." (jg/scm) ○



In the centre of Santander, 400 sensors embedded in the roads ensure that motorists do not have to drive around forever to find a parking space: they are directed to the nearest vacant space by GPS and illuminated signals.

CITY LOGISTICS IN 2030

eTransport, the electric axle drive developed by BPW, has won numerous awards. As the company continues to underpin its role as an innovation leader, a team of specialists from several departments recently attended a two-day workshop to discuss the city of the future with other experts.

Why is BPW taking an interest in the future of urban centres?

JOSHA KNEIBER: There shouldn't be any doubt that we are keeping a watchful eye on the bigger picture. We can already supply vehicle manufacturers with an end-to-end system, consisting of the battery and the drive, and are thus becoming more prominent in the city centre transport sector. In other words, we are extending our portfolio to include the sub-nine-tonne category as well. Many of our customers operate such vehicles, and we intend to offer them appropriate solutions. We want our products to be seen not only in the major freight streams, but throughout the entire supply chain.

What can we look forward to in the city of the future?

KATJA BOECKER: We took 2030 as our starting point and asked ourselves how vehicles are likely to have been transformed by then in response to changes in branches of industry and urban landscapes. We then examined a variety of axle applications from the perspective of that future date. Where and how will axles be operating in cities in 2030?

DANIELA WEIDENFELDER: For this purpose we formulated ideas together with energy suppliers, vehicle manufacturers and hauliers. Last year BPW invited these experts to attend a workshop with our senior leadership team and junior managers. We discussed the options that electric transport will offer vehicle manufacturers and operators in the city of the future, and investigated the challenges facing the two groups.

Which subjects animated the attendees the most?

KNEIBER: One issue was the future of deliveries. It is likely that there will be just a rudimentary supply of basic products in the cities. According to one theory, the number of large shopping malls in city



From the top: Daniela Weidenfelder works in product development in the standard vehicle systems business unit, Josha Kneiber is employed in business development and sales, and Katja Boecker is an in-house senior management consultant.

centres will increase again, but they will maintain small inventories because consumers will be simply selecting goods and placing orders – the purchases will be delivered to the doorstep. We also concluded that digitisation is certain to have a massive impact on logistics flows, that time slots for deliveries by courier and parcel service providers will be contracting steadily, and that service provision in the part-load segment will expand independently of brands and merchants. The volume of night-time deliveries will increase as well. We expect the vehicles of the future to be shaped by processes; they will be powered by electricity, comply with modular design principles, and be digitised.

BOECKER: Of course, we also thought about any additional factors that could be exerting an influence in 2030 – whether ecological or relating to society or legislation. Emissions could be even more strictly regulated than they are at present.

WEIDENFELDER: Brainstorming together without an agenda was an inspiring exercise, and we quickly focused our attention on specific topics. The outside experts were invited in particular to contribute ideas of their own – and they rose to the challenge. One interesting proposal spawned by the workshop, for example, was to build an underground network of tubes for moving goods between logistics hubs.

What happens next at BPW?

KNEIBER: I am in contact with customers a lot and therefore have every opportunity to raise and further discuss these exciting ideas. In the electric transport team we are constantly scrutinising foreseeable trends and regulations, and seeking to keep up to date at all times. For us, therefore, it's a continuous process that persists well beyond the workshop.



The smart city concept can only be successful if residents are open to the technologies and willing to participate.



Model region for CITY LOGISTICS

Hanover aims to investigate and test future-proof logistics concepts for urban areas in a project entitled "Urban logistics of the future". Residents are closely involved in this undertaking.

The representatives of the partners at the start of the Urban Logistics Hanover initiative.



Hanover wishes to demonstrate what clean, quiet, effective and thus future-proof city logistics concepts might look like. "We want to become a model region for the delivery traffic of the future," explains Mayor Stefan Schostok. To this end, he has launched a comprehensive and long-term project together with Dr Eckhard Scholz, the CEO of Volkswagen Commercial Vehicles. "Urban logistics of the future" is an initiative sponsored by the city's administration, business community and academics that is seeking to create an international centre of excellence for urban logistics in the Hanover region by 2030, while giving consideration to all the relevant factors.

Intelligent networking

The region around the capital of Lower Saxony is one of Germany's largest logistics sites, making it an exciting object to research. "Our main aim is to create a city worth living in, which raises the question of

how we can plan traffic in such a way that it produces as little noise and air pollution as possible," explains Tim Gerstenberger, a traffic planner for the city of Hanover and one of the two project managers. Several topics are to be brought together in the process: intelligent networking and smart mobility solutions, digital communication and control technology, as well as electric delivery vehicles. "There are many technological ideas and approaches, but to date only a few have been brought together, transferred to, and tested out in entire city districts or even a major city," says Gerstenberger. This is exactly what the urban logistics initiative is seeking to achieve: to develop and test model solutions for Hanover. They could include electrification of the city's own vehicle fleet or the use of alternative drives, hubs or even cargo bikes.

Among the partners in the project's steering group are not only the state capital and Volkswagen Commercial Vehicles, but also Deutsche Post DHL, Stadtwerke Hannover AG, Hanover University of Applied Sciences and Arts, Leibniz University

of Hanover, and the state of Lower Saxony. Together, they have drafted a clear strategic schedule and defined four sub-projects to establish a research infrastructure and promote both research work and doctoral scholarships. Comprehensive data analysis also forms part of this endeavour. A system to record, evaluate and use environmental and traffic data will bring together figures that can be used to control traffic flows. The figures will then be examined to determine their relevance to urban delivery traffic. There will be pilot districts in which concrete logistics concepts will be developed and tested, known as "living labs". And finally, communal and commercial e-mobility will be expanded.

Benefits for everyone involved

"This strategic approach should safeguard full sustainability," insists Gerstenberger. "In the end, everyone involved should benefit – both residents and the municipality,

and the companies that engage in logistics." As a representative of the municipality, Gerstenberger outlines its role, "Like all the partners in this initiative, we are highly committed and contributing our values and expertise with a view to achieving the common goals." It is precisely this commitment and the engagement of everyone involved that makes this project initiative unique. This view is echoed by Rüdiger Prang of Volkswagen Commercial Vehicles who is the initiative's second project manager, "Having partners with different points of view joining forces and all working towards a common goal is truly exceptional. We have been able to attract highly committed people to the project. There is a huge interest in this subject – it makes a difference, and it motivates us!" All players who currently bring logistics to the city or who take care of supply and disposal are looking for alternative vehicles and logistics concepts, explains the expert, "These are primarily hauliers who, of course, want to run their businesses successfully

in the future as well. And that's why they are extremely interested in learning about the concepts that have the best chance of being adopted."

In dialogue with residents

The urban logistics initiative was conceived during a public consultation to shape the city's future in the period to 2030. "We began talking to residents to find out which topics were important to them and where there was a need for action," explains Gerstenberger. "It became clear that mobility was definitely an area in which people want to have modern solutions." The residents will continue to be closely involved in order to determine whether they will really accept the concepts in question. This means that the residents in the pilot districts in particular will be asked about their requirements and experiences with individual concepts. In the residential districts, the structure of the population as well as their needs, the traffic flows and their

impact on the environment will all be investigated accordingly. "At first, we will collect data about commercial transport, see which flows exist and how they can be managed," says Prang. "We will then simulate new concepts for commercial transport and apply them in real-life tests in the city districts, focusing on efficiency, reliability, environmental compatibility and acceptance."

