

SCHNELLECKE

Insights into the Schnellecke Group

2020.1



WELL BUILT

Schnellecke Real Estate hands over logistics center to VW

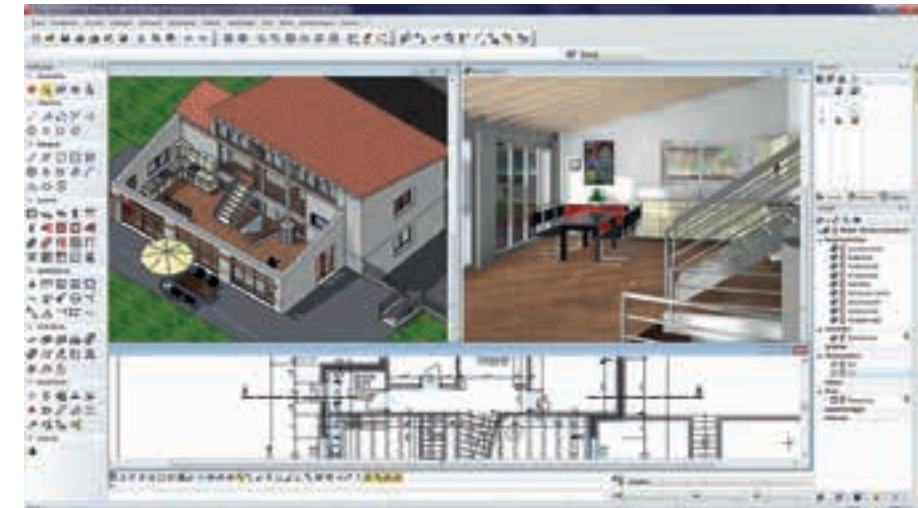
A LEIPZIG SPECIALTY
A visit to the Leipzig site

ROBOT COLLEAGUES
Automation in the office



The master builders of the past personally created the design and statics, and supervised the construction process. Depending on the era, they came from very different classes and professions, including clergy, craftsmen, artists, sculptors and scientists. The medieval master builders completed an additional training as stonemasons after their journeyman's apprenticeship and were qualified to work as architects after their master's exam. It was not until the 19th century that the profession of architect developed as a separate academic discipline.

Source:
Translated from the German Wikipedia



The digital revolution of recent decades has not stopped at planning professions such as architects. It is true that traditional means, such as sketches or model making, are still used in the planning process. However, the final planning and depiction of projects is now almost exclusively created on the computer with the help of CAD programs. A particular advantage of 3D CAD is the ability to generate an image of the object from any direction. Mastery of at least one CAD program is essential for architects today.

Source:
Translated from the German Wikipedia



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Dear Readers,

We are currently experiencing difficult times. This applies to Schnellecke as well as to many other companies. Nevertheless, we are looking to the future with cautious confidence, because the first months of the pandemic have shown that we have reacted consistently and well to the crisis, and automotive production is also gradually gaining momentum again.

When the pandemic began, we immediately set up a corporate corona steering committee which, on the one hand, defined the necessary hygiene measures for our sites and took the necessary steps to protect the health of our employees and thus also to ensure the supply of our customers. On the other hand, we have reacted to the lost sales revenues with a large number of measures to reduce costs and secure liquidity.

Furthermore, our IT infrastructure, which has been expanded in recent years in a targeted manner, has enabled us to allow many employees to work from home without any problems. Our strategic investment in digitalization and IT has thus paid off directly and noticeably. To give you an insight into the sectors in which we operate, you will find three articles in this magazine that deal with different facets of digitalization, from the office to the warehouse.

On the occasion of the handover of a new logistics center to Volkswagen in Wolfsburg, we would also like to introduce you to Schnellecke Real Estate, a promising division of our company through which we are expanding our service portfolio.

We would also like to invite you on a tour our sites in Bremen and Leipzig, where we work for BMW, Mercedes and Porsche in very different ways.

I hope you enjoy reading this issue.

Sincerely,



Nikolaus Külps
CEO Schnellecke Logistics SE



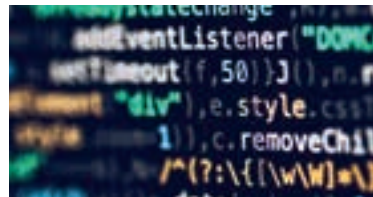
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In the Saxon metropolis, Schnellecke has been working for two automobile manufacturers directly or indirectly for many years



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With the Digital Control Tower, the digital twin of logistics processes is gradually becoming reality



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 SCHNELLECKE REAL ESTATE

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“A GOOD EXAMPLE OF OUR PHILOSOPHY”

Schnellecke Real Estate completes logistics center in Warmenau on schedule and according to gold standard



**“A GOOD
EXAMPLE ...”**



...OF OUR PHILO- SOPHY”

SCHNELLECKE REAL ESTATE
COMPLETES LOGISTICS CENTER IN
WARMENAU ON SCHEDULE AND
ACCORDING TO GOLD STANDARD

Despite the corona pandemic, Schnellecke was able to hand over a new logistics center to Volkswagen in August on schedule. It was planned and built by Schnellecke Real Estate, the real estate specialists of the Schnellecke Group.



The managing directors:
Ludwig Büttenbender (left)
and Carsten Sievers



Volkswagen is pursuing the goal of bringing its warehouses, which are scattered throughout the city of Wolfsburg, as close as possible to its production facilities in order to further reduce the environmental impact of truck traffic and to cut costs.

So, it was a good thing that Schnellecke owns a plot of land in the Warmenau district of Wolfsburg, close to the factory. It was quickly agreed: Schnellecke would build a logistics center there, and VW would then lease it.

“That sounds easier than it is,” says Ludwig Büttenbender, Managing Director of Schnellecke Real Estate (SRE). “The layout of the plot of land was not exactly ideal, and Volkswagen naturally

had specific requirements. A lot of time was spent on the preparatory planning.”

Schnellecke Real Estate is the business unit of Schnellecke that specializes in the planning, construction and management of logistics real estate. Currently, over two million square meters of warehouse space are managed worldwide. SRE develops and builds not only for Schnellecke, but also for other customers.

Thinking about the future

Büttenbender and his co-managing director Carsten Sievers sat down with colleagues from Business Development at Schnellecke Logistics. “They are the

absolute experts; they do this every day,” says Sievers. The planning was based on the logistics requirements. Where should the external warehouse be located? What are the transport routes? Where does waste intersect? “That sounds trivial, but if this is done a hundred times a day for ten years, every wrongly planned meter is money wasted,” says Büttenbender.

Not only was the planning done according to VW's requirements, but also projected into the future. VW wanted 70 parking spaces at ground level for cars. SRE planned the area in such a way that a parking facility for a total of 170 vehicles could be built there if there was an additional demand.

This is just one example of what Büttenbender and Sievers understand by sustainable logistics planning. The office space of 800 sqm was put on the second floor over the gates so that an additional 400 sqm could be added as need grows without reducing the logistics area.

Even though Volkswagen does not want a suspended ceiling at present, anchor heads have been installed in one part of the hall. The roof was designed in such a way that insulation and statics allow the future installation of a photovoltaic system.

Ecology and aesthetics

However, it is not only SRE's planning that is sustainable, the property itself is also sustainable. Less sustainable materials were replaced by ecologically more sustainable ones. The low-energy construction is gold-certified by the German Sustainable Building Council (DGNB), rainwater is used to irrigate the property, a consistently low-consumption LED lighting system controlled by motion detectors was installed both inside and outside, and the outdoor facilities will be landscaped in an ecologically sound manner.

“In addition to the technical and ecological properties, one should not forget the aesthetics,” emphasizes Sievers. “A logistics building will never win an architecture award, but that doesn't mean it has to be ugly.” This is proven by the use of color and design patterns in the façade design in Warmenau.

Warehouse Management by Schnellecke

Volkswagen now has a building that meets all the company's requirements and is also flexibly equipped for the future should demands change. “This is a good example of our philosophy,” concludes Büttenbender. “We develop tailor-made solutions for our customers, which, if necessary, can later be adapted with a manageable amount of effort.”

The management of the new logistics center is also in the hands of Schnellecke. In a parallel call for tenders by VW, Schnellecke Logistics was able to prevail over its competitors.



