

trailer world

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The digital fast track

Sensor technology, electrification, connectivity – which trends are shaping the future of logistics?





»On the **digital fast track**, following the right signs is crucial.«



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In both the real and virtual worlds, standing still is not an option for those who wish to remain ahead of the field in the future. But how can digital transformation generate impetus for transport and logistics enterprises? Where can the industry harness potential and translate it into successful business models?

This issue of trailer world looks at the opportunities and challenges presented by technical developments, and illustrates how digitisation can contribute to enhancing value-added processes in a targeted way. Companies should be seeking to utilise the valuable data generated by linking the IT departments of suppliers and customers, and connecting production, goods and vehicles to the internet. The way in which sensor technology, connectivity and electrification are shaping or even revolutionising the logistics industry is reflected in a variety of topics, including the internet of transport, real-time track & trace concepts, urban logistics and alternative drive systems.

Success in business depends to a growing extent on the ability to embrace change. But which trends should be adopted in order to sustain success? And which developments are likely to lead to blind alleys? As a leading innovator, BPW Group is taking a keen interest in the interconnected future. We identify ideas that harbour promise, pursue them assiduously and transform them into new developments. On the digital fast track, as elsewhere, following the right signs is crucial. Only solutions that offer tangible, practical and everyday benefits can help us and our customers to make progress.

As you browse through this forward-looking edition of our magazine, join us on the journey to digitisation – together, we're sure to be on the right track.

Carlo Lazzarini

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Photos: BPW, Oliver Felchner, Krone, Antonieta Marques | Cover: Yongyuan Dai - Getty Images

Autonomous driving underground

Unpaved roadways contribute to the challenging working conditions encountered in the twilight world of underground mines. Volvo is currently testing a vehicle that could prompt a revolution in the mining industry and beyond. Without a driver, the Volvo FMX six-wheeler is navigating the narrow passages of a mine, discharging its cargo and then returning to the loading site. It is the world's first autonomous truck capable of driving underground. With the aid of sensors it can operate safely all on its own at a variety of depths. The system recognises obstacles the size of a 1-euro coin and adapts to the mine's topography by creating a map of the site in advance. The tipper truck plots a very precise route and can operate continuously around the clock. In tests conducted in a Swedish mine it travelled seven kilometres at a depth of up to 1,320 metres. The project is seeking to demonstrate how technology can contribute to safe and productive transportation – particularly in confined and especially inhospitable environments.



Trying things out and thinking outside the box – BPW is a leading innovator



From left to right: Ranga Yogeshwar, Katrin Köster, Head of Corporate Communication at BPW, and Dr. Markus Kliffken receiving the top-100 innovation award at the German SME Summit.

› In recognition of its status as a leading innovator among German SMEs, BPW Bergische Achsen KG has been presented with a top-100 award. Companies with especially well-structured innovation processes, a fertile creative climate and an exceptional track record of success are selected to enter the competition in an independent procedure. At the award ceremony the business journalist and TV presenter Ranga Yogeshwar described the attributes that distinguish successful innovators, “They reconfigure processes, break the rules that govern their industries, suffer setbacks and still have the courage to pioneer new solutions. Driven by a belief in their ability to do things better, they are absolutely tenacious.”

BPW’s director of innovation management Dr. Markus Kliffken says, “We want to encourage employees to try things out, think outside the box, and talk to their colleagues in other departments.” His words are reinforced by Michael Pfeiffer, managing general partner of BPW, “Innovation is recognised as a task for the whole company and supported by all of our managers and employees.”



54 kilograms



amount of weight saved in a three-axle unit by the new BPW forged aluminium hubs. Paving the way for higher payloads and increased revenues, this solution is especially suitable for tankers and silo vehicles.

Environmental innovation prize for BPW Group



› BPW Group has taken second place in the GreenTec Awards with its electric axle drive eTransport. The GreenTec Awards rank among the most prestigious distinctions for environmental innovation. Since 2008 they have been rewarding concepts that bring together innovative engineering and sustainability.

eTransport is targeted at electric urban delivery vehicles between 7.5 and 18 tonnes. The drive is integrated in the axle, and the space-saving location of the battery packs between the axles puts them out of harm’s way. eTransport replaces the conventional powertrain, consisting of a diesel engine, transmission, drive shaft and exhaust emission control system, without adding to the vehicle’s weight or reducing cargo space. Dr. Markus Kliffken, director of innovation management at BPW, commented, “We are delighted to receive this award, which has a history of recognising foresighted developments. Elon Musk won the GreenTec Award, for example, at a time when Tesla was practically unknown in Germany.”

New BPW Fan Shop



› Rucksacks, hoodies and towels – available now from the Fan Shop launched by BPW recently in response to the demand for promotional items. The assortment currently encompasses a small number of select articles, including baby items. Additional products are to be added to the range soon.



Go to www.bpw-fanshop.de to browse the selection of BPW branded goods.

Conscientious electric transporter



› The E-Wiesel AGV developed by KAMAG Transporttechnik of Ulm is a high-capacity pallet transporter without a cab that can be loaded from both ends. Sophisticated sensor technology ensures the safety of shuttle operations with a payload of up to 30 tonnes. Among the sites where the vehicles are already operating is the Ulm plant of Uzin Utz AG. Here they are used to bridge the distance of around 200 metres between the production building and warehouse. Before their introduction, pallets of tile adhesive or mortar were



carried by truck, which necessitated as many as 50 journeys a day – at walking pace.

The E-Wiesel AGV built by KAMAG that now carries out the task stops whenever a pedestrian crosses its path or a car gets in its way. As soon as the route becomes clear, it automatically resumes the journey. Redundant systems – laser scanners and mechanical bumpers – make certain of compliance with strict safety standards.

In short, the E-Wiesel AGV makes automatic goods transportation more economical, safer and more sustainable.

The transparent cab

› Regulation (EU) No. 165/2014 requires all newly registered trucks to be equipped with a digital tachograph from mid-2019. Among other functions, the device has an integrated remote control mode that allows passing police cars to retrieve its data wirelessly. Haulage and other transport operators will be subject to fewer controls because only vehicles that raise suspicions will need to be stopped in future. Other functions are intended to improve everyday working conditions for drivers. They can, for example, display their driving and break times on a smartphone. In addition, the new legislation provides better protection for drivers’ personal data.

DATES

28 September–1 October
NUFAM
Karlsruhe, Germany

5–6 October
BPW Praxistage
Wiehl, Germany

12–18 November
Agritechnica
Hanover, Germany

14 November
BPW technical seminar
Berlin, Germany

21–22 November
Seminar on special-purpose vehicles
Wiehl, Germany

21–25 November
Solutrans
Lyon, France

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

Air suspension ECO Air COMPACT HD enters series production



› With ECO Air COMPACT HD BPW delivers as of now the reinforced version of the familiar modular air suspension featuring two-part cast trailing arms. It has been further improved for the challenges encountered by nine-tonne axles with drum or disc brakes, and is ideal for transport companies that operate both on-road and off-road. The suspension is a perfect solution for tippers and moving floor trailers.

Award-winning innovation



Ralf Merkelbach (BPW, centre), Gerhard Grünig (left) and Jan Burgdorf (both of “Verkehrsrundschau”) at the award presentation.

› The trade journal Verkehrsrundschau has awarded BPW its Green Truck Innovation 2017 prize for the zero-emission electric axle drive eTransport. The prize recognises technical solutions that reduce the burden imposed on the environment by commercial vehicles. A panel of judges evaluate the entries’ ability demonstrably to reduce air pollutants, greenhouse gases or noise emissions, and assess their practicability. According to Ralf Merkelbach, BPW’s senior key account manager for large fleets in Europe, eTransport has the potential to revolutionise urban transportation by delivering outstanding driving performance and manoeuvrability without adding to the vehicle’s weight or giving over cargo space to batteries. BPW has also won the KEP Innovation Prize for eTransport which is awarded by the ETM Publishing House.



Recognising and harnessing potential

Observers are forecasting a variety of trends for the logistics industry. Where should companies be focusing their attention, and which paths should they be taking? Experts recommend sober analysis and are helping to extract useful information from the wealth of available data.

According to a study on the subject of digitisation produced by the auditing company KPMG, change is compulsory. Transformation and action are essential ingredients for those who want to face the future with confidence. There are unlikely to be many companies that embody these concepts better than transport and logistics enterprises. No matter what the business, however, a series of questions have to be addressed on a regular basis. What kind of change do we wish to bring about? Which of the issues are short-term trends, and which ones demand sustained attention? Big data, the internet of transport, artificial intelligence, connectivity – what are the truly essential topics? And how can the relevant issues be harnessed to deliver business success?