The initiative is targeting another milestone in the context of the USEful research project, which is being supported by the federal government with funding of around two million euros. In the next three years, a web-enabled urban logistics tool will be created to allow different areas and concepts in the city to be simulated. It will support policymakers, businesspeople and administrators in their task of deciding on innovative logistics concepts. In consequence, the urban logistics project is providing valuable groundwork for other region too. (jg)

 You will find more information at www.urbane-logistik-hannover.de

technology

DIGITAL

Organising logistics in the city means organising mobility. Here, parcel delivery companies such as UPS are important players. Alternative technologies are intended to assist them in their work.



Turn right as often as possible! Using this simple rule, parcel delivery company UPS saves 38 million litres of fuel and 20,000 tonnes of carbon dioxide per year. The routes of the company's delivery vehicles are calculated by in-house software called Orion. It avoids left turns as far as possible because they generally entail waiting for oncoming traffic, which costs time and increases the risk of accidents. Orion ensures that delivery vehicles only turn left in ten percent of all cases. Moreover, it enables 350,000 more parcels to be delivered a year than before. "This latest boost in efficiency is due to the clever use of digital technology," explains Lars Purkarthofer, Manager Public Affairs at UPS. "Competitive innovation will ultimately identify the best solutions for the final mile of delivery routes."

Competitive pressure as a driver

Efficiency is the decisive factor along the last mile. However, this highly competitive environment is precisely where Purkarthofer also sees great potential. He comments, "We are faced with the challenge of exploring which solutions to implement and how we can make them open to all users. The end-customer is playing an increasingly large role in directing logistics, and competitive pressure is a great driver." The testing and scaling of such solutions – alternative technologies such as e-mobility, autonomous driving or platooning – has been part of UPS's business model for a long time. Track & Trace, for example, which was originally launched internally to record data collected from daily logistics processes, has grown to become a system capable of managing delivery fleet networks in real time. "Already in the early 1990s, we swapped our clipboards and lists for delivery computers, which have allowed us to analyse the pro-

cesses in depth," says Purkarthofer. These devices have remained, even if nowadays they are much smaller and easier to use – and, above all, more powerful.

The company's overall strategy is geared towards optimisation and economic efficiency. "However, we are also increasingly taking account of the external expectations being placed on our business model. Adapting our risk management to include future changes in environmental conditions is part of a sustainability strategy." From electric delivery vehicles to cargo bikes: "We're testing everything possible," declares Purkarthofer. There are 8,500 UPS vehicles with alternative fuels and progressive technologies in use around the world. "These are mobile laboratories that show us whether individual vehicles are useful for our requirements."

Regional differences

There are also regional differences. While hydraulic hybrid vehicles – in which the internal combustion engine is supported by recuperation during acceleration – are being widely tested in the USA, the focus in Germany is on electromobility. "These differences are primarily due to the quality of the infrastructure in each case and technical support," says Purkarthofer. Production capacities for electric vehicles are still low, which prevents rapid scaling. "Major manufacturers simply don't offer series-production vehicles up to 7.5 tonnes." Since 2009 UPS has been cooperating with an SME that retrofits used vehicles. Today, UPS has 60 of its own electric vehicles on the road in Germany. "We are already operating a predominantly electric delivery fleet in the centres of Düsseldorf and Hamburg," explains Purkarthofer. "What can be implemented really depends on the local condi-

tions in each case – for example, the density of the delivery area, our volume structure and whether conventional operations can be replaced. There's no blueprint."

Poor charging infrastructure

Alongside vehicle production, the charging infrastructure also needs to be developed. Purkarthofer continues, "Logistics sites must be equipped with appropriate charging capacities." In UPS's experience, the sector is an ideal area of application for electromobility, especially owing to the clear and easy-to-plan routes.

Possibly the most important question is how to deal with a lack of space, especially in inner-city commercial areas which have large delivery quantities. Here, the involvement of municipalities is essential – processes must change so that they become more compatible with the city. "Electric vehicles are affected by traffic jams as much as all other road users," explains the UPS spokesperson. Accordingly, the company is developing concepts together with municipalities which should allow things to run more smoothly in tight traffic areas. "We greatly appreciate it when municipalities appoint commercial transport officers who specialise in these problems and act as contacts for us – for example when we need to find premises that we can use for interim storage."

Hamburg has taken on a pioneering role in this regard: in the inner city, four containers are used as mobile parcel depots, from which the parcels can be delivered to recipients either on foot or by cargo bike. Other interim storage solutions are conceivable. In Offenbach, for example, a parcel trailer is brought into the city, from which the distribution and collection of parcels is organised. Even entirely different →

“We’re testing everything possible.”

receptacles, such as autonomous vehicles, could be used. “With deliveries, it’s always important to us to take care of the delivery drivers themselves and to take the load off them, so to speak,” says Purkarthofer. There are also a range of options regarding the distribution equipment. “People don’t generally want to see bicycles in pedestrian areas, so we are considering alternatives, such as trolleys that the delivery driver can simply pull along.” The decisive criterion is suitability, he explains, “We scrutinise new options and evaluate them based on the role they could play now and in the future, taking into account all solutions.”

Search for alternative delivery points

In future, the greatest challenge in making deliveries to private customers will certainly continue to be their reachability: many are not at home during the day. This means that there will be a particularly intensive search for alternative delivery points. According to Purkarthofer, there are many options, such as containers in suburban railway stations or other public places that are easy to reach. On the other hand, he considers delivery drones to be no more than a possible partial solution and hardly suited to urban areas. One negative factor is the noise, but drones are also inefficient as they can only carry individual objects: “Receptacles will always remain the means of choice for distribution.”

Courier and express services, as well as urban logistics, will look a lot different ten years from now, but the landscape is still evolving, comments Lars Purkarthofer: “It’s an ongoing process and we don’t know what else we will encounter. There is a lot of activity within this area, and I think there are still a lot of new things to come.” (jg) ○

Lars Purkarthofer,
Manager Public Affairs
at UPS



You will find more information at
www.ups.com

TECHNOLOGY OF THE FUTURE

For his doctorate, Dustin Schöder, currently Manager In-house Consulting & CIP at Hellmann Worldwide Logistics, investigated whether electromobility will eventually become a profitable option of consumer goods distribution.

In your dissertation, you evaluate the use of battery-powered commercial vehicles in the distribution of consumer goods, from both a technical and economic perspective. Are they viable?

Not at present, but it will be in future. At the moment, the technology is not really ready for the market – there are only a few models available to buy. But this will most probably change. I carried out a scenario analysis for 2030, following two lines of thought: I assumed first that technology and customer demand would develop positively, and second that they would stagnate.

How will the situation look in 2030?

All of the application scenarios that I investigated are likely to improve over the next ten years or so. Electric vehicles will be more beneficial and less costly to operate than their conventionally powered cousins – especially if they are produced in series

and with other battery technologies having achieved market readiness as well. I was able to identify a large difference in the fashion sector, in particular, as clothing is quite voluminous but comparatively light. Electromobility is ideal for companies that generally drive to their customers frequently but with small cargoes. My calculations showed that B2C parcel service companies would benefit slightly less from the technology, because the daily mileage in this sector is extremely low.

What was the aim of your research?

It gives all those who already use the technology, or who wish to use it, a mechanism with which to analyse usage, from a technical and economic perspective. This can provide greater entrepreneurial security.

Which findings were particularly interesting to you?

That the hype concerning the range of the vehicles is unfounded. My model clearly shows that the far bigger problem is payload. For a logistics specialist or haulier, if the payload of an electric vehicle is sufficient in a specific application scenario, then its range is generally adequate as well.

You say that, in future, electric commercial vehicles will become a viable option. Which factors does this depend on?