KEY FIGURES

Start of construction:	end of October, 2019
Hall area:	30,000 m²
Of which, office and social areas:	1,000 m²
Hall clear height:	10.50 m
Hall grid:	30 x 18 m
Outside warehouse:	7,500 m²
Of which, roofed:	5,000 m²
Truck parking spaces:	15
Car parking spaces:	70

COMPLETION DATE: 05 AUG 2020



SCHNELLECKE IS COOPERATING WITH
FRAUNHOFER IN THE DEVELOPMENT OF A PROCESS
TO INCREASE STORAGE SPACE EFFICIENCY

INTELLIGENT ALGORITHM OPTIMIZES WAREHOUSE

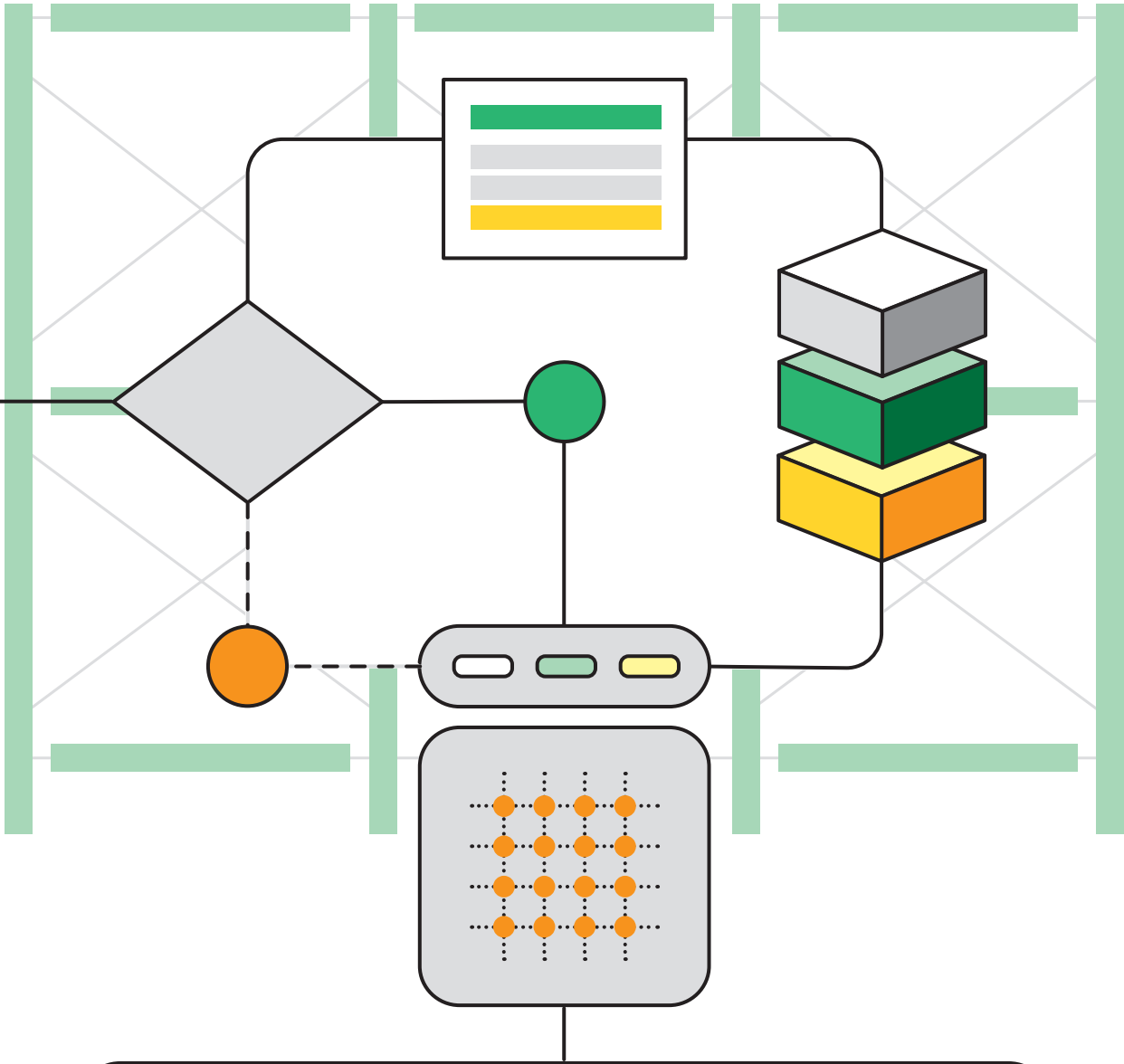
The efficient use of the available storage space in a warehouse is a not inconsiderable cost factor for the operator. This also applies to Schnellecke. Therefore, in cooperation with the Fraunhofer Institute for Integrated Circuits in Nuremberg, an algorithm is being worked on that not only optimizes the use of storage space, but also considers the necessary forklift traffic and is designed to optimize their routes by considering the positions in the incoming goods area and the point of use:

DIn reality, the handling of goods in a warehouse is linked to many, sometimes strongly interconnected secondary conditions, the non-adherence to which can lead to stoppage in operations and also to major disruptions. The primary concern here is not which goods fit into certain shelves but rather safety regulations for employees and compliance with load and fire protection conditions.

Normally, a fixed system ensures that the number of permitted storage spaces for each package of goods delivered is limited to only a few options. This can also mean that in extreme cases there is no free storage space for the container in question. Also, this method does not consider the distances from the storage location to the loading and unloading zones, which means that, in the subsequent operation, a longer distance may have to be covered to process the items stored further away.

To meet these challenges, Schnellecke is cooperating with the Fraunhofer working group for Supply Chain Services (SCS) of the Fraunhofer Institute for Integrated Circuits in Nuremberg. The challenge is the optimal distribution of small and large load carriers in the storage areas. Approximately 1,000 to 1,400 small and large load carriers arrive at the pilot site every day, with about 7,800 handling units in the main warehouse.

After Fraunhofer and Schnellecke had developed the basic optimization approach and the necessary parameters in the initial meeting, the working group transferred this information into a preliminary mathematical model. This model was then fed with actual industry data and the results were checked for validity. Thanks to Schnellecke's close cooperation and decades of practical experience, Fraunhofer was able to incorporate further refinements



IN DETAIL: HOW THE ALGORITHM WORKS

The applied method is a so-called mixed integer optimization model, which is realized by a branch and cut concept. This method successively breaks down the optimization problem into increasingly smaller sub-problems, which can then be solved with simple procedures. These identified partial solutions are finally reassembled in reverse order to eliminate the actual problem.

The more time is given to the algorithm, the finer the subdivision of the task becomes and the better the final solution will be. In contrast to frequently used heuristic optimization methods, the amount of potential for improvement which can still be achieved in the best case is known at each point of the optimization run with this method. Many problem classes can thus be solved optimally in a mathematically provable way with sufficient runtime.



Michaela Schulze,
Innovation Management Expert
at Schnellecke

into the optimization model in order to depict the actual processes in everyday production as realistically as possible.

Reduction of distances and errors

The algorithm not only aims to properly store all delivered goods, but also to minimize process times for warehouse management, thus contributing to a more efficient work process. For this purpose, the status of the warehouse is called up directly when the goods are delivered. The delivered goods are then scanned, and an optimal storage space is determined. Location-dependent restrictions, such as the forklift accessibility of certain storage locations, are also part of this allocation. The current state of the warehouse is also included in the allocation, since, for example, identical goods should be stored appropriately depending on frequency and demand, and no goods should be stored in such a way that they block the access to other goods.

In addition to these restrictions, the algorithm also tries to position the goods in the warehouse so that they can be reached as quickly as possible. This means that goods that are frequently needed can be accessed by employees in the shortest possible time, and that goods that are rarely used are placed in less easily accessible positions in the warehouse. All this should be determined nearly in real time and thus help to make warehouse management safer and more efficient. As a result, there are fewer empty spaces in the warehouse, the distances to be covered are reduced, and the error rate in terms of safety regulations is reduced, at least as far as warehouse planning is concerned.

Efficient warehouse
management ensures
fewer empty spaces
in the warehouse



Promising proof of concept

Michaela Schulze, Innovation Management Expert at Schnellecke, assesses the initial results positively: “Dynamic warehouse control is a groundbreaking pilot project for Schnellecke, which we were able to realize in cooperation with the Fraunhofer work group. At Schnellecke, we are intensively working on optimization topics to achieve efficient resource utilization and highly dynamic processes. Together with Fraunhofer, we were able to again bring our idea of an optimal and process-time reduced storage strategy a little closer to reality.”