Talking to the experts

“It’s important to analyse all the hype calmly and without yielding to the influence of marketing,” insists Christian Kille, Professor of Commercial Logistics and Operations Management at Würzburg-Schwein-

furt University of Applied Sciences. Paying attention to brash publicity claims is nonetheless worthwhile, he explains, “Facing up to the developments that are on the horizon leads to better decision making.” He recommends talking to experts who are willing to share their knowledge and judgement. “On the subject of the sharing economy, for example, I would get in touch with companies such as Uber and seek to learn from their experience.” External quantitative figures are another useful resource for those who wish to evaluate all the data and information objectively.

Change is compulsory – and delaying too long is inadvisable. Many people regard the sheer pace of change as excessive, however, and feel under pressure to respond. Prof. Kille puts this perception into perspective, “Many things happen very quickly nowadays – and certainly much more rapidly than in the past. But it’s crucial to retain a realistic view.” In his opinion, taking action simply for fear of missing out on something is never a good idea. Composure, he insists, is a more appropriate emotion, “The best policy is to continuously monitor what’s happening within an industry and to calmly decide on the best approach for your own business.” →

The KPMG study that regards change as compulsory is entitled 'Survival of the Smartest 2016'. Conducted in the context of a collaborative research project with higher education institutions, it examines how digital strategies are being implemented, investigates how sales and marketing activities are being transformed by digitisation, and looks at the challenges that are being presented by data management. The authors also canvassed the views of 28 companies, ranging in size from DAX-30 listed corporations to relatively large SMEs. The study reveals that only a few businesses are certain about the direction in which they wish to change and have set themselves specific targets.



»It's important to analyse all the hype calmly and without yielding to the influence of marketing.«

Christian Kille, Professor of Commercial Logistics and Operations Management at Würzburg-Schweinfurt University of Applied Sciences

Continuous observation

Drawing on his academic experience, Prof. Kille is cautious when evaluating trends. He says, "I am not expecting to see a massive fleet of autonomous vehicles in ten years' time. They are sure to represent a feasible option on some stretches of road but, for legal reasons alone, a driver will still be required." He likewise regards drones as a niche phenomenon and feels that their status is unlikely to change in the future. He thinks that 3D printing, in contrast, will be much more widely used in future for manufacturing not only replacement parts, but also numerous customised products. "The technology is currently too slow and expensive, but these problems could be resolved in the next five years."

Prof. Kille views artificial intelligence as a steadily emerging discipline that is not to be underestimated. Despite commenting that scientists are unable to create algorithms that can endow systems with intelligence at present, he believes that such developments take place by leaps and bounds,

rather than gradually. As he explains, "We barely notice just how intelligent systems are becoming, but we are surprised when we suddenly realise what enormous progress has been made. While I was studying electrical engineering 20 years ago, artificial intelligence was already a hot topic. Then it was all but forgotten for a long while, but now rapid progress is taking place again because computer systems have become so powerful. Today they have the performance capabilities that were previously lacking."

New business models

In Prof. Kille's opinion, the shape of the future will be determined by innovative business models. "Logistics experts must adapt and respond to the forthcoming challenges," he says. The professor then outlines the importance of closely monitoring and supporting the start-up culture, "SMEs should not only seek to assimilate young companies, but also give consideration to strategic partnerships, for example. As soon as a start-up is integrated in other enterprise, it is forced to observe boundaries again and becomes less disruptive."

Tobias Thielen is someone who helps SMEs to develop new ways of doing business. He is an industrial engineer and an expert for Industry 4.0 business models at a centre of excellence, the Mittelstand 4.0 Kompetenzzentrum in Kaiserslautern. The Federal Ministry for Economic Affairs and Energy wants this and similar institutions, which are overseen in collaboration with partners, such as universities or research organisations, to enable SMEs and independent tradespeople across Germany to digitise, interconnect and apply Industry 4.0 practices in their businesses. "The digital era harbours tremendous potential for both manufacturers and the service sector to exercise imagination and develop innovative business ideas," remarks Thielen. "Here in Kaiserslautern we address this topic from an interdisciplinary perspective. We look at the ways in which people and technologies are interconnected and identify the strategies that enterprises need to apply as a consequence."

Achieving a lot by simple means

Many young entrepreneurs decide to get in touch with these centres of excellence.

Thielen comments, "We then work together to pinpoint how they can use the opportunities afforded by digitisation to their advantage. In particular, we look at possible new business models that could be developed on the basis of ones that already exist." He regularly discovers that fairly small companies lack the resources needed to address issues such as these. "It would be reasonable to assert that the smaller the business, the less likely that sufficient time and employees are available for tackling the challenges. It is also more likely in such circumstances that the business owners regard Industry 4.0 as the preserve of the big players. They are blocking out the belief that a lot can be achieved even by simple means. Industry 4.0 can sound like a complex subject to many, but there are a lot of simple approaches to utilising the opportunities it provides."

Citing the topic of connectivity as a case in point, he comments, "We regularly encounter companies that have procured a good inventory of modern machines, but not interconnected them. It's a fairly simple thing to change – and before long valuable data are being generated. There is sometimes a lack of awareness of the data that already exist and of its hidden potential." And some companies that have been found to be using solutions already, he claims, have not adopted them in a systematic way. "In almost every case only a single activity, such as production, is interconnected – but it has no contact whatsoever with the accounts department, for example. Even for relatively small enterprises, however, establishing connections between processes makes good sense and is easy to achieve. As long as the machines are technically capable, even simple tablet computers can serve as workstations in many instances, explains Thielen, "By retrofitting older machines with new technology, such as one of these mobile devices, employees can be given access to their production data."

The use of data that already exist could be regarded as the most important pathway to new business models for SMEs in particular. In his view, "The key personal skills are creative thinking and a willingness to explore." He underlines this point by referring to the example of Ford. It sells information collected by its vehicles' automatic windscreen wiper systems to weather services – and thus generates additional income from data that would otherwise have remained unused.

Another example is taken from Thielen's own consulting activities. Using parameters captured over many years of business,

»The digital era harbours tremendous potential for both production and the service sector.«

Tobias Thielen, Mittelstand 4.0 Kompetenzzentrum in Kaiserslautern



a building company established a construction agency offering a full range of building-related services online. As he explains, raw production data are generally of little interest to external users, but they can constitute an appropriate platform for providing customer support, "Especially in the automotive industry, lots of customers want to see the data." It's important for suppliers, therefore, not to get left behind, "These include many small companies with around 20 employees, and losing a major customer can soon lead to the collapse of their business. Utilising production data and giving products a memory – typically in the form of RFID chips – actually entails relatively little work or expense."

Prof. Kille shares the view that such applications sometimes offer the greatest potential, "There's a lot of talk about big data, and most companies are sitting on large volumes. In most cases, however, these resources lack structure, and the different standards that exist are subject to frequent change. Practically every business possesses a large quantity of data garbage." The solution could lie in IT platforms, interfaces and fixed standards. "Data garbage has to be transformed into a recyclable asset," says Prof. Kille. "In the next step, all the parties in the supply chain must see themselves as partners and share information." In this context data security is, of course, imperative. Apart from installing security mechanisms, the essential action plan includes detecting and responding to cyber attacks.

Resolute connectivity

The performance capabilities of carefully considered and resolutely implemented connectivity are well illustrated by the project smartPORT logistics (SPL) in the →

Photos: Gettyimages - Colin Anderson, Dierk Kruse, Kompetenzzentrum Kaiserslautern



Modern IT-supported transport and communications systems help to accelerate traffic and trade flows in the port of Hamburg and coordinate them more efficiently.

Port of Hamburg. The platform there has been built jointly by SAP, Deutsche Telekom and the logistics specialist Dakosy. The port occupies a 7,200-hectare site, where as many as 8,000 container trucks complete around 40,000 journeys every day. In view of rising transshipment figures, the number of trucks is expected to exceed 15,000

by 2025. Navigating the port's road network could become difficult. By interconnecting the entire supply chain, the IT solution SPL has allowed twice the volume of goods to be handled without any increase in the size of the facility. All the relevant traffic data, truck locations and the infrastructure situation can be displayed on the screens of mobile devices. Hauliers can subscribe to a fleet management service that notifies them of their trucks' arrival times at the container terminal. And the drivers' screens display the best routes, which also alleviates the traffic situation in the port. The system reduces driving time, per truck and journey, by five to ten minutes, which adds up to a total saving of 5,000 hours a day. Everyone is a winner.

As an international mobility and system partner, BPW ranks among the companies that are taking a keen interest in the topic of Industry 4.0. Its most recent example of a successfully digitised production process entailed the establishment of a new, fully interconnected wheel and axle assembly shop in Wiehl. The digital system has raised production efficiency and offers customers significant

Photos: Deutsche Telekom AG, idem telematics

added value – the modules they are purchasing are manufactured to order, and all the relevant data are recorded and made transparent. In overseeing this major project, the IT production & internal logistics department has contributed substantially to embedding the principles of Industry 4.0 in the company.