I found that the financial balance is influenced less by the vehicles’ operating costs than by their procurement cost. Even if the charging current were available for free, as long as an electric vehicle costs twice as much as a conventional one, the difference cannot be overcome during the service lives that are commonplace in the logistics industry. In order to focus attention on electric drives for commercial vehicles, it would, in my opinion, be advisable for policymakers to offer funding models for procurement rather than for electricity, for example.

You now work for Hellmann Worldwide Logistics. Can you apply your expertise there?

Yes, I am also working on e-mobility here. We have adapted the evaluation model mentioned above to the application scenarios in the company, so that when a new electric vehicle comes onto the market, we can quickly get an initial impression as to whether we can make use of it – at the push of a button, so to speak. Hellmann sees great potential in electric mobility and wishes to use it increasingly in future. This year, for example, we are planning to start a field trial together with BPW Bergische Achsen KG to test an electric vehicle in real commercial operations. ○

Photos: Tien Nguyen, BPW

Photo: Hellmann

ARTIFICIAL INTELLIGENCE

The founders of Urbismart are all over 50, so they refer to their business as an "old men's start-up". It is specifically their experience in transport and logistics, digitisation and warehouse automation that led them to the idea of using artificial intelligence to optimise city logistics.



"If the interaction between the various shippers, service providers and delivery channels is well organised, then everyone benefits."

Jean-Paul Rival, Urbismart

"Sustainable city logistics is a hot topic. But above all, logistics is a cost factor. If you add an environmentally compatible solution for the last few kilometres of the journey to the delivery costs, no-one wants to pay that," says Jean-Paul Rival, one of the four founders of French start-up Urbismart. "Therefore, if you want to deal with city logistics properly, you have to rethink the entire supply chain." As a result, Urbismart has developed a model for a shared truck platform that breaks down the boundaries between shippers, logistics service providers, hauliers and even local authorities – in short, all of the players in the supply chain. In doing so, they are seeking to create a supply chain that satisfies all interests.

customers being supplied, and ensure that the trucks are loaded optimally." In hubs on the outskirts of the city, either cross docking takes place, or the deliveries are prepared in detail by merging the B2B and B2C shipments. This gives the transport companies access to some of the deliveries which are currently entrusted to express couriers or the postal service. This, in turn, increases the efficiency of the driver making deliveries to the street in question – especially if he uses his empty truck to pick up

return deliveries, swap bodies, clothes hangers or cardboard boxes for recycling.

Specifically, this means that tractor-trailers cover the journey from large warehouses to cross-docking hubs on the outskirts of the city, where just one vehicle is loaded with all of the consignments for one street in the city centre – goods shops and parcels for private internet customers. Accordingly, there is just one delivery truck for each street. In return, the author-

ities should guarantee a parking space for the vehicle from which the deliveries are to be made. There is neither noise nor pollution as long as the truck remains parked there. "We need dynamic optimisation in real time," explains Jean-Paul Rival. "On the one hand, you have hundreds of shippers, and on the other, hundreds of cities. In between, there are thousands of transport companies and tens of thousands of recipients. This is big data – a huge set of data that is constantly changing and requires quick responses." New situations occur all the time as orders are changed, trucks break down or drivers fall ill, or when the current traffic situation or the weather disrupt the route calculations. "This amount of information and data can no longer be handled by conventional software, let alone people in front of a screen. We need a more powerful machine here – and this is precisely where artificial intelligence comes in."

lack experience in collating and delivering all of the orders from shops and also from online buyers. At the same time, they want to keep down their costs. The first victims of this financial pressure are the transport companies: there are more than 30,000 such businesses in France, and many of them are close to bankruptcy, according to Rival. At the same time, local authorities want to limit traffic and thus reduce noise and pollution – while shop deliveries should still be guaranteed. "We therefore wanted to combine the demand and the services of all players in order to exploit the relevant synergies. If the interaction between the various shippers, service providers and delivery channels is well organised, then everyone benefits," says Rival. He is certain that shippers could thus achieve significant savings, as transport companies would improve vehicle capacity utilisation. Moreover, there would be fewer delivery vehicles on city centre roads.

which lasted several months. "The companies that took part were enthusiastic without exception," reports Rival. Deliveries to the city centre were made in cooperation with Libner, a truck bodybuilder, which has developed a small electric delivery vehicle that is carried on board a truck. In a car park close to the city centre, a pallet loaded with goods is pushed onto the electric vehicle, which is then set down by the truck and begins making deliveries along the road in question. When the pallet is empty, the next one is taken from the truck, and the deliveries continue. Rival explains, "The test in Bordeaux has proven that we can manage supply chains such as this with a variety of shippers and hauliers."

So far, Urbismart remains a more or less virtual undertaking. To position itself as a player on the market, the start-up needs to have its own offices, IT and staff, and acquire as many customers, that is shippers and hauliers, as possible. "To get going in practice, we initially need at least 1.5 million euros," admits Rival. "At the moment, we're still looking for investors." (rkl)

Hubs on the outskirts of the city

Describing the Urbismart business model, Rival says, "We buy transport and sell it to the shippers with a margin that generates income. We manage everything in such a way that the logistics providers can operate highly efficiently and thus profitably, while the shippers incur minimal costs. To this end, we combine the delivery quantities of the participating shippers, look for the best routes to the



The truck with deliveries for a single street carries an electric vehicle for distribution purposes.

Photos: Ralf Klingsieck

Combining demand and services

"Shippers are faced with increasingly complicated issues because of multi-channel deliveries," says Jean-Paul Rival. They

Test in Bordeaux

The concept was put into practice and further improved during a test in Bordeaux,

You will find more information at www.urbismart.com

RELIABILITY IS A MUST

Haulier Peter Peisker of Waldbröl has been using BPW running gears for many years after being won over by their quality. He put together his two latest trailers at the IAA Commercial Vehicles trade show and equipped them with further products from BPW Group companies.



Peter Peisker is beaming about the LED lighting on his articulated truck. "It's just wonderful how the colours come out," he shouts as his son-in-law manoeuvres the 14.90-metre-long semi-trailer in the haulier's car park in Waldbröl (North Rhine-Westphalia). The power of the LED lighting means one thing in particular for the haulier: additional safety for his drivers. The haulage company from the Bergisches Land region has 70 employees, 30 tractor units and 45 semi-trailers – and between them, they cover an average of 100,000 to 120,000 kilometres a year. At the end of last year, Peter Peisker purchased two vehicles which now drive all around Germany on a daily basis. The new trailers are distinguished by the fact that most of their components are made by BPW. The haulier has his reasons, as he explains, "I want good quality that I can rely on."

Confi-Go-Mat proves a hit at trade show

Peisker has been working in the haulage industry and in logistics since 1973. As a

regional haulier for a major car manufacturer in southern Germany, he is on the road around the clock. He supplies just-in-time components which are then processed immediately on the assembly line. Reliability is a must, he says, "I can't afford any delays." For this reason, he opted for BPW running gears from the very beginning. As the company continued to expand its product portfolio over the years, he became increasingly interested in other components and could hardly contain his excitement when he came across the Confi-Go-Mat configurator on the BPW stand at the trade show IAA Commercial Vehicles 2016 in Hanover. It gave visitors the opportunity to put together vehicles using BPW Group components. "To begin with, I could choose the vehicle type I needed. From curtainsiders to box trucks, tippers or tank and silo semi-trailers – everything was available," remembers Peisker. Then he added the relevant products from BPW Group companies: running gear from BPW, wear and bodywork components from Hestal, lighting technology from Ermax, various mudwing designs from HBN-Teknik and telematics solutions from idem telematics.