Promising findings were already obtained during the proof of concept in a Schnellecke warehouse. A number of other tasks ranging from software integration into existing IT system, to physical exception handling now have to be mastered. This raises the following questions: What should be done if a designated storage location cannot be used or other unforeseen events lead to a discrepancy between the database of the model and the actual situation in the warehouse? Although this step also sounds like a major challenge, both sides are confident that it can be mastered.

The project has now also attracted the interest of the professional public. The trade journal LOGISTIK HEUTE, for example, reported on this approach to warehouse optimization in their March 2020 issue.



“OUR FOCUS
IS GLOBAL”

BUSINESS DEVELOPMENT IS LAYING
THE FOUNDATION FOR SUCCESSFUL
CORPORATE DEVELOPMENT

Lars Otte,
Vice President of
Group Business Development,
Schnellecke Logistics SE

As with every global player, the Controlling, Human Resources (HR), and Information Technology (IT) divisions are an integral part of the corporate structure at Schnellecke Logistics.

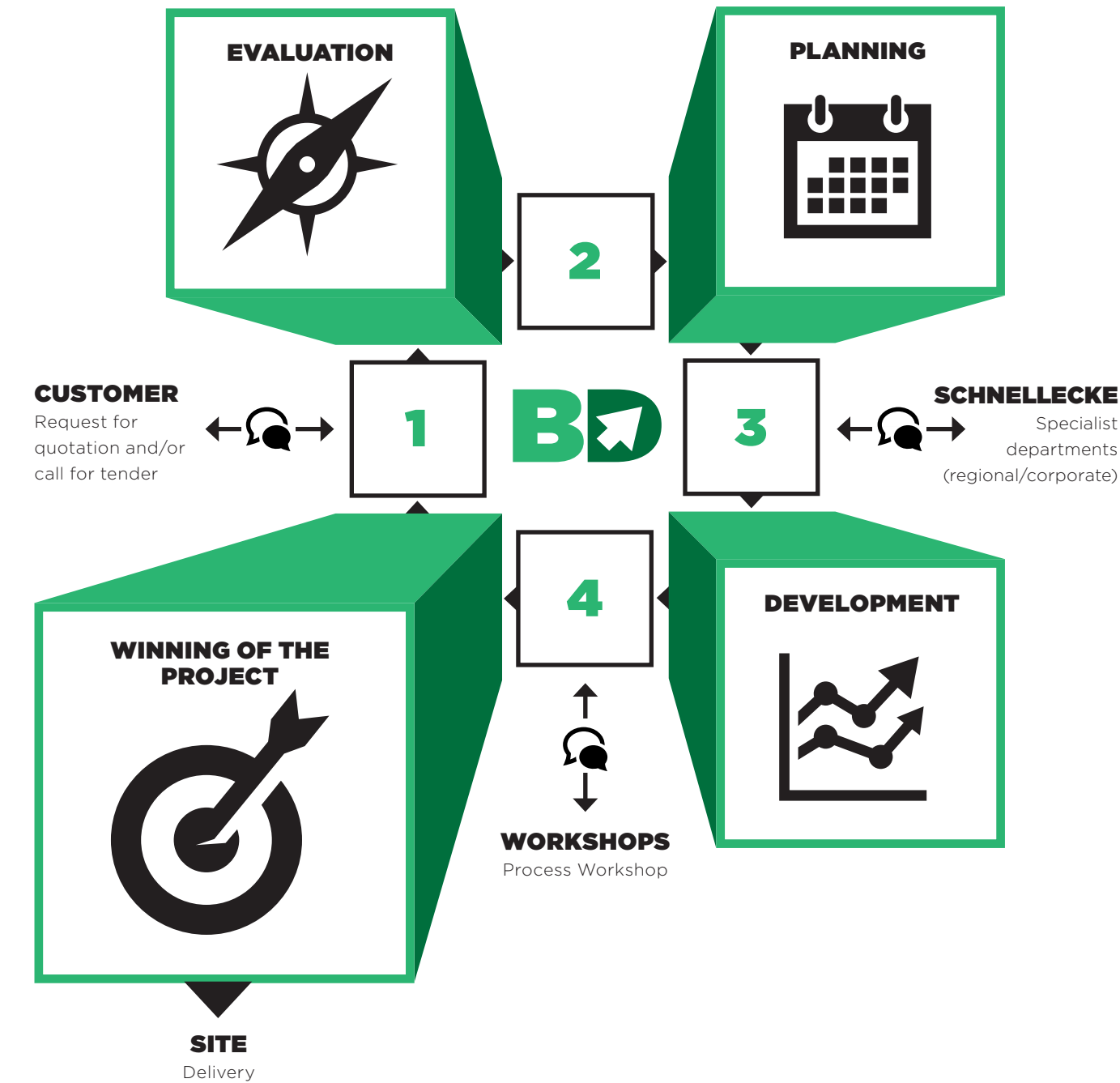
However, the Business Development (BD) division plays a special role. This is where the foundations are laid for the successful development of new business areas and the future of the company. We spoke with Lars Otte, Head of Business Development, and two of his colleagues about the tasks of Business Development.

In Business Development, we bundle a number of tasks that in other companies are spread out,” explains Otte. “We are sales, process planning, costing, and customer service in one. Our spectrum includes the evaluation of new customers and industries, tender and order processing, and the support of project launches.”

When it comes to sales, BD is only slightly different from how other companies work. “We identify industries that are strategically interesting for us and then approach potential customers,” says Otte. “For large existing customers, we have a key account management team that is in close contact with the customers and tries to win further projects for us.”

Gerwin Koehler, who is responsible for the Module Assemblies and Sequences competence center at BD, gives an example of his day-to-day work: “When a new vehicle model is launched, we analyze the competition and the overall potential of the project.”

THE SCHNELLECKE BUSINESS DEVELOPMENT PROCESS



- 1 EVALUATION**
Potential customers, sectors and industries
- 2 PLANNING**
Planning of material flow, costs and resources
- 3 DEVELOPMENT**
Concept/offer preparation and volatility
- 4 WINNING OF THE PROJECT**
Staff planning, support of change processes

Gerwin Koehler,
Head of the Module
Assembly & Sequencing
Group Competence Center,
Schnellecke Logistics SE



“In the process, we pay attention to which supplier has been supplying which modules so far, and which modules should be outsourced. We also consider the production site; if, for example, a tier 1 supplier is on site, we do not need to make an offer because the manufacturer has an advantage there. In the end, we have a list of potential scopes that we can offer. On this basis, a target business case for the vehicle is established and then we actively work with the appropriate operating unit to win the projects. This happens at a time when the tier 1 suppliers themselves have not yet been nominated for the assemblies, which results in a large

number of calculations and offers for the same components to the various potential customers.”

Analysis of tenders

Another way to acquire new customers is through tenders and inquiries. These are filtered and evaluated in an upstream process before they are forwarded to the corresponding competence center in BD. Not every inquiry is interesting for Schnelllecke.

This can be due to various factors. Before the start of developing a quota-

tion, an initial risk assessment and a rough evaluation is made, which is then used to decide on a Go or No-Go in consultation with the relevant committees.

Once a potential project has cleared the first hurdle, the responsible competence center takes over. There are CCs for supply logistics, for packaging logistics, and for module assembly and sequencing. A responsible quotation manager is appointed for the project, who organizes the internal quotation preparation and implements the external communication with the customer according to Schnellecke's "One-Face-to-the-Customer" strategy.

Communication is a key success factor. "Our focus is global, even though the majority of the tenders processed are for the German region and thus for the domestic market," explains Otte. "There are local BD teams in the other regions. We have a regular exchange with local colleagues to provide them with the best possible support. There are many tenders in which we put together international teams from regional teams and corporate BD."

Specialist departments involved

The major topics in this phase are material flow planning, resource planning, cost planning, calculation, and concept development. "Of course, we don't do this alone but rather involve the relevant regional and corporate departments," says Christian Wessel, responsible for supply logistics at BD alongside Sascha Langer. "In addition, it is always a good idea to have a process workshop as well. This helps to work out the best possible solution and is also a good preparation for the technical presentation to the customer that follows later."

The work is done on the basis of the information contained in the customer's tender documents. In addition, there are the so-called bidder information days, where you can take a tour. "There you get a first impression of the project, but in terms of pricing these should be treated with caution," regrets Wessel. "A more detailed examination of the processes is unfortunately not possible beforehand."

In-depth exchange with customer

This leads to an in-depth exchange with the customer during the development phase of the offer until finally a concept is ready to be offered. This must then be championed with the customer. "The fact that it is always only about money is only half the truth," emphasizes Otte. "In the first phase of project development, the technical planning and the implementation concept are the most important factors."