Finding individual solutions

Addressing the subject of change, Philipp Ostermeier, a partner in KPMG in Germany and an expert in solution management, comments, "Business life cycles are becoming shorter and shorter, and decision makers nowadays must continuously analyse changes concerning their customers, markets and competitors, and recognise opportunities and risks as they arise. In order to weigh up the strategic options and enable the business model to adapt more quickly, entrepreneurs must be willing, and possess the necessary capaci-

ties, to interconnect all the relevant information and data points." The survey he conducted with his colleagues revealed that, because of their numerous divisions and departments, large companies find it especially difficult to define the exact implications of the changing landscape and decide how to respond. Many smaller businesses, on the other hand, simply don't find the time to address the issue in depth.

According to KPMG, "Every company must define the details of its own individual solutions. Where does ultimate responsibility rest for the entire transformation process? Which products and business models can be redeveloped or adjusted? Which of the many approaches are practicable? The answers to these questions differ from one business to the next." There's no single blueprint for digital transformation, but precisely this lack of a catch-all plan opens up many opportunities. After all, those who bring about change inevitably give shape to the process. They not only influence what will happen tomorrow, but also drive success and the emergence of trends for the future. (jg) ○

Ready for the interconnected future 📡

The BPW subsidiary idem telematics is a business that is working on digital solutions for the internet of transport

What role does connectivity play for idem telematics?

Jens Zeller: We are certain that the exchange of information between vehicles, their environment and businesses is becoming more intensive. Connectivity is an elementary subject for the logistics industry – and therefore for us as well.

Heiko Boch: We provide telematics systems for trucks and trailers, and are helping to build the internet of transport, a network in which goods organise their own shipping movements. It will trigger an exponential

increase in data volumes, but we are determined to be open – isolated data silos are things of the past.

Which challenges are you facing at the moment?

Zeller: We are operating in a very dynamic environment in which numerous start-ups, among others, are seeking to gain a foothold. Using our know-how, we establish which topics clearly have a long-term future, and create new products and services to address them. The benchmark is always

defined by customers and their everyday business needs. Once we have identified the ideas that are relevant, we pursue them assiduously and persistently. The strategy is simple: keep going, keep going, keep going.

How can the key developments be pinpointed in this landscape?

Boch: Our customers need a reliable, independent partner that has a thorough understanding of the business in which it engages. For our part, we need a good product management team who are familiar with customers' wishes and needs. The subject matter is always the transport chain – that is our customers' business domain and the field in which they invest. It's crucial that we know our customers and appreciate what makes them tick in their core business, namely the transportation of goods. These aspirations can be fulfilled only through ex-



Jens Zeller (left), managing director of idem telematics, and Heiko Boch, the company's senior product manager.

perience, close contacts and many conversations. We also have to give consideration to customers' own expertise and be aware that they are running their businesses on very tight margins.

Zeller: In this industry new ideas, many of them intriguing, arise practically every day. But we always adopt the customer's perspective and can therefore develop appropriate solutions almost as a matter of course.

What projects are currently occupying idem?

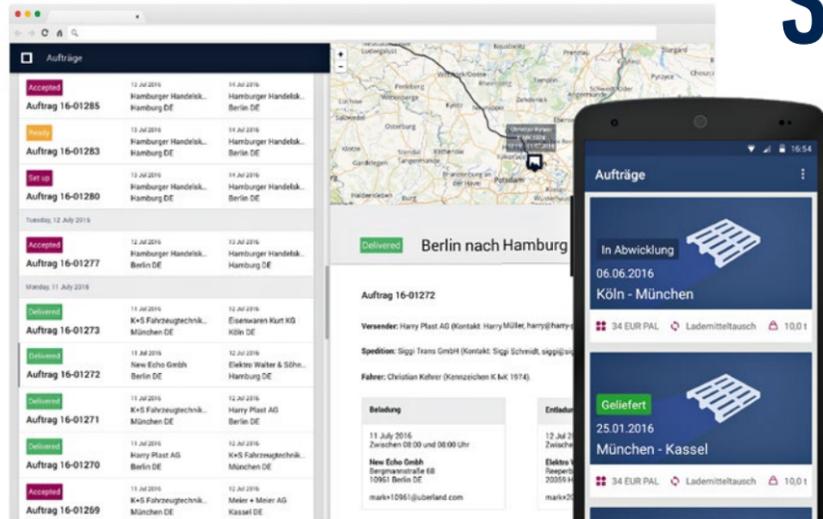
Boch: In future, telematics systems will not only issue reminders when wearing parts need to be renewed, but also monitor the vehicle's condition and adjust its journey plans accordingly. Such functions will be made possible by a new generation of sensors capable of registering the structure-borne noise transmitted by components, for example. In

addition, trailers of the future will be able to acquire precise data concerning every aspect of the cargo space.

Zeller: We are working on several interesting, technology-driven projects. In this context we are in close communication with other originators of ideas within BPW Group, namely the mechatronics department in Wiehl, which is developing trailer sensor technology among other things; and the Innovation Lab in Siegburg, where the main agenda item, under the heading 'internet of transport', is the automated logistics process. This is cross-fertilization and incentivisation at its productive best. At the same time, of course, we also pursue non-technology projects, which can be driven by a variety of factors, such as sales, legislation and internal deliberations. I often enjoy the sales-oriented ones the most because they are always associated with revenue opportunities. ○

Simple, flexible and efficient

Start-up company Frachtraum of Berlin, which is positioning itself as an online freight forwarder, is seeking to simplify the handling of shipping procedures and make them more efficient.



It offers its customers all the services of a conventional carrier in a digital format complemented by modern technology. Founded in spring 2016, the company has developed software capable of organising all transport operations, from booking cargo space, loading and unloading to billing. Frachtraum takes charge of all booked shipments and promises reliable transportation, carefully selected carriers and direct quotes. “Arranging transportation should be as easy as booking a holiday flight,” explains Stefan Dörfelt, one of the company’s three co-founders and responsible for product management. He comments, “To a great extent, moving goods by truck is just as complicated as it was 30 years ago – dispatchers still rely on paper documents and spend a lot of time on the phone to customers and drivers. Our aim is to provide a service that redefines the entire process and enables logistics experts to face the future with confidence. We offer them forwarding services with unprecedented support.”

er’s smartphone allows him to be traced and contacted at any time. Thanks to this real-time track & trace functionality, the customer always knows exactly where his goods are located. All activities are recorded and logged in a journal. It documents loaded and delivered quantities, pallet exchanges, and any damage that arises. Both the transfer of risk and shipping documents are digitally recorded as well. Orders can likewise be placed by way of a software interface. All these factors save customers time and administrative effort, and reduce process costs. “There are far fewer phone calls and much less



The co-founders of Frachtraum (from left to right): Gabriel Sieglerschmidt, Mark Kirschbaum and Stefan Dörfelt

Track & trace in real time

Using the software, shippers can find and book space for their part and full loads. Orders are placed in an online dashboard. They then receive an e-mail confirming the name of the driver and the vehicle registration number for the order. The app installed on the driv-

printing takes place in the offices of shippers who use our system,” comments Dörfelt. Pointing to the importance attached to good customer service, he says: “Our experienced support team can be contacted by customers at any time by phone or in live chat sessions.”

Interconnected partners

Frachtraum’s co-founder remarks that the haulage market is currently saturated. “Demand is far greater than the available cargo space. In this situation it is vital that forwarders have access to a network of partners. And that is exactly what we offer.” As a consequence, carriers can utilise their capacities fully and avoid empty journeys. “We seek to build the best possible supply chains with as few disruptions as possible,” explains Dörfelt. Transport operators also benefit from lower acquisition and administration costs, and simpler communication. If any delays occur, typically because of heavy traffic, all the parties are quickly notified and can respond accordingly. Frachtraum is continuously refining its software. Describing the next milestone, the co-founder continues, “We intend to become the largest online forwarder in Germany – and then to expand into the rest of Europe. Although transport is likely to remain a physical service sector, we will be assiduously developing its digital footprint.”

Fast reactions foster strength

The other co-founders alongside Stefan Dörfelt are Gabriel Sieglerschmidt and Mark Kirschbaum. They have accumulated diverse experience with software in the fields of project management and commerce, including with Tchibo and SAP. Although all three have had some contact with logistics in the past, none of the them has actually worked in the sector. “From the perspective of a start-up, logistics is a very exciting market that offers a lot of scope for digitisation,” comments Dörfelt. “We must be wary of overestimating ourselves and understand that we have to respect partners who have been operating in the market for a long time.” Frachtraum’s strength, he insists, lies in its responsiveness. “Our approach is more direct and faster than the customary solutions, but we are also aware that not every change can be accomplished quickly.” (jg)

You will find more information on www.frachtraum.com

Smart solutions

The BPW Innovation Lab is seeking to illuminate the gap between goods issue and receipt.