Vehicle manufacturer Fliegl assembled its new trailers from BPW components.

He was shown all of the possibilities by BPW sales employee Reinhard Hamm. At the transport logistic fair in Munich, Peisker went ahead and ordered all of the components for two semi-trailers. Every year he adds four to six new trailers to his fleet, and they remain in use for around eight years. To have as much cargo space as possible, the haulier uses extra-long three-axle trucks with an inner length of 14.90 metres, among others. The advantage of semi-trailers over road trains is that the trailer does not have to be uncoupled during loading and unloading at a ramp. In addition, there is only one vehicle to be opened. This makes loading times significantly shorter – a clear advantage in the fast-paced haulage business.

Practical test passed

At his company's yard, the haulier proudly shows which other components he chose in addition to the LED lighting. First, there is the telematics system supplied by idem telematics, which enables Peisker to notify →

"I WANT GOOD
QUALITY THAT I CAN
RELY ON."

Peter Peisker, Peisker Logistik



Logistics manager Zoran Rados appreciates the gearing for the landing legs, which allows them to be wound down easily.



BPW sales employee Reinhard Hamm (left) and Peter Peisker discuss the installed components. Both men rate the quality of the products very highly.

his customers down to the minute when the vehicle will reach their yard. Moreover, at any time and from his office desk, he can locate the vehicles, check the battery status and tyre pressure, and analyse brake pad wear and fuel consumption.

Peter Peisker looks upwards towards the pillars and roof-lifting system made by the BPW subsidiary Hestal, which conveniently raises the roof by 300 millimetres. “It gives us some additional room for manoeuvre when we use a forklift truck to load and unload,” explains the 67-year-old. His son-in-law and logistics manager Zoran Rados particularly appreciates another detail: the landing legs can be wound down easily – the gearing reduces the effort required. The semi-trailers have passed the most important practical test, reports Peisker, “My drivers are very happy. This quality is typical of our home region.” The BPW headquarters in Wiehl are only a few kilometres away from Waldbröl, and the distance to the nearest service workshop is a mere 800 metres. Proximity unites.

Welcome in the workshop as well

The semi-trailers with BPW components are a hit not only with the drivers but with the company’s own workshop too. As the mechanics undertake around 90 percent of all maintenance work themselves, they benefit from the comprehensive support provided by BPW’s customer service department – especially on Saturdays, when the vehicles are in the yard and receive their routine inspections. Furthermore, Peisker and BPW have concluded a maintenance contract for each new vehicle. “If a bulb blows, I can turn to one of the 3,200 service partners worldwide,” says Peisker. He thus benefits from the dense customer network everywhere.

Incidentally, visitors to the IAA 2018 trade show can look forward to a new offering from BPW – and the haulier from Waldbröl will be there as well. (pb)



You will find more information at www.peisker-logistik.de

PEISKER LOGISTIK

Founded in 1973, the company engages in haulage, logistics and warehousing/out-sourcing. The fleet consists of tractor-trailers, swap body trucks and mega semi-trailers with loading heights of up to three metres. The haulier specialises in transporting large volumes of up to 120 square metres and express shipments for just-in-time solutions. The company is able to transport parcelled goods throughout Europe thanks to its cooperation with the express pallet network Palletways. Peisker also undertakes procurement logistics for raw materials and parts for its manufacturing customers, as well as storage and delivery of finished products. To this end, the company has its own warehouses with up to 20,000 square metres of storage space.

Photos: Holger Jacoby

INNOVATIVE LEARNING

BPW has fitted out an industrial space, which is large enough to accommodate a trailer, as a venue for its practical training courses.

In Wiehl around eighteen months ago, BPW opened a seminar room that probably ranks among the most unusual in the industry. Here, in a smart industrial space, course participants can get up close and personal with the Group’s products – there’s even enough room inside for a trailer. In fact, the trailer plays a major practical role in the numerous workshops hosted by the company for customers who wish to learn more about disc brake repairs or telematics, for instance.

Seeing the bigger picture

“This space certainly enriches our offering,” says Nils Henkelmann of BPW’s training department. “It gives us a unique opportunity to present the products in an installed condition. Instead of practising on lots of individual exhibits, those attending our courses can now see the bigger picture. As in a real setting, we demonstrate and work directly with the installed products. It is a method that accurately mirrors their everyday work experience.” It enables repair shop employees in particular to immerse themselves in the task at hand. “They are usually eager to see new parts installed in the trailer.” Training courses are also available for those employed in sales or aftermarket parts, whose primary interest in the components is generally more theoretical.

There’s something to learn for everyone who attends a training session, as



Every year BPW trains around 700 experts from all segments of the commercial vehicle industry, from repair mechanics to senior managers.



Henkelmann explains, “Even experienced employees always come away with fresh knowledge, such as an understanding of the best way to perform a specific repair. Sharing information is a major part of the seminars and often gives rise to new ideas about how to approach our products.” In addition, he says, many workshop attendees become truly aware of the tremendous variety of the BPW Group’s products for the first time when they visit the new facility. “They already know that we supply products for practically every aspect of trailers through our subsidiaries, of course, but it’s not until we show the range and explain our services here that the offering becomes more tangible.”

Bespoke seminars available

Numerous experts have already attended courses in the innovative training facility.

The first anniversary coincided with a visit by ten employees of the BPW partner Ewals Cargo Care. “BPW is a highly innovative company that pays close attention to its customers and their needs, which is reflected in its information and training provisions as well,” comments Bart van Rens, the fleet control manager of Ewals Cargo Care. Together with his team, he gained insights into production, the telematics solutions of idem telematics, and eTransport, the electric axle drive developed by BPW. On behalf of Ewals Cargo Care, the BPW training team designed a customised practical seminar tailored to the attendees’ present requirements. Such bespoke arrangements run alongside the officially scheduled programme of training events. On request, the training team will visit your premises to discuss the format of a tailor-made course. (jg)



You will find more information at www.wethinktransport.com



QUALITY, WELL RECEIVED

For three decades, Aircargo Transport GmbH in North Rhine-Westphalia has been providing road feeder and other services. The company uses the Cargofleet platform of idem telematics to exchange data and information about the fleet.



Michael Roelofsen, managing director of Aircargo Transport GmbH, has a self-assured reply for any questions concerning his company strategy, “We don’t want to be the biggest on the market – just always the best.” True to this principle, the company has practically reinvented itself in the last five years – and this, of course, includes constant growth. By deliberately focusing on challenging transportation tasks, extremely time-sensitive orders and valuable goods requiring special handling, Aircargo has tapped into new business fields and acquired well-known customers such as Lufthansa Cargo, which recognises the company as a Premium Road Partner.

Trust in new technology

Aircargo focuses on three pillars: road feeder services, high-value transport and temperature-controlled transport, especially for the pharmaceutical industry. “With our strategy and our focus on special transport, we have clearly achieved our aim of setting ourselves apart from the majority of the competition,” comments

Roelofsen. “This is down to the hard work of the entire team, although it would not have been possible without the associated hardware and IT systems.” The agile company relies on the Cargofleet platform supplied by idem telematics for exchanging data and information. “When we started specialising around five years ago, we considered various software alternatives. We placed our trust in idem telematics and chose Cargofleet, which has proven to be the correct decision over the last few years. We are completely satisfied.”

Cargofleet enables all relevant trailer data to be accessed in real time, including the current location of the trailer, temperatures, and the status of locks and doors. In addition, idem telematics adapted the platform to the customer’s specific requirements. “They were able to customise a lot of features – the collaboration was very good right from the development stage,” says Roelofsen. Aircargo also put idem telematics in contact with a manufacturer of a door locking system, for example. “Together we created a solution which enables us to unlock the door from head office via remote control.” The company thus fulfils an important requirement for high-value transport: the trailer cannot be opened by the driver alone.