The biggest challenge in a quotation is always to reasonably reflect the volatility of such a project in the price, as Wessel knows. "Our calculation is a model for representing the far more complex real world. Moreover, the quotation price is usually static, but reality is a constantly changing dynamic world."

"Our costs, for example, increase from year to year. If we make erroneous assumptions in the quotation phase, we are constantly chasing the costs right from the start of the project."

In supply logistics, work is mainly carried out on the customer's premises in their buildings. This presents a number of challenges. "If we set up a hall infrastructure ourselves, then we design it optimally for the logistics processes as we understand them," says Wessel. "When

we move into a fully equipped hall, we have to adapt to an existing infrastructure. This starts with the question of where our usable common areas, sanitary facilities, logistics and office space are located and how they are equipped, and goes on to the question of whether our tow tractors or forklifts are allowed to enter, right through to the question of IT. Because most of the time we work with customer systems, we always have to adapt to new basic requirements."

After winning the project, BD's task is largely completed. The planning and costing, together with the framework parameters, for example the personnel deployment planning, are handed over to the project team and the site in the implementation project. But even after the project has started, BD often remains involved with the site and the direct customer, since in many cases change processes occur over the course of the projects, which then make it necessary to revise the calculation and the prices.

Christian Wessel,
Head of the Supply Logistics
Group Competence Center,
Schnellecke Logistics SE



IN SCHNELLECKE'S NEW RPA
COMPETENCE CENTER SOFTWARE ROBOTS
ARE CREATED FOR THE OFFICE



WATSON ON THE CASE



ou quickly get used to things that make life easier,” laughs Joliana Hunt, who works as a creditor clerk in the FSSC (Financial Shared Service Center) at Schnellecke. The “thing” she is referring to is called Watson and is a bot, a software robot. Hunt describes what this has changed in her department: “In the past, the majority of invoices arrived at headquarters in paper form by mail. They were brought to the accounting department by in-house mail, where they were sorted manually according to company code, and then transferred to the accounting software by scanning the documents.”

Nowadays, more and more companies send their invoices digitally to Schnellecke by e-mail, a total of around 300 per day. Each incoming e-mail was opened in order to open the attached invoice document and to determine the recipient (company code). The company code was then entered in the subject line of the e-mail and the e-mail could be moved on for transfer to SAP.

And today? Today Watson takes over these tasks. The bot is able to read the attachment of an e-mail via Optical Character Recognition and, based on the recognized information, decide where the e-mail should be moved to. It can then assign each invoice to a company code and automatically transfer it to SAP. The entire process is now fully automated.

Easy for humans, difficult for robots

“This task is ideal for a software robot,” says Marten Niebuhr, who heads the RPA Competence Center at Schnellecke and programmed Watson. The 31-year-old joined Schnellecke as a digital trainee almost three years ago after completing his master's degree, and has been involved in the RPA innovation project from the very beginning.

Most people think of a robot as a structure made of metal and electronics that welds body parts together, automatically transports goods, or performs recurring monotonous tasks in a wide variety of economic sectors.

But there are also other, more invisible robots. They are not made of metal or plastic, but of code. The first specimens of this type have now started work at Schnellecke.

RPA stands for Robotic Process Automation, i.e. the automation of processes using software bots. This requires a suitable development environment in which the robots can be qualified for specific tasks. “One robot can certainly handle several tasks. Every RPA bot is capable of working 24/7, but at some point it reaches the limits of its capacity,” Niebuhr knows. “Then a second robot has to be added.”

Processes suitable for such automation were first identified in several workshops before the invoice receipt process was defined as the first project. “The first step was to find out which process was to be automated,” reports Niebuhr. “In the specialist department, I was shown the process and a video of it was recorded.” The video then served as the basis for developing the bot.

The robot is not programmed directly in a programming language, but in a sequence of actions that it is to perform and which are then specified in a programming language.

That sounds simple, but the devil is in the details, as Niebuhr knows: “There are actions that are incredibly easy for a person to perform. They see something, for example in SAP, and know what it's all about. You then have to develop a rule for the bot so that it can process what the human intuitively recognizes correctly.”

Good for monotonous tasks

Employees therefore do not need an IT background and do not have to master a programming language to build robots. “Johanna Gerstel, my colleague, trained as a forwarding agent. Now she has familiarized herself with the development environment and has already automated her first own process,” Niebuhr cites an example.

Once a process that is to be taken over by a robot has been started, it takes about five days to set up the basic framework. What then takes time is the finishing touches. The bot runs on its own server, and you can even watch it at work. Some processes run in the background, such as the analysis of attachments, which do not need to be opened. If Watson works in SAP, however, you can practically look over its shoulder and follow its actions, which it carries out much faster than its human colleagues.

Joliana Hunt



“The key to the success of RPA is above all the acceptance by our colleagues,” says Niebuhr. “The robots should be perceived as hard-working and reliable colleagues. The only thing that must not be forgotten is that they have no human intelligence at all. Instead, they are simply very good at performing monotonous tasks for their human colleagues.”

Further robots in development

Another project is the so-called intercompany reconciliation. Here, the receivables and payables of the individual Schnellecke companies are reconciled with each other.

Since a high booking volume has to be reconciled and this takes a lot of time, the reconciliation is currently only done twice a year.



Marten Niebuhr

If the bot takes over this task, it will do it every month in the future. This significantly reduces the personal reconciliation effort. The process is not particularly complex, but it is so extensive that even the robot needs several hours for this. For this reason, it is planned that it will always do its work on weekends when the SAP servers are not so busy. “It can then work in peace,” Niebuhr smiles.

Own competence center for software robots

Each bot has a built-in reporting function that registers and totals the time saved per action. This also makes it easy to determine the KPIs. Due to the enormous potential of RPA, Schnellecke decided to anchor the topic in the organization with its own Competence Center. In order to build up RPA know-how in the workforce as well, the Competence Center trains so-called RPA scouts, who are to use their new knowledge to identify further RPA-suitable processes.

RPA is also being promoted globally by Schnellecke. The goal is to have established a fully functional RPA team in Mexico in the coming year, which will then take care of the development of RPA bots in Mexico and in the USA.

In the FSSC, Joliana Hunt is now actively involved in the development of “her” robot – and is relying on it. “In the meantime, it’s noticeable when Watson isn’t working,” she says, “it’s now a recognized member of the FSSC.”

ROBOTIC
PROCESS
AUTOMATION

or RPA, describes the automated handling of structured business processes by digital software robots. RPA enables the automation of repetitive and rule-based processes and tasks performed by humans. This increases process speed and process reliability and relieves employees of monotonous and non-value-adding tasks.



“LEIPZIG SPECIALTY”

IN THE SAXON METROPOLIS,
SCHNELLECKE HAS BEEN WORKING FOR
TWO AUTOMOBILE MANUFACTURERS
DIRECTLY OR INDIRECTLY FOR MANY YEARS

A bright blue sky welcomes us on this summer day in Leipzig. In contrast to the other visitors of the city, we are not heading for the historical city center or the trendy districts.

We are not here for the monuments or the soccer, but for another thing that makes Leipzig unique: It is the only German city with production plants of two car manufacturers.



In the future we will work directly with the material suppliers

Schnellecke works directly or indirectly for both companies. “These are essentially very different services with very different challenges,” explains Ingo Bach, Managing Director of Schnellecke Sachsen GmbH and responsible for the locations in Leipzig. “At the BMW Group, we work in the press shop, in car body construction; and in the CFRP (carbon fiber reinforced plastic) area. And the SML is an external Multi-JIS Center, which we operate on behalf of numerous suppliers and from which we supply the Porsche plant.”