“Where are the goods, and will they arrive on time? For the shippers we speak to, these are two of the most important questions,” explains Marcus Sassenrath, who is responsible for BPW’s IT and digital strategy. In the company’s Innovation Lab in Siegburg he and his team are addressing these and similar challenges that face the transport industry today. “The desire for greater transparency throughout the logistics chain is a constant theme,” says Sassenrath. “Between the shipper issuing the goods and acknowledgement of receipt at the destination, consignments regularly disappear into no-man’s land. At present, customers who want to know when a delivery is expected can spend a lot of time asking forwarders about individual orders.” Although technology is already available for tracking goods in real time, for cost reasons it is generally deployed only for high-value goods. “There is a lack of affordable options for enhancing the transparency of good in transit,” claims Sassenrath. The Innovation Lab is developing potential solutions and intend to present the initial results later this year.

Ideas are elaborated in workshops with individual customers and in group sessions – logistics experts representing various companies have already attended two workshops addressing the future of their industry. “Our deliberations focus on agile methodology, which includes design thinking,” says Sassenrath. “These methods soon prompt exciting thoughts and are highly motivational for all those involved.” The workshops also develop ideas for the team in the Innovation Lab to scrutinise and refine – the approaches with the greatest potential are ultimately put into practice.

Living green logistics

Meyer Logistik is extremely interested in new technologies that will make freight transport in conurbations more sustainable for both people and the environment. Alternative drive systems in particular have captured the family-owned company's attention. The specialist in temperature-sensitive goods maintains close contacts on this subject with suppliers, customers and university researchers.



Transporting refrigerated goods is a tricky business. A few degrees too warm – and meat and ice cream are no longer fit for sale. It was a major customer from the catering industry that prompted Meyer Logistik, a long-established specialist transporter of fresh produce, to incorporate telematics in its refrigerated vehicles. Meyer is resident in Friedrichsdorf in the state of Hesse. The search for a supplier of appropriate solutions culminated in an order being placed with idem telematics. Its cloud-based system delivers the greatest possible security thanks to sensors that continuously monitor the temperature in the refrigerated chambers. Dispatchers and customers are thus kept constantly aware of the condition of their goods, as well as the vehicle's location and the time of delivery, which the system also calculates in real time.

Customer requirements were also the decisive factor in the creation of a multi-temp system developed in a collaboration between Meyer Logistik and Rohr, a manufacturer of vehicle bodies and trailers based in Straubing. Today, multi-temperature bodies are standard in the industry. They allow frozen goods, dried food and chilled foods such as fish to be transported in a single consolidated trailer load. "The system consists of modular chambers that can be combined with each other and refrigerated

to different levels. The temperature range extends from -24 to +25 degrees Celsius," explains Meyer Logistik's fleet manager Matthias Schickedanz. He and managing director Matthias Strehl regularly discuss new ideas with suppliers. The two managers are chiefly interested in alternative drive concepts. "We can see the day coming when the entire Meyer fleet is equipped with environment-friendly drives," says Strehl.

Leading from the front

The company has performed pioneering work in connection with drive concepts on several occasions. It has been operating two conventionally converted 18-tonne electric trucks in and around Berlin for its customers Rewe and Lidl, for example, since the end of 2014. At the time, they were the first vehicles of their kind in Germany. They feature regenerative braking, have a range of

250 kilometres, emit no emissions and are very quiet. Meyer Logistik is also very interested in a vehicle equipped with BPW's electric axle drive eTransport, and the companies regularly discuss its further development. →



Matthias Schickedanz, fleet manager at Meyer Logistik



The electric trucks have a range of about 250 kilometres, and the batteries can be fully recharged in just six hours.

How cost-effective are the electric trucks in practice? What are their strengths – and do they have any weaknesses? Academics are also keen to learn more about these issues. Meyer Logistik is involved in a research project investigating the options for deploying electric trucks in the heavy road freight segment. Entitled EMOLSE 2020, it is being conducted by Fulda University of Applied Sciences and grant-aided by Hesse's Ministry of Economic Affairs. The project is scheduled to run until the end of 2018. Among other things, the results are to be incorporated in the development of an electric-powered 26-tonne truck. Meyer Logistik does not have an in-house R&D department of its own, but develops innovations hand-in-hand with manufacturers, suppliers and researchers at higher education institutions. Schickedanz particularly appreciates the ability of academics to originate completely new ideas and different approaches. He now receives several queries a week from HE and other institutions that are interested in collaboration or the results of completed projects.

Great potential of hybrid systems

Meyer Logistik regards hybrid trucks, which it has been operating since 2011, as



The LNG filling station occupies a site belonging to Meyer Logistik and is open to other hauliers and transport operators as well.

another important issue. It took delivery of two new Scania P320 hybrids with all-electric refrigeration in the early summer. "Although the electric drives of hybrid heavy goods vehicles have a range of only four to five kilometres, that is generally enough to reach grocery shops in pedestrian precincts or residential areas," says Schickedanz. It is in these and similar locations that the call for reduced noise and air pollution is the loudest.

Given the threat of a ban on diesel vehicles, the company's commitment means it is well prepared. Schickedanz believes that the only other way to circumvent such measures will be to obtain expensive exemption permits – or accept restricted delivery times at unsocial hours "that nobody wants".

Outstanding commitment

The haulier has already scooped a number of prizes for its commitment to environment-friendly technologies. At the IAA Commercial Vehicles 2016 fair in Hanover, for instance, the company won the Eco Performance Award for its pioneering role in the field of electromobility and the deployment of LNG trucks.

Policy makers are also showing interest in its innovative skills, and recently invited the company to a working breakfast in the German parliament. Speaking on the roof terrace of the Bundestag, Schickedanz addressed some 50 MPs on the subject of the new LNG vehicles that entered service in the capital this year. He also took the opportunity, of course, to mention the public filling station built by Liqvis on Meyer's site on the eastern section of the Berlin's orbital motorway. Until then, there was nowhere in the vicinity where vehicles could refuel with LNG, which prompted the company to take immediate action and resolve the supply problem itself. As Matthias Schickedanz remarks, "Everyone talks about green logistics, but we're living it in practice." (sp)



You will find more information on www.meyer-logistik.com

Photos: Meyer Logistik



An electric future

What type of drive will be powering commercial vehicles in the future? Logistics service provider Köppen of Duisburg in Germany is looking for answers and has therefore decided to convert around one-tenth of its fleet by the end of 2018.

Every generation in the transport industry to date has been required to overcome momentous changes. Jochen Köppen is certain that the future will be no different in that respect. The managing director of the eponymous company in Duisburg, which specialises in tank container logistics, recalls, "When my grandfather was growing up, our haulage company was still using horses, but my father was familiar with diesel trucks from childhood. For the coming generation, alternative drives will be the norm even for heavy goods vehicles." As an experienced transport specialist, Köppen is certain that the time is ripe for the next technological leap – and that it will involve alternative drive systems.

In view of the company's location in the densely populated Rhine-Ruhr region, he is well aware of the growing pressure for change. He continues, "Manufacturing plants and residential areas have co-existed cheek by jowl around the Port of Duisburg and in other industrial centres in the Ruhr region since time immemorial. Increased awareness of sustainability issues and climate protection calls for commercial vehicles with the lowest possible emissions." And by that, he is referring not only to exhaust emissions – when industry and residential areas are so close to each other, noise can also become a nuisance, and an electric truck is significantly quieter when pulling away than a diesel vehicle.

Cross-border pilot project

But which alternative drive will win out in the commercial vehicle sector? Are electric heavy trucks already suitable for day-to-day fleet operations? Köppen is not waiting for someone else to come up with the answers; he intends to be one of the drivers of develop- →

MEYER LOGISTIK

Meyer Logistik was established in Friedrichsdorf in 1949 and is now a major player in the fresh produce and food logistics segment. Alongside 90 sites throughout Germany, the company also maintains four branches in other European countries – in Sweden, Romania, the Czech Republic and Austria. Its own fleet comprises 1,200 vehicles and it employs more than 1,800 people. According to a survey of employees performed by the magazine Focus Business, the family enterprise ranked among the most popular employers in 2017. Now managed by the third generation of the family, the company still has firm roots in Germany's Taunus region.

Jochen Köppen is convinced that the future of commercial vehicles belongs to alternative drives.



ments – in cooperation with other medium-sized logistics companies. When he heard about a cross-border pilot project at an event hosted by the industry association LogistikCluster NRW, his interest was immediately piqued. Köppen is the only German company collaborating with four Dutch businesses in the Interregio project EGLM (Electric Green Last Mile).

Together they have defined specifications for electric drives in vehicles operating across national borders within the EU. They also intend to place purchase orders for the vehicles together – or, to be more precise, they will buy series-produced diesel tractor units and have these converted to order. At present, this is still a time-consuming and expensive job, with each vehicle costing around 250,000 euros to convert. The five companies are therefore committed to major investment themselves, even if the EU is subsidising around 50 percent of the total.