Just over a year ago, Aircargo moved into new headquarters in Emmerich on the Lower Rhine. Everything comes together in what is known as the Fleetwatch team, which has little in common anymore with a conventional vehicle management operation. Customers can contact the control centre 24 hours a day, 365 days a year. “We provide high-quality services and will absolutely keep our promises,” explains Roelofsen. The ability to react flexibly and instantaneously is indispensable in time-sensitive road feeder services. Aircargo remains constantly in touch with its clients and vehicle fleet, which comprises 50 tractor units and around 60 trailers, by way of redundant IT systems, for example.

State-of-the-art technology for the fleet

The company is also committed to a state-of-the-art fleet: most trucks already fulfil the Euro 6 standard, and their average age is just two years. The vehicles have special roller conveyor trailers to ensure that the Aircargo team can transfer loads safely from the aircraft to the trailers, without causing any damage. In addition to normal →

AIRCARGO TRANSPORT

The company was founded in 1978 and therefore has 40 years of experience, which is a very long time in the field of road feeder services. In 2005 the company changed hands within the family, with current director Michael Roelofsen representing the fourth generation. Aircargo operates throughout Europe, providing road feeder, high-value transport and pharmaceutical logistics services.



roller conveyor trailers (height 265 cm), mega roller conveyor trailers are used, especially for high-volume loads. These trailers are up to 305 centimetres tall. Freight security has been verified by multiple certification agencies. Aircargo has been approved and registered as a regulated agent with the German Federal Aviation Office since 2012.

Clients expressly welcome the added-value services that the transport company offers. In the last few years, Aircargo was able to acquire many new customers after making targeted investments in its fleet and IT

systems. Thanks to the high-tech equipment on board and at its headquarters, the company can prepare static information dynamically and provide it to clients in real time. Customers can thus use a web browser to call up information at any time, such as the predicted arrival time, which is calculated every minute based on the traffic situation and other factors. According to Roelofsen, this is where traditional expertise meets

state-of-the-art technology, “We are and intend to remain logistics specialists through and through. But today we are just as much a web-based company.” (os)

 You will find more information at www.aircargo-transport.eu



INTELLIGENTLY INTERCONNECTED AND INFORMED IN REAL TIME



The big data revolution in transportation began long ago: real-time information offers considerable competitive advantages to both logistics companies and consignors – a strategy that companies such as Aircargo have pursued successfully for many years. The Cargofleet telematics platform provides an ideal gateway in this context.

In its third and latest generation, the solution has become even more versatile and intuitive to use. As an open platform independent of vehicle manufacturers, the system interconnects mixed fleets, fleet operators, dispatchers and drivers, collects and exports data from trucks, trailers, vans and swap bodies, and displays the information in an easy-to-use menu interface. The development of Cargofleet 3 took a little more than a year – a tight schedule which could only be met thanks to the agile scrum method, as Heiko Boch from Product Management at idem telematics reports: “Our aim is to provide full transparency in the transport process.” To this end, the all-in-one telematics platform processes relevant information about transport orders, vehicle operation, driving behaviour and cargo in accordance with needs and target groups, displays the information graphically, and makes it available in real time. In addition, the driver can retrieve all of the data relating to the order, vehicle, trailer and cargo via the associated app on an Android tablet.

Development will not stop there, says Boch, “We want to go beyond collecting data and be able to process information more and more intelligently. To achieve this, the system needs to automatically condense and process the data, typically, using it to generate decision-making aids for the transport company.”

Photos: Holger Jacoby



Modern Swabians: 28-year-old Pascal Schober is a member of the fourth generation to enter his family’s haulage company, where he has a lot of scope to implement digital projects.

These days, if friends or acquaintances ask Pascal Schober about his job, he no longer gets nervous. “People now regard logistics as an exciting field of work,” he says. Around ten years ago, when he was sitting his school-leaving exams, it was a very different story. At that time, he was often faced with prejudice: “You want to work in haulage? Pushing around heavy boxes, driving dirty trucks and polluting the environment? You’d better steer clear of that!” But he didn’t. Rather, he works in such a way that it improves the general perception of haulage and logistics: he relies on digital solutions which increase efficiency and quality while also markedly enhancing the image of the industry.

His business card reads “Business Development”, which certainly leaves room for interpretation. And the 28-year-old who, as a member of the fourth generation, wants to develop the Swabian family-owned haulage company Schober Transport, actually has a broad spectrum of duties. He acquires customers, and when collaboration with a new customer starts, he may well spend a week on site refining the processes. He not only takes care of new IT systems, but also deals with new employees, head-mounted displays and fuel consumption, as well as his favourite topic: digitisation. “There were alternatives. But I wanted variety and the opportunity to be creative.” After studying logistics management at Baden-Wuerttemberg Cooperative State University in Stuttgart →



gart, in 2013 he was faced with the question: “Should I start off in another haulage company as an assistant or project manager and handle somebody else’s work, or do I want to quickly make my own mark in our company?” The decision was easy.

Clear division of tasks between father and son

Since then, there has been a clear division of tasks between him and his father Steffen-Kai Schober, who is almost 30 years his senior. As managing director, Schober senior still looks after most of the administrative and strategic matters. And he takes the pressure off Schober junior so that he can implement his ideas.

One of them is, for example, to enhance the telematics system to include an “estimated time of arrival” function, or ETA. Pascal Schober explains, “We are always thinking about which developments will actually benefit our company and our customers. And an automatically generated ETA clearly makes business easier for dispatchers, by helping them to calculate the remaining driving times, for example. The customer can also see the ETA and thus knows whether planned ramp slots can be adhered to or whether they will need to be rescheduled.”

Pascal Schober has also considered automatic price quotations and online booking tools, but decided against them. “Data such as these can only show a trend, at best. Our customers want overall concepts that they generally put out to tender in order to compare them, from which they get specific transport prices. When they see that we have our own drivers and vehicles, they will rate this differently compared to quotations with transport services that are simply purchased on the market.”

Diesel consumption reduced by 20 percent

In a company that transports more than 90 percent of all shipments with its own trucks, a lot of thought is given to fleet organisation and optimisation. In this regard, Schober counts on BPW as a reliable partner.

Pascal Schober comments, “We face many different challenges. On the one hand we have the constant pressure to reduce costs, and on the other, there is the challenge of attracting new drivers and retaining the ones we have. New technology can help us, but technology alone is not enough.” For example, the fuel consumption of Schober’s vehicles has been reduced by around 20 percent in the last five years. “Much of it is simply due to reducing the maximum speed.” New engines also made a contribution. In addition,



continuous driver training led to fuel savings of between five and seven percent, according to Schober.

For the drivers, too, it is worth driving economically and working conscientiously because they receive bonuses based on a points system in addition to their basic salary. Points are awarded for undamaged deliveries, for example, but also for good driving style: How many times does the driver kick down? How long does the engine run when the vehicle is stationary? How is the retarder used? Did the driver have to apply the brakes suddenly? An app collects all of this information from the trucks’ telematics data and sends individual feedback

to the drivers. Furthermore, an anonymous ranking system shows all drivers where they stand in relation to their colleagues. “Now 180 of our 220 drivers are posting scores in the top half of the scale which is also thanks to the transparency that we have achieved through telematics.”