Logistics for Porsche since 2001

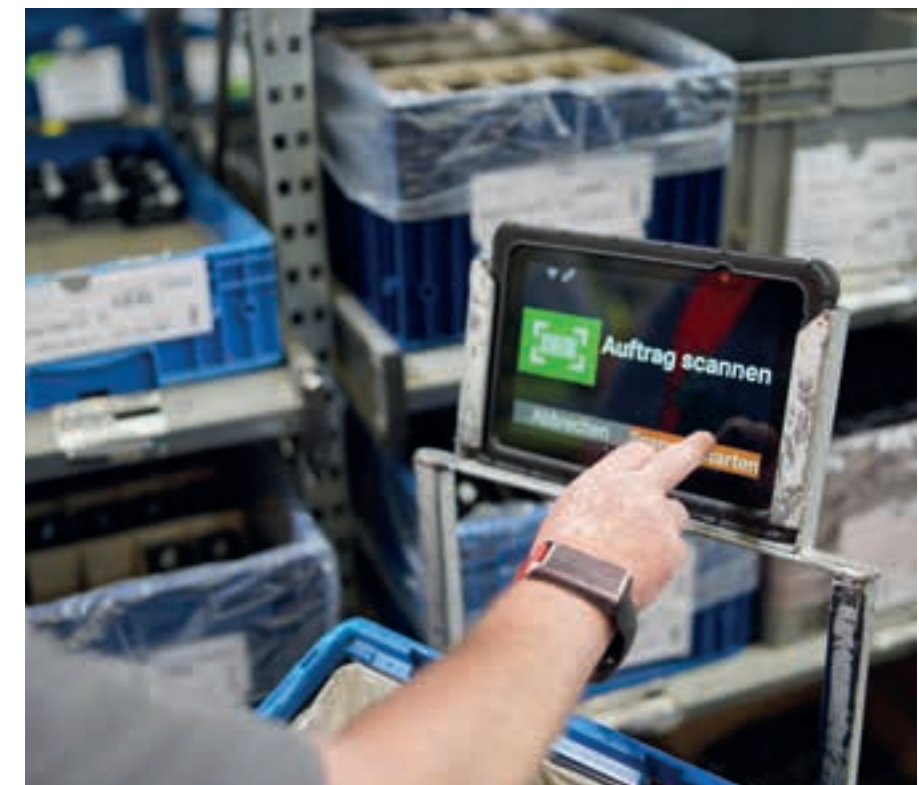
Leipzig is one of the oldest Schnellecke sites in Germany. Work was started here in 2001. The development of the site is closely linked to the growth of the Porsche plant in the trade fair city. Since the pre-series start of the Porsche Cayenne in December 2001, Schnellecke has had logistical responsibility for all Porsche models built in Leipzig. The Cayenne is no longer built here; today, the Panamera, the Macan and, since the summer, the Taycan, the first all-electric Porsche, roll off the assembly line.

SML: Error rate below 10 ppm

The first stop on our visit is the Schnellecke module and supplier center, which is located about two kilometers from the Porsche plant. At this site, Schnellecke does not work directly on behalf of Porsche, but works for a number of suppliers whose products are temporarily stored here and delivered to the plant as required. “Some suppliers send us finished sequencing racks directly, which we then bring to the plant at the right time,” says department head Stefan Wetzig, who guides us through the halls.

It's relatively quiet in the building. Not only is order picking and sequencing done here, but component assembly also takes place. We stop at the headliner production for the Panamera and Macan. A headliner (the interior roof of the vehicle) is placed in a robot station where cables and other elements are glued on.

From there, it goes to other workstations where accessories such as sun visors or mirrors are mounted. Every headliner is different. Model variants, colors, equipment – even the destination country plays a role, as can be seen from the different language stickers.



For spare parts or rarely requested vehicle headliners, there are cabinets specially designed by Schnellecke a few meters further on in which they are stored to protect them.

With the production start of the Macan successor, the tasks of SML will change. Starting in 2022, the headliner for the new Macan generation will no longer simply be assembled here and delivered. Instead, Schnellecke will take on the responsibility of a module supplier and thus become the first point of contact with regard to the entire supply chain for this assembly.

“For us, this means that in future we will work directly with the material suppliers and Porsche Leipzig, without any intermediaries,” explains Bach. “This applies to scheduling and quality of the individual components, as well as to the development of the assembly systems and JIS racks. The logistics processes, too, will then no longer be specified by third parties, but will be developed and implemented by us.”

Past the sequencing racks with body parts such as front and rear trim panels, which are delivered here ready for assembly and then delivered to the assembly line by Schnellecke, we reach another area where delivered tank bladders are supplemented with additional functional parts on behalf of the manufacturer and are then tested for leaks in a helium chamber.

“In addition, there are a number of special processes,” emphasizes Wetzig. “In the ‘color of choice’ paint process, for example, we receive bumpers with a base coat of paint, which Porsche then paints in the customer's desired color and then returns them to us to be reintegrated into the sequence.”

Around forty trucks are processed here each day to the incoming goods department, and over 110 trucks leave the center daily for Porsche. Departure monitors show when the next truck is scheduled.

All of this may not always run smoothly, but it is always to the satisfaction of the customer. “We have an error rate of less than 10 ppm in sequencing, which is extremely good,” says Ingo Bach, proud of his employees. Perhaps this is one of the reasons why people are always happy to get in touch when there are pilot projects in the Schnellecke Group.







BMW: COILS, PRESSES AND CAR BODIES

The next morning, we drive to the BMW Group. As we get out of the car, we hesitate for a moment: This is supposed to be an automobile plant? The central building was built according to the designs of the world-famous architect Zaha Hadid. In the foyer, we look up: Vehicles glide past above us. Almost silently they move through the room – past the desks of the planners, specialists, and managers and high above the heads of the visitors.

The BMW Group plant in Leipzig is one of the most modern and sustain-

able automobile factories in the world. Since March 2005, cars for customers all over the world have been produced here. More than 1,000 BMW 1 and 2 Series and i3 vehicles roll off the production line every day.

We are picked up by Arnd Rockser, head of the Schnellecke Business Unit at the BMW Group in Leipzig. A few meters behind the cafeteria, he opens a metal door – and we are right in the middle of production.

When a new BMW starts its journey into the world here, Schnellecke is involved right from the start. Since July

2011, the company has been responsible for the logistical supply of the press shop, body shop, and CFRP production. When we arrive at the incoming goods department, a huge steel coil is being lifted off the truck by crane and unloaded in the area in front of the cutting plant. “Once we have parked the coils appropriately next to the feeder of the plant, the customer takes over the transfer to the decoiler,” explains Rockser.

Presses set the pace

Four presses and two coil lines run around the clock. In the coil lines, the steel coils are cut into sheets of different sizes and shapes. The blanks come out at the other end, which are then transported by forklift truck from Schnellecke to the presses. “At first glance, this looks easier than it is,” says Rockser. “The edges of the blanks are razor-sharp, and handling them requires special care.”

The next step is the gigantic presses that press out the various parts for the car bodies. These are punched and cold formed at further stations. The finished parts are stowed by the Schnellecke forklift drivers in automatic storage and conveyor towers, from where they are removed as required for the car body assembly – either automatically or by Schnellecke as well.

The forklift trucks whiz throughout the hall to keep up with the cycle times set by the machines. “This is particularly challenging because the type of pressed parts is constantly changing,” explains Rockser. “The BMW Group does not produce in standardized series

here, but rather according to requirements. This means that sometimes larger parts come out of the plant which have to be produced almost every minute so that there is no bottleneck. And then again there are many smaller parts where the cycle is not quite as fast. Planning a long time in advance is not possible.”

Even the breaks during die changes on the gigantic presses are short. It only takes about three minutes to replace one of the dies with a new one. Then the forklift drivers are immediately needed again.

Over 1,000 points of contact

Another important task is the supply of small parts to over one thousand workplaces. Around 85 different parts are needed for doors alone, around one hundred for a side frame. A missing screw at an assembly station can bring the entire production process to a halt. On their routes, drivers must always check whether there are still enough small parts; if not, supplies are automatically brought in.

We stop at one of four production islands where individual components are turned into complete doors. Here, too, it is difficult to plan a fixed route, says Rockser: “According to the contract, we supply an average of 45 doors per system. But the customer can run zero on one system because the door configuration is not needed at the moment, but produce 65 doors on another system. We have to adapt to this in a new and flexible way again and again.”

At first glance, the entire hall is completely confusing for the newcomer, like a gigantic labyrinth. “These are completely different processes and control requirements than we are used to in synchronized processes or processes that we carry out ourselves,” emphasizes Ingo Bach. “Each production cell can produce quite autonomously with the help of the upstream and downstream buffers. Getting the supply to work in terms of planning and organization is a very special challenge.”