In addition, there are still a number of formalities to overcome. “The current ADR dangerous goods regulations do not yet include electric trucks, although they are at least moving in the direction of alternative drives,” explains Jochen Köppen. Questions on this subject remain to be clarified, however, as do issues concerning the charging infrastructure, he says. The plan is to equip the pilot vehicles with slow-charger battery systems, each with a power capacity of 44 kilowatt-hours, which can be charged by way of a conventional socket outlet and industrial connector.

The Duisburg company is looking at the idea of topping up the vehicles’ batteries while goods are being loaded and unloaded on the premises of chemical industry customers. These 30-60 minute recharging sessions are enough to provide sufficient power for a whole day’s terminal operations, but this regime depends on the availability of appropriate infrastructure. Jochen Köppen has already identified a lot of interest within the industry to get involved and, for example, install charging stations. “By working together in this way, logistics companies and their customers can send out a joint message, demonstrating that the industry understands the public’s concerns and is looking for sustainable and environment-friendly transport solutions.”

Project to be rolled out in 2018

The partners are working hard to finalise the details. The first nine units for the EGLM project are scheduled to be delivered to the five haulage companies involved in 2018. Köppen has ordered two electrified tractor units and two LNG vehicles, which are to be supplied next year as well. “Liquefied natural gas is used far more widely in the commercial vehicle sector in the rest of Europe than in Germany,” says Köppen. The two gas-powered vehicles are due to be used on European routes, for example between the ports of Duisburg and Rotterdam. The company will therefore shortly be converting almost ten percent of its entire fleet to alternative drives – which will facilitate the collection of sound empirical data and thus actively contribute to shaping the commercial vehicle drive of the future. (os) ○



You will find more information on www.koepfen-du.de

Photos: Oliver Felchner

Illustration: Sandra Schulze

Laboratory on wheels

BPW’s mechatronics innovation lab is assessing the potential of sensor technology for trailers.

In recent months, an eTrailer with a dark blue tarpaulin has become a familiar sight on the roads of the Bergisches Land region to the east of Cologne. A cabinet bristling with cables is attached to the side of the semitrailer floor. These are components of the measuring equipment with which BPW hopes to teach the trailer how to see, hear, feel and speak. The company’s mobile mechatronics innovation lab is assessing the potential for deploying sensor technology in the everyday transport environment.

“We are using the eTrailer as a tool and experimental platform. As a mobile laboratory it provides ideal conditions for putting various approaches and ideas to the test,” explains the company’s head of mechatronics, Torsten Schubert. “We evaluate the data recorded while the vehicle is on the road and apply the findings to develop tangible customer benefits.” The outcomes range from solutions that are approaching market readiness to entirely new approaches that require further testing. Many of the investigations represent responses to customers’ wishes and are inspired by feedback from the sales team.

Useful field data

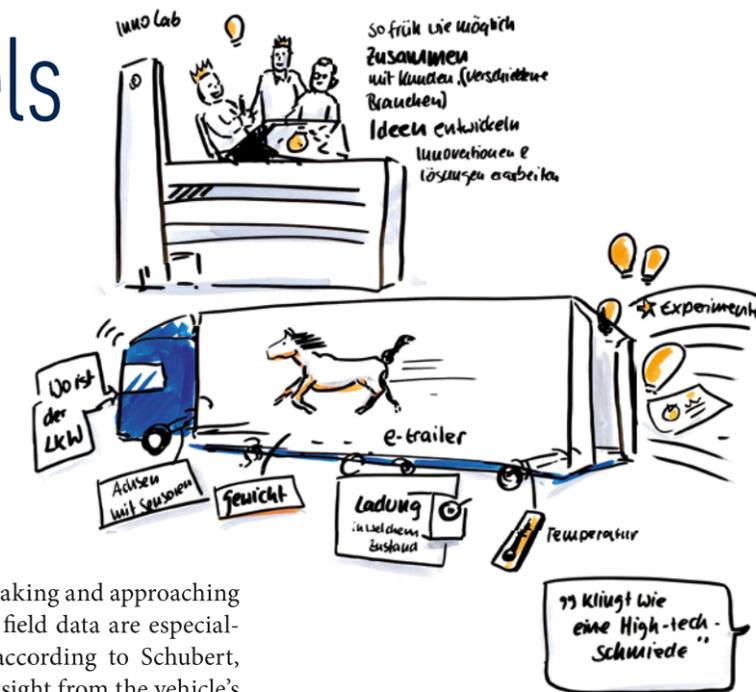
Equipped with a wealth of measuring equipment, including cameras and numerous running gear sensors, the eTrailer embarks on trials in its home region from the company’s headquarters in Wiehl. It operates not only on the public road network, but also on an airfield, where slaloms and emergency braking can be performed safely. The test runs enable the innovation team to collect road behaviour data relating to

cornering, abrupt braking and approaching loading bays. These field data are especially useful because, according to Schubert, “They give us real insight from the vehicle’s perspective.”

The eTrailer has been on the road since March this year, and the group headed by Torsten Schubert are already hard at work on initial ideas. Among the issues being addressed are situational awareness and how the trailer can be enabled to anticipate how the driver will respond to certain circumstances. Another potentially interesting topic is parking sensors for the trailer, given that damage frequently occurs while manoeuvring at loading bays. “The lab provides us with a valuable opportunity to approach questions in a completely unfettered way,” remarks Schubert. “In many cases we don’t have an explicit goal. Rather than set targets, we simply investigate what we can achieve by technical means to answer customers’ questions and meet their requirements.” As with any other project, however, there are milestones. About every six months the innovation lab seeks to identify functions that are suitable for making the transition to project status or even products.

Looking at the vehicle as a whole

The team are working closely together with BPW’s subsidiaries, in particular idem tele-



matics, as Schubert explains, “Its employees possess the skills required to transform the functions we identify into practical applications. As far as possible, we wish to use hardware that already exists.” There are also many points of contact with the BPW Innovation Lab in Siegburg, he says, “We regularly share information, furnish advice, and benefit from our colleagues’ experience and expert knowledge of digitisation. And we collaborate on identifying things that could interest our customers, and run early-stage trials together.”

Such topics can include autonomous driving, for example. “Although our products are destined for trailers, we look at the vehicle as a whole. We realise the importance of engaging with emerging topics and keeping in touch with developments,” comments Schubert. “We are already thinking about the attributes required by forthcoming products if they are to be efficient, safe and legally compliant. At the same time, of course, we are also examining which technologies we can already integrate today.” (jg) ○



You will find more information on www.wethinktransport.com

Towns and cities need **concepts**

Congestion, noise, exhaust gases – new mobility concepts are essential if cities are to become pleasant places to live again. The content of such concepts is among the topics being investigated by the German Institute for Urbanism.

When asked about their vision of the urban environment, many people talk about a green environment with lots of open spaces for recreation and very little traffic – a place in which practically everybody walks or cycles to get from A to B. “They are talking about a place that is kind to people and fosters communication and diversity,” explains Dr. Kirstin Lindloff, a mobility researcher at the German Institute for Urbanism (Difu) in Berlin. “A city in which it is easy to get around, thanks to small-scale, environment-friendly transport solutions that are also interconnected and digitised.”

Translating the vision into reality

Many German towns and cities currently have very little in common with this view of the future, but Lindloff is determined to

bring about change. She is examining how the urban landscape can be redefined in order to achieve the desired improvements. As the largest institute of its kind in the German-speaking countries, the Difu is a research and educational establishment and a source of information for municipal authorities, local government associations and regional planning groups. It addresses a variety of issues, such as the fundamental principles governing mobility, how to influence traffic behaviour, and the interaction of urban structures, land use, accessibility and transportation.

Local communities face diverse challenges – growth in the number of people living in towns and cities, for example, is inevitably giving rise to denser traffic, more noise and a greater risk of accidents. At the same time, investment is required to promote walking and cycling as viable options for covering short distances, and to develop local public transport. In short, integrated concepts are essential.

An autonomous future

“At present, local public transport is seen as the best means of moving large numbers of people around in a pro-environmental and easily accessible way,” comments Lindloff. On the other hand, she insists, its effectiveness is subject to limitations in large cities in particular. Even though more people would use urban transport systems if they could, some operators are simply unable to increase their capacities. “A new solution to the problem of mass transportation could entail the introduction of autonomous or automated driving systems,” she says. Driverless trains or buses can enhance efficiency by allowing a more frequent service to be operated. Gains can also be made as regards fuel consumption, maintenance and repairs. Smaller autonomous vehicles can play an important role, moreover, in ferrying passengers to hubs serving high-speed trains and buses. They can also be used to plug existing gaps in service provision where demand exists.

In view of tight budgets, however, Lindloff explains that many local communities currently lack the means to invest in such forward-looking technology.