Driver recruitment impossible without the internet

In spite of paying performance-based bonuses, providing extremely comfortable driver’s cabins with the best equipment, and arranging fixed routes and weekly schedules that give drivers predictable working hours, even Pascal Schober has to go to great lengths to find new drivers. He has started using social media for recruitment, he says, “We’ve created a Facebook platform to target drivers in particular, and we’ve also used Google Ads. These days, it’s just not possible to find new drivers without the internet.”

Then again, not every digital innovation has proven useful. “We examined the practical application of head-mounted displays for order picking, for example,” says Schober. “In principle it works well, as employees have both hands free and it speeds up certain processes.” However, HMDs have not (yet) caught on in Schober’s warehouses, because “We’ve not yet found a project in which they would really be worthwhile.”

Nevertheless, the entrepreneur will maintain this course of action. He wishes Schober Transport to continue operating as a haulier that combines traditional and digitised methods. He concludes, “If we can combine new technology with the positive energy and creativity of a start-up, along with the expertise and experience from 80 years of transport and haulage, then we’ll have excellent prospects indeed. That’s when logistics becomes really attractive.” (lmc)

 You will find more information at www.schober-logistik.de

Photos: Schober

“We are always thinking about which developments will actually benefit our company and our customers.”

Pascal Schober,
Business Development
at Schober Transport

SCHOBERTransport

The company address at Birkelstrasse 14, Weinstadt, bears witness to an old tradition. For decades Birkel, which was once Germany’s largest pasta producer, had a manufacturing site on this street. Schober Transport, a foodstuff haulier which grew up with clients such as Birkel and Danone, still has its administrative department at headquarters on Birkelstrasse. Schober’s focus remains on foodstuff logistics. Half of the company’s 160 trailers are refrigerated vehicles, and they mainly transport partial and complete loads from five warehouse sites, which can accommodate up to 60,000 pallets, to commercial warehouses and stores. Schober’s customers also include companies in the automotive industry. The haulier employs 600 staff and has an annual turnover of around 50 million euros.

ZERO EMISSIONS IN JUST TWO WEEKS

A combination of BPW's electric axle drive eTransport and the expertise of the special-purpose vehicle maker Paul Nutzfahrzeuge is transforming the Mercedes-Benz Vario into an electric van.



One ingredient is essential in any endeavour to develop the electric vehicle market within the urban landscape – vehicles that can withstand the rigours of everyday use. This applies in particular to commercial vehicles, which have to satisfy strict efficiency criteria and meet their operators' sometimes very specific needs. Together with Paul Nutzfahrzeuge, which is a European leader in special-purpose vehicle construction and conversion, BPW has now developed an exciting solution in this context. The two companies intend to electrify the Mercedes-Benz Vario with the introduction of a standard programme for municipal and commercial utility vehicles. Retrofitting existing vehicles with BPW's electric axle drive eTransport will transform the diesel-powered workhorse into a van that brings together efficiency, zero

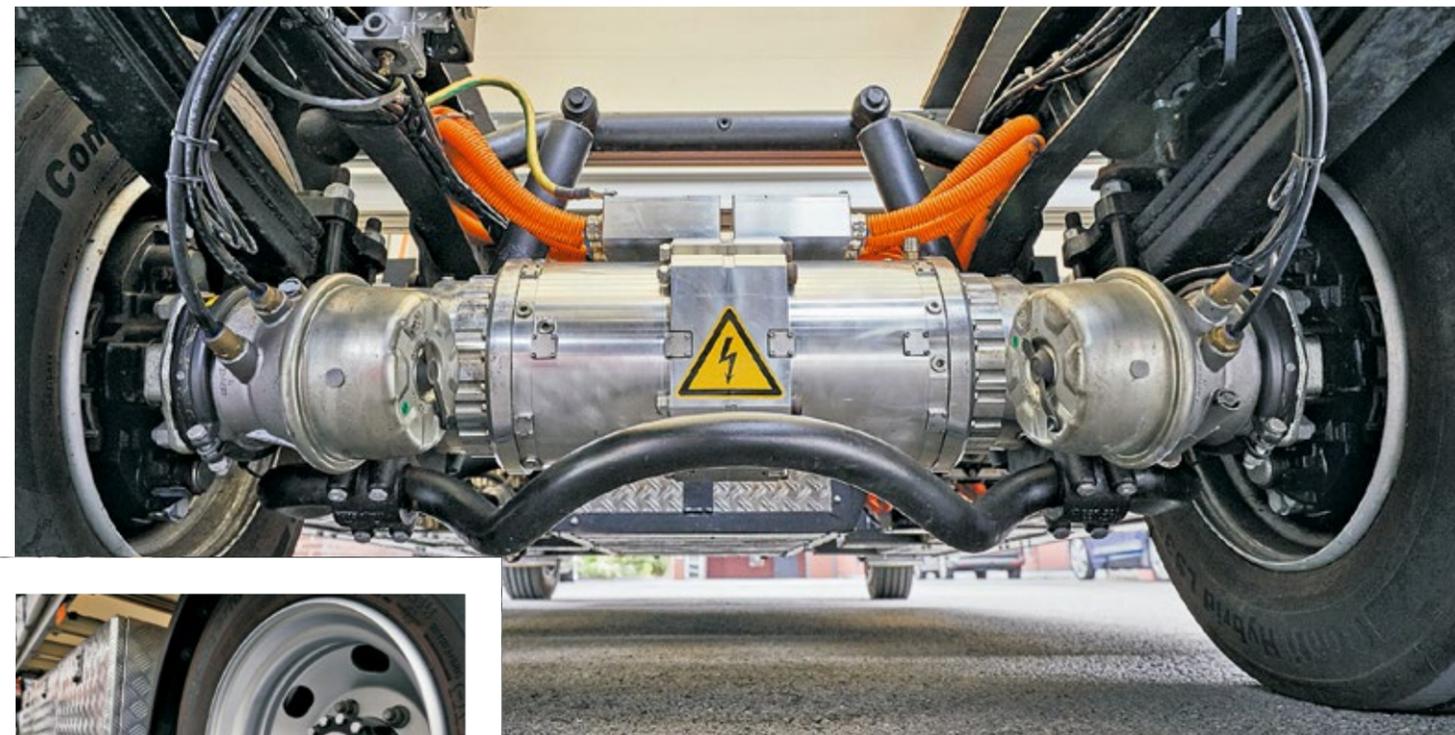
emissions and outstanding driving characteristics.

Highly promising partnership

"Many authorities could ultimately be compelled to issue driving bans contrary to their own interests," says Walter Pöttinger, managing director of Paul Nutzfahrzeuge. For this reason, a scheme that discards the diesel engine in favour of an electric axle marks an exciting step, given that municipal authorities rank among the largest operators of diesel-powered commercial vehicle fleets. Markus Schell, managing general partner of BPW, remarks, "The standard conversion programme being launched by Paul sends an important message that has been eager-

ly awaited by fleet operators in the municipal, public agency and business sectors. But it also represents a crucial milestone on the road towards electric transport in general. We are delighted to have this opportunity to build on our long-standing mobility and system partnership with the company in the electric vehicle segment as well."

The Vario, a 7.5-tonne heavy commercial van built by Mercedes-Benz between 1986 and 2013, is very popular with municipal authorities and public agencies, and well represented in their vehicle fleets. In Germany alone, almost 20,000 units are thought still to be in service. "These are treasured vehicles and we are giving them a new lease of life," insists Walter Pöttinger. Among the arguments backing the Vario are its high payload, uncompromising reliability and large cab. And it has a long ser-



PAUL NUTZFAHRZEUGE

Converting existing vehicles to accommodate BPW's electric drive axle, eTransport, paves the way for zero-emission logistics.