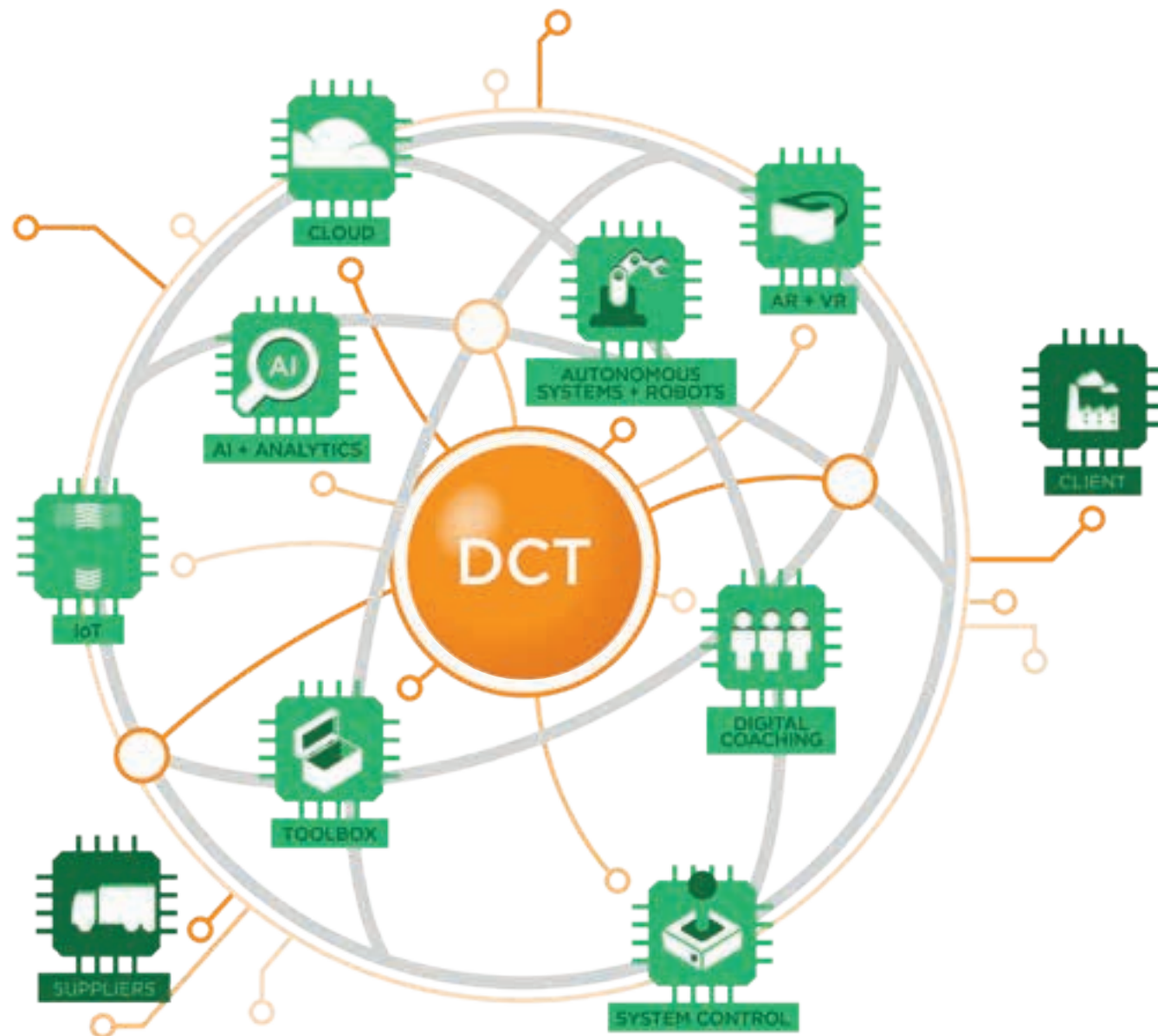
In addition to the body shop, Schnellecke also manages a 40,000 square meter batch-size warehouse. Here, pressed parts for other BMW Group plants are stored. The BMW Group pursues the strategy that each set of tools for the presses is only stored once in Germany. This means that certain body parts are delivered, while others are manufactured here and sent to other plants.

At the end of our visit, we sit together for a coffee in the cafeteria. Like Porsche, the BMW Group plant is a world of its own, each a small town within a town. It is fascinating to see how the ideas of the engineers and designers become reality here in Leipzig. And how it is possible for every customer to obtain a customized vehicle, configured exactly according to his or her wishes, despite series production.

And Schnellecke plays an important role in this.

EVERYTHING IS UNDER CONTROL

WITH THE DIGITAL CONTROL TOWER, THE DIGITAL TWIN OF LOGISTICS PROCESSES IS GRADUALLY BECOMING REALITY



When you enter the headliner assembly in the Schnellecke factory in Wolfsburg, nothing special can be seen at first glance. In a well-rehearsed sequence, many individual parts are used to create complete interior linings for vehicle roofs, which are installed on the Volkswagen production line only a few hours later. What you do not see: This is also a pilot site where the Digital Control Tower (DCT) went into productive operation almost a year ago.

We want to know exactly what is meant by this. That is why we meet Denis Wirries and Jan Tereszczuk in the huge hall in the Sandkamp district of Wolfsburg. The two IT experts are responsible for developing the Digital Control Tower.

“There’s a lot of talk about the digital twin. However, it will be several years before this happens, as this requires the collection of vast amounts of data in real time,” Wirries says, dampening our expectations right at the start. “On the one hand, the technical prerequisites for this are missing, for example a complete equipping of all objects in the supply chain with sensors, and on the other hand, we do not own the components and are not allowed to change them.”

Complete transparency of all events that influence a process is therefore currently not possible. But only when it is known at all times what is happening or will happen at which point can the system or the person controlling it react accordingly and also preventively. So, this is still a dream of the future?

“Clearly,” nods Tereszczuk. “We call what we do a complete process controlling, that is the pragmatic way, so to speak. And at the end of this path is the digital twin. But when that will be is pure speculation.”

Uniform process monitor

So, let’s take a closer look at what has been achieved so far. To do so, we go to the control center for the assembly of

components. Wirries points to a monitor. “Until a year ago, several monitors were still needed to track all processes in real time,” he explains. “One was running SAP, another our own warehouse and process management programs. We have now combined these in a uniform process monitor. In addition to this live data, we have also integrated warehouse management data.”

On the screen we see a row of tiles. Behind each is one of the modules that are manufactured here. If you click on them, new tiles are loaded, representing the individual stages of the process chain and the corresponding activities, from goods receipt and assembly, to sequencing and transport. By using traffic light colors, you can see immediately if there are any problems anywhere.

By selecting a tile, details can also be called up, for example via call-ups, and a comparison between target and actual status can be made. “You can see, for example, from the aggregated call-offs, whether a customer's production line is currently slowing down or speeding up. This enables us to deploy our human resources in a more targeted manner, for instance by taking employees off one job and assigning them to another,” explains Wirries.

Simple error message

One strength of the DCT is that it runs on all end devices. This means that the employees themselves, whether they are factory workers, team leaders, or forklift drivers, can also use it on their tablets or smartphones. The latest module added to the system a few weeks ago is based on this capability: an error message monitor.

In the past, an employee would call the control center to report an error, for example a technical problem with a forklift, incorrect deliveries, or incorrect storage locations. The problem was then resolved from there, often without any feedback to the employee. “With the notification monitor, the employee simply takes a picture of the situation with his smartphone or tablet, adds a brief description and that's it,” says Tereszczuk. “The error message is automatically documented in the system, as is the reaction that is initiated, and the employee receives feedback. This not only speeds up the entire process, but we can also evaluate the documented errors and see where any weak points in the process are.”