For its part, Hamburg is seeking nonetheless to set a good example. The first driverless buses are expected to be taking to the city’s streets in just a few years’ time. Hamburger Hochbahn, the company that operates the underground system and large parts of the bus system in Hamburg, intends to open pilot routes for testing autonomous buses by 2021. Berlin and Leipzig are already examining autonomous scheduled bus services, including in collaboration with the railway company Deutsche Bahn.

Driverless technology has the potential to improve city life in the individual transport segment as well, typically by way of car sharing schemes. At present, a lot of open space in towns and cities is put out of bounds by parked cars. Lindloff argues that much of the demand for parking spaces would disappear if shared driverless cars could interact and, immediately after setting down their passengers, continue their journey to the next customer. “But this is a scenario for the more distant future,” she concedes.



»Policy makers must plan wisely and take a far-sighted view as they address and regulate the major challenges facing towns and cities.«

Dr. Kirstin Lindloff,
academic assistant at the German Institute
for Urbanism in Berlin (Difu)

trolled aircraft and robots can carry only small payloads, so that their widespread use would actually create more congestion.”

Some innovative delivery concepts are already being implemented, however, such as cargo bikes for transporting goods the final short distance to their destinations. “Sustainable solutions such as these can effectively combat inner city traffic jams and emissions even as the volume of goods increases,” she insists. Several large transit hubs could be established in towns and cities in future to accommodate shipping containers, she says, for accepting a variety of companies’ goods for onward delivery by

environment-friendly means of transport. “But we have only recently started to develop such concepts,” remarks Lindloff. She points out that vehicles with electric drives are steadily gaining in significance as well, “The use of electric trucks in particular, as well as e-cargo bikes, can substantially reduce the extent of nitrogen oxide, particulate and noise pollution in towns and cities.” BPW’s eTransport solution is a case in point. This new electric axle drive concept was developed specifically for delivery vehicle manufacturers and can be integrated in a variety of models. It is configured to cope with a typical day’s deliveries in an urban setting, while retaining some capacity for additional trips. The system recharges within a few hours overnight.

Lindloff believes that policy makers will ultimately determine which of the competing concepts will prevail in the long run. She is certain that a diesel ban, for instance, would prompt an increase in the number of cargo bikes and electric vehicles on the roads. Furthermore, the federal government has expressed a commitment to developing the network of e-vehicle charging points. It intends to make subsidies totalling around 300 million euros available in the period to 2020. “Policy makers must plan wisely and take a far-sighted view as they address and regulate the major challenges facing towns and cities,” claims Lindloff. Developing vehicle recharge stations, she comments, clearly has a key role to play here. “From a scientific perspective, infrastructure improvements are considerably more effective than purchase incentives for consumers.” (ls)

Illustration: Fotolia - mast3r Photo: Roman Broedel

Environment-friendly delivery traffic

The IT industry association Bitkom expects around 57 percent of goods to be transported by autonomous vehicles, including drones and delivery robots, in ten years’ time. Lindloff takes a more sceptical view of some aspects. Although she regards drones as a conceivable option for urgent drug deliveries, for example, “Pilotless radio-con-

You will find more information on
www.difu.de

Safeguarding **the future** with telematics

Transportes Bernardo Marques, one of the first hauliers on the Iberian Peninsula to use telematics, opted for idem telematics as its chosen supplier. The Portuguese company's aim is to become better and more efficient as a result, so that it can continue to grow, even in a tougher competitive environment.

Portugal has learned from the past – making savings has become an indispensable part of the country's business culture. It's been a hard lesson – but companies such as the haulier Bernardo Marques show that Portugal is back on track after ten years of austerity.

Efficiency and productivity are absolute priorities for Bernardo Marques. It has improved its internal operating processes in order to cut costs and become more competitive in the future. In order to achieve these goals, the company decided at the beginning of the year to invest in telematics solutions supplied by the BPW subsidiary idem telematics. "Dealing with the economic crisis was no easy matter. We were compelled to make savings, but at least we didn't have to release any employees to reduce costs," comments Antonio José Bernardo Marques, the founder and sole managing director of Transportes Bernardo Marques. "Redundancies were avoided primarily thanks to the quality of our vehicles and services. It was this quality that sustained the inflow of orders. We were also helped by not being dependent on the southern European markets."

Price pressure is the mother of invention

Fierce competition in recent years exerted pressure on both prices and margins. "We were able to convince our customers, however, that quality is more important than the price in the long term," says Marques. "Punctual, reliable delivery has to be the primary aim. Booking cheap haulage solutions proves more costly in the long run."

But the bad times also made the Portuguese creative. During the crisis period, Transportes Bernardo Marques rented around a third of its trailers to other hauliers. This business was handled by its subsidiary Tir2rent, which is also responsible for semitrailer maintenance – such synergies generate additional income. With annual

sales of 23 million euros, Transportes Bernardo Marques now ranks among the top 20 Portuguese haulage companies. It specialises in transporting automotive components in particular. The company carries almost 1.2 billion tonnes annually to 19 different countries. It owes this success primarily to around 300 employees – and its component supplier BPW Trapaco, BPW's Spanish subsidiary.

Modern fleet management

The Made in Germany mark is key to enabling Transportes Bernardo Marques to defend its good reputation with its regular customers. The company-owned fleet of 280 trucks and 460 trailers is almost exclusively equipped with BPW Group components. The two companies have worked together for decades, and their collaborative partnership is continuing with the introduction of a modern fleet management system from idem telematics.

Managing director Marques has opted for the TC Trailer Gateway module in order to analyse driving patterns and thus optimise delivery times and the trailers' capacity utilisation. The 260 drivers cover a distance of some 30 million kilometres a year in their blue-and-yellow trucks, and are on the road for up to 15 days at a time in some cases. "The use of telematics will enable us to reduce the stresses endured by the trailers and monitor driving patterns better – while cutting maintenance costs at the same time," says Marques.

Comprehensive analysis

Two employees are responsible for monitoring and evaluating the data. The more the system is rolled out within the fleet, the →

Always on the screen – the telematics solutions from idem telematics allow Transportes Bernardo Marques' vehicles to be tracked in real time. The data is evaluated by the company's own employees.



Photos: Antónia Marques



Susana Esser, managing director of BPW Trapaco, and Bernardo Marques, managing director of Transportes Bernardo Marques, are looking forward to continuing their successful collaboration.

larger the analysis team and the greater the benefit to the company. At the moment, its main role is still as a warning tool. If certain thresholds are exceeded, the drivers automatically receive a message and can respond promptly. This allows fuel consumption to be significantly reduced. “In some cases, we can also save by refuelling in Spain, where diesel is about 20 cents per litre cheaper than in Portugal or France. But others take advantage of this price difference as well,” says Marques. “In view of the fierce competition, we

have to exploit every opportunity to budget wisely. A system such as this one from idem telematics helps us to analyse in detail where economies can be made.”

Telematics has been used in road transport applications in Europe for several years. “To date, however, only a few of the major companies on the Iberian Peninsula have adopted this technology,” remarks Susana Esser, managing director of BPW Trapaco. There are still a lot of haulage companies in Spain, she says, that monitor trailer costs manually or rely on day books for order processing instead of using software developed specifically for the purpose. “The decision of Bernardo Marques to work with us represents a major step forward for BPW Trapaco as well,” insists Esser.

Steady growth

Company founder Antonio José Bernardo Marques is proud that his fleet is one of the first on the Iberian Peninsula to use BPW Group’s telematics system. “We have to become more up to date. Even when things are going well, standing still is not an option.” His aim is to use his healthy transport business and good branding to move into related business fields, such as truck and trailer repair workshops. “Utilising synergies enables businesses to cut costs and increase margins. The outcome is slow but steady growth – and that’s our sole aim.” (scm)



You will find more information on www.tbm.pt

TRANSPORTES BERNARDO MARQUES

The haulier is at home in the verdant region of Serra da Estrela in the northeastern Portugal. It was founded there, in the industrial town of Guarda, 25 years ago by Antonio José Bernardo Marques. The youngest of four children was inspired by his father, who operated a few trucks back in the early 1990s, mainly transporting agricultural products on the Iberian Peninsula. Bernardo liked the business, learned quickly and set up his own company in 1991. The fleet of Transportes Bernardo Marques now comprises 280 tractor units and 460 trailers – of which around 100 are rented out. The company generated sales of 23 million euros in 2016.



Photos: Alvaro Rodríguez, BPW

On course for growth: BPW Trapaco

Established in Spain by Germans in 1978, BPW Trapaco has undergone a huge transformation over the past 20 years.

In 2003, three years after the second generation took charge of operations, it became an official branch of BPW. Until then, it had served as an exclusive sales company. In view of the influence exerted by importers and the fragmentation of the Spanish road haulage market, however, it became increasingly difficult for the company to survive independently.