Headquartered in Vilshofen an der Donau in Lower Bavaria, Paul Nutzfahrzeuge GmbH ranks among the European leaders in special-purpose vehicle construction. In recent years this division of the Paul Group has emerged as an accomplished global player serving customers the world over. Every year its running gear experts carry out chassis conversions, axle modifications, frame extensions, and special configurations on as many as 1,000 commercial vehicles. Paul Nutzfahrzeuge GmbH currently employs around 150 people. The electrified Mercedes-Benz Vario is to be marketed through EVADE, a subsidiary of the Paul Group.

vice life because many operators use it only seasonally. But the tightening of exhaust gas regulations and the associated imposition of driving bans could bring the Vario's reign to an abrupt end.

An electric successor from the Mercedes stable is not currently in sight, so that the scheme being rolled out by BPW and Paul Nutzfahrzeuge comes at just the right time. The offering is actually much more than simply a life-supporting intervention. Converting a vehicle to electric propulsion represents an innovative, sustainable and efficient approach. "Electrification allows these special-purpose vehicles to remain in service for a much longer period. It is an economically viable option, especially since the e-drive costs less to operate and maintain than an internal combustion engine," comments Pöttinger. →



Photos: Paul Gruppe, BPW

The efficient route to e-mobility

Unlike many electric concept vans, the principal driving force of the electrified Vario is not delivered by heavy battery packs. Their weight is counterbalanced by an end-to-end concept that not only includes the running gear, but also leaves the van's load capacity undiminished. The conventional powertrain with all its heavy components, such as the engine, transmission and emission control system, is removed completely. The batteries are installed underneath the floor of the vehicle, and propulsion is provided by the axle drive eTransport. The intelligent principle underpinning the electric axle drive scooped five innovation awards in 2017 and facilitates the efficient conversion of the Mercedes-Benz Vario, no matter which of the many body variants is mounted on the chassis.

Compelling solution

In the majority of cases, the mileage of the utility vehicles operated by local authorities, the police and armed forces, as well as commercial enterprises, such as energy suppliers, garden landscapers and parcel couriers, is less than 100 km a day, which makes them ideal candidates for electrification. And charging can take place overnight within a few hours. The fully automatic drive recovers braking energy, and the battery can be closely aligned with the process in hand. Depending on its specification, it can even be lighter than a diesel power unit.

Electrification also offers the benefits of enhanced agility – the wheels can be activated individually, and active steering control for the rear axle reduces the vehicle's turning circle. Torque substantially increases as well to master even 20 percent



“THE STANDARD CONVERSION PROGRAMME BEING LAUNCHED BY PAUL SENDS AN IMPORTANT MESSAGE THAT HAS BEEN EAGERLY AWAITED BY FLEET OPERATORS IN THE MUNICIPAL, PUBLIC AGENCY AND BUSINESS SECTORS. BUT IT ALSO REPRESENTS A CRUCIAL MILESTONE ON THE ROAD TOWARDS ELECTRIC TRANSPORT IN GENERAL.”

BPW managing general partner
Markus Schell

slopes on loading ramps without problems. Rapid acceleration is generally associated with noise, but the converted Vario is quiet and does not produce any exhaust gases, so that the prospect of driving bans is not a worry. Electrification of the Mercedes-Benz Vario is scheduled to start this autumn. The scheme marks the culmination of several years' intense development work and countless miles of test driving. The actual conversion work, in contrast, takes only about two weeks to complete, depending on its scope. At the customer's request, Paul Nutzfahrzeuge can overhaul the vehicle, its bodywork and key components. The conversion of entire fleets enables operators not only to perform their customary transport duties efficiently, but also to raise their innovation and sustainability profiles. (pw) ○

↓ You will find more information at
www.paul-nutzfahrzeuge.de



Rolling on where others fear to tread – BPW's new hydraulic drive axle AGRO Drive digs deep when the going gets tough. The hydrostatic drive system keeps trailers and agricultural machinery on the move.

The Fendt tractor needs to mobilise all of its power resources to plough through the heavy ground with an outfit weighing almost 40 tonnes. Even then, the heavy beast and its trailer suddenly cease to make any headway. Despite permanent all-wheel drive and highly specialised off-road tyres, the powerful tractor is unable to transfer its enormous torque to the ground. The rolling resistance beneath the broad low-pressure tyres of the heavy liquid manure tanker in tow simply becomes too great. Serious crop damage is just a short step away – by continuing its journey, the tractor would sink further into the ground and leave deep tracks.

Farm vehicles regularly reach their limits on soft, loosely packed ground and on slopes, but Peter Lindner, BPW's head of agricultural sales in Germany, now has some good news for such situations. “To make it easier to pull away on these surfaces and prevent immobilisation, we have developed a hydraulic drive axle for agricultural trail-

ers,” he explains. The BPW AGRO Drive is the solution that makes a key difference – it keeps outfits moving even in the most inhospitable conditions. At the push of a button, the tractor driver can deliver the additional thrust required to propel the outfit forwards or backwards at the critical moment.

The principle is simple – AGRO Drive distributes the available power to an additional axle. Its positioning directly underneath the load distributes the weight well and enables the drive to overcome the rolling resistance and propel the outfit forward. “Since the drive provides assistance only on demand, none of the available power is diverted unless it is needed. This solution conserves precious energy resources,” insists Lindner.

Bigger and heavier

Ample traction is absolutely vital, especially when cultivating the land. Whenever

it is lacking, even the most sophisticated implements become ineffective. And even high-performance 4WD tractors can quickly be brought to their knees when towing heavy machinery, as rigorous testing in the field by BPW's engineers has demonstrated. The problem is that the tractor's drive axles often lack the downward force required to convert the high engine torque into forward motion on wet and heavy ground. In addition, towed farm machinery and implements are likely to continue becoming bigger and heavier. Both of these factors call for additional drive power.

Demand for the solution certainly exists. Just last autumn numerous agricultural contractors suffered the painful experience of being unable to work their fields because of wet conditions. Likewise in view of amended fertilizer regulations, which will prompt the application of much larger quantities of liquid manure and fermentation residues during brief periods in the springtime, the AGRO Drive offers tremendous benefits. For one thing, it finally →



Mátyás András, design chief of BPW-Hungária, operates the AGRO Drive system from a terminal in the tractor cockpit.



eliminates the costly downtimes incurred while farmers await the ideal ground conditions. According to Peter Lindner, “Contracts will no longer be awarded to the lowest bidders, but to the contractors who have the ability to work the fields in question.”

BPW developed the new product in response to many users calling for drive axles in order to increase their working flexibility. “Although we were entering completely new territory, it perfectly matched our strategy of offering a truly comprehensive range of agricultural products, especially for exceptional user needs, within our portfolio of running gear and drive solutions for commercial vehicles,” comments Lindner. The requirements to be satisfied in order to operate a trailer’s axle drive are very modest. Farmers simply need a tractor with a hydraulic system, which is the norm these days in any case.

Two travel and working speeds

Measured against other hydraulic drives, the crucial difference of the BPW AGRO Drive lies in its two-stage power output. The first speed stage delivers the maximum

torque – for situations demanding the greatest possible propulsive force. With this stage engaged, the tractor-trailer outfit can travel and work at speeds up to 6 km/h. In the second stage, selectively disabling alternate cylinders reduces the torque and raises the outfit’s travel speed to 10–13 km/h. The axle’s maximum power output stands at 37,000 Newton metres with a hydraulic supply rated at 400 bar, but tractors delivering a working pressure of 200 bar are nonetheless capable of operating the axle. The drive system starts to freewheel at the latest when the travel speed reaches 15 km/h.