Automated shift protocol

Relatively new is also the shift protocol automated by the DCT. These protocols were previously prepared by hand on paper, in Excel or a database. “Our goal was to standardize this,” says Wirries. “We also

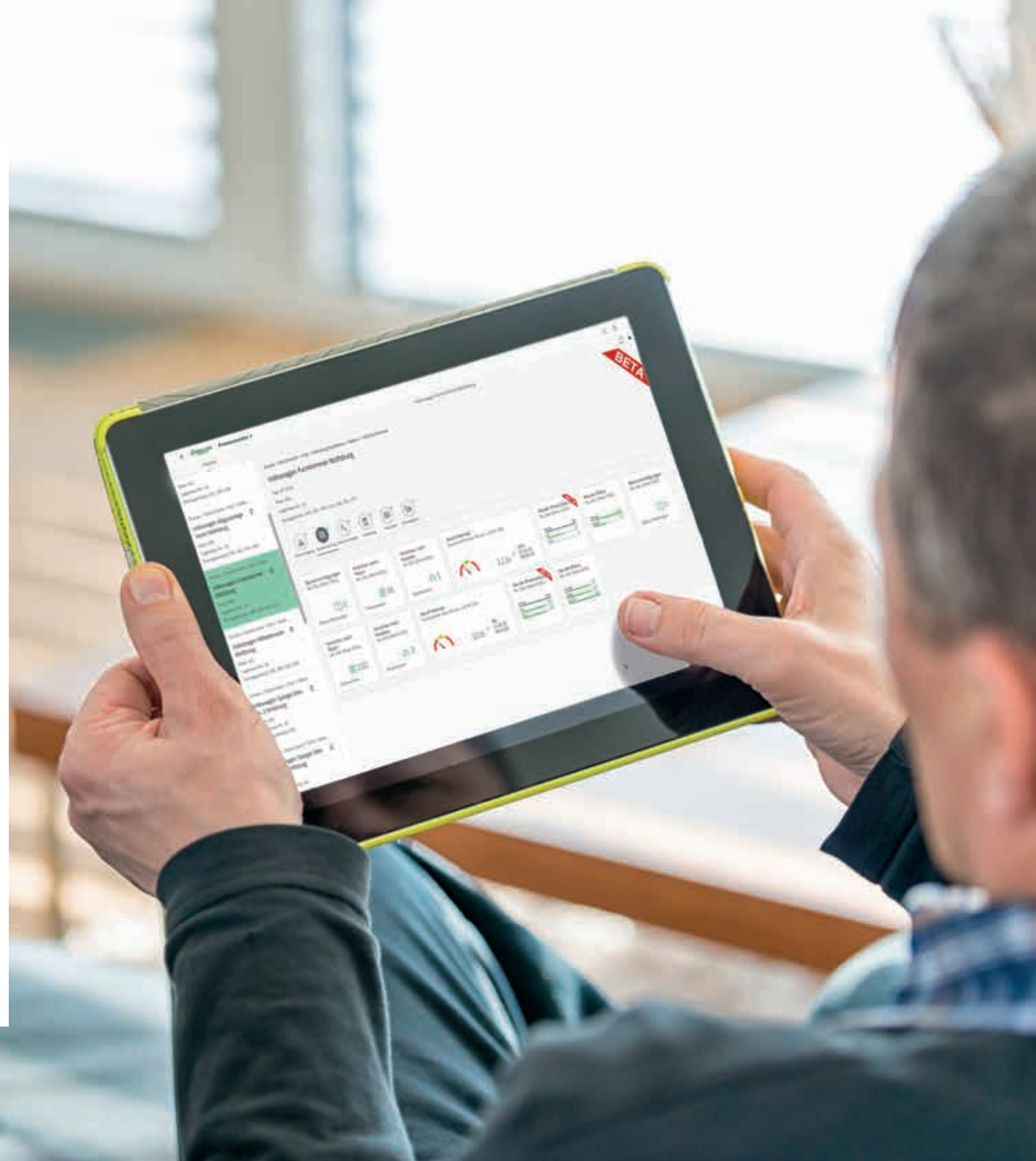
connected our HR system as data supplier. Now we save a lot of time in the production of shift protocols – and in a uniform format. This means that when there are meetings at regional division level, the information does not have to be laboriously transferred by hand from different formats, but is available directly for evaluation.”

The IoT tracking (IoT = Internet of Things) developed and used by Schnellecke was also integrated into the DCT. The next step is to integrate the material coverage from the warehouse area. Inventory stocks are already available, but the DCT should show in minutes how long these will last until they reach zero, a task that is currently still performed by a “linerunner”, who walks through the warehouse, scans articles, and generates replenishments. “Once we have automated this process, we'll have taken a big step forward,” Wirries emphasizes.

Currently, modules of the DCT are being tested intensively in practice at a number of German Schnellecke sites. “We still have a long way to go,” concludes Wirries. “But we are learning with every new process, not least that we always have to involve the people who are going to work with it. Because their acceptance is decisive for success.”

Digital Control Tower: the advantages

- Real-time overview of business processes
- Increased transparency in the processes
- Automated reporting
- Reduction of manual entry of key figures
- Access from anywhere and via all devices
- Modular design, therefore easy expansion



“WE ARE WORKING DIRECTLY ON THE PULSE HERE”

SCHNELLECKE WINS ANOTHER CONTRACT FOR MERCEDES IN BREMEN – PLANT LOGISTICS ON TWO FLOORS

Shortly after our visit to the relatively new site in Bremen (see *issue 2019.2*), we can already report another success from the Hanseatic city: Schnellecke has won the linefeeding in a hall of the Mercedes-Benz plant. Reason enough for an update.



The Mercedes-Benz plant in Bremen is the largest private employer in the region and the lead plant for the C-Class. Twelve models and thus most of the variants within the Mercedes-Benz Cars production network are produced at the site. Since 2019, the EQC1, the first electric vehicle of the new EQ product and technology brand, has also been built here.

“In the hall, the C-Class and E-Class are built as convertibles and coupes, including all AMG models,” explains René Elbert, who heads the new business unit. Since October 4, 2019, Schnellecke has been ensuring that the production lines on the ground floor are supplied with assembly components on time; since January 2, 2020, the same applies to the upper floor.

Schnellecke receives the goods that have already been delivered in sequence from goods receiving, places them in delivery rails, and then delivers them in sequence to production. “The vehicle production is quite varied, sometimes a two-door, then a convertible, then a four-door, and all of them with a wide variety of equipment,” explains Elbert. “The respective sequences can only be used for this one vehicle. Therefore, if they are not there exactly on time, the production stops.”

From 25-ton stacker to narrow aisle

The demands on the employees are correspondingly high. “95 percent of our employees are forklift or tugger train drivers; only a small proportion work in order picking,” says Elbert. “This made it a little more difficult for us to find personnel in the beginning.”

For example, companies that had just gone bankrupt were tracked down and their forklift drivers were hired. These included employees who had previously driven a 25-ton forklift in the port for years. “And now they are suddenly supposed to work in narrow warehouse aisles,” says Elbert. “That is not so easy.”

So, a comprehensive qualification concept was set up in advance. Three weeks before production started, the employees were put through an intensive assessment and training center. For this purpose, a course was set up at the Schnellecke site on the Hansalinie with routes and delivery stations similar to those at the Mercedes plant. After the employees had been tested for their skills with the forklift truck, they could simulate their future tasks here.

The training was supplemented by joint events on the Schnellecke corporate philosophy,



the Schnellecke Spirit, as well as instructions on how to use the employed IT tools, because the company is paperless.

Close cooperation with Mercedes

“This all happened in close cooperation with Mercedes,” stresses Elbert. “We were provided with original containers, and after completing the simulations, our employees were able to practice directly in the hall accompanied by our trainers and Mercedes employees.”

At the end of the three-week training there was a stress test, which was carried out in conjunction with Mercedes. Each forklift driver had to complete their job error-free over the entire duration of a shift before being approved for real-time operation.

“We are working directly on the pulse here,” emphasizes Christian Löschen, Man-

aging Director of Schnellecke Modul GmbH, which the business unit is assigned to. “With an average inventory coverage of thirty minutes, everything must be right on schedule. Otherwise the production line at Mercedes will come to a standstill.”

Potential-questionnaires were developed for the test, which examined several criteria, from social competence to specialist knowledge. If a driver did not achieve the required score for one process, they were trained for another process.

“We did this individually for all 180 or so forklift drivers,” says Löschen. “A lot of effort – but the possibility of doing something wrong is also very high.” Employees who failed the stress test were retrained on other processes or deployed as tugger train drivers.

The situation is made more difficult by the fact that every process is different and every forklift truck is an autonomous workstation.

The drivers had to familiarize themselves thoroughly with the topography of the hall in order to be able to carry out their work in the given time. In order to be able to compensate for absences, for example due to illness, each forklift driver was trained in further processes after successfully learning one process.

Extremely high training effort

“We have invested an extremely high amount of training, the likes of which I have never seen in any project before,” emphasizes Löschen. “That was the success factor for the good start. In the beginning, our employees were evaluated every day and understood how important this was.”

At the same time, a series of short training videos was developed that employees can watch on their tablets. The videos deal with concrete everyday questions: What kind of system do I have on my forklift? What does the system tell me? How do I operate the system? “This is a great help for employees with a migration background, for example,” says Elbert. “But not only them, everyone here uses the videos, for example when they are deployed in a new process.”

The videos have been so well received that they will become an integral part of employee training in the future. “Continuous training is the be-all and end-all in our industry,” says Löschen. “We work for customers who build premium automobiles. And our performance must also be of premium quality.”