Today, the reins of BPW Trapaco are held by the founder’s daughter, Susana Esser. The Spanish-born German has made the company fit to face the competition. She is optimistic, but realistic at the same time, as she explains, “Despite every effort, rail freight simply isn’t picking up here in Spain, which is to our advantage. On the other hand, many of the promised economic reforms have yet to be implemented.”

Difficult economic structure

The construction boom of the early 2000s in Spain initially benefited Trapaco’s business greatly before plunging it into crisis because many of its customers depended on property logistics, and acquiring new customers proved impossible. “The structure of the Spanish economy has not changed to the extent that we would have liked. It still relies heavily on the construction industry and tourism,” explains Esser. Poor payment practices have also driven some smaller haulage companies and a number of manufacturers in Spain – including customers of BPW Trapaco – into bankruptcy.



Susana Esser,
managing director of
BPW Trapaco

Following a tough period of adjustment during the crisis, the BPW Trapaco Group now has 57 employees. Esser’s aim is to grow further with her team and to fuel this growth primarily with telematics and aftermarket parts.

Telematics as the driver of success

The deployment of idem telematics has proved a great success at Transportes Bernardo Marques, claims Esser, “Spanning 300 trailers, this is a very large project and has greatly enhanced our reputation within the industry. Competition in the original equipment sector, on the other hand, is expected to become increasingly fierce. It currently makes up the major proportion of our sales, and we have a 34 percent share of the new registrations market.”

Esser believes that aftermarket parts and telematics will be the main drivers of sales in ten years’ time. Spanish manufacturers are facing massive pressure on prices because their competitors in Germany are almost ten times more productive and therefore have broader options when submitting offers. “As regards large orders, the final price is always the sole deciding factor in Spain. Domestic manufacturers therefore see no alternative to paring their prices to the bone. But BPW has built a strong reputation for top quality and comprehensive service over many years – relating to every aspect of axles and running gear, and now encompassing the whole vehicle. Whether aftermarket parts, training or customer care – as an international mobility and system partner, BPW is always ready to assist its customers. That’s what sets us apart from the competition,” says Esser.

Successful field tests

The BPW Movin' Stars campaign enables customers to test the diverse system components produced by BPW Group in fully equipped trailers. The first hauliers to take up the offer report on their findings.



As an international system partner, BPW Group offers not only running gear but a whole portfolio of components that can reduce the total cost of ownership of trailers. In order to allow customers to gain first-hand experience of the quality and efficiency of its perfectly coordinated, integrated solutions, BPW launched a Movin' Stars campaign at the beginning of the year. Working together with the vehicle manufacturers Fliegl, Kögel, Kässbohrer and Schwarzmüller, it produced four test trailers with integrated solutions from BPW Group. In partnership with PEMA, Euro-Leasing and TIP Trailer Services, the vehicles are being leased for periods of four to eight weeks – the costs are being shouldered by BPW.

One of the first customers to participate in the initiative was Spedition Bork, a forwarder with offices in the state of Hesse. Its business manager Steffen Bork heard about Movin' Stars at the IAA Commercial Vehicles fair in Hanover. He comments, "We can look back on decades of good experience with BPW; our fleet of refrigerated vehicle is equipped with telematics systems produced by idem telematics." He explains that secure cargoes are of crucial importance for his company, "On the BPW stand at the fair our attention

was drawn to Hestal's strap lift system, and we were keen to test it in our regular forwarding operations." Given that conventional systems can be difficult to use, and that loose belts are regularly mislaid, we were interested in a solution that promised to withstand the rigours of everyday use."

Genuine labour-saving device

During six weeks of field testing with a curtainsider built by Fliegl, Bork was able to get to know the benefits of the Hestal strap lift system. The driver can slide the load securing aid to any position from one side of the trailer, and the ease of use is further enhanced by guided roller carriages. Securing the cargo in this way eliminates the laborious task of slinging straps over the load. The strap lift system occupies very little cargo space, and the individual straps can be attached in any position to achieve the best possible security.

Bork carries a wide variety of goods for major commercial corporations. It therefore tested the strap lift system while transport-

ing boilers of various sizes on site for Bosch Thermotechnik. "This strapping solution is especially ideal for our curtainsiders when transporting similar loads," insists Bork's fleet manager Kurt Metz. "The straps are always on board and can be repositioned as needed. And the driver no longer has to enter the cargo space to secure the load – it's a genuine labour and time-saving device that cuts costs as well."

Coherent all-in package

Franz Wirtz GmbH of Bornheim in the Rhineland was likewise among the first to hire one of the BPW Movin' Stars trailers. The international forwarder took the opportunity to test a fully equipped Kögel dry freight box body. "We have only good things to say about the installed components, and the drivers were delighted," remarks managing director Wilfried Wirtz. "The air-

sprung running gear ECO Air COMPACT, in combination with BPW's own ECO Disc brakes, provided appreciable additional safety and comfort in demanding situations, such as when cornering with a full load." He also praised the fast operation of the BPW landing gear and its light weight, which maximises load capacity. Wirtz acknowledged the compelling benefits of the Ermax lighting system as well, highlighting the brightness of the LEDs, the use of strong materials, and the lights' sensible positioning to withstand minor collisions while manoeuvring. According to Wilfried Wirtz, "The test demonstrated that the BPW components constitute a coherent all-in package that pays dividends. The technology is well conceived and reflects the outstanding quality to which we have become accustomed from BPW. Not least of all, having a single point of contact for all the components is a practical advantage in itself." (pw)

You will find more information on www.bork.de und www.wirtz-international.com



SPEDITION BORK

Spedition Bork is an owner-managed, mid-sized forwarding, transportation and logistics company that employs around 400 people. In the core transport business, it operates a fleet of 260 tractor units and 500 trailers, including 200 with refrigerated box bodies. Its home is centrally located in Langgöns in the state of Hesse. The site offers around 30,000 square metres of versatile warehousing and goods handling facilities.

Photos: BPW, Spedition Bork, Frank Wirtz GmbH



FRANZ WIRTZ GMBH

Franz Wirtz is resident in Bornheim near Cologne and a member of the Wirtz Group. As a modern forwarding business and flexible distribution partner, it originates reliable and efficient logistics solutions. The owner-managed enterprise undertakes a variety of assignments and, as a TSR-1 and ISO-9001 certified transporter of refrigerated, high-value, pharmaceutical and dangerous (ADR) goods, is the preferred expert carrier for customers throughout Europe. The site of the centrally located head office also accommodates a modern transit warehouse with integrated cold store.

Digital agriculture

Farming 4.0 stands for next-generation farming and digitisation. Numerous automation processes are already simplifying tasks and reducing costs. Tractors, forage harvesters and combine harvesters are some way ahead of the automotive industry in this respect.

Agriculture generates powerful images – fields populated by huge machines, such as tractors and combine harvesters, driven by enormous wheels that remain on track even on the most uneven ground. The power of these machines is not reflected in their speed, but in the massive loads and quantities they tow and harvest. Take, for example, Krone's Big X forage harvester which, with a power output of 1,100 hp, is currently the world's most powerful agricultural machine. With a work width of up to 10.5 metres, it can harvest 14 rows of maize in a single pass.

Technical progress, often taking place more or less behind the scenes, has hugely simplified agricultural operations in recent decades. GPS-controlled systems have replaced manual steering, and the machines follow dead straight tracks calculated in advance by the on-board computer. This enables farmers to manage and harvest their crops more efficiently.

Ahead of the automotive industry

Agricultural machines may be relatively slow on the road but, as regards digitisation, they are ahead of the automotive sector. Tablets and touchscreens have long since become commonplace in modern tractors, forage harvesters and combine harvesters. The cab is now the control centre for a fully automated system – digitally interconnected with the farm office, trailer

and forage control system. A glance inside the R&D departments of leading agricultural machinery manufacturers also reveals that digitisation is firmly established in the farming sector. Companies are working on digitisation concepts, communication systems, apps and smart services. Underpinning these developments are sensors in self-steering forage harvesters, and tablet computers that control the harvest. Each of these technologies facilitate more efficient and sustainable operations. 'Farming 4.0' is the buzzword adopted by the industry to describe process optimisation with the aid of digital communication systems and data management solutions. More and more companies are using these state-of-the-art processes, explains Jan Horstmann, "Agricultural engineering

is in rude health and making very good progress." He is head of electronics and product IT in the design and development division of Maschinenfabrik Bernard Krone of Spelle in the German state of Lower Saxony.

The exact location of its Big X forage harvester can be pinpointed to an accuracy of 2.5 centimetres using GPS technology. Automatic and precise steering ensures that the vehicle remains on track and makes optimal use of its work width. "The driver can focus entirely on monitoring the harvesting operation," says Horstmann – although that takes place more or less automatically now as well. A machine operator is, however, still essential. For safety reasons, his seat has to be occupied; if he leaves it, the drive stops. →



Rolling on where others fear to tread – BPW axles are typified by high reliability.