Versatile use

A further advantage of the innovative AGRO Drive system is the small number of its components. Thanks to its well-conceived design, moreover, the drive axle does not impose any special demands on repair shops. Maintenance work can be performed and brake pads renewed without the hydraulic motor being removed. Thanks to the BPW brake system, the brake drum is simply pulled off the end of the axle. The drive axle can be installed in trailers with

AGRICULTURAL PRODUCTS FROM THE BPW CENTRE OF EXCELLENCE

The AGRO Drive axle is manufactured by BPW-Hungária Kft. at the Szombathely facility in the northwest of Hungary. This wholly owned subsidiary of BPW Bergische Achsen KG serves as the centre of excellence for agricultural vehicles and machinery within BPW Group. The product portfolio extends from dead axle stub assemblies and single axles to complete tridem running gears with frames including suspension and fitted brake systems. These high-quality and technically sophisticated axles and running gear systems are produced by a labour force of more than 1,500 people in Hungary. The agricultural products are marketed through BPW Group’s global network.

leaf spring, air or hydraulic suspension. The maximum axle load up to a travel speed of 40 km/h is an impressive 13,500 kg. The system is operated from a small terminal in the tractor cockpit. The driver is presented with buttons that accurately control pressure, travel direction, speed, and freewheeling. He can easily monitor the entire system simply by glancing at the display.

In addition, an interface is provided as standard to allow the simple connection of a tyre pressure control system. This enables the driver, while operating the outfit, to adjust the inflation of the trailer’s modern low-pressure tyres to suit extreme ground conditions. Speed, rotational direction and ABS sensors can also be integrated in the axle to capture useful information for oth-

er applications. Another advantage of the drive system is the small additional weight of the hydraulic axle. The AGRO Drive adds a mass of only around 350 kilograms.

The acquisition of a drive axle can certainly make good business sense as well, especially if it avoids the need to purchase a more powerful tractor. Trailers equipped with AGRO Drive axles can be towed by relatively lightly powered machines.

BPW brought together all of its running gear expertise in the production of the axle. The development work involved its sales, application consulting and design teams, and manufacturing takes place in its plant in Hungary. Here the company has established a centre of excellence for agricultural running gear systems, which also accom-

modates a testing facility with a brake tester and servo-hydraulic test rig. The drive system is just one of many new developments spearheading the current expansion of BPW’s agricultural product portfolio.

Another example is provided by an innovative weighing system to upgrade the running gear computer AGRO Hub, which already gives agricultural customers an exact overview of their trailers’ running gear mileage. By way of a sensor, both the daily and the total mileage are calculated in hours and kilometres. Thanks to the integration of additional axle load sensors, vehicle operators can now capture and store the trailer weight as well. “The sensors measure the weight of a trailer with a tolerance of around two percent. Given that many of our agricultural customers issue invoices for their work based on weight these days, our new weighing system represents an especially efficient solution,” explains Peter Lindner. Analysing the data, typically as represented in a histogram, allows vehicle capacity utilisation to be quickly and easily documented. The data can be transmitted wirelessly to Android smartphones by the BPW AGRO app and, thanks to a recent development, to the display in the vehicle by way of an ISOBUS communication channel.

Another milestone has been passed with the addition of nine-tonne axles to the range in order to cater for lighter trailers. But BPW has enlarged its axle offering at the top end of the heavy segment as well. “We aspire to supply appropriate and efficient solutions for all applications,” insists Mátyás András, the design chief of BPW-Hungária. The company is certainly moving in the right direction. (tw/pb)



The auxiliary drive in the trailer’s front axle delivers additional traction in difficult terrain.



Sustainability

across generations

BPW
is a
participant in
the United Nations
Global Compact and has
described its commitment to
man and the environment in
its first Communication on
Progress.



Businesses should support a precautionary approach to environmental challenges, undertake initiatives to promote greater environmental responsibility, and encourage the development and diffusion of environmentally friendly technologies. These are three of the ten principles of the United Nations Global Compact – the world's largest corporate sustainability initiative. BPW became a participant in 2016 and has now, in its first Communication on Progress, explained its position on sustainability. As the business

at the core of the Group, BPW Bergische Achsen KG illuminates its activities in the document entitled Integrity and Innovation. Subsequent reports will measure the progress made in the individual areas. According to managing general partner Achim Kotz, "BPW has a strong moral compass."

Responsibility for man and the environment

"Sustainability adopts a perspective that spans generations, not just the short term," stresses the report. And for generations, BPW has been pursuing the principles of sustainability and corporate responsibility that are now very familiar. It has been using alternative energy sources, for example, since its foundation in 1898. The hammer mill of Bergische Patentachsenfabrik Wiehl, where patent axles were produced for carriages and carts, was driven by hydropower. The site in Wiehl continues to operate a hydropower plant today, which generates a portion of the electricity consumed by the company's main facility. This technology is complemented by roof-mounted solar panels. Since summer 2017 all of the site's electricity is being procured from renewable sources with a guarantee of origin.

Illustration: BPW

THE TEN PRINCIPLES OF THE UN GLOBAL COMPACT

01 Businesses should support and respect the protection of internationally proclaimed human rights. **02** Businesses should make sure that they are not complicit in human rights abuses. **03** Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining. **04** Businesses should uphold the elimination of all forms of forced and compulsory labour. **05** Businesses should uphold the effective abolition of child labour. **06** Businesses should uphold the elimination of discrimination in respect of employment and occupation. **07** Businesses should support a precautionary approach to environmental challenges. **08** Businesses should undertake initiatives to promote greater environmental responsibility. **09** Businesses should encourage the development and diffusion of environmentally friendly technologies. **10** Businesses should work against corruption in all its forms, including extortion and bribery.

Efficiency was already an absolute priority for vehicle operators 120 years ago, and the axles produced by BPW spared them the daily task of lubricating with cart grease, which in turn saved time, effort, and resources. "Our goal of enabling vehicle manufacturers and operators to achieve the highest level of innovation, efficiency, safety and profitability in transport has remained unchanged to this day", comments Achim Kotz. "Our values are reflected in our strategies, products and services, and they provide us with guidance in a time of change."

At the same time, we are committed to acting responsibly and consistently. Alongside technological innovations, our endeavours focus likewise on our employees' well-being. BPW is a keen advocate of education and training; it fosters not only academically gifted recruits, but also young people with learning difficulties. Among its other provisions are age-appropriate workplaces and support for parents seeking to strike a balance between work and family life. In this context, the guiding principle that underpins all of our business actions is self-evident: for us, the ability to innovate depends on our willingness to accept responsibility for man and the environment. Apart from producing the Communication on Progress, BPW has also adopted a code

of conduct governing everyday business practices.

End-to-end concepts

The report further illustrates that BPW is responding to global megatrends, such as urbanisation and digitisation, by engaging in innovation in the fields of electric transport and digital connectivity. The company is well aware of the responsibility it shares in view of the worldwide growth in traffic volumes. "All the products and services of BPW seek to reduce consumption, wear, downtimes, the number of empty journeys, traffic congestion, and noise and exhaust gas emissions. Electric and lightweight solutions, intelligent telematics, and first-rate quality and support raise efficiency and therefore ease the burden on the environment." Examples of this approach include electric solutions for city centre delivery vehicles, such as the electric axle drive eTransport. BPW has adopted the name eSolutions for development work not only to replace diesel engines, but also to produce end-to-end concepts that will enable both itself and its customers in the transport and logistics sector to grasp unprecedented opportunities. (jg) 

 You will find more information at www.unglobalcompact.org

The BPW sustainability report is available at www.bpw.de/en/sustainability-report

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