E-LEARNING AS AN EFFECTIVE ALTERNATIVE

TRANSPORT DIVISION OF SCHNELLECKE HAS BEEN SUCCESSFULLY FOCUSING ON EMPLOYEE INDEPENDENT LEARNING FOR ONE YEAR

There are particular hurdles for training and further education in forwarding companies. There are numerous legally required training courses, but it is difficult to frequently interrupt the work process. This is especially true for drivers who are often on the road the whole week. With the introduction of e-learning in the Transport sector, Schnellecke has now taken a promising step.



Whenver we wanted to train the drivers, we had to order them to the company on a work-free Saturday," says Mandy Beck, who is responsible for implementing the e-learning project in the Transport Division. "And even career changers often underestimate the complexity of the profession and need comprehensive training. The administrative effort required to instruct all employees in accordance with legal regulations was immense. Added to this was the subsequent documentation effort, for example for the professional associations or for audits."

Schnellecke has found a tool, INN-ovativ KG's software "Spedifort", which is special-

ly tailored to the needs of freight forwarding companies. "The software consists of individual modules covering almost all questions that are important to us," says Beck. The spectrum ranges from short modules, such as "Handling ladders", to complex topics, such as "From beginner to scheduler" or "Handling dangerous goods". The contents of the training courses are multimedia-based, with a growing proportion of videos.

All courses certified

For Schnellecke, it was important that all legally required instructions in Spedifort are approved by both TÜV and DEKRA and au-

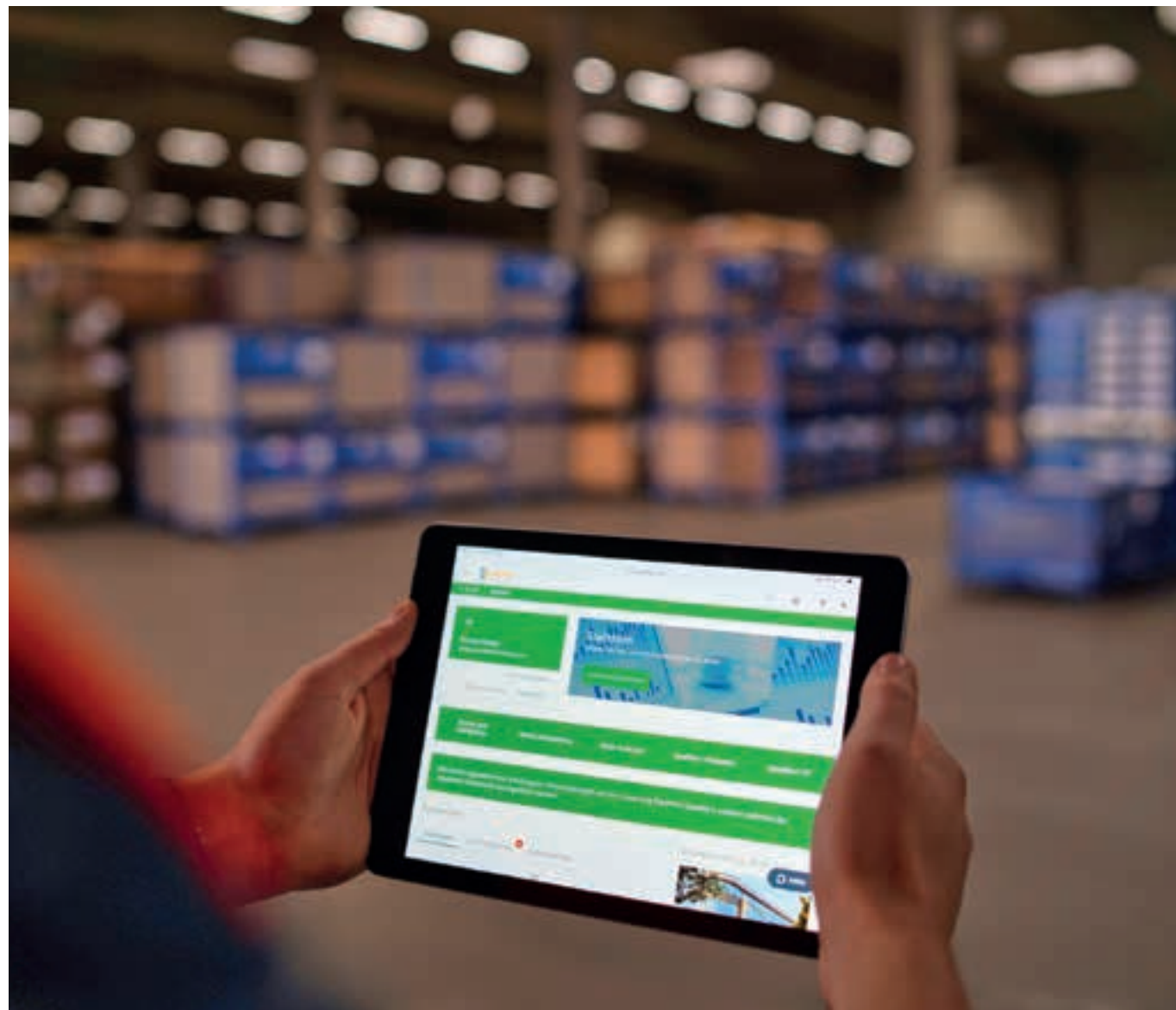
thorized by the Federal Office for Goods Transport. Furthermore, INN-ovativ KG is AZAV certified. Another advantage, according to Beck, is that Schnellecke can also design its own modules and load them into the program. "We have, for example, developed six onboarding modules for new employees, which they can work through on their first day with us."

E-learning is an ideal method of further education, especially for drivers. The "Trimble" system, which includes a tablet, is installed in all Schnel-

lecke trucks. Thanks to the integration of Spedifort in Trimble, drivers can now call up a training module at any time, for example when they are waiting at the loading or unloading ramp. Another advantage is that, since the drivers log on to Trimble with an ID card, they are also clearly identifiable to Spedifort.

Each employee receives a training plan that lists which modules he or she should complete and by when. "The modules are either department-related or job-related," explains Beck. "A fork-





lift driver is thus offered different training courses than an employee in the accounting department.”

Some modules are not longer than thirty minutes and end with a quiz. Other modules can take up to three months to complete and are concluded with an examination, for example, the further qualification to become a scheduler. Participants stop working in a module at any time. The system saves the learning status and resumes at exactly the same point the next time the user logs in.

The system also checks whether employees have completed their modules within the specified time frame. If this is not the case, an automatic email reminder is sent. Also, if someone has twice failed a final test on one of the legally required learning contents, an email is sent, but then to the supervisor so that he or

she can take up the matter and complete the course again together with the colleague. “But no employee is dismissed if he or she fails a course,” Beck emphasizes.

Separate self-study rooms

In addition, separate self-study rooms with PCs and headsets were set up at the transport companies' sites because many employees are unable to use the system optimally due to the high volume of telephone traffic at their workstations. In addition to the mandatory modules, employees also have the option of voluntarily choosing two further courses, such as a language course. In theory, they could also log in from home via a secure connection, but this should be the absolute excep-

tion, according to Beck. There are also special offers for managers or for special situations, such as during the Corona Crisis in which all workplace-specific safety instructions for Covid-19 were communicated via the platform.

Overall, Mandy Beck is very satisfied with the results of the first year. “E-learning is much more effective than packing our employees into a room for eight hours and showering them with face-to-face instruction,” she says. “In addition, we always have an overview of the modules completed and a significantly reduced administrative workload.” And, she emphasizes, “We don't want e-learning to replace personal contact and internal training, but to complement it.”

SCHNELLECKE SUPPORTS IMAGE CAMPAIGN OF THE CITY OF ZWICKAU



With Sachsentrans Spedition und Logistik GmbH, Schnellecke has been a transport service provider for the Volkswagen Group at the Zwickau plant for around thirty years, making it an indispensable economic factor in the region. Therefore, the company was immediately prepared to participate in an image campaign for the city to urgently remedy the increasing shortage of skilled workers in the region.

At the beginning of 2020, branch manager Torsten Colditz symbolically handed over ten megatrailers with the imprint “With a heart for Zwickau” to Sandra Hempel, head of the Zwickau Economic Development Department. Over the next five years, these trailers will support the city of Zwickau in its public image in Germany and neighboring countries and present it as a future-oriented business location.

IMPRINT

Schnellecke 2020.1

Insights into the Schnellecke Group

Note:

Some of the photos were taken before early 2020. Therefore, not all employees are wearing masks. Wearing a mask is now mandatory at all sites.

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