KRONE ICAN

Krone ICAN is the umbrella term for all the electronic gadgetry in Krone's forage harvesters. From simple machine control and fleet management to recording yields and data management, depending on the configuration, harvesters can already be permanently interconnected with a farm management system on the computer. The exchange of information extends from issuing tasks and directions to the appropriate field, to capturing and automatically transmitting billing-related data.

Documentation and sensor systems

The Big X harvester costs around 500,000 euros and, in some cases, is in service for only four weeks a year. Nevertheless, the payback time for fitting a GPS-controlled steering system is just two years, claims Horstmann. He insists that satellite navigation heralded the onset of digitisation in agriculture between 2004 and 2009, and was followed by enhanced documentation, sensor technology and other advances. In addition, the focus of harvesting shifted to quality assurance. A sensor on the spout measures the moisture content of the crop up to 100 times a second. The captured data can be automatically allocated to the area harvested and, among other things, indicate the quality of the crop. Various aspects of organisation and logistics are also being refined. The machine operator can now see the location of the other vehicles in the fleet at any time on a tablet or smartphone, or the machine display. Agricultural navigation systems with special mapping also include forest, field and farm

tracks and low bridges – and also show the location of obstacles, such as a standpipe that is concealed among a crop of maize. “All of these things can now be mapped,” says Horstmann.

Smart services

The topic of intelligent applications is being addressed throughout the industry. Farm machinery manufacturer John Deere is among those seeking to improve productivity and profitability. Its FarmSight concept oversees and optimises every aspect of agricultural production chains. It interconnects machines, fields and operators by way of IT solutions. FarmSight uses machine and field data captured in real time and offers a seamless connection between the office and the operators. The aim is to enhance agricultural production and improve operating reliability, machine output and yields, achieve consistently high quality, and reduce running costs.

Interconnected value chain

The use of data and information for smart services opens up practically unlimited possibilities. A sensor on the Big X forage harvester, for instance, already evaluates crop ripeness and automatically adjusts the chop length. Looking further ahead, machines and stationary systems will be communicating with each other along the value chain. Jan Horstmann can foresee the day when a feed mixer will autonomously calculate the optimal total mixed ration using data captured itself and information received from the forage harvester. According to Horstmann, “The degree of connectivity will increase at a breathtaking pace.” Even to the extent, he says, that a forage harvester working in the penultimate field of the day will automatically realise that it needs only five of the eight available trailers for the remaining area. The others will be sent home early. (pb)

 You will find more information on www.landmaschinen.krone.de

Rolling on where others fear to tread

Once again this year, BPW is exhibiting at Agritechnica in Hanover, the leading international trade fair for agricultural machinery. Peter Lindner, head of agricultural sales in Germany, gives a taste of what's to come at the show.

‘Rolling on where others fear to tread’ is the slogan adopted by BPW for the fair. What is the thinking behind this claim?

It reflects our basic mindset, namely a commitment to satisfying customers' specific wishes. We focus not on the problem, but on the solution. And we always find one. Our diverse range of product developments enable us to offer customers solutions for the entire transport process – right through to connectivity. To make this possible, we collaborate with strategic partners who share our ambitions.

You're unveiling an interesting new development in the form of the electronic BPW AGRO Hub. What can visitors to the fair expect to see?

The BPW AGRO Hub gives customers an exact overview of the running gear mileage. Integrated sensors determine the total and daily mileage figures. A new feature is data transmission to the display in the machine by way of an ISOBUS communication channel. All the information on the running gear is therefore always available at a glance in the cab. We have also refined another aspect of the system – in future we'll be offering our customers a weighing system that operates to an accuracy of around plus/minus two percent. Billing is often based on weight these days, which makes this system particularly useful. Examples such as this highlight our intensive development work in the field of connectivity – which includes some exciting projects.

What are the particular features of the new hydraulic axle BPW AGRO Drive?



»We focus not on the problem, but on the solution.«

Peter Lindner, BPW's head of agricultural sales in Germany

This drive axle leverages practically every aspect of BPW's expertise. Its ingenious design allows maintenance work to be performed and brake pads to be renewed without having to remove the hydraulic motor. It also uses the proven BPW brake system.

Smaller loads are another focus. What can customers expect from BPW in this respect?

We have developed the GS 9000 axle series with a 9 t axle load that is ideally suited to tippers, transport wagons and soil working implements, and offers supreme economy combined with BPW's familiar quality. Next year we will be launching the corresponding steering axle GSLA 9000. The newly developed N 3411 brake also enables us to offer tyre sizes from 17.5 inches for these axles. As you can see, we roll on where others fear to tread.

Industry 4.0: Translating aspiration into practice

A digitally interconnected wheel and axle assembly shop was recently completed in a major project at the BPW facility in Wiehl. The challenge of implementation was taken up by the IT production & internal logistics department.

Industry 4.0 is a very important topic not only for its customers, but also for BPW Group itself. “We are digitising all of our processes in quality assurance, maintenance, production and logistics,” explains Alexander Reissner, head of IT production & internal logistics. “There’s barely a single rack here anymore that’s not connected to IT.” Reissner identifies several focal points in the company’s implementation of Industry 4.0 practices, “Among other things, we are addressing the issues of capturing and processing data. We are investigating how assistance systems can support our employees in their work, and looking at ways of interconnecting and integrating various departments.” For example, every single component is now given an identification number which, for 30 years, tracks when

and how it is installed. This is an important element of quality assurance.

Ultra-modern and highly automated

One of the most extensive projects recently undertaken by the IT department entailed the replacement of an 18-year-old assembly operation. The two discrete shops that previously assembled wheel ends and axles have now been brought together in a single, ultra-modern and highly automated building. It has adopted the one-piece flow principle of manufacturing each unit individually and assigning it to the specific ultimate customer as early as the production planning stage. From multi-stage manufacture to coating, assembly, packaging and ship-

ping, the identity of the customer purchasing the product is known throughout the chain. According to Reissner, the biggest challenge when re-engineering the assembly operation was presented by the enormous variety of units and their different cycle times. “All of our work is completely customer-focused nowadays,” he says. “In ordering an individual packing unit, the customer effectively determines the production sequence. We have the additional task of ensuring that, despite the different cycle times of the individual work cells, the manufacturing capacities are coordinated and utilised to the greatest possible extent along the entire production chain.”

The eye of anyone taking a tour of the new assembly shop is sure to be caught not only by the state-of-the-art robots as they fully automatically insert wheel studs into



the brake discs at high speed, but also by the abundance of assembly terminals, scanners and large VDUs alongside the machines. The workers use these devices to retrieve all the key indicators and data concerning the manufacturing process in real time – by way of a system that digitally maps every production step.

Human interface

Alexander Reissner and his team oversee all of BPW’s IT-enabled production systems, and therefore serve as an interface between departments. “We work with numerous partners – from suppliers of screw fasteners to machine manufacturers and SAP experts,” explains Reissner. “They operate in very diverse domains, so that a common understanding of the processes is essential.” That cannot be brought about without good communication, he says, “We get everyone around the table and talk to each other in order to develop the system-overarching and interdisciplinary processes together, and visualise them in a way that everyone understands. We have to remain constantly aware that digitisation is controlled by people, and all the parties involved must always coordinate their actions with one another.”

This is an environment that calls for a new generation of IT experts, insists Reissner, because the nature of the job is changing significantly. “We need more and more

young people to cultivate a new mindset, who possess a good general understanding of the subject but nonetheless specialise, and who are eager to interact and engage with all those concerned. In order to overcome the shortage of qualified labour in this emerging sector effectively, it is vital that these skills are embedded in the forthcoming cohorts of school leavers.”

The new assembly operation is running smoothly and deemed a success, but for the IT team work on project 4.0 continues. “We are on the right track, but this is not a conventional development process with a beginning and an end,” explains Reissner. In his view, sharing experiences with other companies forms part of the process as well. In cooperation with Cologne Chamber of Commerce, in the spring BPW hosted a discussion forum on the topic of Industry 4.0. Representatives of six major enterprises gathered in Wiehl to inspect the assembly facilities. “We received a lot of positive feedback from our guests. They were impressed by the way in which we digitised the individual processes using the Industry 4.0 toolbox,” comments Reissner. “Talking with our colleagues raised many interesting issues and proved very useful, and we intend to continue the conversation we have now initiated.”

Digital map

The Federal Ministry for Economic Affairs and Energy has produced a map of Germany showing where Industry 4.0 practices are already being applied. BPW is one of 145 manufacturing companies across the country that are pinpointed. Reissner says, “I am very proud that we have been acknowledged as belonging to the pioneers.” He is also delighted that BPW made the decision to invest in the modern production systems in Wiehl. “As an employer, I recognise that the company believes in this site and is taking action to safeguard its future.” (jg) ○



Photos: BPW
Alexander Reissner, head of IT production & internal logistics at BPW

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